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Llywodraeth Cymru  
Welsh Government

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Welsh Government

## Consultation – summary of responses



## Energy Efficiency Strategy for Wales

Date of issue: October 2015

## **Overview**

A call for evidence on energy efficiency was held between 16 October 2014 and 8 January 2015. Ten questions were set out within the call for evidence and responses could be submitted electronically via e-mail, an online form or in hard copy by post.

The purpose of the call for evidence was to seek the views of stakeholders on a potential vision for energy efficiency in Wales and to gather evidence to develop a way forward. There was strong support for the strategy.

We received 103 responses to the call for evidence from a wide range of stakeholders. A large amount of evidence was also submitted in response to this call. The collation of responses to the call for evidence was published 17 June 2015.

All responses to the call for evidence were considered fully in building the evidence and developing the strategy further. A draft Energy Efficiency Strategy for Wales was developed and approved by Cabinet and a consultation on that draft was held between 17 June and 9 September 2015. Seven questions were asked in the consultation, enabling the public to have their say on the future of energy efficiency in Wales.

We received 93 responses from a wide range of stakeholders. All responses are being considered in developing the strategy further.

The Welsh Government would like to thank stakeholders for their constructive and useful contributions in this process.

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## **A)List of Questions**

- Q1)** Do you agree with the areas of action set out in chapter 5.1: Overcoming Barriers?
- Q2)** Do you agree with the areas of action set out in chapter 5.2: Developing the supply chain?
- Q3)** Do you agree with the areas of action set out in chapter 5.3: Education and Skills?
- Q4)** Do you agree with the areas of action set out in chapter 5.4: Innovation?
- Q5)** Do you agree with the areas of action set out in chapter 5.5: Finance?
- Q6)** Do you agree with the impact assessments associated with this draft strategy?
- Q7)** We have asked a number of specific questions. If you have any related issues that we have not specifically addressed, please use this space to report them:

## B)List of respondents

1	Eco Home Centre
2	Neath Port Talbot Group of Colleges
3	Gwynedd County Council
4	Certsure
5	Institute of Civil Engineers
6	Torfaen County Council
7	NSA Afan
8	Royal Town Planning Institute
9	Saint Gobain
10	Coed Cymru
11	Tabitha Binding
12	Renewable UK
13	British Gas
14	One Voice Wales
15	Natural Resources Wales
16	UK LPG
17	Wolseley
18	James Coulter
19	Mineral Wool Insulation Manufacturing Association
20	Castleoak
21	ACE
22	Newydd
23	Isle of Anglesey County Council
24	Energy Effective Ltd
25	City & County of Swansea
26	The Detail Hub
27	My Green Home Ltd
28	Ynni Cymru Energy Solutions
29	The EPC Man
30	Bond Demolition Ltd
31	Colin Edwards
32	Wrexham County Borough Council
33	Gaia Renewable Energy Ltd
34	Green Renewable Wales Ltd
35	Powys County Council
36	GATC Ltd
37	Celsius Energy Ltd
38	C&K SUPPLIES
39	Llangynog Memorial Hall

40	Dr James Henshall
41	John Griffiths - Chartered Surveyor
42	Equity Redstar
43	North Wales Housing
44	NSA Afan
45	T L C Energy Limited
46	ECO CARBON TRADERS LTD
47	Asset Energy Solutions Ltd
48	WDS Green Energy
49	Torfaen CBC
50	Warmwalls Ltd
51	Gas Tech Wales
52	GB-Sol Ltd
53	South East Wales Energy Agency
54	BDT installations
55	Salix Finance
56	Aberystwyth University
57	William Morris Energy Assessments
58	Geraint Williams Plumbing & Heating Ltd
59	URBAN SOLAR LTD
60	Peter Jackson
61	Ignite Mechanical Contracting Ltd
62	Jamie Black OCDEA/DEA/GDA
63	Westflight Ltd
64	Pembrokeshire Power
65	Greener Heat
66	SAM Drylining Ltd
67	Dean Crocker Energy Assessor
68	Biofutures Ltd
69	E W Consultancy
70	Christopher Williams
71	Business Wales
72	Institution of Mechanical Engineers
73	Smart Energy GB
74	Community Housing Cymru
75	SSE
76	CITB
77	CLA
78	EON
79	NEA
80	Rockwool
81	EDF Energy
82	RICS

<b>83</b>	Flintshire County Council
<b>84</b>	Constructing Excellence in Wales
<b>85</b>	RWE nPower
<b>86</b>	Melin Homes
<b>87</b>	Citizens Advice
<b>88</b>	Energy Savings Trust
<b>89</b>	Glass and Glazing Federation
<b>90</b>	WWF
<b>91</b>	Egnida
<b>92</b>	Federation of Small Businesses
<b>93</b>	CALOR

## Overcoming barriers

**“People, communities businesses and other organisations, recognise the benefits of energy efficiency and take action.”**

### Key areas of action:

#### Overcoming barriers for householders and communities

- 1.1 Improved information on the value of energy efficiency, the relative benefits of different measures and the support available.
- 1.2 Working through others with influence to encourage action on energy efficiency.
- 1.3 Building on the work being done by Smart Energy GB.
- 1.4 Providing free energy efficiency assessments and guidance for low income households.
- 1.5 Continuing to provide advice and support for those households on the lowest incomes and living in the most energy inefficient properties.
- 1.6 Making energy efficiency easy for those households who are able to pay but who are put off by the complexity and lack of trust in the sector.
- 1.7 Ensuring that the private rented sector take action to meet the obligations placed on them by the UK Energy Act (2011).
- 1.8 Review of Part L of the Building Regulations in 2016.
- 1.9 Drive achievement of the Welsh Housing Quality Standard.
- 1.10 Aligning community based activity to our wider community based action.

#### Overcoming barriers for businesses

- 1.11 Access to information, advice and support on energy efficiency.
- 1.12 Integrate energy efficiency support within wider business support.
- 1.13 Work with large businesses to use energy more efficiently.
- 1.14 Building on the work being done by Smart Energy GB.
- 1.15 Increased investment and support through Green Growth Wales.

#### Overcoming barriers for the Public Sector

- 1.16 Access to advice and support.
- 1.17 Showcasing successful projects.
- 1.18 Drive efficient use of public expenditure on resource efficiency through the use of the National Procurement Service and Resource Efficient Wales procurement service.

**C) Responses in full to question 1) Do you agree with the areas of action set out in chapter 5.1: Overcoming Barriers?**



## 1.Eco Home Centre

- 1.1 Improved Information.  
We think that giving people really good advice is important, however it needs to be based on RISK and a good understanding of the actual house / life style. This requires trained people who understand building types, building pathology, the limitations of EPCs, moisture, etc.
- 1.2 Work with others to encourage energy efficiency.  
Again this is fine as long as those people have the time / knowledge to give really good individualised advice that highlights risk and takes into account individual circumstances.
- 1.4 Providing Free Energy Efficiency Assessments to Low Income Families.  
The EPC tools used are not reliable for many house types in Wales and certainly gives generic advice that needs interpretation. Luring people in with unrealistic savings and also high risk measures will just create situations where the poorest might be done a serious mis-service.
- 1.5 Continue to provide advice.  
The NEST service is again driven by the unreliable EPC system and so needs to be adapted. It should also look at the wider issue of health, Internal Air Quality (IAQ) etc.
- 1.6 Making Energy Efficiency easier for people.  
We must start with the fact that many energy efficiency measures are NOT easy. We need to give people confidence by providing good and rounded advice that highlights risk and how to minimise them. Honesty is the best policy here.
- 1.7 Ensuring that the PRS (Private Rented Sector) meet their obligations.  
Again we are using EPCs that give advice that is poor, inaccurate and will encourage the cheapest and easiest routes to a E rating. Some improvements that give E's will be detrimental to health of occupants and also not deliver the actual savings. We need to be smarter and to ensure that appropriate guidance is given to minimise this risk. This means appropriate recommendations need to be given. At present the EPC guidance does not give 'clever' advice and this is misleading.
- 1.8 Review Part L of Building Regulations.  
Again we need to ensure that we give lower risk advice / guidance. Pre 1919 buildings need to have better data and we need to consider issues like reverse condensation, maintaining breathable walls, moisture levels etc. We also need to link in Ventilation into the advice to minimise risk to these older properties. The use of EPCs should also be re-assessed and the issues surrounding detailing / thermal bridging etc.
- 1.9 Drive achievement of the WHQS.  
Given the costs associated with continual upgrades should each property be assessed in a manner that makes it as good as it can be (with due diligence

to health of the occupants, building structure etc). This might mean that one building at SAP 60, whilst others achieve 85! Having a purely arbitrary level of 65 might cause a lot of problems that will ultimately cost more and also not give the results expected.

- 1.10 Align community based activity.  
Communities need to give accurate advice and this can only be achieved by understanding houses. Whilst people can help drive interest we should rely on trained specialists using the right tools to give the actual individualised advice.
- 1.11 Provide advice to businesses etc.  
Each property is different and so using showcases can encourage uptake, but each property needs to be assessed individually and so care is needed not to promote solutions that are not appropriate to all buildings.
- 1.12 Integrate support into wider business advice.  
Fine, but it needs to be good advice and support.
- 1.13 Work with large businesses.  
We need to look at how we can use large industrial waste heat can be used for community benefit. District heating schemes, linking heat exporters with importers etc. Planning needs to be involved and encouraged to think strategically.
- 1.15 Increased support via Green Growth Wales.  
Support needs to build on a strategic approach to support relevant industries that provide low risk solutions to energy efficiency etc. Wood fibre should be a standard specification product for many Welsh houses and it needs to have the backing of WG and GW in order to find its market.
- 1.16 Advice in public sector.  
We need to give low risk advice that is tailored to each building.
- 1.18 Drive efficient use of public purse.  
As 1.15 we need to ensure that we develop industries that provide us with low risk solutions.

## **2. Neath Port Talbot Group of Colleges**

Under barriers for Householders and communities, we fully support the areas of action outlined, as key to the success of the policy. There is a need to ensure that there is training and education programme, in place for householders and communities, this is beyond awareness, and needs to be developed with local communities, as well as RSLs, to enable that the technology is fully understood. Learning providers would be well placed, to develop these programmes and they should be community champions/advocates in place, to mentor as well as support the approach. We also strongly endorse the need to utilise Part L in the PLANNING REGULATIONS, to position the approach effectively in Wales.

We also support the areas for action, in terms of Business support, with some improvements needed. The support mechanism needs to be simplified, as business needs to have one point of contact and not various bodies who they have to engage with. Given the key role that the Built environment and construction sector, will play in the policy, we are surprised that there is no mention of engagement with the industry Federations, as part of the wider strategy. There needs to be an approved understanding by the Procurement professionals, in terms of what they are procuring, and the systems used to achieve the standards laid down. There also needs to be impact assessments post completion of the contracts, to ensure best practice and future learning.

### **3. Gwynedd County Council**

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### **4. Certsure**

Yes – there appears to have been significant consideration given to the wider complexities of energy efficiency and use taking in to account all parts of the community from homeowners through to business to provide a viable and sustainable energy future for Wales.

It is clear from reading the proposal that the innovative use of people's emotion plays a significant part in seeing the 'bigger picture' in relation to using energy effectively both now and in the future. This indicates a holistic view of energy usage in Wales which appears to be lacking in other UK Governments.

### **5. Institute of Civil Engineers**

Broadly yes.

However, if this is genuinely about increasing energy efficiency, the free assessment should be provided to all households and businesses rather than just to low income households. After all the far greater use (and waste) of energy will be by higher income households and businesses so much more energy would be saved. NB: This could potentially be a 'self-assessment' spreadsheet although it is recognised that some people (even in higher income households) may still ignore it. How are the obligations within the Energy Act (2011) being imparted to landlords? Do they know they have to take certain actions? They are likely to be willing to take the necessary actions because it will probably improve property values so a good many properties may well be quickly upgraded if landlords know upgrade is required.

### **6. Torfaen County Borough Council**

Yes, however the following issues may need some clarification:

- 1.1 Will WG be providing training to front line staff who will be offering information to householders? Will there be any costs associated with training staff?  
What mechanism is there to enable Local Authorities to check if providers are genuine? RSLs have a role to play in this too, especially as the behavioural change aspects of (a) using less energy and (b) making the most of any new technologies, can benefit RSL tenants who are typically on lower incomes more than some owner occupiers.
- 1.2 Further definition about who the 'others with influence' are and how these links will be made would be useful. We would also welcome a new Wales house condition survey being commissioned by WG.
- 1.3 Smart energy should be promoted, but as one of a range of energy efficiency products and options. We have some concerns about the value for money of implementing new technologies.
- 1.4 We welcome this attempt to support low income households, because many working households are on low income (but not benefits) and are therefore not entitled to grant support and energy schemes such as Nest. However, this approach is fundamentally flawed because low income households without the means to carry out improvements, are unlikely to want to take up a free energy efficiency assessment. This is awfully similar to Green Deal which has not been very successful. The poverty gap is increasing for working age households, and households with member(s) in employment, who are often not catered for when adopting a benefits related criteria/subsidy i.e. many working households are worse off than benefit claimants when it comes to accessing energy efficiency measures such as Nest.
- 1.5 Not sure the current approaches mentioned are actually achieving this yet. Much more work is needed to educate the public about the benefits of energy efficiency as well as how to get the most out of the measures available. We welcome the links being made with the Child Poverty Strategy, and a targeted priority regarding families living in poverty.
- 1.6 This would be an extremely useful service if it were made available, especially since 'rogue traders' have made many householders anxious about investing in energy efficiency measures, as well as a lack of understanding about the Green Deal process.
- 1.7 We have concerns over the enforcement of landlords who do not hit the required EPC level. Is there a danger that the more unscrupulous landlords will 'go underground' and we'll end up with a two tier system where some people take tenancies in properties that are sub-standard, with little recourse? Who will be checking and monitoring this and where are the resources coming from to achieve it? Whilst we welcome increased obligations on private landlords to ensure property energy efficient is adequate, and that available investment is taken up as applicable, LAs will

require further resources to undertake the enforcement role, else the increased private landlords' obligations will not be fully managed.

- 1.11 Without incentives, advice will only get businesses so far. The incentives / funding is often the 'hook' to pull them in.
- 1.15 More assistance could be provided to assist LAs to identify their role(s) and strategies in order to maximise energy efficiency technologies, knowledge, skills, investment and approaches, whether on a 'promoter, producer or provider' basis. LAs should have in place Affordable Warmth/ Fuel Poverty/ Energy Efficiency Strategies (on a local or regional footprint), and WG has a role to play in facilitating this. Ensuring that LAs play a pivotal and strategic role in securing valuable energy efficiency investment, products and developments are essential and WG needs to undertake an enabling role.
- 1.18 There is currently no framework for energy efficiency in place, so how can a National Procurement Service be used? Arbed is currently being run by 1 manager, so would this make a framework redundant anyway.

## 7. NSA Afan

- 1.1 We consider this statement to be positive and we support it fully. We would recommend that each local authority have in place an energy efficiency officer that has responsibility for domestic properties and acts as a point of contact for householders and installers, thereby providing a local channel for enquiries and complaints relating to rogue installers and bogus callers.
- 1.2 We fully support his approach towards partnership working. We recommend that the third sector has a valuable role to play in delivering these 'targeted' campaigns
- 1.3 We support this statement
- 1.4 We look forward to the results of the pilot project with interest.
- 1.5 We support this statement and commend the NEST programme for its excellent work and hope that funding will increase over the coming years.
- 1.6 We consider this aspect of the consultation to be important and welcome the initiative. Middle and high income households will be more open to adopting energy efficiency measures if such a service is available.
- 1.7 We agree that the private rented sector has a major role to play in the promotion and dissemination of energy efficiency information. In addition, their commitment to improving housing stock is essential in the drive for greater efficiencies.
- 1.8 We support the Welsh Governments aims with regard to Part L of the Building Regulations and the review in 2016.

- 1.9 We support this statement
- 1.10 We fully support any involvement in Community first, Flying Start and in actions under the Rural Development Plan.
- 1.11 We support this statement
- 1.12 We support this statement
- 1.13 We support this statement
- 1.14 We support this statement
- 1.15 We support this statement
- 1.16 We support this statement
- 1.17 We support this statement
- 1.18 We support this statement

## **8. Royal Town Planning Institute**

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## **9. Saint Gobain**

Yes, Saint-Gobain agrees with the areas of action to address key barriers. However, care should be taken not to focus on behaviours (implementing SMART metering, etc.) over and above addressing the fabric of buildings, which should be the key step in energy efficiency, particularly if wanting to improve comfort, health and wellbeing of the occupants in addition to reducing carbon emissions.

Lots can be learned from the UK where giving away large numbers of free assessments did not result in Green Deal schemes being taken out at scale. Other drivers and incentives will be required to gain traction, for example lower council tax or stamp duty for more energy efficient properties. Updating Part L will give an ideal opportunity to reconsider the implementation of Consequential Improvements for buildings linked to an increase in habitable space as a driver (and to a requirement for a Green Deal assessment to be carried out when replacing a boiler/glazing).

Setting up an 'existing buildings hub' could help bring together the expertise from across Government and Industry to overcome the day to day barriers associated with renovation and increase quality and standards.

## 10. Coed Cymru

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## 11. Tabitha Binding

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## 12. Renewable UK

The areas of action as set out in the consultation document, and our responses, are:

<b>Section</b>	<b>Summary</b>	<b>Comment</b>
1.1	Improve information on the value of energy efficiency	Agree
1.2	Encourage action through partnerships	Agree, although more motivating factors (than just house value) would be useful to consider; the work of – for example – Common Cause <sub>6</sub> might be useful in this regard
1.3	Support Smart Energy GB and Ofgem on smart metering	Agree; there is a risk of proliferation of cautionary information against the value of smart metering <sub>7</sub> which merits investigation or challenge
1.4	Free energy efficiency assessments for low income (non-grant eligible) households	Agree; although follow-up support would presumably be a key component on take-up of measures
1.5	Advice and support for low-income households	Agree, although the additionality of this point to 1.4, beyond specifying that the above is non-eligible for grants, is unclear. Suggest combining 1.4 and 1.5
1.6	Support for able-to-pay	Uncertain; although this

	households	issue was raised in the response to the call for evidence, the methodology isn't evidence by need
1.7	Ensure compliance by private rented sector	Insufficient as Green Deal has been axed which means that the suggested measures are no longer eligible
1.8	Review of Part L	Agree; the last changes to Part L were lamentably poor, and a review should be urgently conducted
1.9	Drive achievement of WHQS	Agree, subject to funding being available to social landlords
1.10	Aligning community based action	Agree. Awareness and education are key to encouraging people to take control
1.11	Access to information and advice (private sector)	Agree that a partnership approach generally achieves more than a single programme
1.12	Integrate energy efficiency support within wider business support	Agree
1.13	Target large businesses	Rationale not supported; most large energy users are acutely aware of the options they have for controlling energy costs, and a vigorous private sector market already exists to support such companies in managing and reducing their energy use
1.14	Build on work by SmartEnergy GB	No action is specified here



1.15	Increase support through Green Growth Wales	Agree
1.16	Access to information and advice (public sector)	Agree
1.17	Showcasing successful projects	Agree
1.18	Use NPS to support best value in energy efficiency procurement	Agree; this is also an opportunity to support supply chains as stated

*6 Common Cause investigates the values that motivate individuals; see their website*

*7 See, for example, "Smart meters: criminalising landlords, ripping off consumers"*

### **13. British Gas**

- 1.1 We are broadly supportive of the Welsh Government's energy efficiency strategy, and if there is sufficient available funding to do so, we would welcome its full implementation.
- 1.2 Our experience shows that the challenges in persuading households and businesses to take action to improve energy efficiency will vary according to the type of tenure or ownership, level of engagement, and available funding.
- 1.3 We support any attempt to remove barriers to creating a significant market for energy efficiency improvements among those customers who are able to pay. However, insulation measures have been heavily subsidised for over a decade, and many householders expect to receive installs for free. The success of this market depends on the creation of significant customer demand, which has not been stimulated to date.
- 1.4 To create this demand, energy efficiency policy needs to take customers as its starting point and be built on a deep understanding of their needs and behaviours. Our experience suggests that long-term demand for energy efficiency needs to be driven by incentives, regulation, or both. Without this, customers will simply not make their homes more energy efficient.
- 1.5 We would welcome the introduction of any measures that have the potential to encourage uptake among able-to-pay households. These might include council tax rebates, Government incentives, the provision of free assessments, or an impartial advice service.
- 1.6 We suggest that these approaches are thoroughly tested before they are widely implemented to ensure that they will have a material effect on the installation of energy efficiency measures. For example, the recently-closed

UK Government Green Deal Home Improvement Fund led to the installation of a number of measures, but was expensive and failed to create long-term sustainable demand.

- 1.7 The strategy supports the 'whole house' approach to energy efficiency retrofit, and we are supportive of the aspiration to encourage households to pay for the installation of multiple measures at the same time, where the market allows.
- 1.8 We believe that one of the reasons why the market has not yet developed for multiple-measure, whole house retrofits, is that there is limited demand for them. If there were more significant demand for this approach, the market would have responded.
- 1.9 One of the reasons for the current low demand for whole house retrofits is the level of disruption and cost associated with the work, which may require additional building and/or redecoration activities on top of the installation of energy efficiency measures.
- 1.10 The strategy indicates that the Welsh Government will contribute to the UK Government's review of Part L of the current Building Regulations in 2016. We have carried out our own review of these Regulations, and there are no particular changes that we seek to be made to the document.
- 1.11 British Gas has managed the Welsh Government's Nest scheme for over three years, and we believe this model has been successful in delivering energy efficiency measures for households and businesses across Wales. We would welcome the opportunity to compete to run the next generation of Nest, when the programme comes to an end.
- 1.12 We are supportive of the intention to provide advice and support to businesses on energy efficiency, and would welcome further information on the type of support that will be provided, and whether there is scope for British Gas to be involved. For example, we could provide information relating to the benefits of having a smart meter, the data it can provide, and how this technology can help businesses save energy and money.
- 1.13 Providing information like this to businesses will help them to understand how their energy consumption compares to other similar businesses – potentially through a comparison of their energy use per square meter of floor space. Through greater availability and provision of information, we would expect an increase in businesses' engagement with energy efficiency, and increased likelihood of their taking steps to tackle issues by improving building fabric, usage and control systems.
- 1.14 British Gas is leading the roll-out of smart meters, with nearly 2 million installed in homes and business across Great Britain and around 100,000 in Wales. The benefits of smart are wide-ranging. Estimated bills will be a thing of the past, faster switching will be made easier, and importantly, they will

also transform the experience of the 20% of British households who use prepayment meters.

- 1.15 British Gas supports the Welsh Government's proposal to build on the work being carried out by Smart Energy GB, to raise awareness of the benefits of smart meters for households and business. We believe customer engagement will remain the greatest challenge to the smart meter roll-out and we will need a broad, consistent and positive message to ensure that customers grant us access to their properties to fit smart meters.
- 1.16 Smart Energy GB will play a crucial role in tackling consumer concerns and encouraging households to embrace the technology. However, Smart Energy GB is also a significant cost to the roll-out and we must ensure that it delivers value for money.
- 1.17 To help ensure all customers benefit from the roll-out of smart meters, including those in fuel poverty, British Gas also supports the involvement of trusted third parties, such as Citizens Advice and local community groups, as a route to encourage consumer engagement. These organisations will become increasingly important when the mass roll-out begins and suppliers seek to engage with difficult to reach and vulnerable customers.
- 1.18 British Gas is training the Smart Energy Experts who are leading the roll out of smart meters in Wales at the British Gas Academy in Tredegar. At our award-winning contact centre in Cardiff, we have a growing number of customer service advisors who are developing an expertise in the different conversations we are now able to have with our customers who already have smart meters. These resources mean we are well positioned to work with Welsh Government and other partners to promote understanding of this new technology.

#### 14. One Voice Wales

Yes. Area of action 1.10 in particular offers our sector an opportunity to provide leadership and cohesion within the development of an effective network of best practice exemplars across the communities of Wales. The community and town council sector has a broad range of experience and exemplary work in this direction, both in terms of individual councils pioneering initiatives within their communities and in terms of councils contributing to wider partnership projects with other stakeholders.

#### 15. Natural Resources Wales

Yes

In *Area of Action 1.13 - Work with large businesses to use energy more efficiently* we welcome the recognition of the importance of achieving efficiencies in larger businesses and industry. The EU Emissions Trading System, CRC Energy Efficiency

Scheme and the Energy Savings Opportunity Scheme can help meet Wales's energy efficiency commitments through the creation of both financial and reputation mechanisms capable of achieving significant energy efficiencies and greenhouse gas emission reductions from industrial activity and energy generation.

Natural Resources Wales is responsible for the regulation of these schemes in Wales which, collectively, capture around 50% of the total Welsh greenhouse gas emissions. For example, the EU Emissions Trading System captures 20,000 tonnes of CO<sub>2</sub> emissions every day from both Aberthaw Power Station and Port Talbot Steelworks.

Our primary role is to ensure participating organisations comply with the three schemes in Wales. We take an active enforcement role to ensure high rates of compliance, and thereby increase the effectiveness of the schemes, through provision of advice, guidance and support to participating organisations.

We worked with the EU, Welsh Government, DECC, the Environment Agency and other UK regulators to transpose the Energy Efficiency Directive and the EU Emissions Trading System into domestic law, and also contributed to the development the CRC Energy Efficiency Scheme Order 2013. Through ongoing collaboration with these bodies we will continue to take an active role in improving the effectiveness of the schemes and the supporting policy frameworks. Our contributions always aim to ensure the effectiveness and maximum coverage of the schemes in Wales.

*Overcoming barriers for the public sector Areas of Action 1.16 to 1.18*

We believe the public sector should take a leading and visible role in the wider drive for energy efficiency improvements across Wales. The NRW environmental management system is certified to ISO14001, which requires us to continually improve our environmental performance including reducing our energy use and carbon emissions. Working with the Carbon Trust we are also in the early stages of working towards becoming a carbon neutral organisation that will involve a programme to further reduce energy use throughout our offices and opportunities for micro-generation and carbon storage across the NRW estate.

In line with Action Area 1.17 we will be keen to showcase successful projects from this process.

We welcome the focus on resource efficiency through the National Procurement Service set out in Area of action 1.18 and hope it will allow us to achieve maximum value for money and to support local businesses as we undertake our project to become carbon neutral.

Raising individual energy awareness and changing personal behaviours is one of the biggest challenges in addressing energy efficiency. The Welsh public sector is a major employer and could also provide a convenient and effective communications route through its employees to promote household and community energy efficiency. There would be value in developing energy awareness and advice programmes targeted at the residential level that can be run within public sector organisations.

## 16. UKLPG

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## 17. Wolseley

Wolseley wholeheartedly agree that each set of individual circumstances will require a unique solution that is relevant to the householder and that there is no simple, single answer. Overcoming the barriers outlined in the consultation document therefore requires a complete, joined up approach from central and local Government and industry.

1.1 Improved information on the value of energy efficiency, the relative benefits of different measures and the support available.

The UK and Welsh Government's policies have successfully delivered significant success and investment in new and greener power generation and distribution, leading to sustained job creation in those sectors. However, as outlined in the consultation, this success needs to be balanced against the need to promote the uptake of household energy improvements to ensure that we meet our legally binding target of reducing greenhouse gas emissions by 80% by 2050.

Making energy improvements to our housing stock, including retrofitting our ageing homes and ensuring we build low carbon homes for the future, will be vital if we are to achieve these targets. To do this we need to ensure that the general public understands the value of making energy efficiency improvements to their homes – both in monetary terms and in terms of environmental benefits and social good – so that they are encouraged to invest in improvements and change their behaviour. As a result, we strongly agree with the need for a strong evidence base and publicly available information regarding the value of energy efficiency. Our experience of delivering solutions for consumers is that this is best achieved through the provision of case studies or innovative schemes such as the Superhomes<sup>1</sup> scheme. Superhomes participants throw open their doors to the public to showcase energy efficiency retrofit measures.

We need to ensure that the appreciation that we as a society should not waste energy – in the context of saving money for consumers – is at the heart of all Welsh and UK energy policy.

1.2 Working through others with influence to encourage action on energy efficiency. We would agree that the best approach is for a multi-discipline approach to information provision, particularly where uniform messages can be agreed.

Our experience of working with the Department of Energy and Climate Change to encourage the take-up of energy efficiency schemes such as the Green Deal and the Renewable Heat Incentive Scheme has been incredibly informative.

Government schemes fail when broader marketing campaigns and community engagement programmes are not run with the involvement and buy-in of installers.

If we are ever going to make domestic energy reduction a success – and encourage people to take action on energy efficiency – then we need to get the installers on side and on message.

They are the ones who are advising the British public on the doorstep as to what improvements we should be making to our homes and what the best energy efficient replacement for expired systems are. They are the ones making the difficult decision as to whether they can afford an apprentice and the training costs involved. It is these installers that are ultimately the ones who will be a major influence as to whether the public are listening and start to invest in energy improvements to their homes.

We also believe that the involvement of less traditional partners such as estate agents and insurance companies in the process should be encouraged.

#### 1.3 Building on the work being done by Smart Energy GB.

Whilst smart meters provide really interesting potential, there is evidence to show that their impact may only be short term<sup>2</sup> and there are still some significant technical impacts to overcome.

We would support the idea of Smart Energy GB to deliver a broader set of energy efficiency measures, joining up the message.

#### 1.4 Providing free energy efficiency assessments and guidance for low income households.

There is strong evidence of the efficacy of professional assessments in encouraging investment in energy efficiency measures. However, there is a great deal of disagreement as to what constitutes a professional assessment.

We also fully support such assessments as a key tool in educating consumers about the energy efficiency options they have at their disposal.

The Energy Performance Certificate assessments (and therefore Green Deal Assessments) have been criticised by parts of the industry as being less than adequate and the way in which the Standard Assessment Procedure treats some measures has been interpreted as unfair.

#### 1.5 Continuing to provide advice and support for those households on the lowest incomes and living in the most energy inefficient properties. Agreed.

#### 1.6 Making energy efficiency easy for those households who are able to pay but who are put off by the complexity and lack of trust in the sector.

Historically attitudes toward plumbing and heating professionals have not always reflected the genuinely professional nature of the industry.

It is our view that there is an abundance of first class companies capable of offering integrated assessment and installation services. Many of these companies are

subject to rigorous regulatory standards and industry specific guarantee schemes such as the Renewable Energy Consumer Code<sup>3</sup> and the Microgeneration Certification Scheme<sup>4</sup>.

There is certainly a need for a quick and easy ‘call-to-action’ for consumers, but this is more to do with information provision than the establishment of a new vehicle.

1.7 Ensuring that the private rented sector take action to meet the obligations placed on them by the UK Energy Act (2011).  
Agreed.

1.8 Review of Part L of the Building Regulations in 2016.  
It is Wolseley’s view that a comprehensive review of building regulations would have the single biggest impact in encouraging energy efficiency measures. However, as mentioned in the consultation document, Wales does not have powers to regulate on energy efficiency. It is also true that the last two amendments to Part L of Building Regulations have resulted in disappointing dilutions of proposed changes and, in particular, those elements relating to the concept of ‘consequential improvement’ standards.

There is no better example of the success of regulatory change than the change to building regulations that came into force on 1st April 2005, stating that any replacement or new gas or oil boiler must be a condensing boiler. In what appears to be a retrograde step, however, following the UK Summer Budget, it was confirmed that the UK Government have scrapped plans to ensure that new homes are built to a Zero Carbon standard. This decision casts further doubt over the UK’s commitment to improving the UK’s old, inefficient housing stock and represents another significant blow for an industry that has invested heavily in recent years.

1 <http://www.superhomes.org.uk/>

2 Energy Demand Research Project - Ofgem

3 <https://www.recc.org.uk/>

4 <http://www.microgenerationcertification.org/>

## **18. James Coulter**

-

## **19. Mineral Wool Insulation Manufacturing Association**

### ***Barriers***

We support the desire for future energy efficiency programmes in Wales to drive whole-house approaches and to recognise the diversity of the building stock in terms of age, use, materials, build type and quality, thermal mass, location, orientation and occupancy, and to tailor solutions to the building or group of buildings in question. This will help to maximise energy saving potential and high quality installations.

The draft strategy also references potential issues with the performance gap. MIMA has carried out research into this issue with the aim of understanding the specific impact that mineral wool insulation can have in delivering strong in-use performance. Tackling the performance gap is an important part of securing consumer confidence and MIMA would welcome discussions with the Welsh Government on their future plans on this important issue. In particular, research carried out by Leeds Beckett University for MIMA demonstrated that by fully filling cavity party walls with mineral wool insulation, air movement and heat loss could be reduced to virtually zero – reducing the overall performance gap” associated with the cavity wall insulation overall.

The strategy also refers to the need to consider wider action to drive energy efficiency. For example, to examine how energy efficiency might be driven “through processes such as applications for council tax benefits and Welsh Government grants.”

MIMA strongly advocates policies that not only enable people to take up energy efficiency measures (such a pay as you save schemes or low interest loans), but also drives them to want to do it.

We think drivers such as tax incentives are absolutely critical, and enablers on their own are not enough. In our view, the focus on enablers in the Green Deal was one of the fundamental problems with the scheme. We therefore support moves to encourage take up through tax incentives, and would wish to see the strategy take the following shape:

- 1) Commit to a stable, long-term (ten-year) programme with energy efficient housing as an infrastructure priority.
- 2) Drive demand by rewarding energy efficient homeowners with lower stamp duty or other tax incentives (which are cost neutral).
- 3) Enable householders to see it through with low interest loans for energy efficiency improvements and other financial support to reduce up-front costs (the fuel poor and able to pay).
- 4) Support supply chain capacity and high quality delivery.

## 20 CastleOak

-

## 21 ACE

-



## 22 Newydd

-

## 23 Isle of Anglesey County Council

-

## 24 Energy Effective Ltd

-

## 25 City & County of Swansea

-

## 26 The Detail Hub

Yes

## 27 My Green Home Ltd

Yes

## 28 Ynni Cymru Energy Solutions

I agree with most of the above points but some areas would need to be explained. The way that Green Deal has been run (with the so-called free assessments) is very poor. This has only clouded the public's view of the industry creating a negative view of energy assessors and solar panel (as an example) companies pestering the public to have panels installed. The private rented sector needs to tighten up on their properties. Part L is already difficult for some clients to be able to reach particularly those with small builds such as 'granny flats' - there needs to be a Part L review of such situations. There needs to be more involvement with 'professional' energy (SAP/SBEM etc) assessors.

## 29 The EPC Man

Yes. Energy efficiency assessments to be undertaken by qualified impartial assessors not sales teams.

### 30 Bond Demolition Ltd

-

### 31 Colin Edwards

-

### 32 Wrexham County Borough Council

-

### 33 Gaia Renewable Energy Ltd

I think it is important to take a holistic approach to the emerging technologies. Four key areas need to be addressed Solar, battery storage, ultra efficient electric heating and insulation. These need to be combined.

### 34 Green Renewable Wales Ltd

-

### 35 Powys County Council

Generally yes, although I think its a large area. I would consider some other issues, such as, I think that financial issues (capital) are a major barrier to regenerating the energy efficiency industry (not being able to afford replacing old inefficient boilers etc), I cant see a mention of financial incentives or programmes. Also I feel that our heat networks have a major impact to play, whether its having warm homes programmes to engage with our rural hard to treat off gas homes. We have found that central procurement can be an issue as it generally favours larger companies, is not always cheaper, and they sometimes subcontract the work to who originally had the contract (for a cost uplift). Consideration needs to be given towards engaging with smaller businesses within our rural communities to self sustain our local employment skills and smaller businesses.

### 36 GATC Ltd

The areas are correct but will need to be underpinned with effective, value for money training to ensure all participants understand what is required and how they contribute to the end goals.

### **37 Celsius Energy Ltd**

Householders: More needs to be done to ensure that householders receive the correct information for the funding that is available for energy efficiency. What exactly does the WAG propose to do to fill the gap left by the Green Deal and the clear downturn in work undertaken via the Energy Company Obligation. NEST may assist a small minority of vulnerable households but what happens to those that do not fall into this category... off-gas grid, rural properties that are of solid wall construction... is there any help for solid wall insulation for these properties? What help is there for householders not qualifying for NEST who require loft insulation because the ECO does not fund loft insulation anymore? What happens if the Government removes the Feed in Tariff and Renewable Heat Incentive?? The severe lack of funding for energy efficiency is the biggest barrier to take up for householders?

### **38 C&K SUPPLIES**

-

### **39 Llangynog Memorial Hall**

-

### **40 Dr James Henshall**

Broadly speaking, yes.

### **41 John Griffiths - Chartered Surveyor**

Yes.

### **42 Equity Redstar**

-

### **43 North Wales Housing**

-

### **44 NSA Afan**

In general YES I support these actions as a positive approach to overcoming barriers

**45 T L C Energy Limited**

Yes, but an Investment/Development Bank for Green Bonds/Debt Equity/Capex/Salix is much needed!!

**46 ECO CARBON TRADERS LTD**

-

**47 Asset Energy Solutions Ltd**

-

**48 WDS Green Energy**

I agree with all of these.

**49 Torfaen CBC**

Yes

**50 Warmwalls Ltd**

Yes

**51 Gas Tech Wales**

-

**52 GB-Sol Ltd.**

Should also include informing about the value of self generation and self consumption of electricity

**53 South East Wales Energy Agency**

-

#### **54 BDT installations**

-

#### **55 Salix Finance**

Yes I agree with the Public Sector points.

#### **56 Aberystwyth University**

Yes, broadly these would appear to summarise the key areas in which action could bring results. However the accent needs to be on "action" and the realisation that government has few and rather blunt instruments to initiate action of any consequence.

#### **57 William Morris Energy Assessments**

Private landlords are still not getting EPCs for their properties to meet current regulations because they know that trading standards have not the resources or drive to check small ads advertising rental properties in papers; who is going to ensure that they have the minimum E rating for rental properties when it becomes law? Letting agents (on the whole) have EPCs on all their properties but privately advertised properties are few and far between. All trading standards need to do is check through classifieds and telephone the landlord to ask for the EPC certificate number; how hard is that?

#### **58 Geraint Williams Plumbing & Heating Ltd**

-

#### **59 URBAN SOLAR LTD**

-

#### **60 Peter Jackson**

-

#### **61 Ignite Mechanical Contracting Ltd**

As a company that is heavily involved with the microgeneration certification scheme, gas, oil and solid fuel industry I can't help but be very sceptical of the plans. It's good to see that the Welsh government recognise that there is need for change and renewable energies over all are a good idea but there are some huge problems to overcome. The lack of understanding of how renewables are installed and how to educate the customer in how to use them correctly is probably the biggest obstacle. The price compared to fitting a gas or oil appliance is usually three times as expensive. The fact that the government keep moving the goal posts when it comes to their climate change policy and the fact that they keep cutting the RHI (renewable heat incentive) tariff doesn't fill me or customers with confidence to head into the renewable sector. There is a lot of planning, research and liaising with customers before you can figure out the best suited system to their needs which is obviously very time consuming and expensive. I'm sure your well aware of these issues but these are just some of the problems we face on a day to day basis. Quality control and stringent selection of what company's are used as installers will be key if this is going to work. I will be interested to see your progress over the coming months and hope that the Welsh government can make this work as I really believe that renewable energy, if managed and installed correctly is the way forward. Hope this help. Regards

#### 62 Jamie Black OCDEA/DEA/GDA

-

#### 63 Westflight Ltd

-

#### 64 Pembrokeshire Power

-

#### 65 Greener Heat

-

#### 66 SAM Drylining Ltd

1.1 - yes.

1.2 - yes

1.3 - in my opinion Smart Energy GB has done little to raise awareness of energy efficient improvements

- 1.4 - No - the cost of energy efficiency assessments is very little in comparison to the cost of the improvements, therefore if people have a genuine interest in energy efficient improvements then I don't think it is much to ask for them to pay for the assessments. Free assessments will result in a lot of wasted grant money as people will waste assessors and installers time - I would suggest any money earmarked for free assessments would be better spent subsidising a proportion of the cost of installing any measures.
- 1.5 - Yes, although these are the people who cannot afford the improvements so would this money be better spent creating a scheme which targets only the poorest of the population allowing them to access subsidised improvements?
- 1.6 - Yes.
- 1.7 - Yes.
- 1.8 - Yes.
- 1.9 - Yes.
- 1.10 - Yes
- 1.10 - Yes
- 1.11 - Yes
- 1.12 - No, smaller businesses should be the focus.
- 1.13 - as comment 1.3.
- 1.14 - No. I would prefer to see schemes which directly influence the quality of life of the people living in Wales especially with fuel poverty rising, these large scale schemes run into £Billions which could improve so many people's standard of living.
- 1.16 - Yes
- 1.17 - Yes
- 1.18 - Yes

#### 67 Dean Crocker Energy Assessor

Yes

#### 68 Biofutures Ltd

Above is OK at policy level but more practical initiatives required to address access to such technology, upfront grant, interest free loans to home owners etc

#### 69 E W Consultancy

Agree

#### 70 Christopher Williams – Individual

Yes

#### 71 Business Wales

Generally agree although a "Green Deal" for business & commercial sectors would be a good idea despite the poor performance of the previous UK Govt. initiative.

#### 72 Institution of Mechanical Engineers

No Comments

#### 73 Smart Energy GB

##### **Smart meters and the energy efficiency strategy**

1. **We welcome the Welsh Government's commitment to build on the work being done by Smart Energy GB and agree with the areas of action identified in the consultation.** In particular we support the actions of working through others to encourage action; building on the work of Smart Energy GB with households and microbusinesses; and, continuing to provide advice and support to those households on the lowest income.
2. **Working with partners to develop campaigns (Action 1.2) is a positive approach.** Partnerships across all sectors can strengthen the understanding and engagement in action around energy efficiency. It needs to be properly communicated, with input across sectors, to have the required impact in overcoming barriers for householders and communities.
3. This approach is at the heart of our work at Smart Energy GB too. We are already actively engaging with Welsh Government and organisations across the third, public and private sector in Wales to support our work with communities and individuals. Our partnership programme, due to launch in 2016, will help to ensure that our engagement reaches across the population via organisations from national campaigning charities to the local lunch club, and in particular will ensure that we reach some of the most vulnerable communities, including those who are fuel poor.



4. **Smart meters can help consumers to better monitor and manage their energy consumption (Action 1.3):** We welcome the opportunity to work closely with the Welsh Government to ensure that consumers in Wales are properly engaged during the rollout and make the most of smart metering technology.
5. The access to near real time energy usage data through the smart meter display, which is offered to all households when they get a smart meter installed, is vital in enabling them to take control of their energy. This data provides consumers with accurate bills, helps them understand how they use their energy and gives clear information that supports switching between energy providers. For those on low incomes, the smart meter will give them greater confidence to heat their home within the confines of a tight budget, without the fear of an unknown bill – rather than rationing their energy use any more than they need to.
6. The UK Government's Impact Assessment for the smart meter implementation programme predicts that smart meters will help consumers to reduce energy consumption by an average of 2.8 per cent for electricity and 2 per cent for gas. Other studies have found that the potential value of the data provided by smart meters in reducing wasted energy can be even greater: up to a reduction of 9 per cent for at least three years, according to one of the largest pan-European studies.<sup>1</sup>
7. According to our independent research of public opinion on energy and smart meters published in *Smart energy outlook*<sup>2</sup> nearly eight in ten (79%) consumers with a smart meter have taken steps to try and use less energy including turning off lights or changing the way household appliances are used.
8. **The most vulnerable households and communities need support and advice (Action 1.5) to ensure that they meet their energy needs effectively.** We recognise that some households need additional support to engage with their energy use and spend. Smart Energy GB's *Smart energy for all* consultation identified the characteristics that may act as additional barriers to realising the benefits of a smart meter. We are building on the results of the consultation to develop our work with partners in the future to ensure that we support consumers on low incomes, with prepayment meters or other barriers, to realise the benefits of smart meters while continuing to maintain an adequate level of warmth and meet their energy needs.
9. **Smart meters provide an opportunity for microbusinesses to monitor and manage their energy use (Action 1.14)** Smart Energy GB is tasked with helping microbusinesses to understand what smart meters are, how to get one and how to use their smart meter to get their gas and electricity usage under control. We are keen to work with others, including Resource Efficient Wales, to ensure that this message is delivered effectively. We aim to provide useful, insight led information, materials and training to ensure that the work we do has

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<sup>1</sup> Department for Energy & Climate Change, *Smart meter impact assessment*, January 2014

<sup>2</sup> Populus on behalf of Smart Energy GB, *Smart Energy Outlook*, September 2015

a lasting and positive impact.

10. The benefits to be realised through smart meters for microbusinesses are significant, amounting to approximately in £1.44 billion in net microbusiness consumer benefits GB wide<sup>3</sup>. The cost of mains electricity was cited as the number one cost concern for small businesses by 46 per cent of businesses in a 2014 report by Citizens Advice<sup>4</sup>. We also know that energy efficiency is a concern for small businesses for both cost saving and environmental motivations. Research by the Federation of Small Businesses in 2015 identifies smart meters as a vital tool for giving small businesses the information they need to make proactive decisions about energy usage<sup>5</sup>.

## **74 Community Housing Cymru Group**

### **Area of action 1.1 - Improved information on the value of energy efficiency, the relative benefits of different measures and the support available.**

CHC agrees that there are significant consumer barriers. Consumer demand for energy efficient homes and whole house retrofit is a big issue. There is a need for far greater levels of public engagement and appetite for low carbon technologies. Lack of information, consumer awareness, interest, and understanding are all still barriers, as well as awareness of the measures, solutions and technologies available. Consumers are also unaware of the benefits and opportunities available to them. There is a lack of a coordinated marketing approach and independent and consistent advice. Easy access to clear and relevant information on energy issues and the support available is a critical element of tackling fuel poverty in Wales. This advice needs to reflect consumer needs and circumstances.

There is currently a range of organisations that provide advice to consumers on energy issues. To avoid confusion the system needs to be simplified and better co-ordination is needed between these services. All avenues and incentives need to be explored for people to take up energy efficiency measures e.g. perhaps there should be a council tax incentive if people carried out energy efficiency works.

### **Area of action 1.3 - Building on the work being done by Smart Energy GB.**

The installation of SMART metering and the piloting of new technology presents opportunities. However, there are key questions and concerns around smart meters in particular and far greater thought is needed around the way in which the programme will be rolled out. A report by the National Right 2 Fuel campaign outlines some of the challenges that we face in the installation of smart meters<sup>1</sup>. Notably, that greater clarity is necessary if vulnerable consumers are to understand the role of the smart meter in their home and the benefits of the roll out for them. To pick out a few key points from the report, the report states that smart meter rollout

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<sup>3</sup> Department for Energy & Climate Change, *Smart meter impact assessment*, January 2014

<sup>4</sup> Citizens Advice, *The experience of small businesses as consumers in regulated markets*, September 2014

<sup>5</sup> Federation of Small Businesses, *Press Release May 25 2015*

can deliver real and equal benefits to all households if it is done in a way that makes people confident that it is being done for them. The report rightly points out that the rollout of smart meters and delivery of a 'smart energy world' will be paid for by all consumers. This inevitably places the most vulnerable at risk of becoming even more affected by energy costs.

The real challenge over the coming years will be to deliver 'smart' cost savings to consumers, particularly those in fuel poverty. Consideration must be given to "an extra help" scheme for fuel poor and vulnerable customers and to prioritising the fuel poor in the Smart Meter rollout. This is going to be a very costly programme and the anticipated behaviour change associated with smart meters will, in the medium term, only make a small difference to energy bills.

A much bigger difference could be achieved through insulation and other household energy efficiency measures. It cannot be assumed that energy use will fall as a result of smart meters. One of the key areas for further discussion within the energy sector is whether the rollout of the smart meter will make it more difficult for customers to switch. Only when customers trust both the installation company and the technology will smart meter delivery be efficient and at least cost to the end consumer. Contractors will, therefore, require special training so that they are able to deliver different types of advice during the installation to vulnerable consumers. It's important to try and ensure that improved energy efficiency does not have multiple unintended consequences that have the potential to erode much of the anticipated energy savings. Energy efficiency improvements can sometimes increase aggregate energy consumption and carbon emissions and research on these 'rebound effects', has shown they could be highly significant<sup>2</sup>.

**Area of action 1.4 - Providing free energy efficiency assessments and guidance for low income households. We are piloting a project to look at whether low income households, not eligible for grant funded support, can be encouraged and supported to take action through the provision of a free energy efficiency assessment. We will review this pilot and lessons learnt.** CHC welcomes interventions to encourage households to improve their energy use, and we believe that doorstep advice and assessments are the most effective mechanisms for engagement.

**Area of action 1.5 - Continuing to provide advice and support for those households on the lowest incomes and living in the most energy inefficient properties.**

CHC particularly welcomes this commitment. Improving the energy efficiency of our housing stock and prioritising support to households on the lowest incomes and living in the most deprived areas is the most effective way to tackle fuel poverty in the longer term. In targeting vulnerable households, CHC feels that efforts to tackle fuel poverty must not be disconnected from work that is being taken forward in many other linked areas – such as financial inclusion, child poverty, older people issues, etc. People living in fuel poverty are also more likely to live in poverty, be financially and digitally excluded, live in poor quality housing and suffer from poor health. The UK Government's welfare reforms are having a significant impact on some of the poorest and most vulnerable people in Wales, including RSL tenants, putting further pressure on already stretched household budgets.

Social housing tenants account for 30% of the economically inactive total in Wales. Average incomes for social housing tenants tend to be a lot lower when compared to incomes for owner occupiers and 8 out of 10 of financially excluded people are social tenants. Households in social housing are likely to be more vulnerable to fuel poverty due to lower incomes and/or other personal circumstances. Social housing makes up approximately a fifth of the homes in Wales and also houses those in society who are at most risk of being fuel poor. Welsh housing associations own approximately 158,000 homes with around 68% of tenants claiming some kind of income support. Therefore, our members have the ability to target hard to reach people who are exposed to fuel poverty and an improvement in the energy performance of these homes has the dual effect of reducing energy poverty and also lowering our collective carbon footprint as a sector.

CHC has long recognised fuel poverty as being a major contributor to / indicator of financial exclusion. Improving the energy efficiency of properties and making sure vulnerable households are in receipt of all the benefits they are entitled to is the main components of current efforts to tackle fuel poverty. Approximately 70% of tenants in Wales claim some kind of income support. Our members are proactive in supporting fuel poor tenants obtain their entitled benefits that relieves them of fuel poverty. It is vital that many households who might just narrowly miss meeting eligibility criteria on a whole raft of support measures can still benefit from energy efficiency advice. CHC agrees that these households who sometimes slip through the net and are very much so on the periphery and narrowly miss the thresholds for funding can still very much so need support as they find it difficult to pay their fuel bills.

The lower super-output areas on which ARBED is based do not necessarily correlate with the fuel poverty map for Wales. So, there will be areas, particularly rural areas, and marginal areas, that will not have qualified previously for grants because they are not in that lower % of lower super-output areas. Yet, fuel poverty does exist there and can be there in quite high levels. Longer-term planning around future energy needs must take more account of the fuel poverty map and potentially less account possibly of the lower super-output areas. Whilst the lower super-output areas help you to deal with the density of deprivation, deprivation is actually far more widespread so there should be flexibility to take account of this and the fuel poverty map for Wales to target hard to reach people. Furthermore, the type of energy efficiency scheme that would support RSLs in the future is one that targets off gas areas. Whilst most funding is allocated in areas that sit in LSOA areas (where mains gas might be available), feedback from members has stated that not enough funding is allocated for towns and villages that are off the gas main. These properties are reliant on the most expensive forms on heating fuels (electricity, oil and lpg in general) and more investment is needed.

Off-the-gas households pay the most to heat their homes and due to their geographic isolation, they are the most hard to reach households in Wales. Grant support for energy efficiency projects in these communities is essential if we are to target households that are likely to be experiencing 'extreme fuel poverty', living with inadequate heating regimes, affecting their health and likely the fabric of their properties.

In reality, fuel poverty grants to bring gas into rural communities only work when there is a sufficient number of properties owned by one landlord with the will and finance to implement. With this in mind, the best way to help these households is to Grant fund energy efficiency upgrades on individual home basis. For example, a NEST type scheme to enable rural, off gas social housing to be properly insulated and upgraded with for example heat pump technologies and renewables, would result in a huge improvement to the properties and the lives of the residents.

In looking to connect as many properties as possible to the gas main, another option is to offset connection costs via fuel poverty vouchers. Priority must be given where possible to solid wall properties in off gas areas. In parts of Wales, the typical 'estate' can include small-scale, energy inefficient properties, with a wide range of non-traditional build types. The nature of relatively small developments in challenging environments does not fall into the large scheme/significant carbon reduction package both the UK Government the Energy Companies favour and unless there is concerted action to address properties such as those described above, fuel poverty will continue to grow. We therefore need to identify where gaps exist and where we aren't targeting. CHC would therefore welcome a new strategy extending support to households. Who currently don't meet eligibility criteria for Nest/ARBED and who are struggling to get ECO funding. It's important to ask 'How can you best achieve the outcomes that you are seeking, and is the scheme currently designed to maximise that?'

Focusing on the fuel poverty map for Wales includes the need to focus on hard to reach people and the people we haven't reached, as well as people who have been reached and need support but can't access it because they don't live in an LSOA area. There are a range of affected groups that need to be targeted and one particularly affected group is low income, older owner occupiers dispersed in urban, suburban and rural areas across all of Wales. Finding these people requires more up front effort and targeting them for energy efficiency measures might not be as attractive to energy companies who have legal targets on the quantity of carbon emissions they need to reduce. As well as targeting geographic energy efficiency schemes at scale, RSLs and Care & Repair Agencies, with the right support, would be able to form partnerships together, as well as partnerships with a wide range of other organisations so that these types of affected groups can have their properties included in energy efficiency schemes. These groups aren't necessarily favoured by the carbon emissions targets approach under schemes like ECO and therefore, an approach which is favourable to them needs to be discussed and considered.

Care & Repair recognise that vulnerable customers require not only advice, but the support required for them to understand this advice and make changes. Whilst we appreciate the work of Nest, receiving advice on energy efficiency and behaviour changes over a telephone helpline, is often not sufficient for vulnerable people. Care & Repair agencies support older people, in their own homes to repair, maintain and improve energy efficiency. As trusted advisors Caseworkers and Technical Officers can help older people to navigate an ever more complicated energy market and support people to use the technology within their own homes more efficiently. A Welsh Government strategy needs to recognise the importance of supporting vulnerable people to change behaviours, make property

improvements and understand energy efficiency, particularly in relation to impacting upon fuel poverty. A recent report by Age Cymru, Life on a Low Income found that the rising cost of energy bills were the biggest concern for older people and that many of them were cutting back on spending in order to manage. It was also reported that 70% of pensioner households in poverty and 80% of households in severe poverty were not currently in receipt of any major state benefits (Pension Credit, Housing Benefit, Attendance Allowance or Disability Living Allowance). This highlights the importance of reaching those people and providing the financial support that they are likely entitled to but are not receiving.

Care & Repair agencies utilise the Nest Portal system, in order to refer clients directly to the scheme, whilst visiting clients in their own homes. The Nest partnership with Care & Repair ensures that the scheme is accessible to vulnerable older people, living in their own homes. Care & Repair Cymru carried out a survey to evaluate the Nest scheme, in terms of their relationship with Care & Repair and how the scheme worked to support older people to alleviate fuel poverty. The findings included both benefits and concerns.

#### Concerns:

Eligibility criteria-it was felt that the eligibility criteria were too stringent and many people were vulnerable, but did not meet the criteria for support through Nest

#### Measures funded:

Of particular concern was that the scheme did not cover replacement windows or replace old, inefficient boilers. One comment read; 'If the windows are old and inefficient and the roof leaks then a new central heating system will not fully meet the needs of the client.'

#### Application process:

The process was found to be complicated and difficult for vulnerable people (particularly those without support).

#### Benefits:

Respondents felt the benefits included;

- Provision of heating, improving living conditions
  - A more fuel efficient home
  - Reduced fuel bills
  - Improved wellbeing
  - Works were fully funded for clients who would struggle to fund such works.
- One Caseworker summarised the benefits as; 'Clients who are disabled, elderly or with health problems and on low incomes are able to live more warmly, within their own homes and remain living in their own homes.'

**Area of action 1.8 - Review of Part L of the Building Regulations in 2016. We will look for opportunities to build on the improvements made in the 2014 changes in relation to existing buildings and extensions.**

CHC welcomes a further review of Part L and will feed into this separately.

### **Area of action 1.9 – Drive achievement of the Welsh Housing Quality Standard.**

CHC welcomes this action. The number of social housing dwellings that are compliant with the WHQS continues to increase. At 31 March 2014, 83 per cent of RSL dwellings achieved WHQS compliance (including acceptable fails). At 31 March 2014, 88 per cent of RSL dwellings were compliant with the 'Energy rating (SAP ≥ 65)'.

### **Overcoming barriers for businesses**

Research has shown that the energy efficiency sector sees a strong prevalence of region based small businesses who often struggle to bid for large scale projects. This can mean an unequal coverage of the wide variety of measures across areas. Implementation, verification, accreditation and commercialization of new technology are often too onerous and costly for small businesses. Small business owners need help to gain access to capital for efficiency investment.

### **Area of action 1.11 - Access to information, advice and support on energy efficiency**

CHC agrees with this action.

### **Area of action 1.17 - Showcasing successful projects.**

CHC agrees with this action.

### **Area of action 1.18 – Drive efficient use of public expenditure on resource efficiency through the use of the National Procurement Service and Resource Efficient Wales procurement service.**

CHC agrees with this action.

CHC would have liked to have seen more reference in the “Overcoming barriers for householders and communities” section on how Welsh Government plan to address barriers around prepayment meters, as well as Behaviour change barriers. Please see CHC’s response to the previous “The development of an energy efficiency strategy for Wales” consultation for thoughts on how these areas could be addressed.

1 <http://www.right2fueluk.com/downloads/NRFCsmartmeterreport.pdf>

2 <http://www.sussex.ac.uk/spru/impact/rebound>

## **75 SSE**

### **Simplifying the Scheme**

With regard to first question in this consultation on the issue of wider barriers to the uptake of energy efficiency measures, it is an industry wide view, and one with which SSE strongly concurs, that the inherent and unnecessary complexity of the current ECO scheme acts to the detriment of an efficient policy, wasting money and deterring greater engagement by customers and potential partners in delivery. To this end, SSE has considered simple ways of improving ECO and would like to use this opportunity to share some of our thoughts with the Welsh Government. We have identified five steps that could streamline ECO and make sure the bill payers

who fund it get more for their money that may be instructive for any future Energy Efficiency policy development.

Firstly, the burdensome RdSAP scoring system must be addressed. This was a well-intentioned attempt to ensure that the carbon savings claimed accurately reflect the actual result. Unfortunately, the approach creates an additional layer of complexity, increases costs and saps resources. It is also confusing for consumers, who see similar, neighbouring properties benefiting from free or heavily subsidised work without being offered the same support. The lack of a standardised scoring system also makes it difficult for energy companies or insulation installers to offer up-front certainty in their offers to customers. SSE's calculations suggest that re-introducing deemed scoring by measure and house type could save over £200 per measure.

Secondly, the 'famine and feast' created by the stop-start nature of schemes with a relatively short lifespan (and changes to rules midway through) compromises their efficiency. Providing obligated parties longer-term certainty over schemes would help control costs, present a simpler and clearer message to eligible customers and enable a sustainable supply chain to develop.

Thirdly, duplication of effort must be avoided when it comes to policing the industry and enforcing standards. We want to see improvements in the customer experience and certainty in the quality of the job, so we are delighted that Dr Peter Bonfield has been appointed to review standards across the industry. Energy companies use contractors to deliver ECO and require them to be accredited, which means that they are registered and monitored under government accreditation schemes with oversight bodies. Energy companies are then required by Ofgem to carry out additional but almost identical checks on these same installers. We need clearer responsibility for accreditation bodies on monitoring and improving standards.

Fourthly, future schemes could be designed to ensure that funding incentives do not drive inappropriate practices. For example, although ECO was intended to encourage some more expensive energy saving measures, it makes no distinction between low-cost and high-cost measures. This has resulted in some measures, such as 'virgin loft' insulation carrying an artificially high value and being incorrectly claimed. Separating out high-cost and low-cost schemes would help protect customers and prevent money being wasted. In addition, the re-introduction of deemed scores would not only reduce the administrative burden in the scheme, but make it easier to ensure that the right levels of funding are applied to the right work.

Finally, the one month reporting rule creates challenging deadlines for the supply chain and very little flexibility or room for error. ECO measures can involve a long supply chain. The one month window was introduced with good intentions, to ensure that progress is transparent and that measures are submitted regularly. The limited reporting window has led to rushed paperwork and perfectly good measures being rejected. A two month reporting window, with reasonable allowances for administrative error, would protect the supply chain and ultimately mean that customers don't pay more than they should. A clear timetable for work going through the approval process with Ofgem would also provide more certainty that work has been successfully 'banked' as being ECO-compliant. Alternatively, an



annual banking schedule could also provide greater certainty to all participants that work is likely to be accepted at the end of the scheme.

Clarity on a simplified, extended scheme is needed swiftly to help the industry maintain momentum. These simple changes have potential to cut costs significantly, protect customers, create a sustainable supply chain and improve customer engagement with energy efficiency. Importantly, they can all be implemented swiftly, improving the scheme while allowing time for longer term changes like greater targeting through data sharing can be considered.

### **Data Sharing**

SSE, like the Welsh Government, is aware of recent work undertaken by the Department of Energy and Climate Change on greater use of data sharing to cut costs and target measures effectively. While this is a positive development, given that many fuel poor households are not in receipt of benefits, there could be an important role for other bodies in referring other customers for support. Therefore we will work closely with the Welsh Government and others on such schemes.

Whatever the future of energy efficiency policy is across the UK, SSE will continue to work constructively with the Welsh Government as a valued and trusted partner. It is encouraging that SSE and the Welsh Government share so many views on the value of energy efficiency and we look forward to our ongoing cooperation.

## **76 CITB**

### **Overcoming Barriers**

- Research suggests that a significant proportion of the current workforce involved in advice and assessment around energy efficiency measures do not have the required level of skill and knowledge, and that widespread upskilling is required.
- The principal criteria for success is a long term commitment to energy efficiency policy from the Welsh Government and the establishment of incentives to support initial market growth and provide a framework for a more self-determining, free-standing energy efficiency sector, free from the boom and bust cycles of recent times.
- Welsh Government should recognise the potential of SMEs to drive demand for energy efficiency retrofit and low energy buildings through established customer networks.
- We would recommend a strategic review of verification and certification for energy efficiency in a domestic and non-domestic retrofit context.
- CITB Cymru Wales looks forward to the consultation on **reviewing Part L in 2016. Thorough consultation with the sector will be a prerequisite to success in achieving the Welsh Government's obligation for nearly zero carbon homes as set out in European legislation.**

## Overcoming barriers

### Energy efficiency assessments

The Green Skills Alliance (GSA) is a group of organisations, including CITB, who represent employers and workers on a national basis and are working together to provide advice and guidance across the wider green sector. A series of research projects carried out by the GSA and corroborated by the Department for Energy and Climate Change suggests that the efficacy of energy efficiency assessments is dependent on the skills of the assessors involved. **The research suggests that a significant proportion of the current workforce involved in advice and assessment around energy efficiency measures do not have the required level of skill and knowledge, and that widespread upskilling is required.** For instance, 19.4% of the workforce does not have skills around ascertaining the hierarchy of energy efficiency measures, with a further 11.5% lacking knowledge of advantages and drawbacks of installing energy efficient measures for buildings constructed pre and post 1919.<sup>3</sup>

### Innovation and Growth

Under the right conditions, and with the right incentives, the energy efficiency sector will continue to present a fantastic opportunity for business growth, market diversification and innovation for SMEs in Wales, while promoting sustainable development, addressing fuel poverty, energy security and climate change action. Maintaining the interest and levels of investment in training and skills from construction companies, and in particular SMEs, is essential.

**The principal criteria for success is a long term commitment to energy efficiency policy from the Welsh Government and the establishment of incentives to support initial market growth and provide a framework for a more self-determining, free-standing energy efficiency sector, free from the boom and bust cycles of recent times.** This should be seen within the context of wider changes to the energy landscape through UK Government policy around feed-in tariffs.

This will create the conditions within which the sector can innovate. Our labour market intelligence continues to demonstrate that industry innovation is most abundant with the SME workforce. **Welsh Government should recognise the potential of SMEs to drive demand for energy efficiency retrofit and low energy buildings through established customer networks.** Evidence suggests only 1 in 10 consumers consider energy only renovations and tend rather to carry out energy efficiency work at the same time amenity renovations.<sup>4</sup>

To an extent, reforms to Part L that include retrofitting in case of house extension or the building of conservatories reflects this.<sup>5</sup> Welsh Government needs to invest in industry innovation to give it the tools to unlock this potential further. **This could include, for example, a focus on support for ‘trusted actors’ or ‘intermediaries’ who exercise a significant influence over the decision-making of consumers at the point of sale.**

CITB Cymru Wales is also developing an innovative Wales Training Model in partnership with the University of Wales Trinity St David. This will provide an opportunity to train the next generation of construction workers across Wales in innovative techniques, including energy efficiency measures.

### **Trust in the Sector/Quality Assurance**

Sector and trade body opinion gathered in May and June 2015 is especially strong in respect of the need for an improved, clear set of verification and certification processes that will ensure compliant, quality assured workmanship in the energy efficiency sector<sup>6</sup>. Whilst evidence available from consumers that have had energy efficiency measures assessed or installed suggests their satisfaction levels are generally high, there have also been studies (mystery shopping exercises) and objective measures (quality checks) that suggest not all work is consistently delivered to the standard it should be. For instance, some stakeholders in our recent report into traditional building skills highlighted Arbed as a scheme that has suffered from inconsistent standards in the past<sup>7</sup>. This can negatively impact industry reputation and consumer confidence.

Examples include the high number of rejected installations in the Energy Company Obligation and evidence from the new build sector of a 'Performance Gap' between designed and as-built energy performance. Recent research has identified a number of challenges with the range of schemes currently used to verify competence with a range of suggestions put forward, including an industry competency scheme to demonstrate energy awareness.<sup>8</sup> There is however a need to balance the need for quality assurance with the need to reduce the proliferation of bureaucracy that can present barriers to market growth. **We would recommend a strategic review of verification and certification for energy efficiency in a domestic and non-domestic retrofit context.**

### **Reviewing Part L Building Regulations**

Since the devolution of building regulations to the National Assembly for Wales in 2011, a number of changes have been made in relation to energy efficiency, including an 8% reduction in the carbon emissions of new build properties and a 20% reduction for non-domestic properties in relation to the 2010 regulations<sup>9</sup>.

Part L is often seen as an area of regulation that creates barriers to house building as has been evidenced by the varied nature of responses to the Welsh Government's 2013 consultation on 40% and 25% carbon reductions on the 2010 regulations in the house building sector.<sup>10</sup>

CITB Cymru Wales also notes the changes proposed in England in relation to Part L as part of the UK Government's Productivity Plan.<sup>11</sup>

**CITB Cymru Wales looks forward to the consultation on reviewing Part L in 2016 and believes that thorough consultation with the sector will be a prerequisite to success in achieving the Welsh Government's obligation for Nearly Zero Energy Buildings as set out in European legislation.** In particular, it is vital that the industry is aware of any proposed changes in sufficient time and can plan its workforce development in order to accommodate energy efficiency

standards. The Welsh Government should engage with the CITB Cymru Wales Committee and our three regional fora on this issue and should consider its proposals in the context of the UK Government's productivity plan.

### **Welsh Housing Quality Standard**

The Welsh Housing Quality Standards (WHQS) have allowed for an approach to drive up standards on a much wider scale than previous approaches. CITB Cymru Wales welcomes this and believes the drive to improve quality has been helped by clear expectations and timescales in this area. The WHQS has also engaged the wider public in a positive way. The Welsh Government should learn from this approach in designing future interventions.

3 CITB Cymru Wales/Pye Tait Consulting. 2015. *A 'Material' Issue: Understanding and Responding to the Traditional Building Skills Challenge in Wales*. P.37

4 UK ERC. 2013. *Understanding Homeowners Renovation Decisions: Findings of the VERD Project* [Online]. Available at: [http://tyndall.ac.uk/sites/default/files/verd\\_summary\\_report\\_oct13.pdf](http://tyndall.ac.uk/sites/default/files/verd_summary_report_oct13.pdf) P.8. (accessed 7th September 2015).

5 Welsh Government. 2013. *Written Statement – Proposed Changes to Part L of the Building Regulations* [Online]. Available at: <http://gov.wales/about/cabinet/cabinetstatements/2013/partlbuildingregs/?lang=en> (accessed 7th September 2015).

6 Supply Chain Insight Group, forthcoming 2015. *Trust and Certainty: Energy Efficiency Market Viability and Supply Chain Deliverability*.

7 CITB Cymru Wales/Pye Tait Consulting. 2015. *A 'Material' Issue: Understanding and Responding to the Traditional Building Skills Challenge in Wales*.

8 Zero Carbon Hub, 2014. *Performance Gap End of Term Report*. [Online]. Available at: [http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design\\_vs\\_As\\_Built\\_Performance\\_Gap\\_End\\_of\\_Term\\_Report\\_0.pdf](http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design_vs_As_Built_Performance_Gap_End_of_Term_Report_0.pdf) (accessed 7th September 2015).

9 Welsh Government. 2013. *Written Statement – Proposed Changes to Part L of the Building Regulations* [Online]. Available at: <http://gov.wales/about/cabinet/cabinetstatements/2013/partlbuildingregs/?lang=en> (accessed 7th September 2015).

10 Welsh Government. 2012. *2012 consultation on changes to the Building Regulations in Wales Part L (Conservation of fuel and power)* [Online]. Available at: <http://gov.wales/docs/desh/consultation/120924buildingregspartlpart1en.pdf> (accessed 7th September 2015).

11 UK Government. 2015. *Fixing the foundations: Creating a more prosperous nation* [Online]. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/443898/Productivity\\_Plan\\_web.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443898/Productivity_Plan_web.pdf) para 9.17, P.46. (accessed 7th September 2015).

## **77 CLA**

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## **78 EON**

### **Overcoming Barriers**

#### **General**

1. We agree that achieving buy-in from all households is crucial for unlocking the energy efficiency market. We also agree that, in order to buy-in to energy efficiency people need to understand the benefits to them of taking action and perceive a

value in doing so. Furthermore, the current level of general awareness and understanding about energy efficiency is low and needs to be addressed.

2. Lack of trust, and insufficient financial incentives and financing options are additional key barriers, the latter particularly relevant for developing the able-to-pay market. We believe that the solution to tackling energy efficiency refurbishments at scale lies in providing diversity and flexibility of options rather than a 'one-size-fits-all' approach.

3. Central elements for developing an energy efficiency market for all, therefore, are awareness (including of the benefits), accessibility and choice. These will stimulate demand but must be underpinned by high quality standards and customer service in order to generate *sustainable* demand which, in turn, will help to develop and grow the supply chain.

4. All of this must be developed within a long-term, stable policy framework to provide certainty for the future.

5. In our responses below, we make a distinction between 'funding' and 'financing'. We use the terms funding (and 'support') to mean money from government to deliver measures or initiatives, for example to fuel poor households. We use the term financing to refer to the different ways that people can pay for measures themselves, for example by taking out a low interest loan to cover the upfront cost of a measure.

#### Building Blocks of an Energy Efficiency market

- **Awareness** – people need to know about energy efficiency, the **benefits**, what's available and what to do to get measures installed. Seeing a tangible **value** in energy efficiency will stimulate **demand**.
- **Accessibility** – spans access to information about what's available and the benefits, products (via suppliers and installers ie developed supply network in local areas, suitably skilled and sufficient to meet demand) and financing options
- **Value** – people must perceive a value in energy efficiency in order to want to have measures installed. This means different things to different people, for example:

For tenants, this means comfort and lower bills.

For owner occupiers, this means adding value to the home alongside lower bills.

For landlords, it needs to be a condition of letting a property, or driven by demand from tenants. Link to resale value would be an incentive.

- **Choice** – must be a range of options to suit different customer needs and means.

- **Financing** options – key element of accessibility for the able-to-pay market. Range of options need to be available to suit different means and circumstances. Could include low cost loans, mortgage top-ups and interest-free options.
- **Quality standards** – the product must meet relevant industry standards and be competently installed.
- **Customer service** – good experience throughout the process – registering interest, getting quotes, installation, communication and any issues dealt with efficiently and with professionalism. Continuity of service is also important – better to deal with a single point of contact throughout the process. Need an effective customer complaints procedure.

## Households

### Improved information

6. Raising the profile of energy efficiency and the wider benefits is an important building block for establishing a sustainable energy efficiency market. We agree that the Welsh Government has a key role to play in this by providing clear information and trusted advice to households and businesses alike.

7. However, this alone will not be enough to unlock the able to pay sector of the domestic market. For this to happen, the key barriers of affordability and 'payback' must be addressed. People need the means to pay for energy efficiency measures and the confidence to believe it is a worthwhile investment compared to other alternatives that would add value to the property.

### Smart meters

8. We agree that smart meters offer the potential for customers to better monitor and manage their consumption. We do not necessarily agree that the benefits are largely restricted to higher energy users although we, of course, recognise that those living in an inefficient property may negate some of the potential benefits of smart. Equally, for fuel poor households who are under-heating their homes, the primary objective is not to reduce their consumption further but rather to ensure they are, first and foremost, able to adequately heat their home.

9. However, access to real time information will allow all customers to see and understand their energy usage much more clearly. Having real-time visibility of this information will allow customers to make more informed choices about how they use energy as they will have a better understanding about what it costs to run the various devices and appliances in their home.

10. In addition, access to more detailed energy consumption data will enable energy suppliers to innovate in terms of the products and tariffs that they offer to customers. For example, it will be possible to replace current pre-payment metering with more modern Pay As You Go products which will be cheaper and easier for

customers to manage. This will make a valuable contribution to helping lower income households manage their fuel bills and assist with tackling fuel poverty.

11. A concern expressed in the consultation is that levels of switching, which are already low in Wales, may reduce due to households becoming familiar with a product aligned to an individual energy company. Our view, however, is that smart meters will lead to better customer engagement overall and exert a positive influence on customer behaviour.

12. Indeed, the innovation in products and services that smart meters will enable will result, not only, in customer and system efficiency but also in greater customer engagement as suppliers are able to offer solutions that can meet a broader range of customer needs. An example of this would be the opportunity for customers to participate in some form of demand side response, linked either to how they use their energy or to specific appliances or generating equipment. In the longer term, we would also expect to see smart meters facilitate more innovative time of use tariffs.

13. In the meantime we should not under estimate the fundamental improvements that the roll out of smart meters will have on the energy infrastructure and its integration with the wider digitisation seen in society. By having automatic and accurate meter readings, much improved industry processes and improved data in the hands of consumers (through Midata), the experience of engaging with the energy market and switching suppliers will be improved, overcoming many of what customers might otherwise see as potential barriers to doing so.

14. Customers will be able to use information from their smart meter to help them switch energy suppliers more easily. Combined with better engagement, it is likely that switching will become more commonplace in the future. This could contribute towards reducing fuel poverty as it becomes more 'normal' for people to think about their energy usage and how they can proactively manage their energy usage and reduce their bills.

#### Supporting vulnerable households

15. We fully agree that continuing to provide practical help and support to households on the lowest incomes and living in the most energy inefficient properties must be a key priority. We recognise the important contribution that the NEST programme will make in delivering this objective by providing funding to those properties that have an overall EPC rating of 'E' or below.

16. In addition, whilst NEST fundamentally demands the same eligibility criteria as the Home Heating Cost Reduction Obligation (HHCRO) element within ECO, HHCRO funding is available regardless of the overall energy efficiency rating of a property and is only dependent on the customer and property type being eligible. It is therefore important to integrate UK government schemes as fully as possible and raise awareness of these through all the advice and support channels available to households in Wales. Vulnerable households who may not be eligible under NEST but would qualify under HHCRO should be aware of and able to access funding through this alternative route.

17. We firmly believe that greater collaboration between the health and energy sectors would realise tangible benefits for the health sector as well as the clear and lasting benefits for individuals suffering from health problems as a result of living in cold homes.

18. We are encouraged to learn that the Welsh Government is investing in projects to better understand the characteristics of people most at risk from the effects of living in a cold home and to build a stronger evidence base on the link between health and energy efficiency. The combined outcomes of these two pieces of research could be instrumental in helping to influence funding decisions about delivering energy efficiency measures to health-vulnerable households. An initiative guaranteeing support for those suffering from or at risk of ill-health due to living in a cold and damp home could complement existing UK and Welsh energy efficiency schemes, thereby reaching more vulnerable households sooner.

#### Able-to-Pay

19. Key issues for the able-to-pay sector, alongside lack of awareness, include a lack of trust in the industry, the low value placed on the benefits of investing in energy efficiency, and affordability. There is also a perception, based on historic supplier obligations, that energy efficiency measures should be provided for free. This exerts a strong influence on households, particularly in areas where many properties have had free measures installed, and creates an additional barrier to developing a market for energy efficiency.

20. The recent announcement to end the Green Deal removes a financing option that, on paper, was available to 85% of UK households but in practice was hardly used. Reasons for this include an unattractive interest rate compared to other available finance options and Golden Rule restrictions limiting the scope of Green Deal Finance to pay for higher cost measures. The complexity of the various funding schemes also created confusion for customers, adding to the general disengagement.

21. Access to low interest finance is important if households are to be expected to invest in energy efficiency measures. A range of suitable options must be available to as many households as possible including those who may not qualify for the lowest rates on conventional personal loans and, to this extent, we supported the principle behind the Green Deal.

22. Indeed, the need for flexibility and choice to help with covering part or all of the cost of measures is particularly important for people who do not qualify as fuel poor but who, nevertheless, have very little disposable income. We comment further on the questions of funding and financing in our response to the section on 'Finance'.

23. Payback from investing in energy efficiency is perceived by customers as being too long and can be well in excess of 25 years at current rates. Compared to other decisions that people make about investing in their homes this is far too long. Investment in an extension or new kitchen, for example adds value to the property



and the benefits can be enjoyed by the homeowner straight away. Whilst investment in energy efficiency improvements can be just as expensive, the benefits are less tangible, less immediate and less valued.

24. We support the Welsh Government's action to raise awareness about the value of energy efficiency, although we do not believe that a link with property value has yet been reliably established. Whilst there is evidence that energy efficiency improvements can increase the value of a property, this link needs to be more reliably established and embedded within the property market to really influence householders' decisions. Taking account of energy efficiency ratings in mortgage affordability checks will allow people to borrow more towards the purchase of an energy efficient property and goes some way to establishing this link, although it may not be tangible and visible enough to buyers to directly influence property values in the market.

25. We believe that reform of the Stamp Duty system would be an effective way of creating a link between energy efficiency ratings and property value and have engaged the UK Government on this point. Buyers purchasing a house with an EPC below a minimum level would be required to pay a Stamp Duty premium. This would be refunded if the buyer invested in recommended, cost-effective energy efficiency improvements within a set period.

26. Knowing that energy efficiency improvements will be desirable from a future buyer's perspective and will be reflected in the sale price would provide the confidence people need to justify making a significant investment in their property. Without this, people will look for payback of their investment through income or savings over a much shorter period of time. We believe that any payback mechanism would need to cover the cost of the investment within ten years to make it acceptable to homeowners.

27. Affordability then needs to be tackled alongside providing a flexible support package for those on low incomes or with particular vulnerabilities in order to enable access to energy efficiency improvements for all households. We believe that fully-funded support should continue to be available for fuel poor and vulnerable households, with others making an appropriate contribution through a range of flexible financing mechanisms.

28. Underpinning this, there would need to be a robust eligibility system which combines clear criteria with a sufficiently accurate and efficient identification (and verification) process to ensure that support goes to the right people. This would be particularly important during a transition phase where those who are able to pay for measures are required to contribute an increasing proportion of the cost.

29. The medium-longer term objective should be to establish a self-sustaining energy efficiency market driven by commercial demand rather than subsidy. In the short-term, an initial level of support may need to be available to all which reduces over time as public perception of the investment case for energy efficiency, and trust in the industry, improves.

30. In addition to the financial considerations, there is a need to refocus the messages about the benefits of energy efficiency improvements so that investing in measures is something that people begin to actively consider. Current messages are all about reducing energy demand and carbon emissions, neither of which means much to the average domestic customer. The fact that investments will pay for themselves over the longer term does nothing to incentivise the householder who is looking for benefits over a much shorter period.

31. The Welsh government has an important role to play in communicating key messages, and making it relevant, by promoting the wider range of benefits that come with improving the energy efficiency of the home. These include increased comfort, maintenance reductions, improved safety and aesthetics as well as significant health benefits and community regeneration for those living in the worst properties and poorest areas.

32. Quality standards also need to be addressed, which will influence perceptions of trust in the industry. We address this point in our response to the areas of action for supply chain development.

#### Communities

33. We agree that action targeting communities must be well integrated in wider programmes and the above comments are as relevant for communities as for individual households. In addition, communities would benefit from clear advice and guidance about the funding available and how to access it, the range of options for installation and realistic advice about what is likely to be successful and what is not.

34. A reference bank of community case studies showcasing successful projects would help communities think about the options available to them and what might be most suitable. Organised workshops and set-up meetings could be held for communities and potential partners to get together to explore opportunities.

35. The Welsh Government could play a valuable role in identifying potential communities which would benefit from bespoke support. These could be highlighted as opportunities to potential partners who could take the initiative to come forward with proposals and ideas. This might help communities take the first step towards an energy efficiency initiative by establishing contact with an experienced organisation and paving the way for discussions.

#### Private Rented Sector

36. We fully support the drive to ensure that private rented sector landlords take action to improve the energy efficiency of the most poorly rated properties. Not only will this help tackle fuel poverty but momentum in this sector could be instrumental in getting the commercial energy efficiency market off the ground.

37. There is a high incidence of fuel poverty in the private rented sector and few incentives for landlords to improve their properties. The definition of fuel poverty in

Wales is based on a household spending more than 10% of their income on heating their home and there is a high correlation between heating costs and the energy efficiency of a property. However, until recently there has been no real incentive for landlords to spend money on improving the energy efficiency of their properties.

38. The Energy Act (2011) places an obligation on the UK government to improve the energy efficiency of privately rented properties. The Private Rented Sector minimum standard regulations, which will come into effect on 1 April 2018, will require all newly let properties (both domestic and non-domestic) from April 2018 to be at least EPC rating E1. From April 2020 (domestic) and April 2023 (non-domestic) all privately rented properties will need to meet this minimum standard.

39. However, the obligation in the regulations is subject to a cost-effectiveness test which is linked to affordability under the Green Deal. Landlords will be eligible for an exemption where they have undertaken all cost-effective improvements but the property remains below EPC E. If measures cannot be funded entirely under the Golden Rule, meaning that landlords would incur upfront costs to install them, then the landlord is exempt from getting to EPC E.

40. The recent announcement to discontinue funding for the Green Deal Finance Company will mean that new Green Deal Plans are no longer available, effectively removing the obligation from landlords unless an alternative mechanism is put in place.

41. We are concerned about the impact that this could have on households living in some of the most inefficient properties and will be engaging with the UK government on how this issue will be addressed. Similarly, we would urge the Welsh Government to consider the implications for vulnerable households living in privately rented properties in Wales and whether additional action is necessary to ensure that these households are adequately supported.

42. A reliable link between energy efficiency and property value would help balance the benefits between tenants and landlords.

## Businesses

43. We support the actions outlined by the Welsh Government to provide access to information and advice to businesses of all sizes. We believe that using case studies to demonstrate where businesses have successfully benefited from investing in energy efficiency can be a powerful tool for motivating other businesses to take action.

44. We also agree that energy efficiency advice should be integrated within all existing programmes to ensure that businesses get to benefit from guidance on the value of energy efficiency regardless of the route they take to access broader business support.

45. We believe that the Energy Savings Opportunity Scheme (ESOS) is a great way for large businesses, many of whom have not been actively engaged in energy

efficiency to date, to obtain cost effective recommendations for energy efficiency improvements. E.ON has partnered with the Carbon Trust to offer an end-to-end solution for large business customers providing energy audits to satisfy the requirements of ESOS, plus the option of implementing the recommended measures. However, many (if not most) energy suppliers do not offer a standard energy audit to major business users.

46. Despite the merits of the scheme, our view is that it has not been received particularly well. Many of our own customers, whilst being aware of their requirement to undertake the audit, have not actively engaged or committed to a supplier to book the audit. Reasons could include cost or resource constraints.

47. We also share a concern with others in the industry that the take up rate for ESOS is far below what would be expected given the estimated number of companies qualifying under the criteria and the fact that the first compliance deadline is 5th December 2015. This may indicate that businesses, generally, are not adequately informed about ESOS.

48. The Welsh Government should ensure that, as part of the energy efficiency information made universally available to businesses in Wales, the requirements of ESOS and any future developments of the scheme are clearly communicated. As part of this, additional action may be necessary to engage more effectively with customers and assist with planning for an audit and considering the timeline for compliance (as it takes a while to book, conduct and complete a report for the customer).

1 Only properties which have an EPC are within the scope of the regulations.

## **79 NEA**

NEA Cymru broadly agrees with the areas of action set out in chapter 5.1.

### **Area of action 1.1 - Improved information on the value of energy efficiency, the relative benefits of different measures and the support available.**

NEA Cymru welcomes the Welsh Government's action for improved information on energy efficiency, the benefits of installing measures and providing impartial information, advice and support to householders to navigate the complex myriad of offers available on the market and to protect vulnerable consumers from rogue traders and misselling scams. The Green Deal was an example of an energy efficiency scheme which was seriously undermined by misselling and left many vulnerable and low income consumers believing they were entitled to help from the free Energy Company Obligation initiative, when in fact, they were being signed up for a Green Deal assessment. Clear communication is needed on the schemes and services offered to the public particularly for the most vulnerable customers who struggle most with their energy bills.

The Welsh Government and local authorities do have a key role in providing trusted and impartial energy efficiency advice. However, the Welsh Government must recognise that householders in Wales obtain valuable, trusted advice and support

from a number of other trusted organisations and avenues, not only from local authorities. We suggest that the Welsh Government needs to communicate and work closely with trusted frontline voluntary organisations such as NEA Cymru, Citizens Advice, Care and Repair Cymru, RSLs as well as local authorities to ensure that householders receive a consistent message on the benefits of energy efficiency and showcase the support available to eradicate fuel poverty in Wales.

The 2014/15 Fuel Poverty Monitor highlighted the key role that local authorities can play with local delivery partners often best placed to tailor support to local needs. NEA Cymru has previously called for a statutory duty to be imposed on local authorities to work with other local partners in tackling fuel poverty and that this duty should be supported with adequate financial resources.

Additionally the Fuel Poverty Monitor examined how the four nations provided advice on income maximisation and other services to refer vulnerable households to non-energy support schemes. The Monitor found that whilst support services are becoming more integrated across the nations, many consumers and even frontline support staff are not clear about who to contact for advice and support needs. In particular, there are variations in the extent to which local schemes are actively referred to by national agencies, despite the potential for locally delivered projects to often offer a greater level of assistance and more services.

There are a large number of services vulnerable energy consumers may seek to access support on energy related matters, for example, fuel debt advice, income maximisation and energy efficiency. The Monitor found that this 'patchwork' of support services is becoming more integrated. However, there is a risk some consumers and frontline support staff and advisors may not be clear about which service they are able to access in their area and which organisations to turn to for support. There is also a pressing need to reconcile national support schemes with assistance that can be provided locally and the absence of service mapping could result in duplication of effort in some localities. This could either confuse clients or be less resource efficient when compared to a centrally co-ordinated system.

#### **Area of action 1.2 - Working through others with influence to encourage action on energy efficiency.**

NEA Cymru would welcome working with the Welsh Government and partners to influence and encourage action on fuel poverty and energy efficiency. NEA Cymru would welcome discussions on how we could use our extensive knowledge and skills with Welsh Government and partners to promote energy efficiency and eradicate fuel poverty in Wales.

NEA Cymru works closely with voluntary sector organisations in Wales to influence and encourage action on fuel poverty and energy efficiency. We run a number of projects in Wales that provide training to frontline staff to support households and communities become energy efficient, aware of fuel debt issues and support the eradication of fuel poverty in Wales.

#### **British Gas funded Community Action Partnership**

NEA Cymru is already engaged in a variety of practical projects across Wales working with a wide range of partners to promote energy efficiency and help

alleviate fuel poverty. One example is the British Gas funded Community Action Partnership delivered by NEA, in partnership with councils across the UK. It is helping to bring affordable energy and improve the lives and prosperity of residents through practical activities in eight localities across England and Wales, equipping the local community with the tools they need to deal with fuel poverty in the future. In Wales NEA Cymru is working with Cardiff Council and other stakeholders on their Affordable Warmth Group to support a joined up multiagency approach to mitigate the impacts of poverty on people in Wales.

To date more than 12,000 people in Cardiff are now able to control their energy usage thanks to the initiative. Since the start of 2015, almost 140 frontline workers from across the city have been trained to help residents take control of their gas and electricity usage. The training sessions give advice on how people can make their homes more energy efficient, deal with fuel debt and switch energy suppliers.

Those trained include financial advisors, support workers, health visitors, local authority and housing association officers, as well as landlords and letting agents, who are now passing on the important advice to residents they meet. It is estimated that every person trained will help an average of 15 people in the local community each month, meaning that thousands of people have already benefitted from the scheme.

NEA Cymru would welcome discussion with the Welsh Government on the success of the British Gas Community Action Partnership scheme.

### **Wales Fuel Debt and Mentoring Project**

Over the past three years NEA Cymru has successfully worked with SSE to deliver a fuel debt training and mentoring project across Wales. Since the programme's inception, NEA Cymru has provided in-depth fuel debt training to 509 frontline advisors and practitioners.

Examples of how the project has helped Welsh residents include a disabled man who was awarded £942.96 through an energy trust fund to clear his arrears and £2,900 for a new boiler; an older lady who was put on her supplier's Priority Service Register and now receives the Warm Home Discount of £140 a year; and an unemployed tenant who was helped to agree manageable repayments with her fuel supplier and had an eviction notice suspended as a result of her improved money management.

NEA Cymru believes that training on fuel debt, fuel poverty and energy efficiency has been very useful to frontline staff attending the courses. We welcome discussions with the Welsh Government on the best practice for training frontline staff on fuel poverty, fuel debt and energy efficiency.

In addition, other services are being offered to local residents including the Energy Best Deal education sessions supported by Ofgem.

### **Area of action 1.3 - Building on the work being done by Smart Energy GB**

NEA Cymru welcomes the introduction of smart meters into Wales. The Welsh Government needs to work effectively with Smart Energy GB and Ofgem to ensure

that smart meters benefit vulnerable and fuel poor households in Wales which they will be helping to fund through their energy bills.

As mentioned in our call for evidence earlier this year, to ensure vulnerable and fuel poor consumers don't miss out on the benefits of smart meters, the Welsh Government should consider working with suppliers to pilot the delivery of a smart meter to households receiving energy efficiency measures under its Warm Homes programmes. The benefits of piloting the installation of smart meters as part of the delivery of Warm Homes is that installers would be able to explain smart meter technology to customers and the Welsh Government would be able to assess the costs and benefits associated with integrating smart metering into the whole-house package of measures already offered under the programmes.

NEA undertook research on behalf of Citizens Advice to look at the development of an extra help scheme for vulnerable smart meter customers and produced recommendations to ensure all consumers can benefit from the rollout of smart meters.

Every single home in Wales will be visited between 2015-2020 to install a new meter and an in-home display. The smart meter rollout gives a unique opportunity to reach households with little or no other engagement with organisations that could make them aware of help with fuel poverty. This will be particularly valuable for rural households with few local facilities or limited broadband access, who are least likely to find out about help available to them. If installers are made aware of locally based schemes like Cymdogion Cynnes and Nest, they can signpost householders to the help they need.

NEA is concerned that consumers in vulnerable situations could miss out on the potential benefits of smart meters and although not a devolved area of policy, the Welsh Government need to ensure they are holding energy suppliers to account for the smart meter rollout in Wales and the opportunities to link up with other schemes and services to help consumers maximise their income and reduce their energy bills. At NEA Cymru's 2015 annual fuel poverty conference held earlier this year delegates saw smart meters as a huge opportunity to bring positive benefits for fuel poor homes, particularly those using prepayment meters. However they also stressed the importance of managing communications and expectations carefully for vulnerable households.

The Competition and Market Authority (CMA) investigation into the energy market concluded, once again, that low engagement by customers in the energy market is keeping prices high. Customers who do not switch are effectively subsidising the good deals available to those who do, and it is low income households who are the least likely to engage. The CMA noted that households in Wales are particularly unlikely to shop around. An example of how this is being addressed in Wales is the 'Cyd Cymru Wales Together' collective switching project run by Cardiff and the Vale of Glamorgan councils. Collective switching schemes are a great means of breaking down some of the perceived barriers to switching, and can even get participants a market-beating price. The Fuel Poverty Coalition Cymru believes the Cyd Cymru scheme has demonstrated the huge potential of this approach.

The next Welsh Government should continue to support collective switching, and encourage more local authorities to get involved and promote the service to their residents – particularly those in fuel poverty. Last year the power of collective energy buying saved over 2,000 households an average of £250 on their energy bills and the more people who register, the bigger the savings should be.

Area of action 1.4 - Providing free energy efficiency assessments and guidance for low income households NEA Cymru welcomes the Welsh Government's pilot project providing free energy efficiency assessments and its research into the feasibility of a paid service. NEA Cymru has heard of a number of stories of vulnerable householders being mis-sold energy efficiency products and services and welcomes Welsh Government intervention.

However, with the UK Government closing Green Deal, the main mechanism for financing energy efficiency measures and improvements has been removed. To be successful, the pilot needs to have a recognised energy efficiency programme to refer householders to install energy efficiency measures and with the closure of Green Deal, that avenue is now closed.

The closure of Green Deal, however, does provide the Welsh Government with the great opportunity of piloting and developing its own interest free loan energy efficiency programme for householders who do not meet current and future Warm Homes Programme criteria.

It should look at the learnings from the initial pilot free energy efficiency assessments project and assess whether there is demand for a free and paid assessment project and paid for loan scheme for householders in Wales.

Area of action 1.5 - Continuing to provide advice and support for those households on the lowest incomes and living in the most energy inefficiency properties.

NEA Cymru commends the large scale investment in energy efficiency programmes over the past few years by the Welsh Government under Nest and Arbed despite the difficult economic climate. The schemes have made a clear difference to people's lives. However, NEA believes that to meet the fuel poverty challenge faced in Wales, the Welsh Government needs to invest more than current levels.

NEA welcomes the increased investment in the Nest scheme in 2015-16 to leverage funding from the Energy Company Obligation (ECO) in Wales, widening the eligibility criteria for free Nest home energy improvements to include E-rated properties, in addition to F and G rated properties. NEA has vigorously campaigned for the Energy Company Obligation (ECO) overall to be adequately resourced to deliver a comprehensive energy efficiency programme for low income households and communities across the UK.

Additionally, the Fuel Poverty Coalition Cymru believes that energy efficiency schemes should also target those at risk of fuel poverty. It can be more cost effective to keep a household out of fuel poverty, and intervene before their health starts to suffer. Any new funding for energy efficiency measures must not just be available to those who are easy to find or define. For example, people with cold-



affected health conditions or disabilities, and families with young children whose education and health could suffer from the effects of a cold home should all be able to apply for help. Combined with access to improved housing stock data, more responsive eligibility criteria could drive greater engagement by support services who work closely with households who have yet to receive help.

The next Welsh Government's energy efficiency scheme(s) should widen the delivery of whole-house measures and continue an area based approach to funding. In the long term this will keep more households out of fuel poverty if and when energy prices rise.

NEA Cymru also believe that the Welsh Government need to work effectively with the UK Government to influence the future direction of the ECO scheme to ensure the next supplier obligation is a more effective tool to address fuel poverty. NEA's views on the future of the ECO are provided in the attached document "NEA's emerging views on the future of the Energy Company Obligation and complementary programmes". Recommendations include:

- Targeting the ECO at low-income households and deprived areas
- Moving away from single measures by creating a new fuel poverty target with obligated suppliers rewarded for how many SAP points a household is moved up in pursuit of a higher EPC and thus the new ECO policy would provide a much more quantifiable contribution to the Welsh Government's fuel poverty target
- Providing guaranteed access for the most vulnerable households.

In addition Welsh consumers contribute a significant amount to the UK Treasury from levies on their energy bills (£1.4 billion over the next 10 years) and the next Welsh Government should lobby the UK Government to return this revenue to be directly spent on expanding resources for energy efficiency programmes.

NEA Cymru works closely with voluntary sector organisations in Wales to influence and encourage action on fuel poverty and energy efficiency. We run a number of projects in Wales that provide training to frontline staff to support households and communities become energy efficient, aware of fuel debt issues and support the eradication of fuel poverty in Wales. Through our training, advisors are able to confidently influence and encourage more householders to become more energy efficient in Wales.

NEA Cymru believes that training on fuel debt, fuel poverty and energy efficiency has been incredibly useful to frontline staff attending the courses. We welcome discussions with the Welsh Government on the best practice for training frontline staff on fuel poverty, debt and energy efficiency.

**Area of action 1.6 - Making energy efficiency easy for those households who are able to pay but who are put off by the complexity and lack of trust in the sector.**

Research undertaken with the Construction Sector Panel must look at the qualifications and the accreditation of the Welsh energy efficiency construction sector in assessing and installing efficiency measures into energy inefficient homes

in Wales. It needs to take the learnings of the failure of Green Deal and research into developing robust safeguards, accreditation as well as a mechanism for costing and funding assessments and installation of measures. Any Welsh Government scheme will need to provide value for money to householders as well as Welsh taxpayers.

The Welsh Government needs to be realistic on how many households it may successfully target for free and paid for assessments and how many households will pay for energy efficiency improvements.

The Welsh Government needs to urgently speak to the UK Government to have a clear understanding of the UK Government's plans for a paid for energy efficiency programme to replace Green Deal. Welsh Government representatives need to sit on the recently announced independent review to look at standards, consumer protection and enforcement of energy efficiency and have a say on future discussions on Green Deal funding successors.

The Welsh Government needs to do more to identify and stamp out cold calling and rogue companies providing energy efficiency assessments and advice to vulnerable householders in Wales. It needs to work closely with Citizens Advice and other frontline advice voluntary organisations, Trading Standards, Information Commissioner's Office (ICO) and the UK Government to gather evidence and find solutions to deter rogue companies from taking advantage of current and future energy efficiency programmes and mis-selling to households in Wales.

**Area of action 1.7 - Ensuring that the private rented sector take action to meet the obligations placed on them by the UK Energy Act (2011).**

NEA Cymru welcomes action being undertaken on private landlords to improve the energy efficiency of private rented properties in Wales. Private rented tenants often live in the most energy inefficient properties and statistically are more likely to be in fuel poverty than any other households in Wales.

NEA Cymru welcomes the recent announcement and launch of Rent Smart Wales as the new landlord accreditation and resource for useful guidance and information for landlords, agents and tenants.

Rent Smart Wales and the 2016 regulations will need to be rigorous to ensure that residential private landlords will not be able to unreasonably refuse consent to a tenant's request for energy efficiency improvements.

NEA Cymru welcomes the empowerment of tenants to request energy efficiency improvements to their rented properties and help alleviate fuel poverty. NEA Cymru welcomes in particular the 2018 regulation for private and non-domestic landlords to ensure that their properties reach at least E EPC rating. The Welsh Government must ensure that there are stringent regulations and penalties to ensure that landlords comply with both 2016 and 2018 obligations.

There is an opportunity for the Welsh Government to use any enforcement fines to also compensate tenants for higher energy running costs and also introduce a low cost loan facility for landlords to help meet the proposed EPC band E standard

which the landlord would need to pay back after the property is sold or after a period of five years.

The Welsh Government should ensure that landlords are considered when researching into the feasibility of establishing a paid for service for assessing and installing energy efficiency improvements. Private rented properties as mentioned are often the least efficient homes and need to be part of the scheme. NEA Cymru would be interested to hear how many private rented landlords have previously taken out Green Deal finance to improve the energy efficiency of homes in Wales as this would be an indicator of how many landlords would voluntarily support a future loan scheme.

NEA Cymru welcome discussions on how it can help support Rent Smart Wales to provide fuel poverty and energy efficiency training to landlords and agents in Wales.

#### **Area of action 1.8 - Review of Part L of the Building Regulations in 2016.**

NEA Cymru welcomes the review of Part L of the Building Regulations in 2016. The 8% aggregate improvement for CO2 emissions for new-build housing compared to 2010 Part L of the building regulations does not meet Welsh Government's Wellbeing of Future Generation (Wales) Act and forthcoming Environment Bill ambitions. If the Welsh Government is ambitious in meeting its 2020 carbon emissions targets, it must lower its aggregate improvement to at least 6% England levels or lower.

#### **Area of action 1.9 – Drive achievement of the Welsh Housing Quality Standard (WHQS)**

The Welsh Government's requirement for each social landlord to produce a WHQS Compliance Policy is a good step to ensure they meet the 2020 WHQS standard. The Welsh Government must continue to monitor compliance and penalise social landlords who do not meet the standard in accordance to the Housing (Wales) Act 2014.

#### **Area of action 1.10 - Aligning community based activity to our wider community based action**

There are a number of well-developed small scale community energy efficiency projects and activities in Wales. NEA Cymru would welcome the integration of energy efficiency action within programmes such as Communities First and Flying Start as well as Vibrant Places. Cross-cutting solutions to fuel poverty should be more prominent in the Tackling Poverty Action Plan, in actions taken by the health services and in the child poverty agenda. Fuel poverty must not be characterised as merely an energy efficiency issue.

NEA Cymru worked with Calor on the FREE (Future of Rural Energy in Europe) Programme between 2010 and 2013 to assist fuel poor households in off-grid rural communities across the UK. The project helped individual households reduce their energy consumption and encouraged local communities to work together to promote best practice in energy efficiency and carbon reduction, with the overall aim of reducing levels of fuel poverty in off-grid areas.

In Wales, we worked closely with off gas communities to reduce their energy consumption through a community led approach. We worked with community advisors in Ceredigion, the Llŷn Peninsula and Anglesey - selected due to their high levels of fuel poverty and lack of access to mains gas - to help the advisors develop community events, attend training and help local residents heat their homes more affordably. Integrating energy efficiency action within existing Welsh Government programmes will help promote energy efficiency and lower fuel poverty in built up and rural communities in Wales.

At NEA Cymru's fuel poverty conference held earlier in the year delegates were interested in how energy generated within a community could be used within the same communities rather than going into the grid. They heard that this would take change in regulation and the scale of generation, to match supply with demand. Delegates also considered how collective switching schemes could be made sustainable, by communities unlocking the premiums paid by suppliers.

Although action at a national level remains very important, delegates felt that more support was needed for community led action. They discussed the opportunities for using energy generated locally within the same community; setting up a national co-operative to help remove the barriers to entering the energy market for community groups; discrete networks for fuels such as biomethane for communities that are too far from the mains gas pipelines for connection; and support for co-ordination of oil syndicates in off gas areas.

In terms of addressing fuel poverty in rural areas, mains gas remains one of the cheapest ways to heat a home but is not an option for rural households not connected to the mains gas network, increasing their likelihood of being in fuel poverty.

A number of local communities have tried to reduce heating costs for households reliant on heating oil by setting up syndicates to bulk purchase oil to reduce unit costs and increase flexibility in the amount households need to order. For one scheme operating in Ceredigion, the average annual household saving by participating in this kind of syndicate is around £150. Additional benefits of these schemes beyond reducing fuel poverty include increasing community cohesion, reducing the number of tankers on the road and those who are socially isolated know someone will call them to check on their next oil order, giving the opportunity to check on their wellbeing more generally.

The FREE project found a high level of interest in support for setting up and participating in oil bulk buy schemes. There may be opportunities for farmers, as large consumers of oil, to take part in these kinds of syndicates and drive them forward. The success of these schemes often lies in their local community organisational basis but syndicates would benefit from larger organisations, such as local authorities, supporting them. For example, support could take the form of office facilities being provided free of charge, facilitation of networking between syndicates, expert advice on developing existing syndicates in new directions such as incorporating other off-grid fuels and investigating renewables, and provision of information on setting up a syndicate to communities where they do not yet exist. Since the roundtable discussion, the Minister for Natural Resources and Food

announced a new investment for a pilot project to develop a network of fuel buying syndicates across Ceredigion. We welcome this and hope it will provide a model that can be replicated in other parts of Wales and that any further roll out deemed beneficial will be supported by the Welsh Government.

A community based approach is key to working in rural areas. Word of mouth is often more important than in urban areas and area based action is more likely to build momentum and engage people than trying to approach households on an individual basis. If a whole community is fuel poor, then that can be seen by residents as the norm and so the community must be brought on board together to realise the need for change and to believe it is possible to improve their standard of living through taking action on fuel poverty. Involving the community in that change is crucial and helps ensure that this change is sustainable, in all senses. The ECO rural safeguard and arbed schemes give opportunities for this kind of area based activity, as do schemes to install renewable technologies and unconventional insulation measures on community buildings as example projects. The Welsh Government's Cynefin project is working to empower communities to build resilience and sustainability. This is a community driven approach and so it is important that communities understand the value of energy efficiency measures and energy generation to want to engage as part of their Cynefin programme. The Place Coordinators are currently focussed on more urban areas but as the model matures, there will be potential to bring rural areas on board and bring people in rural areas together to co-produce solutions which suit each particular community.

The Welsh Government and local authorities need to work closely with community groups as they are able to better target and approach fuel poor households.

In addition to community projects, the Welsh Government needs to work with Ofgem in ensuring Welsh communities are part of the Fuel Poverty Gas Network Extensions Scheme (FPGNES) and encourage the GDNs to improve their connection targets.

i <http://www.nea.org.uk/nea-wales/fuel-debt-mentoring/free-training.htm?WBCMODE=AuthoringPreview.rss.pdf.p>

## **80 Rockwool**

ROCKWOOL is a member of the MIMA, the Mineral Wool Insulation Manufacturers Association, and we are pleased to confirm our support for the attached, joint submission from MIMA.

## **81 EDF Energy**

Yes, we agree with the areas of actions set out in Chapter 5.1. Some areas for further consideration are outlined below.

In reviewing the barriers, in particular for Government and private sector, we would like to highlight the importance of communication, a key action that links the various

areas of activity. Whether it is applied by technology, e.g. through smart metering or by word of mouth, there is true value and a need for this multi pronged method to be utilised effectively.

The common consumer misconception that energy efficiency is difficult to achieve or unnecessary can only be addressed by an overarching approach which includes all of the approaches outlined in the consultation document. For key area where a re-education and better understanding is required is the lack of recognition of the correlation between investment in energy efficiency and the resulting social, health and environmental benefits. The uncertainties of future energy costs also do not enable firm predictions of rate of return.

Reviewing the barriers for the end user, i.e. household and business consumers, the following areas should be priority considerations:

1. There is low public perception of the benefits of energy efficiency when purchasing new products.
2. Business has a misconception that energy costs are not controllable and investment is better spent in other areas of their business.
3. A common misconception is that energy efficiency is too difficult to achieve without great technical knowledge and there is a mistrust of the savings that can be achieved.
4. There is limited availability of clear, independent and trusted information and hence, lack of understanding to encourage investment in energy efficiency.
5. Consumers managing budgets often identify the purchase price of equipment as the deciding factor. As a result inefficient equipment may be cheaper to purchase but incurs higher lifetime energy costs.

## **82 Royal Institute of Chartered Surveyors**

Agree but some of the actions could do with more clarity and lack information about the impact and measure of performance.

## **83 Flintshire County Council**

Yes, but only in part.

The comment on page 31 under the heading “overcoming barriers for the public sector “ is a generalization that insults the many experienced and committed public sector Officers doing a sterling job under difficult circumstances. It is not generally the lack of understanding of energy efficient technologies or indeed knowledge that is holding Local Authorities back, but a lack of resources and funding to support the necessary retrofit projects.

### **Action 1.18 National Procurement Service**

In general the launch of NPS is to be welcomed, there is no point in individuals procuring the same products time after time, which is a waste of resource and unlikely to obtain best value. However, this is not the case with the procurement of

energy which is often seen by procurement bodies as a cash cow that can be milked to support less profitable areas of procurement. All Welsh Authorities procure energy via framework contracts, mostly through Crown Commercial services (CCS) contracts, but not exclusively so.

The procurement of Utilities (gas, electricity etc) are some of the largest contracts in cost terms that most Authorities sign up to, however it is an area best left to individual Authorities to determine where and how they procure this resource. Historically North Wales Authorities (who have significant experience in the procurement of such contracts) have achieved lower costs than South Wales Authorities who use a procurement body to appoint suppliers. This is due to the extra costs levied by additional layers in the procurement process which is unnecessary when the likes of CCS, Laser (Kent C.C.), and other framework suppliers can and do provide a one stop shop.

Flintshire have been working through our own collaborative procurement service and in consultation with a number of other local authorities and housing associations on a framework focused on energy efficiency and renewable energy retrofit, focusing on a whole-house approach and delivering the Welsh Government's objectives under the Value Wales toolkit. This was developed to allow for more sustainable supply chain development in each region of Wales to deliver large scale energy efficiency programmes to public and private sector properties.

Further barriers will become more evident as the Government reduces or remove the incentives that support the installation of renewable energy systems. This is particularly important for retrofit projects in housing, where a whole house approach should include improving the building fabric insulation, heating appliances/systems, and the installation of renewable energy systems.

## **84 Constructing Excellence in Wales**

### **Area of action**

### **CEW comment**

#### **Householders and communities**

1.1 Improved information on the value of energy efficiency, the relative benefits of different measures and the support available

Recently published, the UK-GBC and the UCL Energy Institute's report explores the extent to which mortgage lenders could estimate energy costs using data that is already readily available to them, including properties' Energy Performance Certificate (EPC) rating<sup>3</sup>.

1.2 Working through others with influence to encourage action on energy efficiency

CEW continues to work to increase the body of evidence which demonstrates a correlation between the energy efficiency of a property and its market value.

Research commissioned by CEW, undertaken by Reading University, has reviewed house sale transactions and EPC ratings for properties in Wales. Their work has indicated a correlation similar to regions of England, building on the work the University conducted for DECC in 2013<sup>4</sup>.

We are also a partner in the LENDERS (Levering Economics for New Drivers to Energy Reduction and Sustainability) project. Funded by InnovateUK, the project will build on findings of CEW's EPC's and Green Mortgages report<sup>5</sup>. The project will evidence the capacity to use a property's actual energy efficiency (including Energy Performance Certificate ratings - EPCs) and other factors to predict to a reasonable degree of accuracy of a homeowners' actual fuel bills. The project will go on to develop a new methodology for estimating homeowners' fuel costs, suitable to replace the existing methods typically used in financial institutions' own mortgage affordability calculations. This will enable both better estimation of mortgage affordability and providing a credible, sustained and strong stimulus for market demand to favour energy efficient properties.

1.3 Building on the work already being done by Smart Energy GB

We would be encouraging of any joint mailing or cross marketing of the Resource Efficient Wales contact centre to include reference to Smart Energy GB's work in order that sign-posting between organisations can help householders make the best decision for energy efficiency and billing for their household simultaneously.



#### 1.4 Providing free energy assessments and guidance for low income households

The expansion of eligibility in the Nest programme to include E, F and G rated homes is welcomed. We would encourage the programme to consider a whole house refurbishment which lifts a house to as high an EPC rating as practicable. We note that some 15% in 2014-15 remain an EPC of E, F or G after receiving investment and measures through the programme<sup>6</sup>.

We understand that whole-life costing (and carbon budgeting) does not currently inform the decision making process for Nest or arbed. Boilers for example, may not be the most efficient available on the market and may require replacement within 5 years, requiring a re-visit to the property rather than more robust product selection ensuring a lifetime performance of 15-20 years. It is evident from the recent work undertaken by the Solcer project<sup>7</sup>, that a higher capital cost investment in deep retrofit could produce a better payback rate and alleviate fuel poverty more rapidly.

We would encourage WG to consider a deeper retrofit agenda than that currently being delivered through Nest and arbed, which is providing some alleviation to many households but still locking many in to carbon-heavy fuel sources and energy bills.

#### 1.5 Continuing to provide advice and support for those households on the lowest incomes and living in the most energy inefficient properties

Follow up advice and support needs to be provided by REW (and others) for householders who have received energy efficiency improvements. It is not possible to see what longitudinal improvements have been made by the delivery of Nest or arbed due to limited evaluation being publically available. WG needs to ensure that householders are trained and fully aware of how to operate any new technologies, or simple systems such as trickle vents. This training and / or user guides mean that householders (whether owner occupier or tenant) can be confident that they will

operate their home in the most practical way to achieve energy efficiency, reduced fuel bills and improved health. Evidence is currently being collated by the Zero Carbon Hub's ventilation project. This is indicating that user understanding of both natural and mechanical ventilation within homes is very limited, with indoor air quality being compromised with undesirable health impacts and in some cases examples of damp and or condensation damaging properties. The Scottish Government's "Quick Start Guides" template<sup>8</sup> will help householders be more aware of how to operate their homes efficiently when they come into force in October 2015.

1.6 Making energy efficiency easy for those households who are able to pay but who are put off by the complexity and lack of trust in the sector

We note WG's commitment to establishing support programmes for those householders who are in a position to pay for energy efficiency and / or renewable technologies to be installed on their property.

1.7 Ensuring that the private rented sector take action to meet the obligations placed on them by the UK Energy Act (2011)

We feel more support should be targeted towards landlords to ensure that Wales complies with the UK legislation. Perhaps within the private rental sector, action could initially be targeted towards one market, for example, university students and their private sector landlords. Working with this sector would improve accommodation levels where the added benefit of establishing energy efficient behaviours. Further research is available from NUS on the research and Student Green Fund<sup>9</sup> operating in England with HEFCE. By working with this sector, the tenant would also be better supported to seek improvements to their rented home. As they graduate and move on to private or owner occupier accommodation; they would take these behaviours and quality of life aspirations with them.

More broadly, CEW would be supportive and keen to work with Estate Agents across Wales to flag our research to

their networks to help inform the sector and drive change, reducing the scepticism around EPC's and the value that they hold within the property market.

#### 1.8 Review of Part L of the Building Regulations in 2016

Regulations offer a significant opportunity to set expectations for the construction sector as well as the market. Through June 2015, CEW facilitated three workshops across Wales with SME developers and those delivering new homes. The workshops were each a half-day session and included a presentation from the Welsh Government's Homes & Places team, Finance Wales followed by facilitated discussions. One of our recommendations was the request for "clear, simple-to-follow guidance on existing and new regulations". We note that much of this guidance is being delivered by industry such as the NHBC Foundation's Part L 2014 – "where to start" guides. These provide an introduction for house builders and designers for masonry construction<sup>10</sup> and timber frame construction<sup>11</sup>. We are also aware of the resources currently in development by the Zero Carbon Hub's Builders Book<sup>12</sup> and associated documents on: Builders Book Masonry (complete), Thermal Bridging Guide, Design Guide, SAP Guide, Cost Guide, Services Guide, Builders Book Timber . As discussed earlier, we feel more could be done to provide building occupants with support and advice on how best to operate the building services within a building, whether this is a new build or refurbished property. We would encourage future Building Regulation reviews to consider the development of template user guides for use within Wales.

#### 1.9 Drive achievement of the Welsh Housing Quality Standard

We note that the timescales to achieve Welsh Housing Quality Standards has

extended to 2020. It is disappointing that there is no increased energy efficiency level being sought. This will mean that homes are likely to need to be revisited in order to secure further carbon emission savings in the future.

#### 1.10 Aligning community based activity to our wider community based action

More alignment with communities engaged through Ynni'r Fro, who are active and interested in developing a low carbon Wales, should be encouraged and supported to ensure their own homes and community is refurbished in parallel to the installation of their renewable energy source. We feel more could be undertaken to promote community scale energy, linking investment in with energy efficiency activities. For example, more collaboration between area based programmes such as arbed and community energy schemes such as Ynni'r Fro. Any new programme aimed at "able to pay" households should also explore the opportunity for community energy within their neighbourhood as this may also provide financial benefits for the group.

### Businesses

#### 1.11 Access to information, advice and support on energy efficiency

No comment.

#### 1.12 Integrate energy efficiency support within wider business support

We would encourage the Welsh Government to demonstrate its commitment to sustainable green growth by integrating energy efficiency support within business support offered by WG sponsored organisations such as Finance Wales, Business Wales and others. For example, utilising Environmental Management Systems / accreditation or an active monitoring of businesses estates carbon footprint (e.g. utilising Display nergy Certificates) to ensure public money is investing in businesses committed to Welsh Government's aspirations for Wales in 2025.

From our SME workshops it was evident that companies felt that what the FinanceWales is offering was not as attractive as envisaged. Increasing funding requirements on the SME's own carbon emissions would need to be trialled and an approach suitable to their business model (acknowledging that SME's operate very differently to larger organisations).

1.13 Work with large businesses to use energy more efficiently

Take up of the ESOS scheme remains low, promotion of the current number of submissions ahead of the December 2015 deadline should be used to help drive increased submissions.

1.14 Building on the work being done by Smart Energy GB

No comment.

1.15 Increased investment and support through Green Growth Wales

We would welcome a stronger and clearer link between WG's energy efficiency work and that of the Green Growth Wales team and initiative. For example, a commitment to raise the energy efficiency of the "Wales Plc. Estate", such that by year 20?? properties over Xm2 would be securing a Display Energy Certificate (DEC) rating of Y, with increases at 2 / 5 / 10 year intervals. It is commendable that the Welsh Government has expressed a commitment for Natural Resources Wales to become a carbon neutral organisation. But, we would look for the Government itself to make appropriate pledges and for other public sector bodies to be challenged equally.

## Public Sector

1.16 Access to advice and support

Greater support is required for local authorities and public sectors to fully assess the benefits of making energy efficiency a priority. Support to enable capital and maintenance budgets to inform a more strategic and whole life

cost approach to retrofitting buildings to be more energy efficient.

#### 1.17 Showcasing successful projects

CEW has run the Exemplar<sup>13</sup> and Demonstration<sup>14</sup> projects for the construction sector since 2011 in Wales (Demonstration projects have existed across the UK since 1998). These programmes focus on topics wider than solely energy efficiency in new build or refurbishment projects and in fact beyond solely buildings. For example, case studies such as the refurbishment of the Merthyr Tydfil Town Hall<sup>15</sup> provide concise summaries of what is possible with a listed property.

The showcasing of successful projects should not be limited to solely case studies from the public sector. More examples of works carried out on domestic and commercial properties should also be developed by the Resource Efficient Wales network.

The approach WG takes with high profile programmes such as the

Design4Life and 21st Century Schools should showcase the best construction practices and delivery. CEW continues to work with the Education department to ensure best value for money for the 21st Century Schools programme.

#### 1.18 Drive efficient use of public expenditure on resource efficiency through the use of the National Procurement Service and Resource Efficient Wales procurement service.

No comment.

Other barriers not explored in the current strategy:

- *Performance gap*: There is a growing body of evidence demonstrating that building performance does not match that anticipated by designers of new or refurbishment projects. Whilst the work undertaken by the Zero Carbon Hub in 2014<sup>16</sup> focuses on the performance gap of new build homes, rather than refurbished, a number of the key findings are applicable to the refurbishment sectors.

- *Off- grid properties:* With 19% of homes in Wales we feel that there is more the strategy could deliver to secure more low carbon energy sources for these properties rather than solely reliance on the UK Government schemes of feed in tariff and renewable heat incentives. For rural locations, the exploration of district heating or more whole house technology retrofits could offer real opportunities. For example, the work undertaken by the Welsh School of Architecture's, systems approach to retrofitting work<sup>17</sup> demonstrates that whole house and off-gas housing is achievable and attractive to the market. Refurbishing and providing a low carbon source of heating and power to these communities would have broad policy impacts on fuel poverty, community regeneration, cohesion and reduction in carbon emission.
- *Climate change and its impact in Wales:* the impact of climate change in Wales remains very reactionary rather than proactively considering changes in construction practices or design approaches which could enable the built environment to adapt to future climates. Research on this topic has been growing over the past decade<sup>18</sup> and we feel it should be more integrated within policy documents such as the Energy Efficiency Strategy for Wales. The focus appears to remain on reducing winter fuel bills and excess winter deaths, rather than the year-round performance of our built environment. For example, overheating is an issue for the school estate - changes to future climate will only exacerbate this without appropriate consideration to the issue being given during refurbishment or new build design work.

3 <http://www.ukgbc.org/resources/publication/role-energy-bill-modelling-mortgage-affordability-calculations>

4 <https://www.gov.uk/government/publications/an-investigation-of-the-effect-of-epc-ratings-on-house-prices>

5 <http://www.cewales.org.uk/cew/wp-content/uploads/EPCs-Mortgages1.pdf>

6 <http://nestwales.org.uk/sites/default/files/Nest%20Annual%20Report%202014-15.pdf>

7 <http://www.solcer.org/>

8 <http://www.gov.scot/Resource/0040/00409085.pdf>

9 <http://www.studentsgreenfund.org.uk/>

10 <http://www.nhbcfoundation.org/Publications/Guide/Masonry-Construction-NF64>

11 <http://www.nhbcfoundation.org/Publications/Guide/Timber-Frame-Construction-NF65>

12

<http://www.zerocarbonhub.org/sites/default/files/resources/reports/Zero%20Carbon%20Hub%202015%20FINAL.pdf>

13 <http://www.cewales.org.uk/best-practice/best-practice-programmes/exemplar-programme/>

14 <http://www.cewales.org.uk/best-practice/best-practice-programmes/demo-projects/>

15 <http://www.cewales.org.uk/cew/wp-content/uploads/7245Exemplar-MTTHR-Exemplar-4pp-D.pdf>

16

[http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design\\_vs\\_As\\_Built\\_Performance\\_Gap\\_End\\_of\\_Term\\_Report\\_0.pdf](http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design_vs_As_Built_Performance_Gap_End_of_Term_Report_0.pdf)

17 <http://lcbe.cardiff.ac.uk/news-items/systems-approach-to-housing-retrofit-showcase/>

18 <http://climatelondon.org.uk/publications/your-home-in-a-changing-climate/> and more recently work by Arup: [http://publications.arup.com/Publications/R/Reducing\\_urban\\_heat\\_risk.aspx](http://publications.arup.com/Publications/R/Reducing_urban_heat_risk.aspx) and Zero Carbon Hub

<http://www.zerocarbonhub.org/current-projects/tackling-overheating-buildings>

## **85 RWE nPower**

With regards to the specific consultation questions asked (question 1-6) we agree with the areas of action set out and we do not have any additional questions or issues to be addressed.

## 86 Melin Homes

### Action 1.1

- Agree absolutely. There is a hierarchy of trust in the mind of householders, with trusted 'brands' being foremost Welsh Government and local authorities. There are then a range of other trusted organisations including housing associations, care and repair agencies etc.
- Unfortunately, cold callers, rogue installers etc. have the will and the capacity to carry out campaigns, door knocking and the like and access households, often to a greater degree than Welsh Government and others are able to.
- Consideration should be given to marketing campaigns and a 'sign up' scheme backed by Welsh Government that householders are able to refer to. Examples such as Welsh Governments Rent Smart Private Sector Landlord scheme evidence what can be achieved through such schemes.

### Action 1.2

- In a wider context there needs to be far more dialogue and powers in this area. Households that are engaged with energy efficiency may then be far more engaged in areas such as recycling, reducing waste etc. Areas such as linking the energy efficiency of properties to Council Tax should be explored in order to provide impetus.
- The engagement with households is quite patchy in terms of energy efficiency. Areas to be included must be benefits of switching, reduction in costs, reduction of greenhouse gases etc.
- School education programmes must be considered in terms of influencing householders. Our work with schools has demonstrated that students are a meaningful way of engaging with the whole household. Whilst there is work in many schools in terms of ECO councils and the like, programmes should be explored that relate activities directly back to individual households.
- For many households in fuel poverty and extreme fuel poverty, their means of engagement are self and externally limited. Many households have a fixed and limited energy budget, are coping with pre-payment meters and are not able to consider or implement activities such as switching, nor do they have the capacity to self seek meaningful help. Such 'very difficult to reach households' require an external influence in order for their circumstances to be positively affected. Significant consideration needs to be given to identifying and assisting those households
- Energy companies need to be positively engaged with. The work of our Little by Little project has demonstrated that, where we have proven extreme hardship, significant fuel debt has been cancelled. Therefore, there needs to be effective engagement led by Welsh Government in ensuring that energy companies understand and play their part in this strategy.

### Action 1.3

- Smart Energy GB are willing and committed to engaging in order to further develop and implement the roll out of Smart Metering. Some anecdotal evidence suggests that their programme in Wales is performing in excess of their wider experiences in the UK.



- It should be borne in mind that Smart Meters may not have a significant impact on the energy behaviour of individual households. More consideration should be given to energy usage and monitoring systems that are practical for engaged households

#### Action 1.4

- Agreed. Further consideration should be given to the provision of free or low cost EPC's to all households in Wales in order to provide impetus and accelerate energy efficiency dialogue

#### Action 1.5

- Agree and particularly welcome this commitment.

#### Action 1.6

- Agreed. There is a lack of trust from homeowners in relation to paying for energy efficiency works. Schemes such as the GDHIF and the complexity of Green Deal have meant that owner occupiers are not prepared to engage in such schemes. It is also the case that the complexity of many schemes mean that micro SME's are not able to offer such work with the required guarantees etc., and that significant numbers of households are investing, but not maximising energy efficiency opportunities (e.g. having their home re-rendered but not going the extra step to install external wall insulation at the same time)
- Welsh Government can, as part of a coherent and centrally coordinated energy efficiency strategy, have in place programmes that are suitable for all areas of Wales and not just those identified as most poorly performing in terms of WIMD's. By having a menu of choices and incentives the able to pay sectors are more likely to engage (and are, anecdotally, often early adopters of such measures) if they are able to access a trusted source with advice and funding options.

#### Action 1.7

- It is the case the the RSL sector has, with assistance from Welsh Government, previously led the way in terms of improving the energy efficiency and RdSAP performance of the homes they own and manage. It is also the case that those in the private rented sector live in some of the most poorly performing stock in Wales. By focussing efforts on the PRS this will lead to beneficial outcomes for residents and assist in relieving their fuel poverty.
- As part of engagement strategies with the PRS, local authorities such as Torfaen CBC are providing no cost EPC's to Landlords in order to encourage them to participate in schemes with the local authority.
- Is an ECP rating of E selling tenants in the PRS rented sector short? Unless specific construction or conservation issues are present, a rating of band D would be more ambitious. This will place PRS tenants in the same position as those holding a tenancy with social landlords.
- PRS Landlords will require both the 'stick and carrot' approach in reaching these targets. By making low cost financing available to PRS Landlord there can be invest to save or Green Deal type payback programmes in place.
- Care should be taken to ensure that PRS Landlords do not then place the cost of improvements on tenants via unreasonable rent increases, nor that there is a grey market of rented accommodation.

#### Action 1.8

- Agreed

#### Action 1.9

- Agreed

#### Action 1.10

- By making community engagement and community benefit projects a condition of funding, Welsh Government can ensure that those carrying out energy efficiency projects that utilise funding are effectively engaging with communities. It is too often the case that householders and individuals feel that large scale projects are 'done to them and not with them'.

#### Action 1.11

- As detailed below, the activities and presence of REW needs to be embedded more both for households in Wales, to business in Wales and to the third sector in Wales.

## 87 Citizens Advice

If there is a single major gap in the draft strategy, it is around placing consumer experience at the heart of the policy design. The strategy acknowledges how important it will be to engage consumers, but does not demonstrate a sophisticated enough understanding of how this will be achieved. Without consumer buy-in to any new energy efficiency offer, the strategy simply will not succeed.

### **Understanding consumer motivation**

The final strategy should recognise that the provision of information in itself will not drive consumer engagement. Energy consumer behaviour is rarely purely rational. Consumers are aware they could save money by switching supplier regularly - yet they don't, despite years of information-based approaches to promoting switching by regulators and governments.

Engaging consumers with energy efficiency requires a greater level of commitment than a one-off act of switching, so the barriers are greater. This strategy should therefore be underpinned by a **solid evidence base on consumer attitudes to energy efficiency, their motivation to engage**, and not just their knowledge and awareness.

### **Behaviour change**

Permanent behaviour change requires everyone in a household to know how they can be more energy efficient, and to want to do it. This could require **different messages for different members of a household** - e.g. adults, children, older people. Informational remedies need to be carefully tailored to particular groups, a single message will not be persuasive to all.

Information alone has been proven to be insufficient to drive behaviour change. In our previous response, we highlighted the finding of Consumer Focus' *What's In It*

*For Me?*<sup>6</sup> report, which emphasised the need for **the advertised benefits of energy efficiency to outweigh the barriers** for consumers. These include how to 'nudge' behaviour, support consumers directly, and address negative perceptions or myths around energy efficiency as well as promoting the positive aspects. We do not feel the insights of that report are sufficiently reflected in the draft strategy.

Some individuals are also better able to manage their energy use than others, for example housebound people, or people with disabilities who rely on special equipment. They may need a **different package of information, advice, and direct support tailored to their higher level of demand**, and a message which does not unintentionally make them feel stigmatised.

### **Quality assurance and trust in energy efficiency measures**

Having measures installed under any warm home scheme takes time, causes disruption, and costs money - all barriers to uptake in themselves. It also carries a perceived risk around the quality of what is installed.

The strategy rightly mentions consumer trust, and the advantages of working with tradespeople and partners who are already trusted in a community. However it does not acknowledge that there is always the potential for things to go wrong, and that there is therefore a need for a clear pathway for complaints and redress to give consumers confidence.

Our report *Quality assurance in energy efficiency and low carbon schemes in the domestic market*<sup>7</sup> explores issues with

- assessment and certification
- guarantees and warranties
- audit, standards and training

Any new programme of energy efficiency installations must be underpinned by a robust quality assurance framework that consumers can have confidence in, with a simple, accessible path of redress, and real compensation when things go wrong. Getting this right is crucial. If early adopters have a poor experience this risks creating a negative perception of the schemes which could mean other consumers are unwilling to get involved.

### **Partnerships and capacity**

The draft strategy acknowledges the role partnerships will play. Informal community groups, voluntary organisations, and independent advice and support services are amongst those who can directly support and encourage consumers to engage, change their behaviour, and have measures installed where appropriate.

However, the Welsh Government should also acknowledge that **partners will themselves face barriers to supporting the strategy**.

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<sup>6</sup> Consumer Focus *What's In It For Me?* (2012)

<sup>7</sup> Citizens Advice *Quality assurance in energy efficiency and low carbon schemes in the domestic market* (2015)

Many organisations are finding themselves stretched by the difficult economic climate, which has caused cuts to funding, at the same time as driving increases in the number and complexity of issues their clients or members face. It is a risk to assume that these potential partners have both the incentive and capacity to take on the promotion of energy efficiency. Without clear funding routes, and well defined agreements with partner organisations, we cannot assume they will be able to play the role the Welsh Government is hoping for.

There will also need to ensure partners have the **knowledge and skills** to effectively communicate the benefits of energy efficiency, and to foster trust and enthusiasm amongst consumers. Clients often come to organisations like Citizens Advice at a time of wider financial crisis, when the most immediate concern is more likely to be debt or benefit issues rather than their energy bills. The time needs to be right to encourage these clients to think about reducing their costs through behaviour change or going through a potentially daunting process of applying for measures.

Effective interventions like Energy Best Deal Extra, one to one sessions with consumers to help them switch or reduce their usage, are also more costly. They also require a commitment from the client to return and have a detailed conversation about something that was not their most pressing concern. This can be done most effectively once we have resolved their primary problems.

Funding and support for organisations like Citizens Advice to support the energy efficiency strategy should **recognise that clients often face multiple problems**, and need to be persuaded to focus on this specific area with recognition of the benefits of doing so for their wider circumstances. The final strategy should be clearer about **how the Welsh Government will support, train, incentivise, and motivate partner organisations** to engage with the promotion of energy efficiency.

Citizens Advice [\*Taking Control\*](#) (2014)

## **88 Energy Savings Trust**

Area of action 1.2 – Working through others with influence to encourage action on energy efficiency. Further to the report cited in the consultation, an Innovate UK project is underway with a number of partners looking at the link between energy efficiency of a home, as detailed through the EPC, and the property value at times of purchase and selling.

### **The energy efficiency delivery framework: ECO and other programmes**

ECO is currently supplier-led with energy companies obligated to deliver energy efficiency improvements to homes in order to reduce carbon emissions and fuel poverty. Although we expect ECO post 2017 to work along similar lines as the current model, we do not know entirely what shape it will take. We would like to see flexibility in the energy efficiency strategy for Wales to be able to utilise ECO3 in whichever format it appears. We are calling on UK Government for that format to be more focused in the consumer experience.

Information needs to be specific for both the home and the householder. While general information can cause some action, tailored information results in a greater commitment and actions.

### **Ensuring effective targeting with best use of big data**

A crucial part of the energy efficiency strategy which is not explicit in the consultation is the collection of data to allow effective targeting and reaching those who most need help, or targeting support effectively. One of the big costs for energy efficiency now is to find and prioritise the homes that most need help. The need is for government to be looking hard at how information collected from – for example – energy performance certificates can enable us to do that as cost effectively as possible. In Scotland for instance, Home Analytics is proving invaluable to Local Authorities to facilitate targeting the fuel poor, extending this to Wales would help improve targeting and support provision as well as providing a more accurate baseline of need in Wales.

The Scottish data use the EPC database to produce much better insight into the efficiency of its housing stock. We strongly suggest Wales investigate taking control of the database for properties in Wales, especially as the current contract for the administration of the database will come to an end in the next two years.

Energy efficiency in housing is also a health issue- many diseases are caused or exacerbated by cold, mouldy and damp homes. These illnesses cost the NHS billions of pounds a year<sup>8</sup>. EST welcomes this year's National Institute of Clinical Excellence (NICE) guidelines on energy efficiency and excess winter deaths, and its benefits for health and wellbeing and supports their recommendations that special training and awareness of the health risks associated with energy inefficiency is needed for both the public and professional bodies.

### **Smart meters**

Smart meters will make energy visible to consumers once again, as in the days of coal. The ongoing smart meter rollout offers several opportunities to promote energy saving and efficiency. In order to fully reap the benefits of smart meters customers have to be able to fully access their own data and share it with whomever they choose, allowing them to make informed choices. Sharing will allow organisations providing energy saving and energy demand management services to innovate and provide a range of services tailored to the householder and their home. New tools are being developed. EST has developed and successfully trialled the Smart Meter Advice Programme (SMAP) for householders so they can use their homes' smart meter data to provide personalised energy saving advice by email, in-home and over-the-phone. As the roll out picks up pace we are keen to see that early learning is quickly used to maximise this opportunity in Wales

Area of actions 1.7 – Ensuring the private rented sector take action to meet the obligation placed on them by the UK Energy Act (2011). A clear strong minimum energy efficiency standard for private rented homes needs to be set. Landlords need to be encouraged to invest to improve the efficiency of their stock. This is a

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<sup>8</sup> *Local action on health inequalities: Fuel poverty and cold home-related health problems, Public Health England, 2014*  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/357409/Review7\\_Fuel\\_poverty\\_health\\_inequalities.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/357409/Review7_Fuel_poverty_health_inequalities.pdf)

win-win ensuring warmer homes and lower bills for tenants (often those on lower incomes) and improving the value of the stock for landlords. We believe that F and G banded homes should not be on the rental market and landlords of these properties should be required to invest to bring them up to a decent standard, aligned to the WHQS for social landlords.

### **Community energy programmes**

Area for action 1.10 – Aligning community based activity to our wider community based action. A key part of an energy efficient economy is community-based renewables projects providing clean, cheap energy at a local level. The likely cuts to renewable energy subsidies will change the economics for home owners and communities. We need an urgent focus – working with business – on how new models can be developed that can drive uptake of renewable energy and energy efficiency, particularly at the community level. This means bringing the private sector together with communities and partnering with community groups as an effective way to promote energy saving in local areas, so long as they are given proper backing and long term funding. A community-based approach can work very effectively alongside the use of “big data” to target energy efficiency programmes.

Community volunteers can be effective in mobilising local knowledge to identify specific households and individuals in need of support, motivating and normalising investment in energy efficiency and in providing independent advice or verification around energy efficiency. This approach can be especially effective in identifying hard-to-reach customers who would not otherwise respond to mass marketing campaigns.

In order to maximise their potential these programmes require steady finance for marketing and an appropriate time period. Given that some reports have suggested very high customer acquisition costs for ECO, there could be scope to run a referral mechanism into national schemes (supported by some kick-start funding for community initiatives), offsetting marketing costs for energy suppliers who would direct referral fees into a fund for community energy efficiency work. We would like to see Welsh Government working with the energy companies to pilot a scheme that opens up longer term, stable funding streams to these projects, meeting energy efficiency and fuel poverty strategic objectives.

Programmes such as Ynni'r fro have provided a wealth of information on community based renewable energy generation and this needs to be documented and used as a knowledge bank, allowing others to access the information to improve future activity in this area.

## **89 Glass and Glazing Federation**

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## **90 WWF**

The actions for household energy efficiency in this section are advice and assessments. WWF Cymru agree with need for this we would expect to see the anticipated emission impact towards overall emission reduction goal that these measures would deliver. In 2010 Climate Change Strategy and Action Plan there was an attempt to quantify these measures. Our analysis provides some assessment of NEST – it contributes a very small proportion of emission reduction from this sector. Therefore advice and support only has a small role when compared to other measures such as grants for installations measures. We therefore recommend that more detail is needed on the role of advice and support and how contribute to the overall emission reduction targets for this sector.

## **91 Egnida**

Egnida has direct experience in the market areas and most of the initiatives mentioned in the consultation and has previously provided in depth feedback to the process and associated initiatives. As such, we are fully supportive of the actions presented through 5.1 to 5.5 of the consultation as referenced in Questions 1 to 5 and the associated dynamics and impacts.

## **92 Federation of Small Businesses**

### **Overcoming barriers**

As the strategy rightly identifies, the majority of firms operating in Wales are micro businesses and there remains a significant opportunity to lower Wales emissions through this sector. We know from the FSB 2015 survey that amongst members across the UK *“the main issues preventing many small businesses becoming energy efficient are leased/rented premises (45%)”*.<sup>3</sup> We are therefore keen to see Welsh Government place greater emphasis on working with landowners to ensure Wales’ non-domestic properties are upgraded.

Elsewhere, better promotion of the benefits of energy efficiency measures to small businesses should be incorporated into the other streams of business support. Energy costs are unlikely to be a significant factor of many small and micro businesses costs<sup>4</sup>, so the benefits of undertaking investment in this area may be less apparent. Many smaller businesses expect to see a quicker return on investment than larger, perhaps more established businesses, and such features should be designed into schemes designed to target small and medium-sized companies.

<sup>4</sup> Ibid.

## **93 Calor**

As identified by consultation Questions 1-6, the Welsh Government has outlined a number of areas of action within which energy efficiency needs to be addressed.

While the majority of these fall outside of Calor's specialisms, we would, however, emphasise the need for a specific focus on rural Welsh areas where the housing stock is often less efficient and transportation costs are higher. Such barriers need to be overcome – in part by embracing new technologies – to ensure that all parts of Wales are able to benefit from improved energy efficiency.



## Supply chain development

**“We have the supply chain throughout Wales to deliver energy efficiency improvements: to buildings, products and processes, and those businesses go on to grow and export their expertise and know how.”**

### **Key areas of action:**

- 2.1 - Continued support for installers to diversify, achieve the necessary accreditation and identify opportunities for collaboration.
- 2.2 – Strengthened support for supply chain development.
- 2.3 – Supporting supply chain development through delivery of our programmes.
- 2.4 – Action to ensure quality of delivery.
- 2.5 – Entrepreneurship.

**D) Responses in full to question 2) Do you agree with the areas of action set out in chapter 5.2: Developing the supply chain?**

## 1.Eco Home Centre

- 2.1 Support for installers to diversify etc.  
All installers MUST have training in Underpinning Knowledge of buildings. Recognising building types, understanding how they worker, common maintenance problems, the effects that changes / improvements might have. They must also be able to justify and decisions and the rationale that underpins it.
- 2.2 Strengthen support for supply chain development  
Again we need to have correct specification based on a more holistic approach, for example health considerations as well as energy efficiency. This means development / use of different materials / products that are currently used. Training and robust detailing driven by Government needs to used to drive this development.
- 2.3 Support supply chain through WG programmes  
This is key and needs to be driven by RISK assessment (via STBA work) and a HOLISTIC stance that covers FGA requirements. So addressing moisture, Internal Air Quality etc needs to be a WG specification criteria and then this is backed up by contracts that encourage adoption and hence provide a market for newer, better, natural and local products.
- 2.4 Quality of delivery  
On paper PAS2030 and other warranties offer protection, but in the real world they are either not tested legally, or are pretty worthless due to the complexities of building physics. So we must use RISK assessment rather than reliance on worthless paper comfort blankets. We must address the lack of underpinning knowledge in the construction industry. Builders MUST understand basic building physics, material compatibility issues, common 'improvement' issues etc. Ideally any builder working should have a minimum qualification to be able to do the work and anything done on a solid wall building needs to have additional modules completed and passed.
- 2.5 Entrepreneurship  
In order to get the right products made we need entrepreneurs to lead on this, BUT they do need to have the support from the specification teams in WG, Local Councils, Housing Associations in order to free up investment monies.

## 2. Neath Port Talbot Group of Colleges

Some very content and outline, in terms of support for supply chain development. There is very little detail on how the sector in WALES will be developed and how those organisations who have employer engagement can support. There needs to be a joined up approach, and note there was no mention of Business Wales or Construction Futures Wales. As NPTC Group, we have adopted an innovative approach, and have developed A Fire sprinkler centre in Wales, the first in the UK, this is currently having more interest with English contractors, than Wales based.

The same can apply with Smart Meters, in terms of the Wales Based manufacture and WBL providers playing a bigger role in the qualifying of the installers. There is rightly a high dependence on quality builders to offer solutions, but they must be educated, in the new technologies on how they can be used, and where they cannot, as they have been examples under ARBED, where insulation was applied to walls, that had detriment to the structure, as well as reduced credibility of the approach. We also need to look at a registration scheme for approved contractors and installers, like the competent builder scheme with FMB.

We also need to be aware, given the GB nature of the Construction industry, the possible impact of the removal and changes to the green policy in England. This could create gaps in the capability of the sector to respond to demand in the short term, but present opportunities for the Wales based sector long term...we need to accommodate the development of this approach within the policy.

We need to look at the support from legal profession in Wales, to advise and safeguard the supply chain, as this technology develops. It would also open up opportunities to look at joint ventures to build strong and robust capability in Wales, given the high proportion of micro SMEs

### 3. Gwynedd County Council

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### 4. Certsure

The actions proposed seem to engage with all sectors of the supply chain and help develop it in such a way that quality is the primary driver. This should provide confidence throughout the supply chain, and that should lead on to consumer confidence and encourage adoption of new technologies and help with shifting consumer culture into making energy efficiency part of everyday life.

As an organisation that is approved to operate, through its NICEIC & ELECSA brands, contractor registration schemes we would endorse and encourage the proposed action to support installers throughout Wales in order to overcome the limited availability of a competent, skilled workforce in Wales.

### 5. Institute of Civil Engineers

It is considered that there is an over-emphasis on support for installers in rural Wales. Again if this is truly about increasing energy efficiency then the bigger impacts will be gained from what is done in the towns and cities.

- Great concern is raised about how Green Growth Wales can increase renewable energy capacity in Wales as stated, when the UK Government has been dismantling the subsidy system which was designed to encourage investment in clean technologies. This now sounds to be an impossible aspiration.

- To ensure sufficient confidence within the potential supply chain these organisations will need to be satisfied that any measures taken by Welsh Government are long term. These organisations will have seen the damage done by the UK Government to developers installing renewable energy.

## **6. Torfaen County Borough Council**

The actions being proposed are encouraging, but there are no reassurances for Local Authorities regarding future funding and the sustainability of this funding.

2.5 What does this action mean? It is too vague, so would welcome more detail on the type of support that will be offered to support entrepreneurship.

## **7. NSA Afan**

- 2.1 We support this statement
- 2.2 We support this statement
- 2.3 We support this statement
- 2.4 We support this statement
- 2.5 We support this statement

## **8. Royal Town Planning Institute**

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## **9. Saint Gobain**

Yes, Saint-Gobain agrees with the actions set out to develop the supply chain. We agree that more needs to be done to link energy efficiency policies for retrofitting buildings into an already successful RMI market. The same comments apply as given in response to question 1.

## **10. Coed Cymru**

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## **11. Tabitha Binding**

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## 12. Renewable UK

Section	Summary	Comment
2.1	Continued support for installers to diversify and achieve accreditation	Agree, although no actions are defined
2.2	Strengthen supply chain support	Agree, although no actions are defined
2.3	Use programmes to support supply chain	Agree, although the methodology to ensure that new opportunities are provided for Welsh businesses is not stated
2.4	Ensure quality of delivery	Agree, but there is probably a missed opportunity here to highlight the potential of working through 'trusted traders' or other online rating tools in order to support high-quality installations
2.5	Entrepreneurship	No new action stated but the generic aim of supporting business growth is laudable

## 13. British Gas

- 2.1 British Gas has over 2,200 employees in Wales, with 1,300 at our award-winning Cardiff contact centre, and 400 service and repair engineers who are active in Welsh homes every day of the year. This combined workforce brings around £50m into the Welsh economy.
- 2.2 We are also a Welsh Government Anchor Company, and have worked recently with the Department for Economy, Science and Transport to provide energy efficiency support for SMEs in Wales through our Energy Efficiency Fund.
- 2.3 For more than three years, British Gas has, as managers of the Welsh Government's Nest programme, worked with small and medium enterprises across Wales to build the capacity of the supply chain.

- 2.4 All the requirements of the scheme - in terms of gas, LPG, oil, solid fuel and biomass heating systems plus loft, cavity, and external wall insulation measures – are now met through this supply chain.
- 2.5 Nest has achieved this through meeting regularly with the local supply chain. In addition, we have been able to create around 20 apprenticeships in local communities.
- 2.6 We have delivered around 24,000 energy efficiency measures in Wales through the Energy Company Obligation since January 2013. Along with Nest, the future of this scheme will have the most material bearing on the Welsh energy efficiency supply chain. We would welcome early certainty from UK Government on what might follow ECO, to mitigate any risk to the workforce both within British Gas and the wider supply chain.
- 2.7 In particular, we would like the UK Government to clarify the treatment of ‘carry-over’ of measures completed under ECO into any future scheme. We plan our ECO delivery up to two years in advance, and believe that a 24-month extension of the current ECO would ensure households continue to benefit from measures, and mitigate the risk to the supply chain of a potential hiatus in delivery. It would also allow the UK Government the time to fully consider and consult on a scheme to follow ECO that might include more substantial reform.
- 2.8 In terms of design of future energy efficiency schemes at scale, the roll-out of relatively simple-to-install measures – such as loft insulation and condensing gas boilers – is something that energy suppliers like British Gas are well equipped to carry out cost effectively. Furthermore, energy suppliers often have a well-established infrastructure and supply chain for carrying out the large scale roll-out of this sort of energy efficiency measure.
- 2.9 Energy suppliers are generally less well equipped to deliver more targeted energy efficiency programmes aimed at particular households, or requiring residents to qualify for assistance by virtue of their income, or receipt of particular benefits.
- 2.10 We work closely with Resource Efficient Wales and are supportive of the Welsh Government’s aspiration to reduce bad practice in cold calling, and to improve the consumer experience and trust of energy efficiency programmes.
- 2.11 While increased focus on the advice provision of Resource Efficient Wales is likely to help improve trust, it is less likely to reduce the level of door-to-door promotional activity. We would expect this to continue, as long as there are incentives for the supply chain to identify households eligible to participate in schemes such as the Energy Company Obligation and Feed-in-Tariff.
- 2.12 The strategy is rightly keen to promote the development and usage of the Welsh energy efficiency supply chain. Through our work to deliver the Welsh

Government's Nest scheme, we have included targets in our contracts which ensure that we use local installers, and where possible, locally produced materials.

- 2.13 The requirement to use the local supply chain works particularly well in a sub-contracting model, such as that which we use to deliver the Nest scheme. It addresses the concern that installers might be relocated from other parts of the UK in order to benefit from Welsh Government-funded programmes.
- 2.14 While the requirement to use the local supply chain can work well in many instances, there are occasions where it presents a barrier to the delivery of energy efficiency schemes. For example, larger organisations within the supply chain – such as British Gas – have the scale and expertise to successfully deliver large-scale external wall insulation programmes. However, as this expertise may not be located in Wales, it would not be possible to deploy it to benefit communities through community energy efficiency and regeneration projects.
- 2.15 An additional barrier is presented by the limit on the size of an external wall insulation scheme to a maximum of 200 properties. While we appreciate this limit may be intended to ensure that funding reaches localities in all parts of Wales, it prevents the implementation of larger scale programmes of retrofit that might be more cost effective and would allow organisations within the supply chain such as British Gas to deploy their scale and expertise to most effectively benefit communities in Wales.
- 2.16 Looking at business energy efficiency, it should be recognised that non-domestic premises are significantly more varied than domestic properties. There is a vast range of technologies and options for businesses to improve their energy efficiency, and this generally requires specialised knowledgeable and often expensive survey resource to support assessments of energy efficiency. These individuals are drawn from a relatively small supply chain, and they may not be based in Wales.

## 14. One Voice Wales

Yes. It is particularly important for community and town councils to be engaged in the drive to encourage and consolidate the contribution of locally based suppliers to the efficient energy sector, and in particular for them to have an opportunity to participate in Green Growth Wales, either directly or indirectly.

## 15. Natural Resources Wales

Yes

## 16. UKLPG

## 17. Wolseley

The introduction of UK-wide programmes such as the Energy Companies Obligation, Renewable Heat Incentive Scheme and Feed-in Tariff have meant that the market for the installation of energy efficient products has grown substantially over the last few years.

However, if the Welsh market is to benefit from this potential growth the Government will need to ensure that there is a fully trained workforce ready and able to deliver new microgeneration and renewable technologies. In addition – and perhaps most importantly – we need a consistent framework of measures to support the sustainable uptake of new technologies, rather than the ‘stop/start’ approach to incentives that we have seen over the past.

There is no need to train a whole new workforce to deliver these technologies. With some additional training, the existing network of over 120,000 heating and electrical engineers can be deployed as microgeneration and renewable technology installers. Indeed, many are already making the transition.

Unfortunately, the majority of the supply chain is still reluctant to spend time and money on retraining unless they are convinced there will be significant consumer demand for new, more energy efficient, products. However consumer demand for new products is still invariably determined by the advice given to them by their installer; the average homeowner is not informed enough about the technologies available to know what type of boiler to buy, or whether they could save more money in the long term by installing solar panels or heat pumps.

This brings us to the crux of the issue – if installers aren’t trained to recommend and install more energy efficient products, homeowners aren’t going to buy them.

In addition, stability and continuity are vitally important factors in developing a successful, buoyant supply chain. If business can see the benefits they will get from investing in the skills needed to deliver renewables then the vast majority of installers would willingly sign up.

However, after the cancellation of successful government schemes – including CERT, CESP and the Green Deal schemes – and further cuts to the Feed-In Tariff announced recently, we are facing a crisis of confidence in the industry.

Our customers tell us that they have been burnt paying for training for various government schemes only for them to be scrapped a few years later. Installers also tell us that customers are confused by the plethora of accreditation schemes out there and – with the possible exception of the Gas Safe scheme – most homeowners don’t understand the difference between the various card schemes and qualifications that installers may hold.



We would therefore urge the Welsh Government to work with DECC and Ofgem to rebuild confidence in the sector to make sure that the industry is investing in the skills it needs to deliver significant change. This means an unwavering commitment to the schemes that have been developed in recent years, and resisting the temptation to introduce yet more accreditation schemes for installers without first considering whether existing schemes can be adapted.

2.1 - Continued support for installers to diversify, achieve the necessary accreditation and identify opportunities for collaboration.

As we set out above, we strongly support the statement that installers are absolutely critical to the development and delivery of any energy efficiency strategy, particularly in stimulating more market driven demand. We also agree that any strategy must provide opportunities for all installers and not just the bigger organisations.

In our Plumb Center ‘Manifesto for a more energy conscious society’<sup>5</sup> we have calculated the cost of becoming an accredited installer of gas boilers and three renewable technologies to be in excess of £16,000. This figure does not take into account the cost of lost income during training and assessments. In addition, installers have to pay an annual renewal charge which could easily exceed £1,500. They are also subject to regular re-assessments.

The burden of these costs is undoubtedly a major barrier to installers and small businesses entering the renewables market. The result of this situation has been a steady decline in installers accredited to fit renewable heating and microgeneration products.

Wolseley is working with training and certification bodies to try to minimise the impact of this burden and one of the principal complaints of installers regarding the relatively high level of content duplication between courses and assessments.

Wolseley are also in the process of establishing a group of recognised ‘Energy Efficiency Installers’ who will have access to a range of benefits including training on ‘soft skills’ such as consumer engagement and communicating product features and benefits. Plumb Center would be delighted to partner with the Welsh Government in these initiatives.

2.2 - Strengthened support for supply chain development.

We recognise and applaud the results of Resource Efficient Wales, Construction Futures Wales and a number of other Welsh Government programmes including Welsh Government Warm Homes – Arbed and Nest. Of course, any assistance is readily available, particularly when dealing with those most in need.

2.3 - Supporting supply chain development through delivery of our programmes. See above.

2.4 - Action to ensure quality of delivery.

We fully support initiatives that provide consumers with confidence and choice. However, if we are to get the scale of uptake required to meet the challenging targets in reducing carbon emissions and increasing efficiency then there must be a

selection of measures to suit all circumstances. Plumb Center has developed the 'Sustainability on a Budget' concept which defines a series of relatively low cost measures that provide tangible benefits to consumers.

A good example is heating controls. The world of heating controls has long been considered the 'cinderella' of the energy efficiency world, treated rather harshly on the basis of outdated products and research. Research carried out at the University of Salford on behalf of BEAMA has shown that the addition of a simple room thermostat, plus thermostatic radiator valves (TRVs) to a conventional heating system could reduce energy costs by 40%. Additional research has shown that a modern 'TPI' room thermostat can yield even higher savings. Using a TPI thermostat together with TRVs can increase the overall savings to 53%, a further 13% reduction in running costs compared to the tests using a more conventional room thermostat.

The findings of the report 'Consumers and domestic heating controls' carried out by Consumer Focus in 2012 showed that only 29% of homes had a full set of heating controls featuring a programmer, a room thermostat and thermostatic radiator valves.

Of course, any measure is only effective if properly and regularly used. The development of 'Smart' controls have revolutionised the use of heating controls, with features such as voice-recognition and remote access.

Condensing boilers offer greater efficiency when operating in condensing mode and this happens when the flow return temperature is at or below the dew point (55 degrees c). A modern thermostat can ensure that the appliance is working most efficiently by eliminating the time that the flow return temperature exceeds the dew point. This relatively simple and lower cost measure can make significant gains.

We believe that these 'entry point' measures, which should be both affordable and practical for the majority of householders, will act as a stepping stone towards perhaps more ambitious and capital intensive measures. Since these measures utilise the existing skills of heating installers, the scheme can provide benefits to all stakeholders with a minimum of intervention.

Communicating with installers has been a challenge for many because of the disparate nature of the market. Plumb Center can play a pivotal role as a trusted communications partner across the trade counter through our publications, events, websites and social media.

5 <http://www.wolseleysbc.co.uk/Download.ashx?id=21311>

## **18. James Coulter**

-

## **19. Mineral Wool Insulation Manufacturing Association**

MIMA notes that Wales is rare in having an energy efficiency supply chain covering all aspects from manufacturing through to installation, within its boundaries. Supporting of the end-to-end supply chain will enable the delivery of high quality energy efficiency programmes, and so we welcome the measures described to maintain this.

We also support the goal to work with builders and installers to stimulate demand and encourage householders to see energy efficiency as home improvement. However, the strategy does not set out any particular goals in terms of the scale of future delivery or the principles guiding delivery. For example, we think there should be clear statements about how many homes the Welsh government wishes to see insulated and by when. Similarly, it is well established that a “fabric first” principle should be embedded in energy efficiency programmes, and we would welcome specific references to this in the strategy.

## **20 Castleoak**

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## **21 ACE**

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## **22 Newydd**

-

## **23 Isle of Anglesey County Council**

-

## **24 Energy Effective Ltd**

-

## **25 City & County of Swansea**

-

## **26 The Detail Hub**

Yes

### **27 My Green Home Ltd**

Yes

### **28 Ynni Cymru Energy Solutions**

Again there needs to be more involvement with professional energy assessors (SAP/SBEM etc) in these areas. There also needs to be an introduction of some legislation for payments scales for companies who use energy assessors for EPC production for solar panels (as an example). Too many companies use the 'pay when paid' payment terms - not good for many assessors who are invariably 'one man bands'.

### **29 The EPC Man**

Yes, providing the focus is on providing solutions that meet the homeowners or tenants needs.

### **30 Bond Demolition Ltd**

Yes, but not to the exclusion of everything else proper consideration technical and financial given to persons directly effected by property losses in value due to the siting of pv panel areas and windmills

### **31 Colin Edwards**

-

### **32 Wrexham County Borough Council**

-

### **33 Gaia Renewable Energy Ltd**

It would be nice to see a governing body for Wales providing training and advice in the various disciplines.

### **34 Green Renewable Wales Ltd**

-

### **35 Powys County Council**

Yes, although if Wales has a strong forward thinking energy efficiency vision, then I think that consideration should be given towards positioning and maybe collaborating with international markets. Also investment in new product development and innovation is important (as mentioned in subsequent sections). We are a very rural Authority, and some of our contractors are not local. I would like to see initiatives providing the support to work with local business interested in transferring from traditional heating business to an air source heat pump installation business.

### **36 GATC Ltd**

Accreditation will need to be fully MCS, NOS & QCF aligned, to ensure competent installers carry out safe and appropriate installations that customers can subsequently enjoy appropriate contributions towards, as well as free or nearly free energy.

### **37 Celsius Energy Ltd**

There is a severe problem with utilising the existing supply chain in Wales. An example of this would be Arbed (North Wales specifically). Wilmot Dixon manage this scheme and talked about how the scheme would be great for local SME's and yet the tender process to be involved only accepted those companies who were accredited by CHAS, despite the fact that most SME's are not but have their own robust H&S Policies. The contract was awarded to a large company from England... The quality of the work is poor, to the point where-by problems will be caused with those properties in years to come. I would appear that local businesses are being overlooked for the projects that are being outlined!

### **38 C&K SUPPLIES**

-

### **39 Llangynog Memorial Hall**

-

### **40 Dr James Henshall**

Yes

**41 John Griffiths - Chartered Surveyor**

Yes.

**42 Equity Redstar**

Yes

**43 North Wales Housing**

-

**44 NSA Afan**

YES I support these recommendations. EST have a positive role to play in delivering these outcomes

**45 T L C Energy Limited**

Yes, plus Funding/Incubation Fund for start-ups and Entrepreneurs

**46 ECO CARBON TRADERS LTD**

-

**47 Asset Energy Solutions Ltd**

-

**48 WDS Green Energy**

I agree

**49 Torfaen CBC**

Yes

**50 Warmwalls Ltd**

Yes

#### 51 Gas Tech Wales

I disagree with installers diversifying, diversifying means that tradesman which have little experience within the trade area are involved in thing they don't fully understand. i believe that apprenticeships should be built so that the future tradesman are trade specific

#### 52 GB-Sol Ltd.

Yes

#### 53 South East Wales Energy Agency

-

#### 54 BDT installations

-

#### 55 Salix Finance

Yes

#### 56 Aberystwyth University

If this is financial support, then I disagree with it. Leading by example would be a good step - if through its procurement and purchasing Welsh Government supported these points then it would be in a good position to publicise good case studies. Otherwise interventions in the market will have little or no effect at best and at worst could drive perverse behaviour in gaming the system to gain funding.

#### 57 William Morris Energy Assessments

I agree

#### 58 Geraint Williams Plumbing & Heating Ltd

-

**59 URBAN SOLAR LTD**

-

**60 Peter Jackson**

-

**61 Ignite Mechanical Contracting Ltd**

-

**62 Jamie Black OCDEA/DEA/GDA**

-

**63 Westflight Ltd**

-

**64 Pembrokeshire Power**

-

**65 Greener Heat**

-

**66 SAM Drylining Ltd**

3.1 - Yes

3.2 - Yes

3.3 - Yes

3.4 - Yes

3.5 –Yes

**67 Dean Crocker Energy Assessor**

Yes



## 68 Biofutures Ltd

Encouraging "every Tom Dick & Harry" to get involved is not a safe or secure strategy and will in our experience actually result in a lowering of quality and also supply chain and accountability issues as happened during the PV rush many of those companies have already gone out of business causing many issues for consumers.

## 69 E W Consultancy

Agree

## 70 Christopher Williams – Individual

Yes

## 71 Business Wales

Generally agree.

## 72 Institution of Mechanical Engineers

Many of the actions identified in this section are not new, they are just identified as for being in use in the Energy Efficiency sector, and this will not drive real change. The Institution of Mechanical Engineers' 2015 '*Heat Report*' makes several recommendation and there is an opportunity for the Welsh Government to lead the way in its implementation. This could begin as a requirement in specifications for Welsh Government and public sector procurement to show key leadership in the sector.

Recognise the key role of the installer community and instigate a mandatory national installer 'sustainable heat' certification scheme.

With their privileged position in advising customers, competent and trusted installers are key to a successful sustainable outcome for renewal of the UK's heat infrastructure. It is essential that Government recognises this and ensures that they have the knowledge, expertise and skills to take a holistic view of a building's heat systems. Both in terms of energy demand reduction and sustainable supply, and to recommend installation of equipment that fits harmoniously with that view. In order to achieve such an aim, a compulsory 'free' national training scheme should be instigated by Government alongside a mandatory competence registration, similar to the CORGI certification and registration (now 'Gas Safe Register') established as a legal requirement for gas installers in 1991. (*Institution's 'Heat Report' - 2015*).

## 73 Smart Energy GB

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## 74 Community Housing Cymru Group

### **Area of action 2.1 - Continued support for installers to diversify, achieve the necessary accreditation and identify opportunities for collaboration.**

Accreditation is vital. It is essential that energy efficiency measures are installed correctly for the full benefits to be realised. Incorrect installation can lead to detrimental impacts rather than improved conditions for householders and reduced CO2 emissions. To ensure that technical problems can be overcome, installation of low carbon technologies should involve a good quality, consistent pre-works survey to establish the standard and requirements of properties before site works commence. Furthermore, an appropriate design then needs to be conveyed to those undertaking the works on site so that time taken to provide good quality design detail is not lost on site. Good quality workmanship is also essential to allow design to perform as planned. Attention must be paid to intricate detailing e.g. the difficulties when dealing with solid walled properties to avoid water penetration, etc. This can be time consuming to apply on site.

In order to future proof the supply chain, we must make sure that the supply chain is not underdeveloped and fragmented. There can be limited amounts of time to develop projects and gaps between large energy efficiency programmes can have negative impacts on supply chains. We must have long-term thinking, trust in joint working, one stop shops, coordination, cooperation, quality standards and control over the interface. We must not have piecemeal delivery. Renovation for energy efficiency must be coordinated with building system renovation to avoid poor use of resources and inefficient building performance. Suppliers only provide half the solution - not always noting the downsides and how to get around problems. Necessary building and industry capacity, the size of the supply chain and a lack of reliable suppliers available to assist with planning and carrying out work are all barriers to whole house retrofit. Solution development, design integrity, coordination and the sharing of best practice are key factors to helping develop the supply chain. The supply chain needs to be sufficiently geared up to produce and recognise whole house plans and be able to deliver whole house retrofits cost effectively over the lifetime of the dwelling. Whole house retrofits should be implemented in a manner that is not wasteful and is able to capitalise on the opportunity to protect against future climate change impacts (flooding, overheating etc.) and also ensure occupants can lead a more sustainable lifestyle e.g. through the provision of recycling, water harvesting, vegetable growing facilities, etc. In order to work together, bridges must be built between the industry players (e.g. manufacturers, distributors and installers) and markets (e.g. social housing landlords). CHC welcomes the work of the Energy Saving Trusts supply chain team and generate Wales network in particular.

### **Area of action 2.2 – Strengthened support for supply chain development**

CHC agrees. CHC would have liked to have seen more reference to the ability to use local labour in the consultation document. CHC does welcome the reference to

the Wellbeing of Future Generations Act throughout. CHC also supports how the strategy is demonstrating application against the 5 principles outlined in the Well Being of Future Generations Act. Through the Well-being and Future Generations (Wales) Act 2015, the Welsh Government can help ensure that we continue to improve the wellbeing of all our citizens and make Wales a more socially, economically and environmentally sustainable place to live. Welsh Government also have the opportunity to look at supply chain issues in regards to the duty in the Wellbeing of Future Generations Act, which should explicitly recognise and give regard to the international impacts of Wales through the supply chains of the sectors in Wales (the activities of Welsh businesses abroad, and the carbon emissions produced in Wales). There is a need to achieve the wellbeing of people within the environmental limits of the planet in a way that does not compromise the wellbeing of future generations. The implications of Welsh sustainable development policy does not end in Wales, but rather extends globally.

Investment in retro-fit can be a major catalyst for regeneration, providing economic impact with positive effects on supply chain SMEs and the labour market, when linked to training and skill development. CHC proposes that the Welsh Government's established work on Community Benefits is developed into a legal requirement, through the wellbeing of Future Generations bill, to ensure that all public bodies in Wales consider how their procurement activities contribute to sustainable development and environmental, social and economic benefits. There are already a number of examples throughout Wales of purchasers securing additional social, economic and environmental benefits as part of procurement processes. Community Benefits can contribute to growth through the recruitment and training of economically inactive people and through opening up contract opportunities for smaller organisations. The CHC Group supports the continued development of the i2i approach and the Can Do Toolkit, and its extended application across the public sector in Wales. In the years between September 2008 and December 2011, i2i have calculated that this work led to the creation of 2,581 job and training opportunities. Therefore, CHC welcomes the development of the Can Do Toolkit 2 – SME-friendly procurement. Linking regeneration to housing development, renewal and refurbishment can contribute significantly to the economic recovery of communities by providing targeted recruitment and training opportunities at a local level. We should be promoting ethical, fair trade and sustainable procurement practices and deliver public services which meet the social justice and equality needs of the citizens of Wales. WG could also consider enabling pan-Wales procurement of key construction materials to drive down costs.

There is also the issue of embodied energy which is the energy used in manufacture and movement of materials – there is a need to reduce carbon impacts from the manufacture and supply of construction materials, space and water heating, power for appliances and lighting, water and sewage treatment, and transport. It is vital that all agencies involved in development consider ways to reduce the carbon impact of construction and homes once completed – this will involve continuing to develop skills in the housing sector around energy efficiency, on-site energy provision and others. Effective procurement is a major part of what housing associations are doing.

### **Area of action 2.3 – Supporting supply chain development through delivery of our programmes.**

CHC agrees.

### **Area of action 2.4 – Action to ensure quality of delivery.**

This is a big barrier and CHC agrees that quality of delivery is vital. CHC would like to reference the work that the BRE in Wales have been undertaking in relation to Understanding heat losses from solid Walls, investigating how solid walls work, their real 'U' values and how moisture tracks through them. This work should help to inform policy at Governmental level and also highlight 'Un-intended Consequences' of conventional interventions. Furthermore, Peter Draper at Rounded Developments has been undertaking research into the Responsible Retrofit of Traditional Buildings-this work is also important for understanding how well solid walls perform and any skills gaps that need to be addressed in undertaking energy efficiency works to properties. Learning from such studies should be fed directly into the supply chain.

The issue of 'hard to treat' homes remains a difficult problem in Wales, largely due to the high number of urban properties built before 1920 and the number of poorly constructed rural properties with solid walls. The challenge from the existing stock is enormous and one which poses problems across Wales due to the various age ranges of the stock and the varying degrees to energy saving techniques adopted. Hard-to-heat homes are going to be the hardest to upgrade. The Welsh Government needs to work with its partners to address skills gaps in the energy sector in particular. The particular age profile and state of existing housing stock, still including solid walled dwellings – requires grant targeting and specific regeneration schemes.

Barriers include quality assurance control, assurance of performance, a lack of information on the existing structures, potential hazardous components, location of utilities, access problems and disturbance (e.g. solid wall insulation, under floor insulation and noise and air pollution restrictions, etc.) to and from the infrastructure, space constraints, measures reducing the living space such as internal wall insulation, appearance where there is a need to keep the street scene intact, such as with Victorian Terraces, barriers around technical complexity include hard to treat properties, complexities around measures (e.g. Internal Wall Insulation in kitchens, stairs, doorways, etc.), knowledge of building physics, etc. If factors such as trust are absent from information on energy efficiency, inefficient choices may be made.

Welsh Government might find a report entitled "breaking barriers-An industry review of the barriers to Whole House Energy Efficiency Retrofit and the creation of an industry action plan" useful. A link to the summary report from March 2014 can be seen in the footnote below<sup>3</sup>. The behaviours identified above present some of the key barriers not only to the achievement of sustainability but also to the delivery of high quality public services. We need to deliver services in ways which are thought through, joined up and offer what people need, with organisations working together with a focus on serving citizens, including the most marginalised and disadvantaged. The co-production and co-design agenda is important. In regeneration practice, there is long-term evidence of the value of community

engagement and participation. Seeing this as co-production provides emphasis on the benefits which can be achieved by involving beneficiaries in the design, delivery and evaluation of programme and policies which affect them.

## **Area of action 2.5 – Entrepreneurship**

CHC agrees.

3

[http://www.nef.org.uk/themes/site\\_themes/agile\\_records/images/uploads/BreakingBarriers\\_SummaryReport.pdf](http://www.nef.org.uk/themes/site_themes/agile_records/images/uploads/BreakingBarriers_SummaryReport.pdf)

## **75 SSE**

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## **76 CITB**

### **Developing the Supply Chain**

- **The Welsh Government should secure a ring fenced amount for skills investment on all large public sector contracts.**
- **CITB Cymru Wales notes the inclusion of Construction Futures Wales in the Energy Efficiency Strategy and agrees that such collaborative approaches are essential for the success of supply chain development.**

### **Developing the supply chain**

#### **Procurement**

Government low carbon initiatives can have a significant impact on skills needs, from the creation of new roles, to the need for existing trades to learn new skills or the rapid growth of existing sectors.

The Welsh Government's Wales Procurement Policy Statement focuses on the social, economic and environmental impact of Wales' public sector spend. The Minister for Finance's recent statement on public sector procurement highlighted increasing devolution of this area, following the General Designation on Procurement.<sup>12</sup> This provides an opportunity to use public spending to achieve energy efficiency goals, similar to the insistence of Building Research Establishment Environmental Assessment Method (BREEAM) standards on certain public buildings. It also provides an opportunity for further supply chain development by providing construction firms and SMEs in particular, with a degree of confidence in upcoming work by which to plan recruitment and training provision to deliver energy efficiency related work. In this respect, it is also important to provide a long time-scale in terms of funding for local authorities and other bodies delivering energy efficiency schemes.

CITB Cymru Wales believes that in developing community benefits policies further, **the Welsh Government should secure a ring fenced amount for skills investment on all large public sector contracts.** This was set out in our recent report with the Cross-Party Group on Construction entitled *The impact of*

*procurement policy in Wales*<sup>13</sup>. Where appropriate, this policy lever could be used to increase the skill levels of the construction sector to deliver energy efficiency interventions, through schemes such as Arbed.

### **Construction Futures Wales**

Construction Futures Wales (CFW) is jointly funded by the Welsh Government and the Construction Industry Training Board (CITB) through the Joint Investment Strategy (JIS) for the construction industry in Wales. CITB manages the programme on behalf of the partners.

Over recent years, we have seen a growing realisation that construction activity can significantly contribute to the growth and social impact on the Welsh economy by developing both people skills and businesses. This has resulted in construction related contracts moving to longer term framework/collaborative agreements and increased demands along the whole supply chain.

The Construction Futures Wales programme aims to equip the industry to better understand the challenges it faces moving forward, and equip the workforce to better meet those challenges. This will be done through delivery of support on live projects. It will demonstrate opportunities for real savings, growth and skills development, through improvement activities and training.

**CITB Cymru Wales notes the inclusion of Construction Futures Wales in the Energy Efficiency Strategy and agrees that such collaborative approaches are essential for the success of supply chain development.**

12 Welsh Government. 2015. *Wales Procurement Policy Statement* [Online]. Available at: <http://gov.wales/docs/prp/toolkit/june15walesprocurementpolicystatement2015v1.pdf> (accessed 7th September 2015).

13 Cross Party Group on Construction. 2015. *The impact of procurement policy in Wales – a summary of consultation responses* [Online]. Available at: <http://www.citb.co.uk/documents/the%20impact%20of%20procurement%20policy%20in%20wales%20-%20a%20summary%20of%20consultation%20responses.pdf> (accessed 7th September 2015).

## **77 CLA**

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## **78 EON**

### **Supply Chain Development**

Support for installers

49. We agree with the Welsh Government's ongoing commitment to support installers throughout Wales and to address the limited availability of qualified installers in rural Wales. We believe that partnerships with trusted organisations outside of Wales can facilitate this by bringing in valuable skills and expertise

without compromising the desire to secure the economic benefits predominantly into Wales.

50. We expand on our response on supporting the installer network under 'Quality of delivery' below.

Support for supply chain development  
Quality of delivery

51. We welcome the Welsh Government's commitment to working with the UK Government to encourage good practice under UK schemes as well as through schemes in Wales. We believe that quality standards are a key area of concern within the energy efficiency supply chain and must be addressed in order to protect consumers and build trust in the industry.

52. Most home-installation industries develop a base of specialist installers who are well trained and ensure that a good installation is completed. As with any commercial enterprise, they have to develop future business on the back of good reputation and a competitive and affordable approach.

53. The energy efficiency industry, however, has developed as a result of supplier obligation and suffers from the fact that many use access to grant funding as a "ticket" to securing work. The main driver is not to build a sustainable business for the longer term based on good reputation, but a short-term focus on securing access to government subsidies. Consequently, these businesses do not have to depend upon reputation to survive and quality standards suffer as a result.

54. In order to mitigate this, access to funding under supplier obligations should be linked to high quality installations and customer satisfaction levels, working with tried and trusted installation partners. Such installation partners would not need to be exclusively Welsh provided that the economic advantages can be secured predominantly into Wales. This avoids artificially restricting the pool of potential partners able to bring their skills and expertise into Wales which could exclude suitable partners and be contrary to the intention to increase the numbers of qualified installers in rural Wales.

55. A robust and transparent mechanism for ongoing monitoring and review should be in place to ensure that standards are consistently and demonstrably maintained. This is important for building trust in the industry, ensuring that vulnerable households are not taken advantage of and able-to-pay households are confident to invest.

56. Learnings should be taken from the Green Deal experience which has had a detrimental effect on consumer trust in the industry. One specific area of considerable concern under the Green Deal has been lead-generation. The Welsh Government should issue clear guidelines and standards on what is and is not acceptable for all funding schemes. It is likely that such a list, if appropriate, would then be adopted as best practice across the industry.

57. Another key concern has been that, in the drive to expand the energy efficiency market, all installers have been allowed to be accredited. This has led to a general

lowering of standards creating problems for consumers, which ultimately impacts the industry's reputation.

58. To address this, we propose that the Welsh Government should maintain a register of accredited installers. Regular “on the job” monitoring should be introduced along with a process for gathering customer satisfaction information. These results should be recorded and published to act as a tangible disincentive to poor quality delivery. The regime needs to be robust and strictly enforced, similar to the process applied to ECO by Ofgem.

59. In principle, we support the idea of promoting energy efficiency improvements alongside other building refurbishment works or extensions through trusted local builders and installers. We recognise the role that trusted tradesman could play in getting home owners to consider energy efficiency improvements as part of a larger project.

60. However, further thought would need to be given to the role that local tradesman would be expected to play. What are they trying to achieve (awareness or action), how could consistency of delivery be achieved, and what is the impact if it is not well coordinated? At best it could be a waste of effort, at worst it could have a detrimental effect, reinforcing a lack of trust and a perception that the supply chain is not well informed.

## 79 NEA

To ensure householder and consumer confidence in energy efficiency, there must be a well-trained workforce and supply chain in Wales.

Welsh Government energy efficiency programmes have been successful in boosting economic growth, developing and maintaining the efficiency supply chain and highly skilled workforce in Wales. NEA Cymru welcomes Welsh Government investment and view on the added benefits energy efficiency brings to Wales.

Green Growth Wales is an important intervention by the Welsh Government to increase and accelerate green investment and maintain and develop energy and energy efficiency economy in Wales. It is commendable that the Welsh Government recognizes and continues to support, develop and maintain the energy efficiency sector and highly skilled workforce.

As well as cold calling and other bad practices, the Welsh Government needs to look at good and bad practices of installing energy efficiency measures in Wales. There is a lot of evidence gathered by BRE and others of bad practices in installing EWI and other energy efficient measures even under Welsh Government's own energy efficiency programmes.

The installation of EWI and other energy efficiency measures is a skilled role and the Welsh Government needs to work with the construction industry and installers to ensure that the construction workforce have the correct accreditation and training to install energy efficiency measures into people's homes in Wales.



The Welsh Government has an important role to play in ensuring quality of delivery and installation of energy efficiency measures under its Warm Homes programmes. In future funding applications, it must ensure that those contracted and sub-contracted to install energy efficiency measures have the correct accreditation and training, this will improve customer confidence and quality of work.

Stimulating demand and encouraging householders to see the benefits of installing energy efficiency as a home improvement is complex. It is about encouraging and improving the perception that installing energy efficiency will benefit them financially, not only in saving money and energy efficiency terms but aesthetically, raising the value of their home in the process.

Many homeowners are put off by the cost of installation and the pay-back period of, for example, EWI, which is roughly 20 years when they may not live in the property over that time. Therefore, many homeowners do not see the economic benefit of installing energy efficiency measures on their homes.

To change this perception, realistically, energy efficiency needs to be seen as an economic investment, not just to be fuel efficient or climate action ideals. Trusted builders, estate agents, house rental agents, landlords and media need to be educated and view the installation of energy efficiency measures as an economic necessity that increases values of homes and the wider community.

The Welsh Government as previously mentioned, needs to do more to identify and stamp out cold calling and rogue companies providing inaccurate energy efficiency installation and advice to vulnerable householders in Wales. It needs to work closely with NEA Cymru and other frontline advice voluntary organisations and government agencies to improve the perception of energy efficiency and the positive benefits and of installing energy efficiency measures. Things will not change unless householders' perception change and the economic sense of installing energy efficiency as a home improvement are mainstream.

NEA Cymru is happy to discuss with the Welsh Government and Resource Efficient Wales on ways of stimulating demand and encourage homeowners to install energy efficiency measures as a home improvement.

## **80 Rockwool**

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## **81 EDF Energy**

Yes, we agree that where there is a lack of local skills then this can be overcome if the correct actions are taken. With this in mind it should be noted that retraining should focus on jobs for the long term. Combining this with a focus on investment programmes for energy efficiency, both by the Welsh Government and through the private sector will help to support and enhance development of the supply chain.

Areas for consideration include:

1. Support for installers to up-skill and diversify in order to provide new offerings e.g. installation of heat pumps. However, growth in this area can only be achieved if there is an accepting market ready to purchase. As a result, development of the market needs to occur in combination with the development of the supply chain.
2. Strengthen and grow the market that has been created through Nest and Arbed. This will further attract entrepreneurs to the supply side.
3. Offering a recognised 'Welsh Government' accreditation to installers will demonstrate quality and provide credibility to their energy efficient offerings. It will also help to develop trust between suppliers and purchasers and provide valued reassurance to the purchaser.
4. Encouraging collaboration between installers to share skills. This would be particularly beneficial in rural communities with low levels of skilled providers of services.

## **82 Royal Institute of Chartered Surveyors**

Agreed.

## **83 Flintshire County Council**

### **Area of action 2.1**

In general this action is welcomed and supported, however in our experience many companies are here today and gone tomorrow. In order for this to be less prevalent there needs to be a regime put in place that removes the feast or famine issue that bedevils many of the grants and support funding available. Only then will we be able to retain companies that have the knowledge and skill base to achieve the objectives the Welsh government has set.

We have responded regarding this previously and proposed options for spreading the work out more sustainably, but this year again Arbed announcements were not made until the end of August for works to be completed 31<sup>st</sup> March. This overlaps with Vibrant & Viable Places funding which similarly ends 31<sup>st</sup> March. With this kind of regeneration work, 3-5 year timescales are much more workable and allow for us to make meaningful growth in the supply chain and training in these areas.

### **Area of action 2.2**

The general public are confused by the continual renaming and rebranding of schemes, and even with the recent rebranding, there is still Nest, Resource Efficient Wales and Warm Homes (Arbed), which all aim to provide a one stop shop. However we have found consistently that a regional/local service is necessary to

make sense of how national schemes might interact with local support which can make Welsh Government's money go further. A classic example of this is our Affordable Warmth Crisis Fund, where we have a small pot of funding used for "last resort" after checking whether the household is eligible for Nest, Health through Warmth, is in a current Arbed Area, or would be eligible for ECO. We also offer additional support in areas where we are bringing gas in the community through a bespoke Monergy Loans scheme with Robert Owen Community Banking Fund. Additionally, every local authority under the Housing Act offers Home Improvement Loans Houses into Homes and Disabled Facility Grants which can be used for energy efficiency improvements where appropriate. Although these are national schemes, people need to speak to the local contacts to ensure they are getting all support they are entitled to.

### Area of action 2.3

A recurring theme in this response is the potential reduction/removal of FIT's, RHI's and R.O.C.'s and the consequential impact these changes will have.. The renewable energy industry has developed in leaps and bounds over the past 4 or 5 years, but this progress is now very much at risk due to the Governments consultation on the matter.

The whole premise of the Welsh Governments "Green energy Pipeline" was the support of such schemes, through the corresponding incentive. Without the incentive very few if any schemes will get off the ground. If Wales and the U.K as a whole is to meet the climate change targets and obligations this is an area that cannot be left without support, at least in the short to medium term.

## **84 Constructing Excellence in Wales**

We agree with the actions identified within this chapter of your strategy, but would be keen that these aspects are also considered:

- Enhancing links between Welsh academia (and beyond) and the constructions sector in Wales. There are significant project examples<sup>19</sup> being developed by a number of academic institutions in Wales aligned to your strategies aspirations for Wales. Enabling a direct dissemination route for this work to leapfrog into business should be developed as part of the strategy and 10 year vision for Wales. This would also help ensure that those trained within Welsh Universities are able to secure work locally and help contribute to the green growth economy.
- Programmes such as Cardiff University's BEST (Built Environment Sustainability Training)<sup>20</sup> require some legacy support, ensuring that all professionals working in Wales benefit from the training provided, not just those working in convergence areas and non-public sector organisations. A number of the courses developed through BEST would support the aspirations of your energy efficiency strategy. By ensuring the online modules remain available in the short term could help disseminate the training further across the industry (e.g. air tightness and moisture content, refurbishment of pre-1919 properties and other courses as outlined here).

- The specific skillsets required for example heritage and traditional skills required to responsibly retrofit Wales' older properties needs to be more widely acknowledged by the industry. For example, projects on properties dating from pre-1919 and in receipt of WG funding should require contractors to be suitably trained and qualified.
- With regards to consumer protection, we would welcome more marketing and promotion of the construction sector to the public in order that householders become aware of what accreditations and competencies they should be seeking companies to have prior to undertaking work on their home or property.

19 [https://www.youtube.com/watch?v=VHBsWk8\\_QaY](https://www.youtube.com/watch?v=VHBsWk8_QaY)

20 <http://www.best.cf.ac.uk/>

## **85 RWE nPower**

With regards to the specific consultation questions asked (question 1-6) we agree with the areas of action set out and we do not have any additional questions or issues to be addressed. We would welcome confirmation of any proposed interim milestones that will be used within the broader strategy; particularly for those actions that relate to supporting and addressing fuel poverty, given the statutory target to eradicate fuel poverty (as far as is reasonably practicable) by 2018.

## **86 Melin Homes**

Note: In building the capacity of the SME Sector and supply chains in Wales, Welsh Government must recognise that this will require sustained investment on their part as the open market catches up with the requirement to make homes more energy efficient. There was criticism of Welsh Government, with many citing a 'cliff edge' between programmes that saw investment reduce dramatically in between programmes. By building a coherent strategy that is able to offer both large scale community retrofit projects and by having structures in place for better off communities and individual households, Welsh Government can ensure that the Supply Chain in Wales has a steady stream of work in pipeline projects that covers all sectors of communities.

Welsh Government, particularly via the Warm Homes Arbed scheme, have been successful in encouraging and seeing collaboration amongst SMEs in supply chains, and with this collaboration extending to suppliers and manufacturers. This collaboration has happened because SME's have been given the chance to participate and to secure works they may not otherwise.

### **Action 2.1**

- Agreed. The support in place has to be meaningful. Anecdotal feedback from our supply chains has been that some areas have been of very limited use.
- In encouraging diversification and accreditation, Welsh Government must recognise that it also need to nurture organisations for a period of time, and to actively assist in identifying and seeding new markets. Withdrawal of support

from Businesses at too soon a stage is likely to result in contraction of those markets. The case of Feed In Tariff and other UK Government initiatives demonstrates that ill thought out strategies and early withdrawal of support will lead to sharp contractions within these sectors.

#### Action 2.2

- Agreed, but echoing the point made above.
- It must be acknowledged that SME's in Wales may excel in providing the services they are set up for, but will also require support in identifying opportunities and how to access assistance. There should be a drive to ensure that all parts of the public sector are aware of the WG organisations, such as Business Wales, that are in place to provide support and how to sign-post/access them. This is lacking in many areas at the moment.

#### Action 2.3

- Welsh Government must continue to ensure that support is in place as per Paragraphs 1 and 2. There is an excessive amount of public sector procurement that does not challenge effectively and continually awards contracts to National or International organisations, for the bulk of work to then be subcontracted locally with far lower rates and no meaningful benefits for employment, training, communities or SME businesses. Public Sector procurement needs to rise to the challenge of empowering the SME sector in Wales to maximise the benefits of investment in Wales.

#### Action 2.4

- UK Wide energy efficiency programmes have seen significant issues in terms of quality of install as well as other outcomes. These issues are running the risk of 'tarring all schemes with the same brush'. Welsh Governments Warm Homes Arbed scheme has seen close monitoring, quality control and involvement throughout the supply chain and design stages result in far higher quality of projects than has been witnessed UK wide.
- As previously highlighted, many of the building contractors used by individual households are not those that are able to carry out large scale refurbishments. Therefore, more effective links need to be made between the individual 'jobbing' contractor and those that are able to carry out more specialised energy efficiency measures. This cross fertilisation will benefit both sectors within Wales.
- There needs to be the recognition that there is a direct link between quality and cost. In our work we have witnessed contractors outside our framework informing householders that they are able to complete works at prices which are commonly seen as unrealistic and leading to poor quality installs that lead to further problems. Welsh Government should consider a quality mark that will inform householders the organisation they are dealing with is approved across a range of requirements.
- It is also the case that, in Wales, our stock profile is such that there will be additional requirements for repairs and maintenance to be completed prior to energy efficiency works being installed. Any programmes in place need to recognise this and allow for mechanisms to facilitate.
- For households to make the link between improvement works and energy efficiency works, this can be achieved through building regulation requirements,

but also through local authority planning and building services making this clear to those undertaking improvements.

#### Action 2.5

- Agreed. As previously stated any support should be devised in partnership with the sector and allow for levels of certainty to be in place. It is the case that many programmes both in Wales and Nationally have not allowed for sustained periods of continuity.

### 87 Citizens Advice

As stated in our previous response<sup>9</sup>, Citizens Advice Cymru has no direct involvement in the delivery of energy efficiency measures, however we do regularly engage with energy suppliers and other businesses in the sector. Our observations below are based on concerns they have raised with us.

#### **Ensuring consistency**

The draft strategy makes a number of references to the UK Government's Green Deal scheme. The Welsh Government will of course be aware that this programme has recently been scrapped (having suffered low uptake due to poor consumer engagement).

The scrapping of the Green Deal highlights the point made in our earlier submission regarding a consistent long term policy framework for energy efficiency. The Welsh Government should seek to **avoid similar uncertainty and disruptive policy tweaking in devising its own strategy**.

It is right to state that the approach must be flexible, and kept under review to adapt to market changes. However, engaging with consumers will be key to ensuring, as much as possible an attractive offer from day one, thus avoiding unnecessary revisions due to low engagement.

#### **Price signals and consumer motivation**

In addition, we have recently heard from energy efficiency businesses that there is a major challenge in creating a self-sustaining industry founded initially on delivering a product mostly free of charge. **This risks sending a price signal to consumers that the market value of energy efficiency products is 'zero'.**

The solution to this problem is far from simple, but the strategy should acknowledge it. The remedy will lie in **properly understanding consumer motivations and attitudes across all socioeconomic groups** not just those in fuel poverty, on living on low incomes.

The Welsh Government's stated intention is to create a market which can operate independently of government subsidy in the long term. The sector will therefore need to **persuade better-off households that they should value products enough to pay for them** when others receive them free of charge. This may be

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<sup>9</sup> Citizens Advice Cymru [response to call for evidence on Energy Efficiency Strategy](#)

particularly acute when households feel no immediate pressure from affordability of their energy bills, or are not particularly motivated by environmental issues.

Many able-to-pay households have already received easy measures like loft or cavity wall insulation, meaning the only measures left available may be substantially more expensive or disruptive. **People living in hard to treat homes will face particular barriers** when the cost of improving their home to a required standard is beyond any possible financial benefit to them from energy bill savings.

<sup>1</sup> Citizens Advice Cymru [response to call for evidence on Energy Efficiency Strategy](#)

## **88 Energy Savings Trust**

EST agrees with the action points presented in the consultation with support for ensuring the supply chain, from manufacturer to installer is kept up-to-date on areas that impact their activities, but would also seek some further action to build a collaborative network of innovation under Area of Action 2.5 – Entrepreneurship. A network that can bring together interested parties with those for outside the sector, who have a flair for invention, can often come up with different solutions to existing problems and challenge existing thinking.

Area for action 2.4 – Action to ensure quality of delivery also needs to consider the role of regulation in driving confidence of householders and businesses in energy efficiency providers.

Energy standards of many home products have improved significantly in recent years. In large part, this is the result of regulation. The biggest success in energy efficiency policy in recent years was the 2005 decision to make high-efficiency boilers mandatory in homes. That policy has changed the way we heat our homes (where connected to the gas network) and has been fully accepted by householders and industry.

Minimum regulations for products, building regulations and other regulatory requirements are very effective in bringing about change. Combined with better information provision to consumers this can push consumers to the best performing products (better information) whilst getting rid of the worst performing (stronger minimum requirements). If carried out effectively, through consulting different stakeholders, we believe a substantial change can be achieved through product standards, whilst avoiding placing excessive costs on industry and consumers.

The Ecodesign directive, setting ever more stringent minimum energy performance requirements, has been the driving force behind improvements in efficiency in European product markets. The Ecodesign directive has forced improvements in the worst performing products. The introduction (September 2015) of labelling will allow consumers to be more aware of the energy efficiency of their heating system, building on progress already made. This will drive consumers to the better performing products. Broadly speaking, we need to keep effective regulation for home energy efficiency on the agenda.



Alongside this, energy labelling has made manufacturers outperform each other and equipped households with greater information, driving consumers towards the best products. We would like to see this labelling promoted more widely in Wales to provide information when consumers are at the point of purchase.

Existing regulations need to be better enforced - for example there are health and safety regulations that are meant to protect private tenants from cold homes, but they are often not enforced.

Also see Q4) Innovation on Energiesprong

## **89 Glass and Glazing Federation**

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## **90 WWF**

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## **91 Egnida**

Egnida has direct experience in the market areas and most of the initiatives mentioned in the consultation and has previously provided in depth feedback to the process and associated initiatives. As such, we are fully supportive of the actions presented through 5.1 to 5.5 of the consultation as referenced in Questions 1 to 5 and the associated dynamics and impacts.

## **92 Federation of Small Businesses**

FSB Wales would like to examine the possibility of creating or rolling out schemes similar to Arbed and Nest to non-domestic properties in Wales. These existing schemes have been successful at developing a supply chain around Wales' domestic building stock<sup>5</sup>. The development of similar schemes for non-domestic properties could unlock a further market for the small businesses involved in delivering these schemes, and contribute to the economic resilience of Wales' small business community through increased contracting opportunities and lower energy costs.

<sup>5</sup> 70% of installers under Arbed Phase 1 were based primarily or solely within Wales, see: <http://www.walescarbonfootprint.gov.uk/publicsector/arbed/?lang=en> (accessed August 24 2015)

## **93 Calor**

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## Skills and education

**“We have effective education and skills in place to deliver on the energy efficiency challenge, from raising awareness in schools to a qualified and skilled workforce and investment in higher level skills to support R&D and innovation.”**

### **Key areas of action:**

- 3.1 – Delivering skills that respond to local need.
- 3.2 - Mainstream provision of skills.
- 3.3 - Post 16 education and training.
- 3.4 - Enhanced employer engagement.
- 3.5 - Business capability.
- 3.6 - Capital Investment in 21st Century Schools.

**E) Responses in full to question 3) Do you agree with the areas of action set out in chapter 5.3: Skills and Education?**

## 1.Eco Home Centre

### 3.1 Skills that respond to local need

In Wales we have the oldest building stock in the whole world. We need to develop specialist skills to work on our older properties. We need to understand them, to know how they were made, how they have been changed over time, what materials have been used, how these materials inter-relate, how we live in buildings and how this has changed building physics. We MUST become specialists in sustainable retrofit. This means upskilling the existing workforce and also ensuring that the new trainees are filled with underpinning knowledge.

We also want to have the lowest carbon new builds and so again we need to have people trained in concepts like Bio Solar Haus, Passive House, Ty Ynnos etc. They also need hands-on training in practical applications like airtightness, ventilation etc.

### 3.2 Mainstream provision of skills

All builders should have the relevant qualification for the work that they do. Pre 1919 houses need specialist knowledge and skills, System Built houses again need different skill sets. At present anyone can call themselves a builder and do work, we need to have better control over who does what to our housing stock.

All school children should have modules that cover houses. People need to understand their homes and where things are for a whole range of reasons. Secondary schools and Primary can start to address this relatively easily through ESDGC.

### 3.3 Post 16 training and education

The vast majority of the construction industry is based around new build. We need to ensure that we cover maintenance, building history, materials etc as well as underpinning knowledge on building physics in all courses.

### 3.4 Enhanced employer engagement

One of the things that is really difficult to manage is that old habits die hard and so many in business today will only pass on old thinking and old ways of doing things. This is fine on modern buildings, but on older properties it is dangerous and high risk. So again we need to manage employers so that they are appropriately qualified for pre 1919 work if they are taking on apprenticeships.

### 3.5 Business capability

CITB have developed new Upskilling courses for pre 1919 energy efficiency work that should be adopted by WG to help ensure that 'new' knowledge is widely understood and used.

### 3.6 Capital Investment in 21st Century Schools

Schools must also work cover health, safety, noise, adequate space, ease of use etc as well as energy.

## 2. Neath Port Talbot Group of Colleges

Again, some very good actions outlined and support in general the approach.

Our experience of the Regional Learning partnerships, is that they are slow to react and lack the local on the ground knowledge to respond to the training needs. We feel it would be better to work through NTFW and Colegau Cymru, to gain the expert advice needed to deliver these programmes. There also needs to be an effective relationship with Qualifications Wales, to ensure the apprenticeship frameworks required are quickly processed through the system. Given the key role that the Construction industry would play in the roll out of these skills, we would suggest that Energy awareness units, where applicable are added as part of existing Construction frameworks, to ensure an effective Wales skill level. We also need to consider where vocational qualifications do not exist at present, should there be competence to operate units, through industry bodies or Manufacturers, be utilised. This is especially important, given where Wales is leading the way in new technologies, like Solcer House, where the qualifications cannot keep pace with these developments.

The youth engagement framework, is critical, but unsure what a new provider would add over and above, the existing network provides. We would agree there may a need for the approaches to be managed more effectively to a wider plan, but introducing a new provider may confuse the market further. In terms of Construction, we have Construction ambassadors, who are from construction firms, who would only need development in the policy aims. We also have bodies like Construction Youth Trust Wales, Princes Trust, Careers Wales and professional institutions, who are very active in the NEET agenda, and may only need development to meet the aspirations, all these bodies have strong employer links and support. There is also strong engagement links by FE to the schools and industry, which drives new qualifications and learning requirements.

## 3. Gwynedd County Council

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## 4. Certsure

Education and skills are essential for ensuring people of all ages are informed and that they understand the reasons, benefits and rationale as to why we need to use energy efficiently. Starting at a young age is vital as this will become the 'norm' for these young people as they grow and develop, empowering them to educate and inform their own children.

The bigger challenge is to educate and up skill current and older generations who may have been used to different ways of using energy when energy conservation wasn't high on the nation's agenda as it is now.

## 5. Institute of Civil Engineers

In general terms yes

- It is good to see under 3.2 that it is recognised that a 'solid foundation of literacy and numeracy skills' is required.
- The overview states that employment projections show the potential for people in Wales to gain employment in the 'growing energy and environment sector'. As above, great concern is raised following the UK Government's cut in renewable subsidies. Many people will surely lose their jobs rather than there being an increase in jobs.

## 6. Torfaen County Borough Council

The actions being proposed are positive but without having sustainability and a guarantee of future funding as a starting point, these other actions are less relevant.

We agree that education is a major area that needs to be promoted, because if residents are not educated about using the measures installed, then installing the measures in the first place becomes pointless. However, it is not financially viable for some Local Authorities to deliver this. Will there be funding / resources to assist?

To carry out the work, people need the necessary skills, but this costs money and there is a risk to businesses who invest in energy efficiency and training staff, if future schemes and funding are not guaranteed.

How is the school employer engagement model going to be delivered? Working with schools to intervene in energy use behaviours early on could assist in changing household behaviour and perspectives on energy use.

## 7. NSA Afan

- 3.1 We support this statement and would recommend that the Welsh Government increase support to training in these skills as a valuable catalyst for future growth of the industry in Wales especially linked to the Swansea Bay Tidal Lagoon and the off shoots emanating from that development.
- 3.2 We support this statement
- 3.3 We fully support this statement
- 3.4 We support this statement
- 3.5 We support this statement
- 3.6 We support this statement

## 8. Royal Town Planning Institute

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## 9. Saint Gobain

Yes, Saint-Gobain agrees with the actions set out for skills and education. It makes sense to build upon policies already in place to improve these areas.

In order to deliver energy efficiency policies we will need a multi-skilled workforce for carrying out whole house retrofits, sustainable solutions for zero carbon buildings, etc. It is important to look at this from a whole building perspective rather than an individual product level to ensure this is done in the most effective way.

## 10. Coed Cymru

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## 11. Tabitha Binding

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## 12. Renewable UK

Section	Summary	Comment
3.1	Delivering skills responsive to local need	This area of action doesn't specify an energy-efficiency related priority
3.2	Mainstream provision of skills	Agree. This is a very important component of skills and education, and the further education sector could and should be a major provider of skills in the energy efficiency sector which support strong and ambitious targets for passive or low-energy buildings
3.3	Post-16 education and training	Agree; although this forms part of the previous action area

		rather than necessarily being a separate one
3.4	Enhanced employer engagement	We presume in favour of this area of action, although there is no evidence presented for the assertion that employers see young people with insufficient skills attempting to enter the world of work
3.5	Business capability	Agree
3.6	Capital investment in schools	Agree, although it is strange to limit this action area to schools when (presumably) Welsh Government could enact policy to force the same building standards of all public sector buildings in Wales

### 13. British Gas

- 3.1 We welcome the Welsh Government's focus on skills and education as part of its strategy. We recognise the challenges outlined by the chapter and agree in broad terms with the areas of action identified.
- 3.2 However, as noted in our previous response to the Welsh Government consultation on apprenticeships, as an employer operating across England, Scotland and Wales, the current limited parity in skills provision policy across the three nations can present us with significant challenges. We would therefore urge the Welsh Government to, where possible, align with the English system to enable greater compatibility and portability of any skills developed. This is true of apprenticeships (higher or otherwise) and also true of any proposed changes to the curriculum for the 3-16 age bracket, further to the Donaldson review.
- 3.3 As an example of where consistency across Britain is important, we would point to the existing Foundation Apprenticeship in Smart Meter Installation. We welcome the recognition in this consultation that the Welsh Apprenticeship framework is fundamental in equipping the supply chain with the skills related to improving energy efficiency. This will enable the Welsh Foundation Apprenticeship in Smart Meter Installation to continue to develop the workforce required to deliver the UK Government target for all homes and small businesses to have smart meters by 2020.

- 3.4 The desire to encourage better engagement between employers and local schools is also welcomed. This is something that British Gas has long championed and we are proud of our engagement record, including with schools across Wales.
- 3.5 Of particular note, we run Generation Green<sup>1</sup>, an education programme for Key Stage 1 to Key Stage 3 pupils and teachers, providing classroom resources free of charge, educational experiences and sustainable energy technologies to more than 13,000 schools across the UK. It is our hope that, by teaching children about sustainability and inspiring them to be curious about future energy challenges, we can help to create a generation of energy innovators. This programme has already seen schools in Llandudno, Rhyl, Cardiff, which have included the installation of solar panels, heating and lighting systems and other energy saving technologies.

<sup>1</sup> For more details on this programme, see <http://www.generationgreen.co.uk/>

#### **14. One Voice Wales**

Yes. One Voice Wales is confident that Wales has the potential to evolve into a world leading green energy hub, given the natural resources at hand and the experience of its people over two centuries of industrial and energy led development. Further support needs to be given to universities and to institutions of further education to encourage present day students to engage with energy efficiency topics; otherwise any advances towards the ultimate aims of this strategy will be retarded.

#### **15. Natural Resources Wales**

Yes

#### **16. UKLPG**

-

#### **17. Wolseley**

Wolseley wholeheartedly support skills development and the recognition of the requirement that to support the emerging market for renewables, we must have a supply chain to deliver in scale (as set out under 'developing a supply chain').

However, the skills required will have to acknowledge that the vast majority of installations will have to be integrated into existing systems and buildings, requiring a blend of both existing and new skills.

#### 18. James Coulter

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#### 19. Mineral Wool Insulation Manufacturing Association

Overall we welcome the measures intended to up-skill and educate the population of energy efficiency. We would however welcome seeing more information on specifically what new training opportunities may be available for the industry and which themes will be prioritised.

#### 20 CastleOak

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#### 21 ACE

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#### 22 Newydd

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#### 23 Isle of Anglesey County Council

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#### 24 Energy Effective Ltd

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#### 25 City & County of Swansea

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#### 26 The Detail Hub

Yes.



### **27 My Green Home Ltd**

Yes.

### **28 Ynni Cymru Energy Solutions**

Wales is small country. Its OK delivering to 'local needs' but where will the money come from for the training especially as the FE sector is facing huge cut backs at the moment?

### **29 The EPC Man**

Yes.

### **30 Bond Demolition Ltd**

Education is fine if directed properly.

### **31 Colin Edwards**

-

### **32 Wrexham County Borough Council**

-

### **33 Gaia Renewable Energy Ltd**

Yes up to date training needs to be provided by the various educational establishments.

### **34 Green Renewable Wales Ltd**

-

### **35 Powys County Council**

Generally yes. There are a couple of things which come to mind which include... BREEAM Excellent and an energy 'A' rating is great, but not at the expense of high carbon dioxide levels in classrooms which can hinder concentration levels in pupils. Also, how does the BREEAM and requiring an 'A' rating for refurbishments fit alongside the radon monitoring in schools which WG has written to Authorities

about previously? (Improved air tightness and reduced heat loss could result in a greater radon build up in classrooms which were previously IRR99 compliant). Also, there is no mention of CIBSE or the Low Carbon Accreditations they offer in the register, e.g. Low Carbon Consultant (Design), Low Carbon Consultant (Operation), Simulation Specialist, or thermal modelling compliant skillsets. I think these types of skills and accreditations would be extremely useful for new builds or major refurbishments in particular, particularly in facade design and assessing when useful solar gain becomes detrimental and results in overheating requiring mechanical cooling. Maybe minimum energy efficiency standards could be introduced for schools? (similar to WHQS for housing). I think we need to link up and learn more from others, such as the RE:FIT programme in schools in London (amongst other buildings).

### **36 GATC Ltd**

Yes, underpinned by fully aligned training, NOS, QCF aligned.

### **37 Celsius Energy Ltd**

We would welcome the opportunity to employ more local labour whom are qualified.

### **38 C&K SUPPLIES**

-

### **39 Llangynog Memorial Hall**

-

### **40 Dr James Henshall**

Yes. But look forward with interest to see how these become manifest over time.

### **41 John Griffiths - Chartered Surveyor**

Yes.

### **42 Equity Redstar**

Yes.

#### 43 North Wales Housing

-

#### 44 NSA Afan

YES - in full agreement with these points. More can be done in the area of third sector training provision for the unemployed to launch candidates into a career in energy efficiency, such as in-house training - work experience opportunities and work placements.

#### 45 T L C Energy Limited

Yes, and regulation on accreditation bodies in Wales.

#### 46 ECO CARBON TRADERS LTD

-

#### 47 Asset Energy Solutions Ltd

-

#### 48 WDS Green Energy

Yes.

#### 49 Torfaen CBC

Yes.

#### 50 Warmwalls Ltd

Yes.

#### 51 Gas Tech Wales

-

**52 GB-Sol Ltd.**

Yes.

**53 South East Wales Energy Agency**

-

**54 BDT installations**

-

**55 Salix Finance**

Yes.

**56 Aberystwyth University**

Yes, but this requires public-sector commitment to fund these properly for longer than the current political cycle.

**57 William Morris Energy Assessments**

I agree.

**58 Geraint Williams Plumbing & Heating Ltd**

-

**59 URBAN SOLAR LTD**

-

**60 Peter Jackson**

-

**61 Ignite Mechanical Contracting Ltd**

-

**62 Jamie Black OCDEA/DEA/GDA**

-

**63 Westflight Ltd**

-

**64 Pembrokeshire Power**

-

**65 Greener Heat**

-

**66 SAM Drylining Ltd**

Yes to all.

**67 Dean Crocker Energy Assessor**

Yes.

**68 Biofutures Ltd**

Monetary support systems to develop existing staff skills required.

**69 E W Consultancy**

Agree.

**70 Christopher Williams – Individual**

Yes.

## 71 Business Wales

The development of skills should be robust accredited standards that are meaningful. The standards should be set at a very high level to gain acceptance within the business & commercial sector.

## 72 Institution of Mechanical Engineers

There is an opportunity to create a wealth of skilled engineers and technicians to support the growth in the energy efficiency and generation sector. This consultation document does not address these concerns.

Wales has the opportunity to pioneer engineering and science throughout its curriculum, creating a workforce that is both equipped to be creative and responsive to the technological innovation of the future, but to be entrepreneurial and socially mobile.

The consultation document focuses on post-16 education and whilst laudable there is a need for the Welsh government to form stronger links between education and a competitive engineering and science based economy.

The Institution of Mechanical Engineers' policy statement '*Social Mobility and the Engineering Profession*' recommends that:

1. Government makes schools and colleges fully accountable for the provision of structured careers advice through the compulsory publication of student destinations.
2. Government undertakes a review of the options for changing the structure of post-16 education, specifically exploring the consequences of introducing a Baccalaureate-style approach on both academic and vocational routes, especially for economically vital sectors such as engineering.
3. Government compels its careers and enterprise company to source, promote and record industry placements for teachers alongside meaningful work experience for pupils.
4. The engineering community unites in highlighting to school senior leaders and governors, the financial and personal benefit of pursuing engineering training and study, to pupils of all types and from all backgrounds.

## 73 Smart Energy GB

-

## 74 Community Housing Cymru Group

### **Area of action 3.1 – Delivering skills that respond to local need.**

This action is vital. The business department could be providing more support for green jobs and using the skills budget to train NEETs in the skills necessary for these jobs.

Issues such as climate change and energy efficiency need to be part of the curriculum in schools and we need more climate change young people's champions. Furthermore, there should be a promotion of ECO schools. Whilst it is important to maximise energy efficiency and renewable technology installations as priorities to create jobs, reduce fuel poverty, increase our energy security and reduce carbon emissions, research has identified that there are a number of skills and knowledge gaps likely to impede our capacity to meet energy efficiency targets.

It is clear that we need increasing awareness of environmental technologies and training providers primed to step up and supply the required training. We need a strong drive forward and a clear direction and incentives for employers to take action. CREW Regeneration Wales' research into the skills gaps for professional practitioners clearly illustrated that this issue is not limited to the trade level of skills development but identifies critical skill gaps in the professional services sector in key provision including planners, architects, engineers, road designers and landscape architects. There is a need for professional education. Meeting targets will require sustained focus, change management and major investment in design, infrastructure development as well as the marketing necessary to require the necessary behavioural change. Design is seen as a barrier, including the design of systems, having no integrated provision of design and delivery, the lack of holistic thinking and a whole house plan. Furthermore, there needs to be improvement in the number of people who can create and deliver a plan and awareness of architects along with an understanding of the full range of measures available-do designers understand how the measures work together and the detrimental impacts of some actions when combining measures? Installers need to understand from the outset that every home is unique and that there won't be a one size fits all energy retrofit solution.

It is essential that energy efficiency measures are installed correctly for the full benefits to be realised. Incorrect installation can lead to detrimental impacts rather than improved conditions for householders and reduced CO2 emissions. To ensure that technical problems can be overcome, installation of low carbon technologies should involve a good quality, consistent pre-works survey to establish the standard and requirements of properties before site works commence. Furthermore, an appropriate design then needs to be conveyed to those undertaking the works on site so that time taken to provide good quality design detail is not lost on site. Good quality workmanship is also essential to allow design to perform as planned. Attention must be paid to intricate detailing e.g. the difficulties when dealing with solid walled properties to avoid water penetration, etc. This can be time consuming to apply on site.

One has to pose the question of whether we have the right skills to help organisations in Wales take advantage of opportunities in terms of in-depth home energy advice, identifying the most appropriate solutions for particular buildings (new/existing/older buildings), and installing more expensive measures like solid wall insulation and micro generation. It is also necessary to consider whether energy efficiency skills and knowledge amongst builders and other trades people

can be improved to allow them to encourage building owners and householders to consider energy efficient solutions. Obviously, for this to work, trades people need to understand the benefits to them of providing such advice. The public therefore need to trust them and they must be able to refer on to independent advice where appropriate. Trades people need to understand how and when to offer information.

There is a lack of / shortage of skills with few trades people experienced in retrofit.

There are few experts that understand all the issues and whole house retrofit requires installers that are multi-skilled. Other barriers include the technical skills of surveyors and designers and installer expertise. Lack of knowledge can also be a barrier including whether we know enough about how whole house retrofit actually works / affects buildings. Installers need to understand what training is available and how to access it.

As well as up-skilling installers, there is a need to introduce training and apprenticeship schemes to make sure installation skills are not lost to the industry. This includes improving links to schools/education, educational programs at all levels (including professional training and development), improvements to education and training throughout the industry in order to replicate the design and construction skills, knowledge and experience gained through experimental retrofit projects, the increased presence of skills on the government agenda, more education around fabric first, more retrofit related CPD, development of a comprehensive skills strategy to help provide the skilled workforce that will be required, relevant accreditation and education and training in the use of sustainable energy technologies and their economic, social and environmental benefits. Education is needed for suppliers, installers, surveyors, designers, project managers (how to run advanced renovation projects) and architects. There is a need to implement educational programs for in-house consultants, planners and on site workers and/or invest in technology clustering as a way to overcome technology dependant lack of skills and competences.

## **Renewable technologies**

There are barriers to the design, installation, operation and maintenance of renewable energy systems in particular. Research has shown that renewable energy projects which have involved the community in their development from the outset have seen a positive behaviour change of over 90%, compared to those renewable energy projects in which the community is not directly involved (30%). Community developed micro-energy schemes can have significant social and economic impacts, as demonstrated by recent research by CREW Regeneration Wales, the University of South Wales and the University of Glamorgan (this research can be viewed on CREWs website in February 2015) Despite a significant increase in skills, interest and funding in Wales for Community renewable energy over the past 5 years, there are significant barriers to communities developing their own micro renewable energy systems. Many of these significant barriers lie in the planning system, often resulting in over 5 -10 year delays. More assistance, training and advice for both communities and relevant planning officers would facilitate community-led energy projects.



Planning permission requirements can be a barrier e.g. listed buildings with Areas of Outstanding Natural Beauty (AONB) restrictions can be in conflict with whole house retrofit. RSLs have the ability to start addressing these barriers to design, installation, operation and maintenance of renewable heating systems in particular through the relevant expertise in the sector and the willingness to evaluate the effectiveness of such technologies and engage and inform tenants. Due to many reasons (including the cost and the need for renewable heating to be used more widely and be more universally acceptable), from liaising with members, renewable heating projects within the social housing sector in Wales have tended to be small and usually pilots without procurement in large quantities. Housing associations are still assessing the effectiveness, running costs and tenant satisfaction from this/last year's installations. What is evident from projects is that householder education is an important factor to improve both the acceptance and operation of renewable heating systems.

## 75 SSE

-

## 76 CITB

### **Skills and Education**

- **CITB Cymru Wales recommends that Welsh Government consider the skills requirements of all energy efficiency proposals early on and commits resources, guided by Labour Market Intelligence (LMI), to areas of skills deficiency.**
- **CITB Cymru Wales believes that knowledge and awareness around issues such as energy efficiency should be mainstreamed within Wales' construction apprenticeship provision. This should include knowledge on the performance of traditional pre-1919 buildings in Wales, to ensure that our existing stock can be improved effectively.**
- **CITB Cymru Wales has well-established engagement mechanisms through the CITB Cymru Wales Committee and three regional fora, as well as other professional services groups. The Welsh Government should use this as a means for disseminating information and engaging with the construction sector.**

### **Skills and education**

#### **Delivering skills that respond to local need**

The Welsh Government's Policy Statement on Skills and the emerging Regional Skills Partnerships are vital to ensuring the appropriate labour market intelligence in terms of the construction sector is properly fed in to the decision making process. CITB's Construction Skills Network identifies a number of key skills needs for Wales over the coming years. For instance, Wales is set to grow at a rate of 5.8 per cent per annum between 2015-19, which is the highest growth rate of any UK country.<sup>14</sup> This is driven by large scale infrastructure investment such as Wylfa Newydd, the

Swansea Bay Tidal Lagoon and improvements to the A465 as well as a significant body of retrofitting work through schemes such as Arbed and Nest.

In order to maximise the social and economic impact of this growth it is vital that the sector in Wales is able to attract and maintain an appropriately skilled workforce. Detailed Labour Market Intelligence (LMI) is necessary to help ascertain the needs of the sector. **CITB Cymru Wales therefore recommends that Welsh Government consider the skills requirements of all energy efficiency proposals early on and commits resources, guided by LMI, to areas of skills deficiency.**

### **Mainstreaming energy efficiency in work-based learning**

Research by the Zero Carbon Hub suggests that a lack of knowledge and skills on energy performance across the house-building industry is a major contributor to the performance gap between intervention design and performance<sup>15</sup>. Our own research states that these knowledge gaps seriously jeopardise our ability to achieve the EU 2020 climate change targets.<sup>16</sup> **In order to rectify this situation, CITB Cymru Wales believes that knowledge and awareness around issues such as energy efficiency should be mainstreamed within Wales' construction apprenticeship provision. This should include knowledge on the performance of traditional pre-1919 buildings in Wales, to ensure that our existing stock can be improved effectively.** This should be a key consideration of ongoing apprenticeship reforms in Wales.

There is also a need to promote energy efficiency awareness as part of continuing professional development. Existing workforces need the time and incentive to embark on training to improve skills in this area. Welsh Government should therefore examine ways of increasing the emphasis on training and skills as part of its energy efficiency projects.

### **Employer Engagement**

Employer engagement is vital to the success of policies around education and skills, with both the individual and the employer being the beneficiaries of training and development. CITB Cymru Wales is well placed to facilitate this engagement from a construction perspective and has well established governance mechanisms that allow this to take place through the CITB Cymru Wales Committee and the three regional fora. CITB Cymru Wales is also involved in the Construction Sector Qualification Advisory Panel that is seeking to ensure appropriate employer dialogue in the creation and development of qualifications in Wales. This is a vital consideration in any apprenticeship reforms.

**CITB Cymru Wales has well-established engagement mechanisms through the CITB Cymru Wales Committee and three regional fora, as well as other professional services groups. The Welsh Government should use this as a means for disseminating information and engaging with the construction sector.** CITB Cymru Wales is keen to facilitate this engagement on the consultation on the draft energy efficiency scheme and any of its associated policy interventions.

<sup>14</sup> Construction Skills Network. 2015. *Industry Insights: Wales 2015-19* [Online]. Available at: <http://www.citb.co.uk/documents/research/csn%20reports%202015-2019/construction-skills-network-wales-2015-2019.pdf> (accessed 7th September 2015).

15 Zero Carbon Hub. 2014. *CLOSING THE GAP BETWEEN DESIGN & AS-BUILT PERFORMANCE END OF TERM REPORT* [Online]. Available at: [http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design\\_vs\\_As\\_Built\\_Performance\\_Gap\\_End\\_of\\_Term\\_Report\\_0.pdf](http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design_vs_As_Built_Performance_Gap_End_of_Term_Report_0.pdf) P.20. (accessed 7th September 2015).  
16 Build Up Skills UK, 2013, Status Quo Report.

## **77 CLA**

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## **78 EON**

### **Skills and Education**

61. We support the intentions of the Welsh Government to develop the skills capability to deliver on the energy efficiency challenge. A holistic approach of embedding knowledge about energy efficiency in the education system and building on this through later skills development and vocational training is a sensible and practical objective.

62. In order to do this effectively, education and training must clearly be linked to both the school education system and the needs of employers. We support action to encourage strong links between local schools and employers to ensure that school leavers are equipped with the necessary skills to transition successfully in to the world of work. We also support the action to improve business capability around energy efficiency in order to remove the skills gap that may be preventing some businesses from identifying the opportunity for and undertaking energy efficiency improvements.

63. We believe that investment in traditional apprenticeships should be encouraged, focusing on areas where there is an existing skills shortage and longevity in terms of demand for the roles.

64. Training should be delivered by qualified and appropriately skilled staff in recognised training centres where apprentices can obtain recognised and valued qualifications. This should be supported with on-the-job training by employers, the quality of which should be monitored and assessed to ensure that apprentices are receiving a consistent standard of training.

65. Furthermore, vocational training presents the opportunity to deliver broader skills than just the trade being learnt which would be transferable to other professions. This could encompass, for example, first aid, health and safety, energy efficiency, customer service, IT/administration, business studies etc. This supports the Welsh Government's desire to deliver vocational qualifications that are portable and flexible, not only within the energy efficiency sector but also across other sectors.

66. Trainees should have to compete for places. Vocational training should not be viewed as an easy option. Positions should be aspirational with the chance of successful applicants being able to earn and learn during two to three year

apprenticeships. Equally, such roles should not be targeted solely at the unemployed or at school-leavers. Some vocational roles should be exciting enough to attract A-level students as an alternative to university.

67. Employers will need to invest in these roles and will therefore need to be able to see a sustainable pipeline of work. This will be equally as important to the apprentices who will be investing their time and making a career choice for the future. Without attractive prospects for future employment, neither employers nor candidates will be interested in the opportunity.

68. Recruitment and selection should target individuals who will be able and willing to commit to continuous learning as emerging technologies and energy efficiency solutions evolve. Multi-skilling individuals at the outset will be beneficial in terms of their mind-set and their longer term employment aspirations.

69. We believe that the Welsh Government should form strong, proactive partnerships with key stakeholders outside of Wales who can bring their expertise and experience to assist in developing energy efficiency in Wales.

## **79 NEA**

The Welsh Government needs to take into account the training of frontline energy efficiency and fuel debt individuals and organisations in Wales.

NEA over the past 30 years have offered and delivered an extensive range of qualifications, training courses and education resources for people working in the energy services sector and support services. NEA provides training on fuel poverty, fuel debt, affordable warmth and energy efficiency advice.

Since 2010, NEA has trained over 1100 people in Level 3 City and Guilds Energy Awareness. This training provides accreditation to frontline staff and advisors providing households with advice on energy efficiency and fuel poverty in Wales. The City and Guild training provided by NEA<sup>ii</sup> needs to be included in Box 3: Key energy Efficiency accreditations as these qualifications are a requirement to frontline staff advising householders in Wales. The Welsh Government needs to recognise the importance of frontline staff on energy efficiency in the final energy efficiency strategy.

City and Guilds energy efficiency training of frontline staff and advisors is important and should be recognised as a key energy efficiency accreditation within the strategy. The accredited course ensures that training and the delivery of energy efficiency advice is consistent across Wales and the rest of the UK. It enables those trained to legitimately advise householders on energy efficiency and support them out of fuel poverty.

ii <http://www.nea.org.uk/training/qualifications/energy-awareness-6281>

## **80 Rockwool**

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## **81 EDF Energy**

Yes, we agree with the actions detailed. Areas for consideration also include:

1. Encouraging greater promotion and engagement through existing programmes and local installers to serve the demand in rural Wales for improved development of education and skills. This could be achieved through both, increased financial support and greater collaboration between smaller installers. Local small installers could help each other up skill, developing new skills and building partnerships to compete with larger suppliers.
2. Colleges should be encouraged to include modules on energy efficiency particularly in courses involving plumbers, electricians and construction trades.
3. Similarly, trade associations should be encouraged to promote to businesses the benefits from the take up of new skills and development of new income streams.
4. Further, encouraging the introduction of energy efficiency into the school curriculum would aim to support mitigation of climate change impacts. This would result in greater understanding of other benefits, for example, to health, finances and home comfort.

## **82 Royal Institute of Chartered Surveyors**

Agree education has an important part to play but fails to include professional education. Capital investment in schools and the commitment to the construction of buildings that meet environmental standards should be taken as a given.

## **83 Flintshire County Council**

Skills need to be learnt and retained. The problem is retaining trained/skilled staff when businesses are struggling to survive. What can be done to support such companies that would enable them to grow and retain their skilled staff? e.g create Sustainable incentives ?

Area of action 3.1:

Local need is invariably driven by incentive, or need in one form or another. Such incentives could be financial, or driven by a requirement for improvements to the housing and public sector stock. However if this is to be achieved, it must be consistent in order to become sustainable from the perspective of skills and employment. There is no point training employees if they don't have a job a few months down the line.

Could the Local Development Plans of Local Authorities be required to assist this?

Area of action 3.6:

It is of serious concern that the requirement to achieve BREEAM excellent and an EPC A rating do not translate into efficient schools. Theoretical calculations tend to force the design of schools down very complex mechanical and constructional routes that do not achieve the intended or expected results,...it has become an expensive tick box exercise

It must be remembered that the more complex heating and ventilation systems are, the more difficult it is for the end users to understand how they work. This has manifested itself in one new school, that achieved BREEAM excellent and an EPC A rating, that produced an operational rating of a "C", Display Energy Certificate . This also hides the fact that the site in question was just **one point off being a D rating ie worse than many schools built in the 1950's**.

The Mechanical and Electrical design of new schools need to be very much simpler so, that on site staff can understand and operate the systems installed with relative ease. Whilst BREEAM was designed to improve Environmental compliance it does little to produce efficient buildings, in practice it does not work, and serious consideration should be given to developing something that does achieve the stated objectives. There is a lot to be said for simple construction with good levels of insulation and effective, but managed, natural ventilation!

## 84 Constructing Excellence in Wales

CEW is reassured by the Strategy making reference to the need to improve skills and education within the sectors of energy efficiency and renewable technology. But we would seek more detail on what specific actions will be identified for these sectors rather than the broader upskilling initiatives currently outlined within chapter 5.3. Our comments are as follows:

- We feel this requires a more focused approach specifically to the businesses and markets in which energy efficiency and renewable technology deployment will be made. For example, local training and upskilling projects delivered by the third sector, work by organisations such as Ymlaen Ceredigion who enable a number of networks and agencies to work together to alleviate fuel poverty.
- We are keen that the Donaldson review incorporates as much learning from the current delivery of ESDGC curriculum as possible. Within the C21 schools programme links between the main contractor, school and wider community are being made, often beyond the baseline requirements of the community benefits tool. We have recently submitted to the Education team our papers recommending that targets are linked to funding conditions. These would set targets on the number of: apprenticeships, work-based placements, graduate in-take, schools visits (curriculum input from the construction sector) required by a project. This should be applied to any capital programme that the WG take forward, not solely the C21 Schools programme. Capital investment in the 21st Century Schools programme also



offers a unique opportunity to harness enthusiasm across Wales in school leavers and post-16 students to join the construction sector.

- Much of the training in Wales' post-16 education curriculum focuses on new build construction techniques. Your strategy acknowledges that Wales has some of the oldest housing stock in Europe, but a more clear training strategy is needed to support colleges and industry in developing appropriate courses. The "specialist" heritage centres in West and North Wales<sup>21</sup> need to become more integral to the supply chain and not be seen as specialist ventures.
- In 2014, the Zero Carbon Hub completed its research project on the Performance Gap<sup>22</sup>. The project sought to understand the nature of the Performance Gap between a building's designed performance and the energy efficiency achieved once completed on site and occupied. Whilst the project was focused on new build homes, there are several findings which hold equal merit with the retrofit industry, some are shown below, but your review of the report may identify more:
- Energy Literacy – the project found limited understanding of "as-built energy" performance and the existence of the performance gap. This includes clients, planners, designers, architects, engineers, SAP assessors, energy modellers, developers, contractors, procurers, site managers, materials suppliers, operatives, commissioners, testers, verifiers, valuers and insurance bodies.
- Improving Quality Output - There is a need to create a more robust industry-led approach to construction detailing, linked to improved quality control from design through to the construction and commissioning phase.

Findings from the NHBC Foundation's "Sustainable Technologies – the experience of housing associations"<sup>23</sup>, primary research also highlights areas of improved skills and training with regards the design, installation and maintenance of energy and water efficiency technologies. Key findings of the research of relevance to the Energy Efficiency Strategy for Wales are: that inadequate installation skills are an issue; technology use is benefitting residents and that residents could benefit further with better understanding. This is not the first report to identify that occupant training is frequently inadequate with regards the handover of properties which have undergone energy efficiency measures or had renewable technologies installed.

BRE, on behalf of CEW have completed a review into the legacy issues of retrofitting cavity wall insulation and external wall insulation to homes in Wales. The report is being finalised and will include a number of recommendations for industry and policy. We will present this separately to the team for your consideration in due course.

21 <http://www.tywicentre.org.uk/English/Pages/default.aspx> and <http://thenaturalbuildingcentre.co.uk/>

22 <http://www.zerocarbonhub.org/current-projects/performance-gap>

23 <http://www.nhbcfoundation.org/Publications/Primary-Research/Sustainable-technologies-NF63>

## **85 RWE nPower**

With regards to the specific consultation questions asked (question 1-6) we agree with the areas of action set out and we do not have any additional questions or issues to be addressed. We would welcome confirmation of any proposed interim milestones that will be used within the broader strategy; particularly for those actions that relate to supporting and addressing fuel poverty, given the statutory target to eradicate fuel poverty (as far as is reasonably practicable) by 2018.

## **86 Melin Homes**

Notes: Those that are developing new technologies and programmes, those that are then responsible for either delivering those programmes or installing those technologies are the ones who need to be identifying and shaping the education and skills required. It must then be for Welsh Government and Education/Skills providers to work with the sector in shaping and delivering programmes that are fit for purpose.

Training and skills are vital in meeting the aspirations of the strategy, encompassing research, engineering, construction skills and ensuring that individual households, communities and business are empowered and eager to be a part.

Awareness of energy efficiency and education needs to start in primary schools and then be part of education throughout.

A new approach is required to what is taught – there tends to be more of a focus on ‘traditional’ skills, particularly in the construction industry. Education and Industry will need to be far more focussed and communicative in order to teach the skills required. It will also be the case that new skills will need to be taught to those already in the workplace. Our organisation has built energy efficient homes and then found a very limited pool of people with the skills required to then maintain those homes.

## **87 Citizens Advice**

No answer.

## **88 Energy Savings Trust**

Continued professional development is a key cornerstone of most trade bodies and membership organisation, but time for the supply chain to attend events is often at the expense of income generating work. Area for action 3.1 – Delivering skills that respond to local need, also needs to include more centralised digital multichannel learning that is now becoming commonplace. Maintaining a single central resource for access through a number of different channels will provide a learning platform to support those across Wales, where and when they want to access the information.



European funding can help but is often restricted – such as the Built Environment Sustainability Training (BEST). There was clear interest and demand from the private a public sector outside of the target demographics and geographies. Welsh Government should look at resources such as these to further support increasing skills of workers in Wales.

#### **89 Glass and Glazing Federation**

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#### **90 WWF**

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#### **91 Egnida**

Egnida has direct experience in the market areas and most of the initiatives mentioned in the consultation and has previously provided in depth feedback to the process and associated initiatives. As such, we are fully supportive of the actions presented through 5.1 to 5.5 of the consultation as referenced in Questions 1 to 5 and the associated dynamics and impacts.

#### **92 Federation of Small Businesses**

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#### **93 Calor**

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## Innovation

**“We support innovation in new energy efficiency products to deliver solutions in Wales; and our businesses benefit from the opportunities presented by this global challenge.”**

### **Key areas of action:**

- 4.1 Support to develop new products and services.
- 4.2 Smart meters.
- 4.3 Energy efficiency innovation in the public sector.
- 4.4 Smart Living demonstrations.
- 4.5 Shared learning.
- 4.6 Innovation in Welsh Government Programmes.

**F) Responses in full to question 4) Do you agree with the areas of action set out in chapter 5.4: Innovation?**

## 1. Eco Home Centre

### 4.1 Support new products and services

We can all benefit from using new techniques like Bio Solar House and Passive House, but we can make these Welsh as well by using our national natural resources. This should be a priority. Having new zero carbon Welsh Vernacular is one way forward.

All new products should be designed to further the aims of FGA rather than just energy efficiency.

Major new products (like wood fibre insulation) must be supported by specifications in contracts from WG and other public sector bodies.

### 4.3 Energy efficiency in public sector

The current research needs to inform this, so that we encourage products that fulfill all FGA criteria. Products that are encouraged need to be healthy, low carbon, local etc.

### 4.4 Smart Living demonstrations

These should be used to help inform people about their houses and how to manage risk.

### 4.5 Shared Learning

Always important, but context is important.

### 4.6 Innovation on WG programmes

WG needs to be wise in its work to ensure that it is appropriate, low risk etc and also encourages the right type of innovation. We can be a UK leader here and show how smart we can be by not storing up problems for the future.

## 2. Neath Port Talbot Group of Colleges

AGREE strongly with the actions outlined. We would suggest, given the amount of innovation, that already exists in WALES that an exercise is undertaken and evaluate the technology that is already in place or being developed. The exercise would then allow the capacity to train as well as development of the manufacturing capability, within Wales.

## 3. Gwynedd County Council

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## 4. Certsure

We agree with the action points as innovation generally drives change and if the change is beneficial in both saving energy and costs then there should be some

successes as a consequence of the innovation, assuming it has been widely adopted.

The identification of basic principles are still a key fundamental requirement in achieving energy efficiency should NOT be overlooked in the drive for innovation, not all change is good change!

#### **5. Institute of Civil Engineers**

I would broadly agree

#### **6. Torfaen County Borough Council**

We have concerns about some of the new technologies. We would welcome evidence that the new technologies are going to work and that they are cost effective. If measures don't work (e.g. some homes have had to have cavity insulation removed), then this will end up putting people back into fuel poverty.

#### **7. NSA Afan**

- 4.1 We support this statement
- 4.2 We support this statement
- 4.3 We support this statement
- 4.4 We support this statement
- 4.5 We support this statement
- 4.6 We fully support this statement

#### **8. Royal Town Planning Institute**

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#### **9. Saint Gobain**

Yes, Saint-Gobain agrees with the actions set out for innovation. We also welcome the recognition that more confidence in policy is required by all in the energy efficiency sector. This will help business to justify spend on innovative technologies and solutions in energy efficiency for the future.

## 10. Coed Cymru

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## 11. Tabitha Binding

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## 12. Renewable UK

Section	Summary	Comment
4.1	Support to develop new products and services	Agree; this is an extremely important part of supporting nascent Welsh business, and of capitalising on our strong higher education and industrial research areas
4.2	Smart meters	A potentially useful action area but with insufficient detail on what will be done to produce real outcomes
4.3	Innovation in the public sector	Again, a potentially useful area but no detail on what 'stepping up our action' means in practice. Some of the Green Growth Wales and Resource Efficient Wales description is a duplication of previous action areas
4.4	Smart Living demonstrations	Agree; smart living demonstrator projects can be useful in helping business understand which aspects of energy efficiency innovation are most likely to be commercially successful
4.5	Shared learning	Agree, but this should be a standard part of good practice in the public sector, and there are no specific actions to consider

4.6	Innovation in Welsh Government Programmes	Agree. We welcome the implicit appetite for risk in innovation in public sector practice, and look forward to seeing the outcome of research into new technologies
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### **13. British Gas**

- 4.1 Innovation has the potential to transform the way that households and businesses interact with their energy usage, from smart meters and connected homes devices such as Hive Acting Heating, to microgeneration and heat technologies, like solar and microCHP. We support the Welsh Government's focus in this area and the areas of action set out in the consultation document.

#### ***Smart meters***

- 4.2 Smart meters play a crucial role in helping customers to manage and understand their energy usage and are already delivering benefits to consumers. They have delivered measurable improvements in customer satisfaction and customers are also saving around 2% on their bills, a figure we expect to increase to around 5% when we measure the impact of additional feedback tools, like apps.
- 4.3 As smart meters are installed into more and more homes, further innovation will also become possible, from batteries to store locally generated energy, to time of use tariffs and products to help consumers automate their homes. We agree with the Welsh Government's focus on supporting Smart Energy GB's consumer engagement activity. We also believe it's important for all suppliers to be ready for the mass roll-out phase of smart meters, due to begin in 2016 and for suppliers to stick to the 2020 end date, so consumers can benefit from smart technology as soon as possible. We would like to work with the Welsh Government and other partners in Wales to highlight and promote the benefits that smart meters are already bringing to households and businesses across Wales.

#### ***Smart energy***

- 4.4 We welcome the Welsh Government's focus on smart living and believe a series of demonstrations will be a useful tool to test the impact of nascent technologies.
- 4.5 British Gas is leading the way in the development of connected homes products, as we were pleased to see recognised in the consultation document. Our Hive Active Heating remote heating control product is already helping Welsh homes and we recently announced a new family of Hive

products, to make easy for people to control appliances and lights remotely, and be alerted to motion in their home from the Hive smartphone app.

- 4.6 However, this is just the beginning and smart grids and demand side response, enabled by smart meters, will also play a role in the smart energy future and will allow us to reduce the pressure on the grid at peak times. British Gas has been involved in some trials to understand the impact and potential of demand side response, but we believe any further trials would be useful and so we are keen to build on conversations we have started with officials in Welsh Government on this agenda.
- 4.7 We have also identified distributed energy as a key area for our business in the future and believe opportunities exist to help our industrial customers with energy efficiency, supporting flexible generation and providing energy management systems.

### ***Microgeneration and heat***

- 4.8 Microgeneration and heat products will also play an important role as we transition towards a low carbon future. British Gas is already working with the public and private sector across Wales to help them make use of these technologies and manage and reduce their energy usage. For example, in the public sector, we have an Energy Performance Partnership with Hywel Dda Health Board in West Wales to reduce energy bills while in Newport we are developing a biomass district heating scheme on an estate of 900 houses. Last year we worked with Toyota in Deeside to launch a solar array, which will substantially reduce their manufacturing costs. In order to ensure that Wales can fully benefit from solar and to reduce the administrative burden, we believe that the Welsh Government should increase permitted development planning rights for solar from 50KWp to 1MWp.

## **14. One Voice Wales**

Yes. Use should also be made of all avenues of technological advances such as social media and Internet trading to encourage take-up amongst the wider population of the emerging opportunities for domestic and small business improvements in this field.

## **15. Natural Resources Wales**

Yes

We support the view that the Welsh public sector has great potential for development and adoption of innovative energy solutions as detailed in *Area of action 4.3 Energy efficiency innovation in the public sector*. We will be seeking innovative energy efficiency and micro-generation solutions to assist us in meeting our objective of becoming a carbon neutral organisation.

## **16. UKLPG**

-

## **17. Wolseley**

We firmly support the concept that innovation in demand side measures – those that reduce demand – can be more cost effective in meeting our climate change and fuel poverty targets. The Sustainable Energy Association has calculated the relative returns on investment, showing the efficacy of demand side measures<sup>6</sup>.

Innovation will continue to play a key part in all sectors and we are committed to providing access to top quality products which combine ease of use with improved efficiency at affordable prices. It is important to manage the development of innovative solutions and to ensure that products are fit for purpose before making them available. Quality management and experience is a key factor in this management process.

## **18. James Coulter**

-

## **19. Mineral Wool Insulation Manufacturing Association**

MIMA welcomes the ambition to support businesses in developing and commercialising new energy efficiency products and services. We would appreciate more information on what this support might look like.

## **20 CastleOak**

-

## **21 ACE**

-

## **22 Newydd**

-

## **23 Isle of Anglesey County Council**

-



**24 Energy Effective Ltd**

-

**25 City & County of Swansea**

-

**26 The Detail Hub**

Yes.

**27 My Green Home Ltd**

Yes.

**28 Ynni Cymru Energy Solutions**

I agree but the above points are 'woolly' at the moment. How will it be carried out?

**29 The EPC Man**

Yes.

**30 Bond Demolition Ltd**

Yes we need proper long term understanding of energy generation creating industrial sites in the countryside is not the way forward when there are existing industrial sites which could be used.

**31 Colin Edwards**

-

**32 Wrexham County Borough Council**

-

### **33 Gaia Renewable Energy Ltd**

If we are to take renewable energy seriously action is needed.

### **34 Green Renewable Wales Ltd**

-

### **35 Powys County Council**

Generally yes. I would like to see more product innovation around biomass (woodpellet is expensive and relatively carbon intensive to transport, chip often has fuel quality issues). A locally produced briquette type system could be a source of income for local farmers in rural off gas communities, and provide a compromise with the above fuel issues. I would also like to see innovation across several cross cutting schemes, I understand that the budgetary cuts will be ongoing, and that healthy homes can yield benefits in terms of occupant health, reductions in sick days, reductions in GP visits etc. It would be good to know more about health and energy efficiency initiatives such as NEAs warm and healthy homes fund, and to have data on the overall cost savings, looking at the schemes the whole, although I don't believe that this level of information is available at present. Also, there maybe procurement innovation opportunities for setting up models for working with smaller, local businesses, to ensure that the income, training and skills stays in the area when contracts expire.

### **36 GATC Ltd**

Yes.

### **37 Celsius Energy Ltd**

We are in agreement with the investment in new and innovative energy efficiency products but not at the detriment of existing products or smaller products that should be done before introducing new products. There should be a whole house approach to include new measures but not to exclude older, more cost effective measures

### **38 C&K SUPPLIES**

-

### **39 Llangynog Memorial Hall**

-

#### **40 Dr James Henshall**

Broadly, yes. I have a few concerns with regard to how smart metering may be diverted from its original purpose.

#### **41 John Griffiths - Chartered Surveyor**

Don't like smart meters etc...

#### **42 Equity Redstar**

Yes.

#### **43 North Wales Housing**

-

#### **44 NSA Afan**

YES - The Welsh Government could be a world leader if they grasped the nettle. Lead by example and all will follow.

#### **45 T L C Energy Limited**

Yes and a Development Bank.

#### **46 ECO CARBON TRADERS LTD**

-

#### **47 Asset Energy Solutions Ltd**

-

#### **48 WDS Green Energy**

Yes.

#### **49 Torfaen CBC**

Yes.

#### **50 Warmwalls Ltd**

Yes.

#### **51 Gas Tech Wales**

-

#### **52 GB-Sol Ltd.**

Develop low-carbon and local supply chains and manufacturing

#### **53 South East Wales Energy Agency**

-

#### **54 BDT installations**

-

#### **55 Salix Finance**

Yes.

#### **56 Aberystwyth University**

5.1 Yes but only through the existing applied research funding sources. 5.2 Yes but only 1) as advisory for their benefit and 2) ensuring that they are installed in all government buildings and those deriving financial support from Welsh government including local councils, hospitals, schools and universities. Again, lead by example. 5.3 See 5.2 above - through internal investment in government. 5.4 Yes, but in collaboration with existing architectural demonstration sites. 5.5 Yes within the existing educational framework - particularly in schools. 5.6 Only where it leads to action. Welsh government hosts one of the biggest wind-farms in the UK but who would know about this innovative step?

**57 William Morris Energy Assessments**

I agree.

**58 Geraint Williams Plumbing & Heating Ltd**

-

**59 URBAN SOLAR LTD**

-

**60 Peter Jackson**

-

**61 Ignite Mechanical Contracting Ltd**

-

**62 Jamie Black OCDEA/DEA/GDA**

-

**63 Westflight Ltd**

-

**64 Pembrokeshire Power**

-

**65 Greener Heat**

-

**66 SAM Drylining Ltd**

Yes to all.

### 67 Dean Crocker Energy Assessor

Yes.

### 68 Biofutures Ltd

Why not.

### 69 E W Consultancy

Agree.

### 70 Christopher Williams – Individual

Yes.

### 71 Business Wales

There are a lot of existing energy efficiency products and services that have not been exploited to the full. Some are tried and tested. These existing products and services should be supported.

### 72 Institution of Mechanical Engineers

This section does not discuss the promotion of technology or investment in research and development. This is especially pertinent to energy storage technology and heat management as well as opportunities presented by graphene in electricals and transmission. A focus on new technologies would grow the burgeoning sector in Wales, create skills and jobs that support the energy industry. A comprehensive energy efficiency strategy should address these engineering issues.

The Institution of Mechanical Engineers encourages adoption of the following recommendations:

1. **Government needs to focus on heat and transport, as well as electricity.** It is well understood that security of supply is crucial and that decarbonisation of the UK energy system desirable, but in contrast to past thinking it should not be confined to simply having sufficient electricity generating capacity to 'keep the lights on'. With a growing amount of the UK's fossil fuel supplies being imported, and rapidly increasing global competition for remaining resources, it is in the national interest to utilise freely available indigenous renewable resources for heat and transportation as well as electricity generation. Government needs to work with the engineering community to develop new and innovative

systems that include energy storage to cope with the intermittency and seasonality challenges that these renewable sources present.

2. **Government must recognise that energy storage cannot be incentivised by conventional market mechanisms.** It is unlikely that the nation's long-term decarbonisation objectives will be met without significant deployment of energy storage capability, yet there are no plans in the UK for significant levels of energy storage. To date very little public investment has been made in research, development and demonstrator activity and, as yet, there is no existing or proposed incentivisation scheme for energy storage deployment. In order to stimulate the sector and ensure that UK has the capability to deliver energy storage, as well as exploit emerging export opportunities, new public finance and business models are required to fund this key element of the nation's future energy system. The Government must lead the way for industry by developing a clear roadmap for the development, demonstration and deployment of energy storage in the UK and create an energy storage shop window to the world.
3. **The UK must reject its obsession with 'cheapness' in the energy sector.** Despite current concern over rapidly increasing energy costs, and the reactive political promises that are unlikely to be fulfilled, it is evident that whatever form of energy is used in the UK, costs will have to continue to rise into the future. In comparison with other European countries, the UK has for decades focused on keeping energy prices artificially low, which has led to over-consumption of energy, while the necessary demand-side reduction measures have not been put in place. This attitude must change and an alternative culture developed which recognises the value of energy and drives sustainable change in the nation's energy system. (from IMECHE Energy Storage Report 2014)
4. **Tackle the provision of larger pieces of national heat infrastructure, as well as the interconnection and integration of heat systems with other energy networks.** The UK's heat infrastructure, from individual buildings to larger-scale District Heating networks, should be declared 'national infrastructure' and dealt with in a holistic and strategic way. The global exemplar of a truly integrated energy system is in Denmark, where the power generation network, the heat energy network and multiple forms of waste stream are often integrated to deliver a Sustainable Energy Network (SEN). The aspiration of the UK Government should be to learn from this existing system and adopt the approach within a UK context. (From IMECHE Heat Report 2015)

## 73 Smart Energy GB

11. **Smart meters are an important first step to creating a smart grid for Wales (Action 4.2)** With the accurate information from smart meters comes the potential to develop innovative, energy saving appliances for households and integrated

greener technologies such as electric cars.

12. The accurate data provided by smart meters also means that future investment in generation, supply and technology will be based on factual data. This information has not been readily available across sectors previously. For example, with smart meters, communities can participate in local energy generation schemes with an accurate picture of their usage. The managers of these schemes can effectively plan and deliver energy to households in the community and plan accurately for the total consumption needs of their community and how best to meet them.
13. **The data provided by smart meters will enable a transformation in the range and quality of services offered to consumers, by providing a new platform for innovation:** By finally digitising energy retail, smart meters will drive a massive growth in new services provided to consumers using data. The range and scale of this will be enormous; from simple but transformative services that can ensure consumers are buying their gas and electricity on the best value tariff, to much more sophisticated services that use energy data to help manage health and social care.
14. As the smart meter rollout progresses there is potential to work with public, private and voluntary organisations across Wales to explore how they can best use the smart platform created by smart meters to enable innovation and technological advances that lead to energy efficiencies. We would welcome the opportunity to work with the Welsh Government to explore future potential.

## 74 Community Housing Cymru Group

### **Area of action 4.1 – Support to develop new products and services.**

CHC encourages innovation in developing green technologies. This includes the development of products which will make the task more secure and less disruptive. CHC feels that we should be increasing the amount of energy efficiency retrofit works as well as the amount of energy that we generate through renewable technologies. Government should keep the cost of capital for investment in low carbon technologies low. Schemes such as the feed in tariff and renewable heat incentive are good examples of innovative schemes that we need more of.

### **Area of action 4.4 – Smart Living demonstrations.**

CHC feels that its Registered Social Landlord members can play a significant role in partnership with others to lead the development of local and community based Smart Living energy demonstrator projects.

### **Area of action 4.5 – Shared learning.**

A key opportunity for developing skills and education is the ability to learn from each other and share best practice. This includes:

- Sharing intelligence;
- Raising awareness;
- Seminars to share knowledge,
- Promotion of case studies,



- Using demonstration projects and open days at properties as showcases and learning opportunities,
- Determining the barriers and best practice for discussion at workshops,

#### □□ Establishing stakeholder communities

- More participation in research,
- Making the tools and acquired experience available to all actors,
- A medium of proactively disseminating information to stakeholders and focused, regular collection of information from stakeholders,
- Involvement of experienced research teams in whole house retrofit projects to minimise the gap between predicted and actual performance and more.
- Action at the community scale is vital for engagement and motivation of people to take action. Effective community engagement requires an ongoing process with trained professionals. Housing Associations have played a key role in the Arbed programme and have proven experience in combining investment in energy saving measures with job creation. The majority of the works in the Arbed scheme were commissioned and managed by housing associations which achieved significant regeneration outcomes by the use of binding social inclusion clauses in procurement contracts.

#### **Area of action 4.6 – Innovation in Welsh Government Programmes**

Taking into account the energy hierarchy, energy reduction should be considered firstly before considering energy efficiency. Once energy reduction has been considered as well as energy efficiency, renewable energy should be considered. CHC would like to see more support from Welsh Government in enabling local energy production through renewable energy systems. People in Wales have amongst the second highest electricity bills in Great Britain, which is largely due to Wales' energy infrastructure and higher distribution costs faced by consumers in Wales (more so in North and rural areas of Wales, but also other parts of Wales as well). A fair deal on distribution costs is needed for Welsh consumers. Part of this deal is the need to improve the capacity and infrastructure of the national grid with regards to installing renewable energy systems amongst other benefits. There is great potential for renewable energy in Wales and, alongside this; we need to consider the potential for energy storage, smart grids and other technological advances. Such projects can have significant social, environmental and economic benefits for housing associations, tenants and communities.

Following the UK Government's decision to launch a consultation on electricity distribution costs in the north of Scotland, CHC feels that the same could be considered for North Wales which has the second highest regional energy costs. However, CHC would go a step further and argue that we need a major overhaul in this area and big investments in infrastructure are needed to create a flat national rate. Higher distribution costs faced by consumers in Wales results in people paying more on their fuel bills. A fair deal on distribution costs is needed for Welsh consumers. Reports have suggested that 'Network costs' were found to be unnecessarily high, with operators making "greater than expected profit", despite Ofgem regulation<sup>4</sup>. Pressure should be put on Ofgem to encourage the roll-out of

more efficient network technology, such as smart grids, while also connecting smaller energy providers to the grid to stimulate competition. There is a need for more efficient network technology. Energy storage not only has the potential to provide back-up power in case of power cuts, but storage can also help electricity grids run at average rather than peak load, therefore reducing the chances of power cuts in the first place. Energy storage can also be used to obviate the need to upgrade or install new grid capacity. Puerto Rico, for example, has set a 30% storage requirement for any new renewable capacity<sup>5</sup>. Storage is also proving invaluable for isolated communities that have no access to the national grid, with “islanders in particular enjoying continuous power without the need for additional diesel generation”<sup>6</sup>. Renewables, together with energy storage, open the possibility of communities and individuals becoming energy self-sufficient.

With solar panels or wind turbines, for example, generating electricity and batteries storing it, households become far less reliant on the grid. CHCs members do not have a lot of experience in assessing energy storage mechanisms, but CHC understands that the costs today are prohibitively high for mass adoption, but there are already residential energy storage solutions on the market and costs will come down. Support from Government and others would be essential in driving the use of energy storage mechanisms into the market due to initial costs and significant commercial risk. The German Government is even setting aside €50m (£36m; \$56m) a year to offer subsidies to its citizens specifically to help buy storage batteries. Since May 2013, some 5,500 Germans have been given on average €3,200, with demand increasing all the time. Forecasts suggest the market could be worth anything between \$30bn and \$400bn in the next five to seven years<sup>7</sup>. The implications for consumers, big power utilities and grid operators are profound. Small-scale storage could have a similar effect to grid-scale storage, as consumers would be able to buy power from the grid when it's cheap and plentiful, and use their own when it's more expensive. This would help balance demand and reduce strain on the system.

It could also lead to a point where demand from the grid is much reduced. This raises important questions about who will pay for grid maintenance - initially at least only the wealthy may be able to afford renewables and storage, leaving those who can't afford them to pick up the bill. Therefore, if Wales did decide to pursue energy storage options, this must be taken into account in helping to enable low income households to get access to new technologies so that they aren't disproportionately affected.

The utilities could be hit hardest by a fundamental shift away from centralised energy production. Research by Barclays has estimated that 20% of US electricity consumers will be able to use power from solar and storage for the same price as they get it from the grid by as early as 2018<sup>8</sup>. In the history of the electric utility industry, there has never before been a truly cost-competitive substitute available for grid power. Solar plus storage could reconfigure the organisation and regulation of the electric power business over the coming decade. There are an increasing number of energy services companies able to provide everything their customers need to generate and store their own energy. The ultimate beneficiaries could be consumers. It has been suggested that energy storage could pave the way for the "democratisation of energy", where consumers are able to generate their own

power that, after set-up costs, is effectively free<sup>9</sup>. Large-scale generation and national grids are not going to disappear overnight, if ever, but CHC would like to see individuals and communities having the power to choose their own energy futures.

The huge problems and new housing stock.

Running alongside CHC being active in helping our members secure energy supply for Housing Associations tenants via local energy production through renewable energy systems, is the need to consider local energy supply through the potential to explore partnerships to set up an energy supply company. CHC wants to address the market failure impacting on low income households and impact fuel poverty directly through price. There is a significant and growing appetite amongst our members to intervene directly in the market and therefore CHC is looking to set up a partnership to weigh up options for setting up an energy supply company. A good example is "Our Power" in Scotland, which is a new independent energy supply company and the first in the UK to operate on a non-profit distributing basis. It plans to sell heat and power to tenants in 200,000 homes across Scotland by 2020. Planning needs to account for more recognition of benefits and social ownership and we need active promotion of social ownership in communities. Cuts to schemes such as the feed in tariff have had big impacts on community's ability to install renewable energies.

There is potential for making more use of certain technologies such as biomass, combined heat and power, district heating and cooling. CHC therefore welcomes the stakeholder event that Welsh Government is organising and welcomes Welsh Government working with Department for Energy and Climate Change to produce a UK National Comprehensive Assessment of potential for combined heat and power, district heating and cooling, in order to enable the comparison of a range of efficient heating and cooling supply options in order to identify the most resource and cost-efficient solutions to meeting heating and cooling needs. We do need to learn more good practice from other countries including Denmark's experience of district heating, with Denmark being one of the most successful nations in spreading low carbon heat networks.

There should be a medium-to-long-term strategy, as physical measures are worked through the stock, to start to look at other ways that we can reduce the cost of energy to our tenants. In particular, there are a number of RSLs in the sector now who are starting to look at how we support community renewable energy initiatives and the expansion of solar for example, so that people start to get free power, rather than having to pay for it at all. The feed-in tariff schemes work very well where they have been installed, but there is a lot more to be done now around enabling communities to generate their own power and thereby have a greater control over future fuel usage and costs. We also need to challenge the status quo in terms of the amount invested in energy efficiency. If you look at the experience in France, under the 2007-2013 structural funds programming period, each French region allocated up to 4% of their Operational Programme to energy efficiency investments and greater use of renewable energy in existing housing. Looking at Germany's energy production, Germany has seen a huge increase in renewables from 6% in 2000 to 20% in 2011, with the aim of getting this to 35% by 2020. That scale of spending is happening in Wales and that is the kind of investment we should be aiming towards to get to grips with the challenges we face in Wales. For

example, estimates in a Bevan report on poverty states that it will take 78 years for Nest to reach each and every home suffering from fuel poverty in Wales<sup>10</sup>

Schemes such as the feed in tariffs and renewable heat incentives present the sector with an opportunity to take advantage of an attractive financial incentive, reduce the cost of electricity for our tenants, potentially generate income in future years and the potential for growing social enterprise around the future maintenance of installations. The schemes offer the opportunity for our members to drive this uptake in renewables with the price of oil and concern for the environment being strong drivers for our members. Social landlords can and should play a vital role in the roll out and eventual mainstreaming of renewable technologies. More incentives such as these are needed.

The key objective in the first instance should be to increase the uptake and public acceptance of renewable technologies in the early days and social landlords have an important part to play in achieving this objective. Several of our members have been piloting the installation of renewable heating systems for example and several have been successful under UK Government initiatives. Significant costs have resulted in the need to engage with tenants following renewable heat installations. It can be accepted that renewable heat technologies are generally less well known and there are more hassle factors associated with their installation, which increases the barriers to installation. Therefore, bearing in mind the experience of social landlords in installing renewable heating systems, social landlords have the skills and expertise to work with the industry to accelerate this process, but only with the right incentives.

Appropriate subsidies help make a business case for replacing fossil fuel heating systems with more expensive renewable ones. With an appropriate incentive, with RSLs having large percentages of tenants in receipt of benefits or low incomes, schemes and further incentives would enable RSLs to install renewable technologies into their properties and in communities at a faster rate due to the subsidies available in order to help reduce fuel poverty. While housing associations remain firmly committed to environmental investment, they require increased certainty and realistic timescales in order to proceed with projects, due to the fact that projects take time to get off the ground due to the need for agreements with lenders, consultations with tenants, legal agreements, board approvals and many other considerations.

Certainty and long lead in time is key as well as the need for schemes to be designed to ensure administration is fairly simple. Housing associations' experience with the rapid and dramatic reductions in FITs for PV resulted in many schemes being abandoned and significant abortive costs at times. We strongly suggest attractive incentives exist for social housing providers in order to support the social housing business model and stop schemes becoming regressive in their application. Incentives should form an important part of the process and this could include financial incentives as well as other incentives. Regulatory drivers should include the need for financial incentives and disincentives introduced by Government (including forms of subsidy), stronger enforcement, council tax reductions, etc. Many projects that housing associations are planning are very costly as housing associations have the added expense of the cost of finance i.e.

interest and loan arrangement fees, the cost of due diligence, operational, financial and legal, tax, both corporation and vat (and that the income is taxable without any capital allowances), costs of long term project management (costs of consent, etc.) and maintenance and consultations with tenants/legal agreements.

Housing associations would usually be required to borrow in order to undertake certain schemes with the cost of capital amounting to around 6%, meaning that if social housing schemes were to receive low tariffs or no incentives at all to install renewable systems, then it would make it difficult for the scheme to cover costs. From past experience, if an association did happen to buy products at scale, then savings may be lost in the time and resources that have to be put in to staff training, tenant engagement and follow up in order to ensure that the system is correctly operated and achieving the intended goals of reduced bills and lower carbon emissions. Many of our members have commented that lenders are unlikely to consent to borrowing in light of low incentives and low tariff rates because of the increased financial risk and the lower profit margins. Therefore, it is vital that financial analysis reflects the social business model of schemes in the HA sector. The balance of responsibility for energy costs between landlord and tenant needs to be taken into account when designing appropriate incentives for RSLs. RSLs can target those most in need. There are limits on access to cheaper finance because associations are constrained by the amount of on-balance sheet funding they can accept. Housing associations have to make the additional capital investment to fund installations without benefitting from reduced bills directly and so require support if they are to fund installations on a significant scale. One of our members reported that they have completed an option appraisal at one of their estates with failed solar thermal that was installed at the time of construction. The results of their study concluded that without any subsidy, the most financially viable scheme to proceed with was solar PV.

4 <http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenergy/386/386.pdf>

5 <http://www.bbc.co.uk/news/business-31040723>

6 <http://www.bbc.co.uk/news/business-31040723>

7 <http://www.bbc.co.uk/news/business-31040723>

8 <http://www.bbc.co.uk/news/business-31040723>

9 <http://www.bbc.co.uk/news/business-31040723>

10 <http://www.bevanfoundation.org/publications/rethinking-poverty/>

## **75 SSE**

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## **76 CITB**

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## **77 CLA**

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**Innovation**

**New products and services**

70. Yes, we broadly agree with the areas of action set out for supporting innovation in Wales. We agree that innovation in demand reduction measures should sit alongside developing new technologies for low carbon and renewable energy generation. It is also important to innovate in delivering new products and services in order to grow demand. This will help grow the energy efficiency market which, in turn, will allow the supply chain to develop and grow, leading to the export of skills and services from Wales.

71. We agree that the Welsh government should provide support for businesses to develop and commercialise new energy efficiency products and services. However, we believe that, given current resource constraints, it would be sensible to be selective about which new innovations to support and to focus on those that have genuine potential. This could include collaborating with experts to assess the technical feasibility of a new product as well as assessing wider future commercial viability, for example by determining whether there is sufficient scale and roll out potential, and identifying any barriers to customer acceptance.

72. Obtaining funding for developing new products is often challenging for businesses. We believe that a valuable use of government resources would be to provide support for companies to maximise all possible sources of financial support available, both UK nationally but also EU funding and private sector.

73. Another barrier is time to market, for example obtaining building approval accreditation or adding a new technology to RDSAP to unlock potential funding of grant schemes such as ECO. Bringing a new product to market can be a lengthy process and could easily exceed the timescales of an obligation scheme. Equally, there may be changes to the rules or eligibility criteria part way through the scheme.

74. The provision of 'gap funding' would help keep projects going during timescales that exceed the relative short intervals on programmes such as ECO. This would help alleviate the pressure created by trying to innovate during a relatively short funding phase and prevent viable projects closing before coming to fruition. In CERT, for example, market transformation uplifts were provided for ground source heat pumps which helped TRAGARON in Wales. However, this is not an eligible or cost effective measure under current ECO. Similarly, large district heating schemes have lost out on funding as a result of running over more than one obligation phase.

75. The Welsh Government could help preserve the viability of some of these longer-term initiatives by 'filling in the gaps' so that they are not wholly dependent on short-term subsidy or government grant schemes. In this way, innovation is supported and new products will be more likely to come to market quicker.

76. The Welsh government can also use their knowledge of the specific needs in Wales to help identify and target innovations that will be of most benefit to

customers in Wales. There may be an opportunity to work with the UK Government to consider how a future obligation can best ensure the needs of some of the most inefficient, harder to treat properties are addressed, for example uplifts for off-gas properties or a geographical uplift to account for the one-off nature of isolated properties in rural areas.

#### Smart meters

77. The nationwide roll-out of smart meters will have a truly transformational effect on the retail market, making energy consumption more visible to customers through accurate, real time information and bringing an end to estimated billing. We have taken an early lead in installing smart meters for our customers and remain 100% committed to the roll out.

78. It is important that all households are able to benefit from the smart roll out and support action by the Welsh Government to work closely with Smart Energy GB, energy companies and consumer organisations to achieve this. We believe that smart meters will facilitate innovation for energy customers in a number of areas, as set out below.

79. Access to more detailed energy consumption data will enable energy suppliers to innovate in terms of the products and tariffs that they offer to customers. For example, it will be possible to replace current pre-payment metering with more modern Pay As You Go products which will be cheaper and easier for customers to manage. This will make a valuable contribution to helping lower income households manage their fuel bills and assist with tackling fuel poverty.

80. Access to real time information will allow customers to see and understand their energy usage much more clearly. This could be either via an in-home display or through mobile phones and tablets. Having real-time visibility of this information will allow customers to make more informed choices about how they use energy as they will have a better understanding about what it costs to run the various devices and appliances in their home.

81. Smart meters also provide the gateway to help make other local energy generation and storage products commercially viable through giving customers access to real time information. Customers will be able to understand how much energy they use and when they use it, whether they export energy onto the grid and to record how much, and to allow them to use innovative 'time-of-use' products to help manage how much they pay for their energy. These will develop in the future as the use of smart meters becomes more widespread.

82. Smart meters will ultimately enable energy consumers to evolve into energy 'prosumers' who have a dynamic interaction with the energy market. This is likely to lead to better engagement as people become more 'connected' with energy. In the future, customers will also be able to use information from their smart meter to help them switch energy supplier more easily. Demonstrator projects

83. We agree that the Welsh Government is well placed to act as a coordinator to bring together expertise from universities, local authorities, businesses and grant

funderson for Smart Living energy demonstrator projects. As well as showcasing new technologies and approaches for reducing demand, generating and storing energy, collaboration can extend to other areas such as developing innovative marketing approaches and ways of engaging local communities.

84. The need to effectively engage individuals and communities should not be underestimated. Customers are often sceptical of innovative new products and key to building acceptance and buy-in lies in building understanding and mitigating the risk of trying something new. This could involve testimonials from customers who have successfully adopted the technology as well as offering warranties on the products.

Shared learning

85. We fully support the principle of sharing best practice and agree that the public sector has a vital role to play in facilitating this and in showcasing the benefits of energy efficiency. Potential sources of help outside of the UK, for example the EU, should also be utilised in order to take full advantage of all avenues of assistance available.

86. With regard to the delivery of Welsh energy efficiency programmes, we agree that the most cost-effective way of reducing fuel poverty is through the delivery of tried and tested measures such as cavity wall insulation. However, we believe that it is also important to provide the opportunity within existing programmes to start thinking ahead for what will happen when these basic measures run out.

87. This time should be used to try out new technologies which will become the next basic measures in the future, for example insulation in harder to treat properties or alternative ways to provide heating or electricity. These new technologies could include distributed energy, storage and controls as well as new approaches to customer interaction and communication.

## **79 NEA**

NEA Cymru broadly agrees with the areas of action set out in chapter 5.4.

### **Area of action 4.1 – Support to develop new products and services**

The low carbon and energy sector provides great opportunities for Welsh businesses, academic institutions and organisations in Wales. It is an opportunity for Wales to be at the forefront in research, design and delivery of innovation and services of smart technology, energy efficiency and construction. The energy and energy efficiency sector is constantly evolving and with Welsh Government support, Wales could become a world leader in the field.

The Welsh Government, through Innovation Wales has a great opportunity to develop and test new energy and energy efficiency products and services and develop the energy sector, creating a valuable workforce and industry in Wales.

NEA was successful in securing funding from Ofgem fines imposed on energy companies who failed to deliver their obligations under the CESP programme to



develop our Redressing the Balance Fund. The fund is split into three programmes, the Technical Innovation Fund, Warm and Healthy Homes and Warm Zones Fund.

Under our Technical Innovation Fund, funding will be used to trial in nine English Regions and in Wales a range of innovative solutions at a local community level, to address fuel poverty. Invitations to apply were sent to local authorities and housing associations in Wales and successful projects will commence in October 2015. A number of Welsh organisations have applied and NEA will be releasing information on the successful schemes soon.

#### **Area of Action 4.2 – Smart meters**

NEA Cymru welcomes the introduction and roll out of smart meters into Wales. NEA Cymru, as a trusted fuel poverty charity is well placed in supporting the Welsh Government in promoting the roll out of smart meters and working with consumers and community groups to promote the benefits of smart meters in reducing fuel poverty and fuel bills.

The benefits smart meters (SMs) are expected to deliver are primarily an end to manual meter readings and inaccurate billing estimates. The domestic smart meter roll-out will also enable consumers to access real-time information about their energy use either through an In-Home Display (IHD) and other applications. The Welsh Government needs to be aware that for households who are already under-heating their homes, financial savings will be limited or non-existent and it is vital appropriate advice and support is provided to help consumers (both vulnerable and non-vulnerable) to engage with their new SM and IHD, and to take positive action to manage energy consumption and costs.

As a result, part of the Smart Meter Installation Code of Practice (SMICOP), Smart meter installers are required to provide IHD demonstrations and energy efficiency advice to the householder attending the Smart meter installation as well as providing supporting material that takes into account any consumer vulnerabilities or special needs. Installation is a key opportunity to educate and engage householders by providing high quality tailored face-to-face advice and leave-behind materials. Following the conclusions and recommendations within NEA's report for Citizen's Advice on an extra help scheme for vulnerable consumers, NEA continues to make the case for an additional help scheme to support the smart meter roll out.

#### **Area of Action 4.3 – Energy Efficiency innovation in the public sector**

Investing in natural resources to generate electricity and heat is a great economic opportunity for local authorities and communities in Wales to become energy efficient. It provides the opportunity for communities to reduce fuel bills and step out of fuel poverty. To enable local authorities to invest in natural resources, the Welsh Government must be able to provide the financial resources for local authorities to enable it to fund in renewable installations.

Continuing funding by the Welsh Government to fund local authority led energy efficiency schemes with leveraged funding will ensure that more households within those schemes become more energy efficient, enabling those householders to save money on their fuel bills.

Investing in innovative local authority led projects is expensive and with diminishing local authority funding and manpower, local authorities may not have the long term capacity to develop and oversee innovative schemes. There is a danger without investment in public services that innovative projects can be developed in the future.

#### **Area of Action 4.5 – Shared learning**

NEA is a UK wide fuel poverty charity which with more than 30 years of experience and has a plethora of best practice knowledge which we are happy to share with the Welsh Government and other organisations. NEA Cymru has run a number of innovative projects and initiatives training and working with frontline staff, householders and communities promoting the benefits of energy efficiency and causes of fuel poverty in Wales.

NEA Cymru are open to working with other organisations and sharing key learnings from projects and initiatives and are open to collaborate with the Welsh Government, academia, public and third sectors in joint projects.

#### **Area 4.6 – Innovation in Welsh Government Programmes**

NEA Cymru welcome the Welsh Government's continuing funding of energy efficiency programmes and recognises that one of the best ways of taking households out of fuel poverty is to install energy efficiency measures in their homes. To continue to be innovative and target the most households in fuel poverty, the Welsh Government needs to continue to run programmes which deliver a 'whole house', 'area based approach' to households and communities. It may be costlier to install 'whole house' energy efficiency measures such as EWI and IWI, however, in the long term less households will be, remain or fall back into fuel poverty.

### **80 Rockwool**

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### **81 EDF Energy**

Yes, we agree with the areas of action set out in Chapter 5.4. Areas for consideration are detailed below:

1. Encouraging innovation can be triggered by supporting investment in energy efficiency and renewable energy through creating an 'infrastructure item' within budgets. This would create a demand as a proportion of future energy budgets would be earmarked for investment to offset future energy bills.
2. Furthermore, investment could be sought from the private sector with the incentive of offering reasonable returns.
3. The impending roll-out of smart metering can be a great opportunity for the Welsh Government to work collaboratively with energy suppliers. This would aim to maximise opportunities in innovation and new technologies for small business and those in fuel poverty.

4. Encourage uptake of programmes to engage energy users in monitoring their usage with the new smart meters.
5. The Welsh Government should promote the benefits of the 'connected home', which allows remote control of household devices, heating and hot water. Whilst acknowledging the value of innovation and new technologies, it is still important to recognise that low end technology can still be the most cost effective way to reduce energy use, e.g. insulation of lofts and cavities and changing energy usage behaviour.

## **82 Royal Institute of Chartered Surveyors**

Agreed but could be clearer and a lot of the actions are already embedded

## **83 Flintshire County Council**

### Area of Action 4.2 Smart meters

Smart meters can be very useful and informative, the secret is how to persuade people and businesses to switch appliances and equipment off. There is no direct correlation between smart meters and energy reduction, without some form of an incentive or educational program to explain what the smart meter is telling you, and what actions to take. This is very much work in progress that still has to be explained to the end user.

We have enquired previously about starting our own smart meter roll-out in properties that are benefitting from ECO, GDHIF, Arbed, and other improvements first. It has been difficult to ascertain the best way to engage with the roll-out itself, as different suppliers have different objectives and targets.

### Area of Action 4.3 Energy Efficiency innovation in the public sector

As Chairperson of the Consortium of Local Authorities in Wales (CLAW) Energy Group, I can say with confidence that the vast majority of Local Authority energy officers/managers in Wales are up for the challenge, and have been working to improve public energy efficiency for many years. However a chicken and egg situation exists --, innovation costs money, which is currently in very short supply, and there are still many basic energy efficiency projects that need completing ie the low hanging fruit. Only then can the more innovative technologies be considered, but with capital funding in short supply and uncertain payback periods for many innovative technologies, this is far from straight forward.

### Area of Action 4.5 Shared Learning

Shared learning is extremely important, but the idea is not new. The CLAW Energy group is very familiar with the benefits of collaboration, having been set up for that very purpose 30 + years ago. Regular attendance of these quarterly meetings, by The Carbon Trust, Salix Finance, National Procurement Service, Resource Efficient

Wales and more recently representative from the NHS trusts, plus the majority of Welsh Local Authorities, demonstrate the desire and willingness to share best practice and learn from others.

On the domestic side, CAN Cymru Housing, Community Housing Cymru, and the National Energy Action Fuel Poverty Forums have been active for over 10 years. However with the loss of HECA and the transfer of housing stock to RSLs, there isn't necessarily a single person at each authority involved with these issues, so it is important for each of these groups to share meeting notes, etc

However the biggest obstruction to greater carbon/energy savings is manpower resource, and this is of serious concern as budgets get even tighter and savings demanded through job losses, with little thought given to the knock on consequences. If the Welsh Government is serious about mitigating Climate Change, it needs to set enforceable carbon targets for Local Authorities to achieve, and sustainable budgets that assist the process. Perhaps a Welsh Government mandatory spend to save scheme?

## **84 Constructing Excellence in Wales**

There is a considerable innovation opportunity for Welsh Government with regards to allowable solutions<sup>24</sup>, carbon offsetting and the generation of energy "off-site but adjacent to" refurbishment projects. Integrating energy efficiency within other energy infrastructure projects would assist in realising broader aims and return on investment. We feel that more consideration of allowable solutions should be integrated within this energy efficiency strategy to enable innovative solutions to be developed within Wales.

Within a local authority, the opportunity that a new build school can offer as a community asset is huge. With some initial uplift in capital investment it is possible that a site could provide more than energy solely for the school such as through district energy and assisting with carbon savings (and carbon offsetting). This approach has already been delivered at Gateway to the Valleys campus, Bridgend<sup>25</sup> for a new school and two adjacent sites (both previously operated by the authority and recently handed over to third parties). This strategic approach should be extended to incorporate domestic properties within a local community. We believe that the Energy Efficiency Strategy could be strengthened in light of the Welsh Government's Environment Bill and Wellbeing Future Generation Act aspirations.

As discussed previously, we feel there could be more innovation to support communities who are off-grid, away from the mains gas network. Furthermore, Wales should be leading in smart energy networks, enabling off-grid communities to leapfrog to a low carbon energy network which supports both their homes and transport networks. For example, the car sharing scheme and community energy works undertaken by Talybont on Usk Energy Ltd<sup>26</sup>. Furthermore, the technologies applied at Maes yr Onn<sup>27</sup> and the Solcer house<sup>28</sup> are demonstrating that rapid improvements in technology, particularly batteries, are enabling renewable technologies to complement each other more than ever before and deliver even more carbon and financial savings than in the past.

Whilst the opportunities “smart energy networks” and “smart meters” will make for many householders, businesses and organisations across Wales, the reliance on suitable broadband access will not be available to all. Appropriate and innovative solutions will be required to ensure that these initiatives can deliver savings for consumers here. For example, field testing of smart meter technologies in solid wall housing would help provide feedback on the specification of both the in home display unit as well as the smart meter (to relay information back to local communication hubs and beyond to the customer’s utility company).

Building Information Modelling (BIM) provides an opportunity in terms of being able to demonstrate and model the energy efficiency of a building. This innovative process should be applied, as a minimum, on all public sector building projects.

Innovation needn’t be restricted to technological approaches and systems, it could be demonstrated by an innovative approach to policy and programme design. For example, demonstrating whole-life assessments of schemes to renew / refurbish homes within a floodplain could incorporate flood protection features to a property alongside the installation of energy efficiency measures. For example the programme DCWW’s Rainscape<sup>29</sup> programme will deliver considerable improvements to surface water run-off in key catchments within Wales. If this could be aligned with fuel poverty programmes and other public sector investment, this could achieve a considerable shift in the Welsh built environment and consumers understanding of their relationship between the natural and man-made environment and their role in ensuring a more sustainable Wales.

The Innovate UK’s Design for Future Climates competition (D4FC)<sup>30</sup> enabled built environment project teams to consider Climate Change impacts in the design of £4.2bn worth of construction and building refurbishment projects in the UK. It ran over two phases during 2010-2014 and allocated £5m to 45 projects. A number of projects from this competition demonstrate some innovation within the refurbishment agenda, building on examples such as the London Climate Change Partnerships retrofit projects<sup>31</sup>. CEW believe the strategy should be taking more consideration of climate change policy (both UK and global).

24 <http://www.zerocarbonhub.org/zero-carbon-policy/allowable-solutions>

25 <http://www.cewales.org.uk/cew/wp-content/uploads/Coleg-Cymunedol-y-Dderwen-Gateway-to-the-Valleys.pdf>

26 <http://talybontenergy.co.uk/>

27 <http://www.cewales.org.uk/cew/wp-content/uploads/Maes-Yr-Onn-CASE-STUDY.pdf>

28 <http://www.solcer.org/>

29 <http://www.dwrcymru.com/en/My-Wastewater/RainScape.aspx>

30 <https://connect.innovateuk.org/web/design-for-future-climate>

31 <http://climatelondon.org.uk/publications/retrofitting-london/> and <http://climatelondon.org.uk/publications/yshcc/>

## **85 RWE nPower**

With regards to the specific consultation questions asked (question 1-6) we agree with the areas of action set out and we do not have any additional questions or issues to be addressed. We would welcome confirmation of any proposed interim

milestones that will be used within the broader strategy; particularly for those actions that relate to supporting and addressing fuel poverty, given the statutory target to eradicate fuel poverty (as far as is reasonably practicable) by 2018.

## **86 Melin Homes**

Note: Wales is more than capable of being a leader in innovation, both in terms of new energy efficient products and markets and in delivering innovative schemes for larger scale projects such as domestic retrofit. The nature and make-up of Welsh Government, both politically and departmentally, means there are effective mechanisms and agility in place for Welsh Government to move from concept to delivery far more effectively than UK government. We need to build on this ability.

The Natural Resources Minister has, rightly, planted the Welsh Government flag in terms of how we seek to shape our destiny in relation to Fracking. Wales needs to be in a position where we far more effectively write our own wider strategy. As mentioned in this response an aspiration should be for more energy efficiency powers to be devolved to Wales.

Within the UK and beyond, Wales is seen as a place to do Green Business. My Business Unit is currently working with a group involving English, Irish and South American interests to bring a major green recycling facility to Wales with an initial investment of £25million and the creation of 100+ skilled jobs. This is happening because of the message that Wales is committed to the green economy and can make things happen. More powers devolved to Welsh Government will increase such investment opportunities and allow for more innovative practices. We have shown the UK and Europe our capabilities with the current Welsh Government Warm Homes Arbed project. We have the opportunity to refine, improve and expand this and other projects to make a far greater impact.

Within Wales we have the opportunities to decentralise the grid and implement far more local sources of energy production. We should make the most of these opportunities

## **87 Citizens Advice**

We again welcome the ambition of the Welsh Government to invest in research and development to ensure Wales benefits from the growing market for energy efficiency technologies. However, we again feel the section would benefit from more detail.

Citizens Advice is currently undertaking a call for evidence around Energy Innovation Policy<sup>10</sup> investigating how to improve decisions about which energy technologies to back and how to manage financial support. We intend to develop principles that current and future governments can use to inform their technology choice decisions.

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<sup>10</sup> Citizens Advice: [Call for evidence: Energy innovation policy](#)

We will be keen to discuss the findings of this work with the Welsh Government in due course. However we feel there are two emergent technologies which the draft strategy should consider in more detail.

### Storage

It is quite right to state that ‘there is no single “right” technology that we know, today, will dominate the future energy market’. However we do know that, to complement any significant move towards renewable generation there will need to be an associated move towards storage of both energy and heat at household and potentially community level.

Our original response argued that the technological advances to be made to insulation and generation are largely incremental, but that **storage is an area where technology is relatively underdeveloped**. The strategy makes some passing references to storage, without elaborating on what types of technology it is referring to.

The final strategy should explore more fully how the Welsh Government will target research and development resources at domestic and community level storage of electricity and heat.

### Electric vehicles

The draft strategy makes **no reference at all to electric vehicles (EVs)**. They are also under-represented by the Welsh Government’s draft Transport Plan, which only notes in passing that EVs will be a driver of lower emissions.

Major growth is anticipated in the EV market in the decades to come, and Wales must be ready. There are opportunities for Wales to **invest in innovation in EVs** and the infrastructure to support them. Increasing use of EVs will go hand in hand with growth in the storage market as our generation mix moves significantly towards renewables.

The final strategy should set out how the Welsh Government will **prepare Wales for the growth of electric vehicles**. Wales must not miss out on the opportunities from innovation in the EV and storage markets, and we must ensure our infrastructure keeps pace with the associated technological changes.

<sup>1</sup> Citizens Advice: [Call for evidence: Energy innovation policy](#)

## 88 Energy Savings Trust

Area for action 4.1 – Support to develop new products and services.  
Energiesprong<sup>11</sup> is an innovative programme that delivers whole house retrofits to net zero energy levels via an off-site manufactured building envelope and funded by savings delivered via a contractor-guaranteed energy performance contract. This

<sup>11</sup> <https://www.youtube.com/watch?v=I3WBT2eAArI>



builds: skills; manufacturing opportunity; supply chain jobs and delivers energy efficiency, supplementing the existing supply chain in Wales.

In the Energiesprong model, suppliers of the retrofit product (insulation, heating system, renewable energy systems) work together and take responsibility for achieving a given level of energy saving. The model relies on leveraging investment in energy efficiency from the resulting energy cost savings with occupiers paying back the investment cost rather than an energy bill and as such the energy saving guarantee is a crucial component.

To enable Energiesprong to work, housing providers and Welsh Government will need to develop a successful pay-as-you-save financing approach, including changing benefit rules to allow the upgrade costs to be integrated with rent charges for low income residents. This will require the development of a successful pay-as-you-save model which incorporates the lessons learnt from the Green Deal. The model also does away with incremental energy efficiency improvements to the same property over time, while quickly getting to net zero energy levels.

Householder behaviour is another component of the Energiesprong model. To achieve net-zero-energy households will need to agree to limit their consumption within reasonable kWh limits. Engaging households to take control of their energy use will require households to engage in new ways with their energy meter – linking to the smart meter and smart home energy technology agenda.

Also see Q1) Overcoming barriers – Smart meters

<sup>1</sup> <https://www.youtube.com/watch?v=I3WBT2eAArI>

## **89 Glass and Glazing Federation**

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## **90 WWF**

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## **91 Egnida**

Egnida has direct experience in the market areas and most of the initiatives mentioned in the consultation and has previously provided in depth feedback to the process and associated initiatives. As such, we are fully supportive of the actions presented through 5.1 to 5.5 of the consultation as referenced in Questions 1 to 5 and the associated dynamics and impacts.

## **92 Federation of Small Businesses**

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## 93 Calor

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## Finance

**“We have clear funding mechanisms, a sense of direction and a stable framework that is attractive to investors and consumers.”**

### **Key areas of action:**

#### Householders

- 5.1 Information on financial support for householders.
- 5.2 Welsh Government investment.
- 5.3 – Loan funding.
- 5.4 – Leverage of other funds into Wales.
- 5.5 Financial benefits of switching.

#### Finance for businesses

- 5.6 Awareness of financing mechanisms.
- 5.7 Green Growth Wales.
- 5.8 Support for businesses.

#### Public Sector Finance

- 5.9 Public sector loans.
- 5.10 Energy Performance Contracts.
- 5.11 Pipeline of capital projects.

**G) Responses in full to question 5) Do you agree with the areas of action set out in chapter 5.5: Finance?**

## 1.Eco Home Centre

- 5.1 Information of financial support for householder  
This is fine, but we need to make sure that the right type of support is available. No point taking up grants to undertake EWI where it is not appropriate.
- 5.2 WG Investment  
rdSAP and other tools push us in the wrong direction for older buildings and so we MUST be better than the tools that we use. We made them, we can change / adapt them to make them better suited for use. We must not be driven by funding, but have the strength of character to say what we want / need and then for the money to follow that.
- 5.3 Loan funding  
Any funding MUST be linked to a risk assessment based on best practice. Loans must have low risk works associated with them so that people are not faced with long term maintenance etc associated with poor initial specification.
- We must use the best techniques / skills / materials etc to bring houses back into being homes. No point doing unsustainable face lifts.
- 5.4 Leverage  
Funds that allow us to work sustainably on our buildings should be used. If it is not right for Wales, then don't use it. Mistakes can take a long time to materialise and then who will pick up the bills?
- 5.6 - 5.8 Finance for business  
We must get specification etc right to minimise long term costs
- 5.10 Energy Performance Contracts  
EPC's are NOT fit for use on 1/3 of our stock. rdSAP and SBEM are NOT good tools. DECC, BRE, STBA and many other know this. WG has been told. EPCs are dangerous and MUST not be used in isolation. Pre 1919 buildings are most notably at risk. I cannot stress this enough. We should be using other tools in partnership with EPCs and we must have assessment criteria that take into account IAQ, Moisture content, health, noise etc.

## 2. Neath Port Talbot Group of Colleges

AGREE , with the actions outlined. We also feel it is as important to outline the savings to the consumer and industry, that adoption of the energy efficiency measures brings. We need to develop strong SROI models in terms of monetary, social and community return, that these programmes bring. There has been some work in this area as well as case studies, but this should be looked at, to be developed further. There would be a greater need to resource here, instead of an overcrowded youth engagement approach, and this role could encompass youth, in

terms of more proactive thinking on energy efficiency through community projects, outreach and outcomes.

### 3. Gwynedd County Council

-

### 4. Certsure

There seems to be a large number of sources to provide financial support but the bigger issue appears to be how do you encourage 'people' to buy into the concept of taking money for free or on a low interest option. This includes homeowners and people within businesses that have responsibility for the buildings they work in and run.

People generally feel that there is nothing for free and there is always some associated cost or catch.

Would it be possible to legislate to make it compulsory that energy efficiency measures will be installed in all buildings including all existing buildings?

This would guarantee employment (including manufacturing and installation), ensure targets are met and Government will be able to control the installation of energy efficient measures across Wales.

### 5. Institute of Civil Engineers

Broadly, yes.

- Investment by householders and business owners towards energy reduction could be very significant indeed. What is needed is clear demonstration of the merits of energy reduction measures from a financial perspective. It is considered that free assessments funded by Welsh Government for all (rather than just for low income households) could be the key to unlocking action by individuals towards energy reduction. This would not simply be information but would be solutions identifying suitable specific measures and their implications in terms of cost reduction.

### 6. Torfaen County Borough Council

- 5.2 Does this mean that energy funding is going to be available in the future? We would also query how the WG is going to target those households in the most energy inefficient homes or on low incomes? It is very difficult to access financial data, and even means tested benefits are hard to access. Community based approaches are not always the most effective as some residents within these areas can afford to implement some measures themselves, so will there be greater assistance to access data to make informed decisions about where to target resources?

Should WG be putting grant conditions on some schemes (e.g. Arbed)?

EWI and other measures could increase the value of a property, so if a resident moves within a given period, should they be asked to pay back some/all of the grant costs? There is no means testing for Arbed? Should this also be considered for residents who can contribute towards the cost of the grant?

Under the current system people are receiving measures without their ability to pay being taken into consideration. More emphasis is needed on raising awareness of what schemes are available to residents and the benefits of investing in them.

## **7. NSA Afan**

**5.1** We endorse this statement and welcome the involvement of Resource Efficiency Wales in increasing the level of knowledge for householders. We would like to be involved in the process on a local and regional level.

5.2 We support this statement

5.3 We support this statement

5.4 We support this statement

5.5 We support this statement

Finance for Businesses

5.6 We support this statement

5.7 We support this statement

5.8 We support this statement

5.9 We support this statement

5.10 We support this statement

5.11 We support his statement

## **8. Royal Town Planning Institute**

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## 9. Saint Gobain

Yes, Saint-Gobain agrees with the actions set out for finance. We welcome the move to offer interest free loans and would like to see it expanded to include the private sector.

## 10. Coed Cymru

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## 11. Tabitha Binding

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## 12. Renewable UK

<b>Section</b>	<b>Summary</b>	<b>Comment</b>
5.1	Information on financial support for householders	Agree, but presumably this means no change in previous activity
5.2	Welsh Government investment	Agree, but there is nothing new suggested in this section
5.3	Loan funding	Agree; empty houses can be a blight on communities, and a squeeze on both rental and owned housing sector
5.4	Leverage of other funds into Wales	Agree, but this should be 'business as usual'
5.5	Financial benefits of switching	Agree than awareness of this could be raised, but this has little to do with energy efficiency
5.6	Awareness of financial mechanisms	Agree
5.7	Green Growth Wales	Agree
5.8	Support for businesses	This action area is very generic and does not

		provide anything substantive to respond to
5.9	Public sector loans	This action area duplicates previous statements
5.10	Energy Performance Contracts	Agree that EPCs can be a very helpful tool in supporting the installation of energy efficiency measures, and that promotion of these contracts could be helpful
5.11	Pipeline of capital projects	Agree

### 13. British Gas

- 5.1 In our experience, there are a number of excellent examples of energy efficiency delivery in the public sector, and a significant opportunity for further work to be done.
- 5.2 The strategy highlights Energy Performance Partnerships as a successful way of financing energy efficiency improvements, and we agree that these contracts can provide an excellent route by which improvements can be made to public buildings, at attractive rates of finance, with long-term energy savings guaranteed by the contract.
- 5.3 We have extensive experience of successful partnerships of this sort across the UK, including a number of examples in Wales. For example, our partnership with the Hywel Dda local health board involved upgrade works to their four main hospitals – including the installation of a new biomass boiler at Glangwili Hospital in Carmarthen, alongside other measures such as energy management systems and lighting upgrades. Construction work is now complete, and the project has entered the guarantee phase.
- 5.4 While this model can be extremely successful, there are currently some restrictions in areas of the public sector that prevent organisations from entering into arrangements such as the example above. We have found examples of schools prevented from accessing finance to fund energy efficiency projects which would reduce their running costs and their carbon emissions. We believe this is an area that should be addressed in order to help cut costs in the education sector. Right across the public sectors, including the National Health Service and local government, we encourage the Welsh Government to ensure the removal of restrictions that prevent the public sector borrowing from the private sector on invest to save projects.

- 5.5 At present, the majority of commercial non-domestic energy efficiency projects are funded using in-house finance provided by the organisations requiring the work. However, the extent to which there is latent demand for energy efficiency measures is unclear. It is also not well understood whether a lack of access to finance is a material barrier to investment in energy efficiency, and we would welcome any work to build a better understanding of these barriers, and remove them wherever possible.
- 5.6 We would like to see further support for community benefit funding models. In Carmarthenshire, we are planning to deliver large scale solar projects across the commercial and housing stock of the council's estate. This type of scheme can have a significant impact on fuel poverty while generating income for local councils, but we have found councils can be reluctant to buy into these schemes due to the Right To Buy challenge on the residential stock. More support is required to ensure that investment in these areas is supported, enabling decarbonisation of the energy usage across Wales.
- 5.7 We believe that providing a single point of contact for information on energy, water and materials efficiency is a sensible approach. While we support the use of a central body to do this, it should be acknowledged that a sector trade bodies may also be able to provide this advice. The key issue is ensuring that this information is available in place where businesses can find it and use it.

#### **14. One Voice Wales**

Yes. In particular, One Voice Wales believes strongly that the community and town council sector should be central to the drive to engage communities in this strategy through various public sector finance deals, loans and grants. These should be available to local councils as well as to the larger public sector bodies.

#### **15. Natural Resources Wales**

Yes

Lack of finance for energy efficiency investments has previously been a major constraint to our adoption of energy efficiency technologies. We therefore welcome the Areas of Action 5.9 to 5.11 set out to address the issue of financing energy efficiency developments within the public sector.

#### **16. UKLPG**

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## 17. Wolseley

The availability of finance is clearly a key factor for consideration when investing in energy efficiency.

Any extension of The Welsh Government's Home Improvement Loans and Houses into Homes fund would be welcomed.

The lack of consistency, and regular changes to, the schemes that help support the adoption of more efficient products, such as the Green Deal and RHI, has been one of the more significant barriers to progress to date.

One of the issues pressing many installers is the complexity and cost of credit licensing which is required to introduce commercial funding.

## 18. James Coulter

-

## 19. Mineral Wool Insulation Manufacturing Association

We note the range of programmes funded by the Welsh Government, such as the Welsh Government Warm Homes programme, information, advice and support through Resource Efficient Wales, support to businesses through Business Wales, the development of Green Growth Wales and public sector loans through Salix and Invest 2 Save.

The strategy noted that Wales also "*has access to UK wide action through initiatives such as the Green Deal and the Energy Company Obligation.*" It would be helpful to understand whether the withdrawal of Green Deal finance by the UK government will have any significant impact on the delivery of Welsh energy efficiency programmes and what the Welsh Government's position is on the Energy Company Obligation (ECO) post 2017.

We support plans to expand funding through access to European and local authority co-funding, by attracting private capital, and by stimulating investment by householders.

We fully support the intention to keep grant-funded support for those households living in the most energy inefficient properties and on the lowest incomes. We also support the plan to help householders gain access to consistent and impartial information about financial support available to them.

As noted above, we support the use of the Wales Infrastructure Investment Plan to provide grant funding for those households living in deprived communities, and those in the most energy inefficient homes and on the lowest incomes. We firmly believe that energy efficiency should be classed as an overall infrastructure priority.

There is now a large coalition of organisations across the UK who are calling for this. Making our housing stock part of our national infrastructure would bring real results for the Government, delivering a three-fold return on investment and stability for energy efficiency programmes. Please see the UKGBC's excellent report on energy efficiency as infrastructure.<sup>1</sup>

Lastly, we note the intention to evaluate the Home Improvement Loan scheme and would like to see low interest loans made available not only to those who meet affordability criteria, but also the able to pay market in order to encourage the wider uptake of measures.

<sup>1</sup>

UKGBC "A housing stock fit for the future: Making Home energy efficiency a national infrastructure priority", June 2014

<http://www.ukgbc.org/resources/publication/housing---stock---fit---future---making---home---energy---efficiency---national---infrastructure>

## **20 CastleOak**

-

## **21 ACE**

-

## **22 Newydd**

-

## **23 Isle of Anglesey County Council**

-

## **24 Energy Effective Ltd**

-

## **25 City & County of Swansea**

-

## **26 The Detail Hub**

Yes.

### **27 My Green Home Ltd**

Yes.

### **28 Ynni Cymru Energy Solutions**

Same as my last comment.

### **29 The EPC Man**

Yes.

### **30 Bond Demolition Ltd**

Householders yes to all, finance for businesses no they should be able to stand on their own not rely on government funding, public sector finance only if required to get a proper project off the ground then limited in time

### **31 Colin Edwards**

-

### **32 Wrexham County Borough Council**

-

### **33 Gaia Renewable Energy Ltd**

Strongly support these initiatives.

### **34 Green Renewable Wales Ltd**

-

### **35 Powys County Council**

Yes, although the strategy needs to be updated to reflect the changes to the Green Deal, and consideration given to whether another product will be offered instead.

### **36 GATC Ltd**

Yes, loans and other forms of funding need to assist private householders and businesses alike

### **37 Celsius Energy Ltd**

As mentioned previously, there is a severe lack in funding for energy efficiency measures for householders in Wales since the demise of the Green Deal, Green Deal Home Improvement Fund and the poor performance of the ECO. There should be a significant step change in the way funding works and the type of funding offered i.e. Offering a small amount of support for LSOA's through the ECO that does not cover the cost of the installation of a small measures like Loft insulation is ludicrous

### **38 C&K SUPPLIES**

-

### **39 Llangynog Memorial Hall**

-

### **40 Dr James Henshall**

Yes.

### **41 John Griffiths - Chartered Surveyor**

It's got to be viable and affordable.

### **42 Equity Redstar**

Yes.

### **43 North Wales Housing**

-

### **44 NSA Afan**

5.1,5.2 and 5.3 all good recommendations.

5.4 no comment  
5.5 yes fully support  
5.6 - 5.11 - all good recommendations

**45 T L C Energy Limited**

Yes, but need a push on Energy Performance Contracting for businesses and a Development Bank.

**46 ECO CARBON TRADERS LTD**

-

**47 Asset Energy Solutions Ltd**

-

**48 WDS Green Energy**

I agree.

**49 Torfaen CBC**

Yes

**50 Warmwalls Ltd**

Yes,

**51 Gas Tech Wales**

-

**52 GB-Sol Ltd.**

Yes.

**53 South East Wales Energy Agency**

-

#### **54 BDT installations**

-

#### **55 Salix Finance**

Yes. Is there room to elaborate on the options available within Public Sector Finance?

#### **56 Aberystwyth University**

5.1 - Yes

5.2 - Yes in its own structures and stock

5.3 No

5.4 Yes if it means inward investment into setting up new energy companies

5.5 No - this is intervention in a market where there is already enough information and arguably no market failure.

5.6 Yes

5.7 Yes but only if government sets a requirement for all its suppliers and those companies it helps under this scheme to have ISO 50001 by a deadline or pay the money back.

5.8 Yes as per 5.7 answer above.

5.9 No

5.10 Yes

5.11 Yes, providing they outlive the political cycle by getting cross-party support and are contracted.

#### **57 William Morris Energy Assessments**

Energy efficiency when it comes to EPCs is highly influenced by the type of fuel the property uses: for instance if you had two identical properties and one was fuelled by LPG and the other by Mains Gas the rating could have a difference of 30 points which is down to the heating fuel alone. Older properties in rural locations which do not have access to mains gas (most of rural Wales) would need a much higher level of insulation to offset the lack of mains gas in the calculation; insulation of solid walls is expensive and funding for such projects would improve the carbon footprint of rural properties. Older commercial properties are in the main poorly insulated and have inefficient heating systems; if at all.

#### **58 Geraint Williams Plumbing & Heating Ltd**

-

**59 URBAN SOLAR LTD**

-

**60 Peter Jackson**

-

**61 Ignite Mechanical Contracting Ltd**

-

**62 Jamie Black OCDEA/DEA/GDA**

-

**63 Westflight Ltd**

-

**64 Pembrokeshire Power**

-

**65 Greener Heat**

-

**66 SAM Drylining Ltd**

Yes to all

**67 Dean Crocker Energy Assessor**

Yes

**68 Biofutures Ltd**

Sounds good.

## 69 E W Consultancy

Agree.

## 70 Christopher Williams – Individual

Yes.

## 71 Business Wales

Should consider an "improved" Green Deal the UK Govt. recently dropped for Business & Commercial sector. The scheme was never properly promoted.

## 72 Institution of Mechanical Engineers

Further suggestion given below.

**Declare all UK building stock ‘national infrastructure’ and instigate a legislatively driven insulation programme.** Such a transformative and bold action would go far beyond the Government’s legislative measures to drive private sector landlords to improve the energy performance of their properties. For those who can afford to pay, key intervention opportunities, such as the sale of a building, should be taken to impose mandatory upgrade points, linked to financial incentives, for example, a reduction in stamp duty. For those unable to pay, a national scheme to cover the cost of the work should be initiated and paid for out of general taxation. These private and public sector approaches would not only reduce UK heat demand, but also create employment opportunities and allied skills development for installers, as well as tax revenues that would help offset the programme costs.  
(IMechE Heat Report 2015)

## 73 Smart Energy GB

-

## 74 Community Housing Cymru Group

### **Area of action 5.1 – Information on financial support for householders.**

This action is vital. CHC has long recognised fuel poverty as being a major contributor to / indicator of financial exclusion. Improving the energy efficiency of properties, and making sure vulnerable households are in receipt of all the benefits they are entitled to, are the main components of current efforts to tackle fuel poverty. Housing associations, recognising that a large proportion of their tenants are some of the most in need, are becoming increasingly involved in financial inclusion work and tackling fuel poverty is starting to become part of this agenda.



Holistic advice and partnership approaches have to form the vision moving forward. CHC's Your Benefits Are Changing campaign (YBAC) involves over 70 organisations raising awareness of welfare reform changes. CHC lead on the campaign using television, social media, newspapers and radio to raise awareness. The preventative advice team at CHC supports the YBAC helpline where callers are given information and advice on changes and any possible solutions. The network of organisations involved in the campaign allows advisors to signpost to other supporting agencies if required. One area of success has been the identification of the Warm Home Discount. The number of callers currently claiming a qualifying benefit is 94% and therefore last year we successfully assisted over 914 people to claim a rebate which equates to an annual sum of £127,960 (of which 250 people have also been added to the priority services register). Initiatives such as the warm home discount are crucial in assisting people who are in fuel poverty. However, there are 19 different companies running that scheme and feedback from members suggests that they all have different timetables and different guidelines. There is no consistent message being provided for as to why people are being turned down for that. We need to review that system to improve it.

Approximately 70% of tenants in Wales claim some kind of income support. Our members are proactive in supporting fuel poor tenants obtain their entitled benefits that relieves them of fuel poverty. Our members are spending a lot of resources in focussing on dealing with the impacts of welfare reform. Our members provide benefit advice, helping tenant's secure warm home discounts and winter fuel payments. Our members also provide tenant fuel debt advice by supporting them, for example, in negotiating re-payments of gas and electric debts with energy providers. Housing Associations hold community affordable warmth events where various energy matters are discussed with tenants to allow opportunities to address concerns and issues. This added value support can result in tenants who were in significant amounts of credit gaining a refund, behavioural change advice and Welsh Water support for example. Improving communication and advising tenants of the support they are potentially eligible for is a vital service and opportunity. For many households, who might, for example, just narrowly miss meeting eligibility criteria on a whole raft of support measures can still benefit from energy efficiency advice. These households who sometimes slip through the net and are on the periphery and narrowly miss the thresholds for funding can still need support as they find it difficult to pay their fuel bills.

#### **Area of action 5.2 – Welsh Government investment.**

CHC very much agree with proposals to continue to provide grant funding for those households living in deprived communities, those in the most energy inefficient homes and on the lowest incomes. Investing public funding in improving the energy efficiency of low-income households is the right thing to do to tackle fuel poverty and protect the most vulnerable in society. CHC also agrees that Welsh Government need to seek to maximise investment from the EU and from other sources, such as a future energy company obligation, alongside their own grant funding, and Welsh Government need to continue to maximise links with other programmes, for example Vibrant and Viable Places where appropriate.

CHC would like to see more information regarding proposals to ensure best value for public money and plans to limit the capital investment per household to an

appropriate maximum reflecting the needs of the Welsh housing stock. Welsh Government needs to invest in energy efficiency measures that are appropriate and cost effective and that provide value for money.

A lot of funding that complements Housing Association investment for energy efficiency improvements and make it go further has either been cut or reduced. This has meant that the neighbourhood approach has been more difficult to achieve. An example includes the cuts to the energy company obligation and cuts such as this make it much more difficult for the sector to install energy efficiency measures, particularly more expensive measures such as external wall insulation. Solid walls have low pay back periods and are technically complex. The result is that some tenants that are in most need will either have to wait longer or even miss out altogether on these much-needed improvements.

The aspiration and investment of many in the sector needs to be matched by government stepping up to the plate. Welsh Government should look at future funding models for Housing Associations to ensure that we are able to deliver the best possible standards for housing. This may include the underwriting of private sector loans and grants that both require and enable us to ensure that whole life costing of housing is taken into full consideration. Funding energy efficiency retrofit works as well as the amount of energy that we generate through renewable technologies should be infrastructure investment priorities and infrastructure investment should be benchmarked for their environmental impact. The Wales Infrastructure Investment Plan (WIIP) provides a significant opportunity to ensure that large capital projects fulfil sustainable development criteria at every level from carbon impact to community benefit.

The CHC Group welcomed the additional £2.3million to the Arbed programme in 2013 which provided grants to create a network of Green Deal Demonstration Homes/Schemes in Wales. This early funding allowed Housing Associations to take advantage of ECO funding to improve and target it's hard to treat properties in Wales. The CHC Group and Housing Associations would like Welsh Government to work closer with the sector on such initiatives when considering releasing funding under Arbed or other funding streams. Ideally, the release of funding needs to be planned, allowing time to consult and develop effective energy efficiency projects.

**Area of action 5.4 – Leverage of other funds into Wales. We should continue to maximise the leverage of funds into Wales and will work with the UK Government on energy efficiency initiatives that cover England and Wales. We aim to maximise the take up of such funding by householders in Wales.**

CHC agrees. Funding needs to be focussed and targeted when considering the implementation of schemes. The changes in ECO and the UK Government's decision to reduce the solid wall insulation target in particular impacted the sectors ability to fund properties that do not result in significant carbon savings e.g. mid terrace solid wall properties. This has had a huge impact on Housing Associations in Wales. As a consequence of UK Government changes, a number of energy companies withdrew their ECO funding offers which have affected Housing Association's ability to deliver energy efficiency housing improvement schemes. Many had spent months preparing ECO partnerships, many of which, all the contractors and energy companies, effectively, walked away from. Housing

Associations now have to recast projects at much lower levels of support from the energy companies.

Housing Associations had started enabling work on properties where perhaps new windows were put into properties and properties were prepared to have external wall insulation schemes delivered, only to find that the EWI partners, because of the change in ECO, were no longer prepared to enter into contracts. There were instances where over the winter, tenants whose homes had been prepared for installations that Housing Associations had to maintain watertight over the winter while trying to rebuild schemes this year. That was a real impediment and was not a good service to tenant. This in turn can damage the reputation of schemes in the wider community. That is where the Welsh Government, both in terms of its own policy (in terms of operationalising policy) and in terms of trying to influence UK policy, could have a really significant supporting role and leading role to play in trying to change the way in which schemes are implemented and changed going forward. CHC would like to see Welsh Government support available when, for example, UK government funding is either withdrawn or doesn't materialise.

However, where Housing Associations have been able to secure ECO deals, they have undertaken communication with the local community because they know that local community and have also been able to deal with local contractors when possible, putting targeted recruitment and training into projects, so that schemes can take on apprentices, local people, etc.

Changes to ECO targets and the withdrawal of ECO offers from energy companies have hit HAs who were reliant on ECO funding to improve its hard to treat housing stock. Uncertainty in income arising from the recent changes to ECO has meant that HAs have been unable to plan ahead their energy efficiency and maintenance programmes to treat their hard to treat housing stock. Feedback from Housing Associations has suggested that some ECO funders want to take control over schemes that are already being managed by the HA's. As a consequence to changes, more tenants across Wales could remain in fuel poverty and live in hard to treat homes.

CHC would like to work with Welsh Government to put pressure on the UK Government to create a regional target on the number of solid wall properties an energy supplier must target in Wales, as well as work on the design on investment programmes to help tackle the energy efficiency of housing stock. ECO has taken an inordinately long time to get the deals done. Delays and policy changes have been probably the strongest characteristic for the slow uptake or slow delivery of schemes. This, in turn, causes breaks with the supply chain, it causes breaks with construction partners, and it causes starts and stops on procurements. Stop-starts between different policies does not help. Equally, the sector was caught when the feed-in tariffs were changed a couple of years ago. It caught the sector out as well as the whole construction and supply sectors.

Having a more joined-up approach to individual energy management and energy efficiency policies when policy changes is needed, as well as having forward dates for policy changes rather than drop-dead dates, would also help tremendously in being able to devise and then deliver programmes. Programmes need more

longevity so that we can plan better to get the economies of scale and get those works completed in far more properties. Housing Associations have a long-term interest in the stewardship of their communities and actually planning these programmes has been difficult in many instances in the past.

The CHC Group is supportive of the role the Welsh Government is doing to maximise ECO in Wales. The CHC Group represented the HA sector on the Maximising ECO Core Working Group and welcomed the Welsh Government's £70m commitment to encourage energy companies to invest in energy efficiency projects and maximise ECO investment in Wales. The Welsh Government needs to ensure that a partnership approach, particularly between local authorities, HAs, the private sector and Care & Repair Agencies is a key element in awarding funding for ARBED, the maximising ECO grants and other energy efficiency funding streams. WG should ensure that local authorities are having those discussions with their partners.

However, at current levels, it will take decades to be able to make every home that is currently performing very poorly more efficient. Much more significant investment is needed than is currently in place to aim to get as close as possible to meeting the targets to eradicate fuel poverty. CHC would like to see Welsh Government do more to build on some of the good work delivered under ARBED and Nest. The Scottish Government, for example, plans a £2 billion investment over 10 years towards upgrading the Scottish housing sector. We need that sort of ambition that says that we have a plan to upgrade the entire housing stock here in Wales so that we can really get to grips with the issue here in Wales. That, of course, would help develop our green economy as well.

CHC would like to understand whether the Green Investment Bank, for example could be a useful avenue for funding energy efficiency and renewable energy projects in Wales. The KfW bank in Germany, for example, has provided significant investment into energy efficiency, corporate environmental protection and renewable energies. The German development bank KfW borrows freely and is transforming the energy efficiency of the nation's homes. KfW is owned by the German state. It has half a trillion Euros of assets, making it roughly twice the size of the World Bank. It lent €70bn in 2011, raised from international markets at low interest rates thanks to its AAA credit rating. About a third goes to energy and climate change investments, including €24bn from 2009-2011 on energy efficiency in homes, which leveraged a total investment of €58bn<sup>11</sup>. The bank recognises how energy efficiency can make an important contribution to reducing the fixed costs of an enterprise particularly in difficult economic times<sup>12</sup>. In order for small and medium-sized enterprises to be able to sustain such investments too, the KfW give particular support to SMEs in the form of low interest rates for loans. In addition, KfW is financing the development of renewable energies, such as electricity and heat from the ground, sun, wind and water. The work of the bank should be furthered explored to see if any lessons can be learnt from their model.

We need a long-term plan over 20 or 30 years for example (depending on the availability of resources) and it needs to involve all departments working together. Communities, local government could work with third sector organisations and social housing to promote more bulk buying and switching as tackling fuel poverty

does deliver social, environmental and economic wins for Wales (its sustainable development in action) Nest, for example, has been providing retrofitting of older homes for those groups who qualified for assistance during the Assembly's fuel poverty strategy. However, due to energy price rises, fuel poverty has carried on rising and so changes to the scheme have meant the focus has been on those on low incomes, living in the worst homes in the private sector, with F or G ratings. This has led to many people on low wages missing out on assistance. The scheme has also suffered with difficulty in providing advice to people due to a lack of resources. Schemes such as Nest may only be available when the household is on benefits - this excludes those on low wages who are, of course, in work.

Research by Friends of the Earth and WWF has suggested that we need to improve around 400,000 houses in Wales — a third of the current housing stock that we have — over the next 10 years to a level that cuts carbon emissions by more than 60%. If we are to meet some of the targets set by the Welsh Government, improving around 4,800 houses a year for 10 years, as we are currently doing, will not come close to achieving what is actually required. £2.4 billion pounds is the estimated cost in Wales to take 95% of people out of fuel poverty which is within our reach, especially in the context of borrowing powers.

The CHC Group and members are also keen to work with the Welsh Government to ensure that we take full advantage of the next phase of European structural funds investments to utilise investment opportunities to improve the energy efficiency of homes in Wales. In response to the economic downturn, we need a system that incentivises more action to fight poverty, less carbon and more jobs. We should be focusing on the nature of change, and designing change will need to involve leadership from across sectors, with interventions designed to shift behaviours and establish routes to quickly address barriers. At the local level there is the need for a more targeted approach to identify and reach the fuel poor. There is also the need for the better co-ordination of advice and other support services. Greater co-operation is needed between Welsh Government schemes to help ensure that all those who live in fuel poverty in Wales can access funding and support and gain maximum benefit from the main funding streams available under this agenda. While there have been numerous successful grant schemes to help make energy improvements to people's homes, many of the schemes are target driven but not always reaching those in greatest need.

In terms of the cost of dealing with one home, it's vital that we save money by covering as many homes as possible at once. We must help ensure that we maximize the amount of energy efficiency funding provided in Wales going forward alongside UK Government funding and alongside contributions from social landlords, so that the pot is bigger. That will enable us to create larger-scale programmes, which helps to address some of the issues around the dispersal of stock. A mixed tenure scheme has a fantastic regeneration impact in terms of the vernacular and the street scene in communities because whole streets are being done at the same time. This means that it has the greatest potential to get to the most 'difficult to reach' sections of communities and the potential for the value of money invested to be readily identified in relation to value to the Welsh Economy, the affects on fuel poverty, employment, training, community benefits etc.

In enabling this whole street approach, the Arbed 2 project did take an inclusive approach including local authorities, HA's, community groups etc and CHC recognises the positive benefits it had in many areas. However, CHC felt that ARBED 2 suffered in some areas from an absence of a multi-tenure approach and more could have been achieved if there had been blended funding. While we recognise that ARBED is a programme which should apply cross tenure we believe that the change in the application process from Arbed phase 1 and 2 led to a patchy approach in some areas which was too dependent on local government priorities and processes. In some areas good partnership bids had been developed, but in others, some HAs had not been involved in bids for funding. Various HAs indicated issues with the delivery of Arbed phase 2 in particular in North and rural areas of Wales, including communication issues and using the local supply chain, which are obviously key aims of ARBED.

Feedback from a member based in North Wales suggests that some local contactors struggled to meet the criteria set out in the current Arbed2 format. A HA based in South Wales felt that one of the main issues relating to Arbed 2 was the initial uncertainty as to where the funding was to be focused as they are an RSL working across 5 Local Authority areas, which can lead to uncertainty and difficulties in planning retrofit upgrade programmes across a diverse portfolio of stock.

In looking at the delivery of a likely ARBED 3, in order to ensure Welsh programmes maximise leverage of other funds into Wales, partnership working must be ensured further to help blended funding to happen which brings with it scale and rather than a pepper-pot effect in neighbourhoods, you have a whole street scene where every property may be done and you can look at the whole village. In rural areas, while there is dispersed stock, HAs are well-placed to target private owners as well and retrofit homes with energy efficiency technologies in those areas.

Some HA schemes have reported 100% uptake among private households when they have carried out combined schemes, working in partnership with the local authority. This approach has been very effective, both in terms of the planning bid preparation and delivery on the ground, with both the LA and HA working to utilise the other's skills to best effect, to enable blended funding to carry out works to mixed tenure schemes. The anecdotal evidence of going to those neighbourhoods and talking to the tenants who live there, and to the other residents who live there, is that the difference it has made, not just to fuel poverty, but to their lives, is astronomical. HAs are not for profit organisations and any surplus that might be generated is ploughed back into projects and schemes that benefit communities across Wales. There are a lot of skills and experience out there to make use of. HAs benefit from knowing not just their tenants, but also their communities and are well-placed to deliver that multi-tenure approach. In looking at the delivery of a likely ARBED 3, capacity issues must be considered.

#### **Area of action 5.5 – Financial benefits of switching.**

CHC welcomes schemes such as Cyd Cymru. It's vital that energy switching doesn't lead to monopoly-type practices of many energy companies. Energy companies have made excessive profits through what some would describe as poor practices. We have seen examples of the miss-selling of tariffs and failures to be

transparent over prices and also failures to pass on falls in the wholesale cost of energy, but also very quick actions, in some cases, to pass on price rises. CHC welcomes the devolution of powers over all aspects of energy, including consumer matters, so that we can legislate, for example, to put an end to companies' powers to disconnect any home from gas or electricity and therefore putting energy companies on the same footing as water companies. We also need to simplify tariffs to end complexity in the market, and enable people to have confidence in switching suppliers

There are many ways that the market could be regulated to better protect people in Wales, for example putting energy companies on the same footing as water companies so that they're forbidden from disconnecting customers, regulations over social tariffs and the requirement for companies to offer these to vulnerable people and extending regulations against miss-selling of tariffs to online forms of marketing. We also need to address energy company misbehaviour over direct debit tariffs. Not only is there an issue with the energy companies and the way that they structure the market, but clearly there are companies now, some of which are based in Wales, that are actually taking advantage of people who are in fuel poverty and who are vulnerable. Some organisations then need to be referred to trading standards. We should be taking more direct and robust action with regard to the activities of some of these companies, many of which are located in Wales. The relevance of switching and competition in the new energy market is in urgent need of review.

#### **Area of action 5.6 – Awareness of financing mechanisms**

It would be useful if all financial mechanisms are promoted in one central place via a newsletter for example or on one webpage.

#### **Area of action 5.7 – Green Growth Wales. Through the establishment of the Green Growth Wales investment fund we will lever private investment for energy efficiency and renewable energy projects for businesses in Wales.**

CHC welcome this opportunity to increase renewable energy capacity and deliver energy efficiency savings in Wales.

#### **Area of action 5.8 – Support for businesses. We will continue to support businesses to grow and improve their ability to compete in their markets.**

CHC agrees.

#### **Area of action 5.11 – Pipeline of capital projects. We will optimise our support for delivery of energy efficiency projects by co-ordinating a pipeline of capital projects right across the public sector. In an increasingly dynamic landscape of capital development and delivery, we will maximise the potential for these projects to come to fruition. By identifying the projects, understanding their barriers and seeking solutions to those barriers, we will ultimately make them more investable. This will provide us with a complete picture of potential projects with a funding strategy for the whole sector.**

CHC agrees.

11 <http://www.theguardian.com/environment/damian-carrington-blog/2012/may/24/green-investment-bank-ener> <https://www.kfw.de/inlandsfoerderung/Unternehmen/Energie-Umwelt/index-2.html> gy-efficiency

## 75 SSE

### Finance

- The range and quality of data captured in the WIIP could be increased, so that the industry has more nuanced data to work with.
- In order to improve WIIP further, Welsh Government should examine the inclusion of retrofitting and maintenance and repair schemes where they are of sufficient size and scope.
- It is vital that clarity around apprenticeship funding is provided

## 76 CITB

### Finance

#### **Wales Infrastructure Investment Plan**

While the Wales Infrastructure Investment Plan (WIIP) is an innovative development from Welsh Government, providing a clear statement of intent around a number of capital projects, there is room for improvement.

The WIIP should provide a more detailed pipeline of opportunities to allow Welsh companies to plan their recruitment and training in good time. The pipeline and forward work programme should be more visible and user friendly to the sector to enable better business planning.

**The range and quality of data captured in the WIIP could be increased, so that the industry has more nuanced data to work with.** This could be modelled using the example of the UK Government's National Infrastructure Plan and pipeline to ensure labour flows and skills requirements can be forecast/planned<sup>17</sup>.

This could also help remedy one of the key problems for many construction companies, namely initiative churn. A large number of energy efficiency initiatives have come and gone over time and this creates uncertainty for companies.

**In order to improve WIIP further, Welsh Government should examine the inclusion of retrofitting and maintenance and repair schemes where they are of sufficient size and scope.** This would aid in the planning training effort and help to ensure firms that wish to deliver energy efficiency measures have the time to develop the skilled workforce they need. This is crucial if the performance gap identified by the Zero Carbon Hub is to be remedied.<sup>18</sup>

#### **Apprenticeship funding**

If, as suggested above, energy efficiency skills and a wider knowledge of the performance of pre-1919 buildings becomes mainstreamed in the apprenticeship programme then the funding mechanism employed by Welsh Government will become crucial to the success of energy efficiency interventions. While CITB Cymru Wales recognises that apprenticeship reform is ongoing in Wales, and the



Framework for Co-investment in Skills is only at the beginning of the implementation process, **it is vital that clarity around apprenticeship funding is provided**. This is particularly pertinent in response to reforms in England following the announcement of an apprenticeship levy that could have a significant impact on Wales' funding settlement.

17 UK Government. 2013. *National Infrastructure Plan* [Online]. Available at: <https://www.gov.uk/government/collections/national-infrastructure-plan> (accessed 7th September 2015).

18 Zero Carbon Hub. 2014. *CLOSING THE GAP BETWEEN DESIGN & AS-BUILT PERFORMANCE END OF TERM REPORT* [Online]. Available at: [http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design\\_vs\\_As\\_Built\\_Performance\\_Gap\\_End\\_of\\_Term\\_Report\\_0.pdf](http://www.zerocarbonhub.org/sites/default/files/resources/reports/Design_vs_As_Built_Performance_Gap_End_of_Term_Report_0.pdf) P.20. (accessed 7th September 2015).

## 77 CLA

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## 78 EON

### **Finance**

88. We agree with the assertion in the consultation document that there is a need for smarter use of public funds alongside a long-term, stable and transparent framework. We also agree that schemes must be designed to work together so that, where appropriate, funding streams can be combined with ease. This will help unlock private investment and also encourage householders to invest in energy efficiency.

89. We support the Welsh Government's commitment to investing in energy efficiency measures that are appropriate and costs effective, and to ensuring the best value for public money. In order to achieve this, it will be important to make use of existing, efficient delivery processes rather than setting up new ones which will add unnecessary cost and competition.

90. As noted earlier, we make a distinction between 'funding' and 'financing' whereby funding represents a discount or ways to help with payback, whereas finance helps with affordability.

### Households

#### Funding

91. Historically, support for energy efficiency measures has been on the basis of providing free measures to eligible households, with eligibility defined quite broadly. This has led to an expectation that these should be provided for free, and may have contributed to the slow uptake of measures in the able to pay market (though lots of other factors have contributed to this). This approach is not sustainable, neither is it necessary, but what is required is a smarter approach to facilitating investment in energy efficiency for home owners.

92. Notwithstanding the fact that measures should continue to be provided for free to certain households, support for energy efficiency going forward needs to be more

measured but with a greater capacity to maximise funding opportunities. This, in turn, will help grow a sustainable energy efficiency market in which more households invest in energy efficiency themselves. This will provide a more stable base for the supply chain to develop and compete on the basis of longer-term business opportunities rather than access to short-term government grants.

93. We support the Welsh Government's actions to seek to continue support for vulnerable households, to limit the capital investment per household to an appropriate maximum and to invest in measures that are cost effective and provide value for money. We also agree that it is important to maximise investment from other sources alongside the Welsh Government's own grant funding and combine these as effectively as possible. Future programmes should be designed to work together, share benefits, improve offers to the target audience and avoid the excessive costs in duplication of systems, compliance, standards and reporting.

94. Designing schemes to work together is essential in order to maximise the benefits of energy efficiency programmes and reach as many households as possible. The consultation document states that Wales has some of the most inefficient housing in Europe and that around 30 per cent of households are in fuel poverty. It is therefore essential that different sources of funding can be combined in order to make them go further and help as many households as possible.

95. Schemes in the past have often suffered from a failure to be properly integrated. In some cases they have even been set up to compete with each other as in the case of ECO and the Green Deal cashback offers. Doing this is counterproductive, duplicates effort and creates winners and losers where there is effectively one goal (delivering energy efficiency measures to domestic households).

96. With regard to current schemes in Wales, we believe that the interaction between ECO and local programmes such as Arbed could be improved. The relatively low levels of co-funding in the past may have held back the deployment of measures. Having said this, we have recently increased our activity in Wales through partnering with local authorities that have sought to combine Arbed funding with ECO and are encouraged by the progress that has been made to date to set up these schemes.

97. Notwithstanding this, in the context of limited resources and a need to continue to provide fully-funded support for fuel poor and vulnerable households, it will be important to transition to a future where households that are not fuel poor or vulnerable are enabled to pay for measures through a range of flexible financing mechanisms.

#### Financing

98. We agree that it is important to provide a range of financing mechanisms for individuals that want to consider energy efficiency improvements for their homes. Different households will have different needs and circumstances and a one-size-fits-all approach will restrict peoples' choices and stifle market development. Whilst some people will be able to use savings, many will look towards borrowing at low rates of interest and some may need support to help cover a proportion of the cost.

99. A smarter approach need not exclude grants to help with the upfront cost of measures, but these need to be set at a level which facilitates people contributing a proportion of the cost rather than being too generous and creating a short-term rush in the market. The aim should be to create attractive propositions that will encourage homeowners to invest, thereby getting maximum value for money for scheme funding, be it ECO or local Welsh government schemes, and generating steady and stable growth in the market. Making propositions attractive for homeowners includes making the process simple and transparent.

100. Access to low interest finance is important for helping households meet the upfront costs of energy efficiency measures, although we do not believe that it is necessary to subsidise energy efficiency loans down to zero per cent as has been suggested in the past. It is important that low interest loans for energy efficiency improvements are available as widely as possible, including to those who may not qualify for the lowest rates on conventional personal loans.

101. Indeed, the need for flexibility and access to a range of financing options available to help people cover part or all of the cost of measures is particularly important for people who do not qualify as fuel poor but who, nevertheless, have very little disposable income. Being able to offer acceptable financing options to these households will be crucial for engaging this sector of the domestic market. Local councils could look at equity release loans or develop their own version of the 'Green Deal Finance' loan based on fuel savings (ie pay-as-you-save).

102. Schemes such as the Welsh Government's Home Improvement Loans fund can also help to bridge the financing gap although, as far as we understand, the scheme is only offered at the discretion of local councils and not widely available. We would like to see local authorities encouraged to participate in the scheme so that it is accessible to as many people as possible.

#### Customer Contributions

103. Our experience of successfully delivering a number of schemes through the Green Deal Communities scheme [in England] have demonstrated that customer contributions can successfully be built into a funding model which allows customers to pay a share of the measures and 'buy-in' to energy efficiency. This helps to build better engagement whilst also allowing funding to go further and schemes to deliver to more households.

104. However, there is also an important point to make around consistency of offer. We have learnt through experience that having different offers for different types of customers in the same type of house in a localised area can cause issues. For example, in a street with a mixture of social housing, fuel poor and able to pay customers (living in the same type of properties) customers could be asked to pay from nothing to a major contribution. This is even more difficult in a fuel poor versus able to pay scenario (bearing in mind that one household could be defined as 'able-to-pay' but in practice, in terms of disposable income, no better off than a neighbour who has been classed as fuel poor).

105. There is experience of this in Wales where the funding available means that certain able to pay customers are able to receive solid wall insulation for free. This, in itself, could create future barriers when going back and asking others to contribute by creating an expectation or sense of entitlement, and a resistance to being asked to pay. Making free measures universally available also reduces the longevity of any offer and does not represent best value for public money as the money will be subsidising, in part, households who could afford to pay for measures themselves.

106. We know that the Welsh Government recognise this and is committed to developing the able-to-pay market, with funding being limited to low income and vulnerable households. However, the key point is that the Welsh Government must be very clear on the definitions of 'fuel poor' and 'able to pay' and the qualifying criteria for assistance. These must be clearly communicated so that households know upfront whether or not they are likely to qualify for any assistance.

#### Businesses and Public Sector

107. We support the actions outlined to help businesses and public sector organisations invest in energy efficiency measures.

## 79 NEA

The Welsh Government is to be commended for investing in its energy efficiency programmes, Arbed and Nest, despite the difficult economic climate. NEA Cymru welcomes the continuing commitment to invest in energy efficiency under its new Warm Homes programmes banner, in particular, the recent announcement that NEST will continue in 2015-16 and that it will support properties with an EPC E or below.

However, as stated in our recently published UK Fuel Poverty Monitor 2014/15, the Welsh Government's current programmes, in particular Nest has only been able to assist a small fraction of fuel poor households in Wales.

Current and previous schemes have used a range of criteria to establish whether people living in an energy inefficient property can receive support. These have included receipt of means-tested benefits, age, and living in a deprived area. However 'nearly-poor' households who could benefit from support have missed out as they may not be on means tested benefits or live within defined LSOA areas.

The Welsh Government should aim to use more tailored criteria to ensure households in energy inefficient homes currently excluded are eligible for help. NEA Cymru recommends that the Welsh Government reviews future eligibility criteria to ensure target support to not only people who have already fallen into fuel poverty, but those at risk of fuel poverty.

NEA Cymru is calling on the Welsh Government to continue to develop a long term ambitious centrally capitably funded energy efficiency programme for Wales.

Wales needs to follow the lead of the Scottish Government in making energy efficiency a national infrastructure priority. To ensure more households are removed from fuel poverty, the Welsh Government needs to push for further devolved energy efficiency powers from the UK Government to truly make existing homes energy efficient and eradicate fuel poverty.

Any new programme needs to be planned and structured, not reactive such as Arbed and Nest. The Welsh Government needs to develop an effective 'whole house approach' programme with ring-fenced budgets to effectively fund costlier, but more effective energy efficiency measures such as EWI and IWI. Under Nest, funding is capped per household, as such; external wall insulation has rarely been installed under Nest. Recent NEST evaluation recognised that the majority of households only had a single measure installed through NEST which is short term and does not help a household out of fuel poverty in the long term.

In difficult financial times, the Welsh Government needs to be inventive in developing financing to develop an ambitious energy efficiency programme, including sourcing and leveraging funding from EU, loans and other sources.

In our 2014/15 Fuel Poverty Monitor, NEA Cymru calls on the UK government to use the money it raises through VAT and carbon taxes from domestic energy consumers, to adequately resource initiatives that make homes warmer and healthier. It is estimated that the Treasury will receive £14 billion over the next 5 years with £690m contributed from Welsh energy consumers alone. The Welsh Government should call on the UK Government to use the money it raises through VAT and carbon taxes from domestic energy consumers and devolve this funding to the Welsh Government to use on its own energy efficiency programmes.

NEA Cymru welcomes further European Union European Regional Development Fund (EU-ERDF) for 2015-2020. The £33 million invested into Arbed 2 by the Welsh Government enabled the Welsh Government to develop a far greater strategic and focused energy efficiency programme, helping more households living in fuel poverty. The Welsh Government needs to show how it will use EU ERDF and EDF funding to support communities in fuel debt and in energy inefficient housing between 2015-20.

NEA Cymru are also calling on the Welsh and UK Government's to work together closer together to align or deliver joint non-energy company led energy efficiency programmes that cover England and Wales.

There is limited information in this consultation on how the Welsh Government will learn from the monitoring of its current Warm Homes programmes and how it will use the learnings to develop future programmes to support people in fuel poverty and improve energy efficiency of housing in Wales.

NEA Cymru calls on the Welsh Government to improve its monitoring and reporting of its Warm Homes programmes. NEA Cymru welcomes the annual reporting of NEST, however, each year, the Welsh Government have been inconsistent in its reporting on NEST from year to year on, for example, on the reduction in annual CO2 emission and householders contacting NEST in severe fuel poverty.

The Welsh Government has not published any research reports on Arbed since 2012. NEA Cymru understand that reporting is underway on Arbed, however, without reporting since 2012, NEA Cymru and partnering organisations are unable to determine its success and how many householders have been taken out of fuel poverty through Arbed since 2012. The Welsh Government needs to improve on its monitoring and reporting of its energy efficiency programmes in Wales.

NEA Cymru has been active partners in the delivery of Cyd Cymru – Wales Together, the Welsh collective energy switching scheme. Cyd Cymru has been very effective in supporting households in Wales to fuel switch, saving them money on their fuel bills. Recent results of Switch 3, completed in March 2015 showed that over 5,600 householders registered to the scheme and just over 2,000 householders successfully switched energy supplier. The average saving per householder was just over £250 per annum, a saving across Wales of £525,000. Cyd Cymru has further ambition in Switch 4 in the autumn of reaching out to wider communities in Wales. However, it is doing this on a limited marketing and promotional budget. Cyd Cymru welcomes support by the Welsh Government to help it reach out to more people in fuel poverty in Wales.

## **80 Rockwool**

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## **81 EDF Energy**

Yes, we agree with the areas set out in Chapter 5.5 and that the encouragement of partnerships is a key factor. Areas for consideration include:

1. Facilitating collective switching by providing local authority resources to manage the process.
2. Highlighting that the investment return in energy efficiency initiatives can often provide greater financial benefits than many other initiatives. Furthermore, accessing Welsh Government loans can produce an increased rate of return benefitting both the Government and the end user.
3. Recognise the value of energy performance contracts. These can deliver real and guaranteed savings by investing in efficiency that result in guaranteed savings. Commercial businesses provide these but a local authority service could also be developed to businesses and the public sector (schools, leisure centres etc).

## **82 Royal Institute of Chartered Surveyors**

Agreed but there appears to be no reference to quantified funding (£)

## **83 Flintshire County Council**

5.1. With other North and Mid Wales Authorities, we have proposed an alternative system of identifying output areas where high levels of fuel poverty can be found.

This gets around some of the issues with other proxy criteria (benefits, welsh index of multiple deprivation) which disproportionately benefits urban areas and excludes pockets of fuel poverty in areas with hard to treat (off gas) properties.

5.4 Leverage of other funds into Wales. We support the use of national fora such as CLAW and CAN Cymru Housing to allow local authorities to collaboratively bid for ECO funding and other DECC funding collectively, as well as procuring collectively. It has been our experience that given the continual fluctuation in ECO obligations/prices, that it is most advantageous to continually (6 monthly at least) check to determine whether a scheme is attracting a good level of funding compared to market rate.

We suggest that Welsh Government look at the Scottish HEAPS model which seemed to be quite successful in leveraging ECO funding in. We could learn from the way the Scottish Government has levered in ECO funding by offering match funding at predictable levels through the HEAPS programme. Housing data needs to be collected, updated and managed consistently across Wales in order to maximise potential investment opportunities.

We encourage Welsh Government to support local authorities' endeavours to improve the quality of data on fuel poverty and energy efficiency.

#### 5.5 Financial benefits of Switching

Currently Flintshire County Council support the Cyd Cymru scheme which works through Energy Helpline. However we are looking into whether our position as an RSL may allow us to offer further discounts locally through a scheme such as "Our Power" or "OVO's" community energy offering.

#### Area of action 5.8....Public sector Finance

The alternative sources of funding are to be welcomed, but there needs to be a legislative impetus to achieve the desired carbon savings, otherwise the take up will be patchy.

#### Area of Action 5.10. Energy Performance Contracts

Whilst Energy Performance Contracts are suitable for some organizations, they are not well suited to many Education Authorities due to the manner schools are funded, ie through delegated budgets. This prevent local Authorities acting for all schools, and requires each school to sign up to an initiative, which is impractical. As previously mentioned, the use of BREEAM to determine the construction of schools is a blunt tool and does not work well in practice. New design standards needs to be developed that are much simpler and easier to operate by the end user. Only then will new schools achieve the energy savings that we all want to see.

## **84 Constructing Excellence in Wales**

Public sector grant funding conditions could be used more extensively to stimulate further application of energy efficiency measures.

CEW believes that more promotion of the Home Improvement Loans and the Houses into Homes funds should be made. We would also advise that minimum



energy standards are set on these sources for funding, for example, bringing them in line with the WHQS, a SAP of 65 (EPC D rating) as an initial level. Bringing void and derelict buildings into use is a commendable aim, but this should only be enabled with the aim of delivering attractive, low carbon housing and accommodation. An example of this is provided by the work carried out by the Welsh School of Architecture and NPT Homes<sup>32</sup> where a derelict pre-1919 void has become an attractive family home again providing the RSL with a premium income after some time being derelict.

CEW is currently working with WG's 21st Century Schools programme team to ensure value for money is delivered within Band A funding of £1.4bn. As this programme is working on refurbishment and extensions as well as 100% new build school sites, our work will continue to identify opportunities for Band B to deliver further energy efficiencies from the school estate in Wales. Current funding requirements for the 21st Century Schools programme require a BREEAM excellent rating to be achieved for new builds and certain refurbishment projects. We would welcome more energy efficiency measures being incorporated into refurbishment / extension projects, as well as a continued focus on low/zero carbon buildings for the new building schools. There needs to be a balance reached between assessing the condition categories for schools and their refurbishment opportunity. The consequential improvements approach within Part L need to be explored more fully for the schools funding programme and other such investments WG is making in the built environment in Wales. The Salix funding is contributing to "investing to save" opportunities for the schools estate in Wales - this cash injection needs to be continued.

Whilst there are financial benefits of switching fuel providers, support should continue to be provided for consumers who are off-grid. For example, oil syndicate, bulk purchasing clubs such as the Cosy Club initiative in Ceredigion<sup>33</sup>.

We are aware that the Energy Performance Contracts being established by the UK Government but suggest that communications are clear to avoid confusion regarding Energy Performance Certificates. Further communications on these new contracting procedures are required to encourage a broader take up. CEW would be willing to trial the new contracts as part of the C21 programme to enable school case studies to be developed and feedback provided to UK and Welsh Governments and dissemination to the industry.

32 <http://lcbe.cardiff.ac.uk/news-items/systems-approach-to-housing-retrofit-showcase/>

33 <http://www.ymlaenceredigion.org.uk/en/projects/energy/club-cosy>

## **85 RWE nPower**

With regards to the specific consultation questions asked (question 1-6) we agree with the areas of action set out and we do not have any additional questions or issues to be addressed. We would welcome confirmation of any proposed interim milestones that will be used within the broader strategy; particularly for those actions that relate to supporting and addressing fuel poverty, given the statutory target to eradicate fuel poverty (as far as is reasonably practicable) by 2018.



## 86 Melin Homes

Note: The strategy highlights that there are in the region of 386,000 households in Wales in fuel poverty. It is stating the obvious in saying that this will require levels of funding far in excess of those currently being committed. However, by blending EU, Welsh Government, UK government and self finance massive inroads can be made in assisting households out of fuel poverty.

### Action 5.1:

- Whilst Resource Efficient Wales provides a good platform for disseminating information to householders, there are information sources (including local authorities, door to door canvassing etc) that reduce the impact of REF.
- The REF service needs to have a far higher impact and presence across the public sector and the third sector. Most importantly, it needs to be the first point of contact for householders.

### Action 5.2:

- Investment for householders does need to be focussed on the poorest communities and the highest need in terms of current performance.
- There needs to be care given to a capped amount – some properties are far more costly to improve than others. A high number of these properties are of non traditional construction and previously owned by local authorities – by having a rigid funding cap there is the risk these homes cannot be improved
- The ‘able to pay’ case must be extended to RSL’s (local authorities and housing associations) in Wales – a shared cost of measures will see more funding available, particularly for the poorest owner occupiers
- Care needs to be given to how the cost effective measures are assessed. There are significant discrepancies in performance data
- Wales is the position of receiving EU funding for these measures. This funding needs to be targeted and spent via schemes that achieve economies of scale, maximise impact and ensure the widest social, economic and environmental outcomes are achieved. To this end, EU funds should continue to be held and spent via Welsh Government rather than distributed to local authorities, registered social landlords and the like. In this way Welsh Government can continue to be certain that their goals are being achieved rather than losing control
- Welsh Government has been far more effective in delivering energy efficiency projects than has been the case nationally. The current ECO programme is very poor in delivering and retains control amongst energy companies rather than providing the maximum value to householders. Whilst this is currently outside the control of Welsh Government, there should be every effort made for ECO funds to be passed to the Welsh Government to distribute rather than the current arrangements. This should be a key and ongoing goal. The funding levels potentially involved are in excess of the current Welsh Government commitments and will see Wales receive a far fairer share of funding than is being achieved under ECO.
- DO NOT allow energy companies to provide managed schemes in Wales. There is a general industry view that these provide the majority of benefit to the energy companies, are punitive to SME’s and result in poorer quality measures. The

view is that ECO provides a mechanism for energy companies to control the market rather than seeing the best outcomes. Welsh Government must hold it's line in order to ensure the best social, economic and environmental outcomes for the people, environment and businesses of Wales.

#### Action 5.3

- There should be more consideration given to the use of Credit Unions as a means of providing low cost ethical loans for households to top up funding
- We welcome the evaluation of the Home Improvement Loans scheme. There may be a danger that, as local authority resources are stretched, that this is not made available in all areas to the same extent and that households are not aware of the facility. It may be that case that, in Welsh Government delivering further energy efficiency schemes as per the Arbed and Nest schemes, that those scheme managers are able to provide access to the HIL's, providing more of a one stop shop service for householders and are more able to communicate this message within the context of energy efficiency schemes.

#### Action 5.4

- There is, we believe, a clear financial case for providing large scale domestic energy efficiency schemes in Wales. Welsh Government should consider whether they are able to raise finances that will fund larger scale investment that will have a marked impact across Wales.
- As mentioned above, Wales has not received a proportionate level of funding such as ECO or the Green Deal Home Improvement Fund. This is due in part to the scale of projects achievable in Wales compared to English cities and regions, and due in part to Welsh Government being far more focused on the widest benefits than may be the case in other parts of the UK – 'we will not be sold a pup'. Welsh Government should lobby the UK government for the devolvement of funding in these areas.

#### Action 5.5

- The most effective way to enable householders to switch is through engagement. By working with communities, householders may become local champions in this area. The requirement will be for effective and ongoing behaviour change projects and campaigns. Also central to this goal is digital inclusion and ensuring householders (particularly the poorest, most hardest hit) are supported to switch.

### 87 Citizens Advice

In considering finance options for domestic consumers, we would again urge the Welsh Government to learn the lessons of the failure of the Green Deal, and to engage closely with people from different backgrounds to ensure their needs and wants underpin policy design. **Loans must be attractively priced, straightforward to access, and come with adequate associated protections and clear ways to seek redress.**

The new Home Improvement Loan scheme combines two important qualities, firstly that it is delivered locally by local authorities, which should contribute to accessibility

and trust. Secondly the low cost of the loans should overcome another barrier. We recognise that the scheme is in its early stages, and would urge the Welsh Government to **ensure that detailed feedback from both successful and unsuccessful applicants informs the future delivery** of the scheme.

Resource Efficient Wales, offering a central point of contact for those interested in energy efficiency, thereby addressing one of the key recommendations of our *Strengthening and Streamlining Advice* report which will be published in October 2015<sup>12</sup>. Such a service can **only be successful if consumers are aware of its existence** and make use of it. We would therefore be interested in what evidence the Welsh Government has on brand awareness of REW, and how it plans to increase awareness of the service over the lifetime of the strategy.

<sup>1</sup> A copy of this report will be shared with the Welsh Government on publication.

## **88 Energy Savings Trust**

### **New financing solutions for "able to pay" householders**

One of the challenges with the current energy efficiency scheme has been that the nearly fuel poor have tended to miss out on support. We believe that the pay-as-you-save approach should not end with the Green Deal finance company with an offer in place for the nearly fuel poor in particular. This is about unlocking private sector finance to help pay for energy saving measures. We need to learn lessons from the Green Deal to see how new financing solutions can be developed. Those solutions also need to work for individual home owner occupiers and also for landlords and tenants (one of the issues with the Green Deal was that it didn't work for social landlords).

Changes to the FiT mechanism could dramatically impact the take up of renewable installations, delivering a double blow to Wales, through greater reliance on existing power generation and reducing the supply chain for the installations of, for example solar panel arrays on private homes.

## **89 Glass and Glazing Federation**

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## **90 WWF**

We recognise that resources are a major issue both for Welsh Government and its partners and that scale and cost of installations required to meet emission reduction target. However considering the multiple benefits that energy efficiency programmes bring to the economy and poverty in Wales WWF Cymru believe that financing in these measure should be considered as an investment which has multiply benefits including longer term outcomes.

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<sup>12</sup> A copy of this report will be shared with the Welsh Government on publication.

There are a number of ways we are exploring financing and delivery of these programmes including energy efficiency as an infrastructure project. We welcome the recognition of investment through the Infrastructure Plan (Action 5,2). The scale of the investment however will need to be on a much larger than currently is. In total, this would require installation of over 2.2 million energy efficiency measures, at a cost of around £5.2 to £9.3 billion. It requires almost 3 times the number of installations made from 2007 to 2014.

The strategy needs to recognise this challenge and then provide, alongside the challenge, a detailed breakdown of how much Welsh Government should be contributing towards this, against UK Government Schemes, and those activates from other sources it is seeking. As stated previously, there needs to be a clear route map to how Welsh Government plans to provide the financing to meet the scale of measures needed.

Energy efficiency should be seen as an infrastructure plan priority backed up with a commitment to a multi-billion pound capital investment programme, leveraging private funding, and the kind of clarity, purpose and focus given to other major infrastructure projects in Wales.

We welcome the provisions of low interest loans and other incentives for those able to pay (5.3) and drawing on other private funding streams. But to reiterate greater clarity is needed on how these contribute to the decarbonisation in the residential sector.

We would also recommend that financing of energy efficiency measure through health budget is explored in the strategy. There are a number of projects in UK in which this financing that could be replicated in Wales including Gentoo boilers-on-prescription scheme in Sunderland .

- Two year programme helping 2000 fuel poor households in conjunction with LA and local NHS providers.
- Monitored hospital visits of 300 participants, found negligible (2-3%) decrease in A&E visits but 30% decrease in emergency services visits with costed savings to the NHS.
- Full study will be published in September.

#### Economic Impacts – data gaps

There is no updated version of economic and social impacts of such a programme , particularly in improving the worst performing houses in Wales and the impact that will have on fuel poverty. This is due to no household conditions data in Wales since 2008. In absence of this, the assessment WWF Cymru undertook in 2011 and 2012 on cutting emissions in Welsh homes<sup>13</sup>, presents the general principles and assessments we would like to undertake if there were data available. In particular the possibility of bringing fuel poor homes up an energy efficiency standard and whether this would meet the scale of measures needed to meet the emission reduction targets. We welcome the reference in the strategy to our reports in this area but recommend that Welsh Government update the data to enable more update analysis.

WWF Cymru also recommend that lessons are learnt from other EU programmes. In the household/buildings sector robust evaluations are available for the KfW energy efficiency programmes in Germany and to a certain extent for the 'EnergieSchweiz' programme in Switzerland and the Home Energy Scheme in Ireland. For the industrial sector evaluations have been carried out for energy efficiency programmes in the Scandinavian countries and Ireland. It would be useful evaluation's accrued for Welsh Government schemes and other EU countries for this to be used in the development of a Welsh Government strategy.

### Commit to and deliver a Renewable Heat Programme

Our analysis demonstrates the importance of developing renewable heat programme for Wales. This is currently an area that does not receive much recognition in the energy debate therefore we recommend that a renewable heat strategy and programme is developed which compliments the energy efficient installations.

Enhancing the take up of low carbon heat would help to reduce reliance on volatile fossil fuels, such as gas and oil, which have been the biggest driver of consumer energy bill increases in recent years and account for 60% of domestic bills. This would have consumer and energy security benefits, particularly as North Sea reserves dwindle. It would also help to create new, skilled jobs. WWF UK have produced a report on Renewable Heat which demonstrates the direction of travel for Wales<sup>14</sup>.

<sup>1</sup> [http://assets.wwf.org.uk/downloads/housing\\_report\\_english\\_summary.pdf](http://assets.wwf.org.uk/downloads/housing_report_english_summary.pdf)  
[http://assets.wwf.org.uk/downloads/cutting\\_carbon\\_emissions\\_in\\_welsh\\_homes.pdf](http://assets.wwf.org.uk/downloads/cutting_carbon_emissions_in_welsh_homes.pdf)<sup>1</sup>  
[http://assets.wwf.org.uk/downloads/wwf\\_heat\\_report\\_summary\\_web.pdf](http://assets.wwf.org.uk/downloads/wwf_heat_report_summary_web.pdf)

## 91 Egnida

Egnida has direct experience in the market areas and most of the initiatives mentioned in the consultation and has previously provided in depth feedback to the process and associated initiatives. As such, we are fully supportive of the actions presented through 5.1 to 5.5 of the consultation as referenced in Questions 1 to 5 and the associated dynamics and impacts.

## 92 Federation of Small Businesses

As already indicated, many small businesses, particularly micro businesses and small traders are likely to purchase and consume energy more like households and energy efficiency schemes for business should be designed with this in mind. The majority of small and micro businesses will be unlikely to seek to invest in on-site renewable energy projects, or large scale energy efficiency schemes of the type envisaged by Green Growth Wales, particularly as many of these businesses do not own their premises, do not have fixed premises, or are operating from individuals' homes.

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<sup>14</sup> [http://assets.wwf.org.uk/downloads/wwf\\_heat\\_report\\_summary\\_web.pdf](http://assets.wwf.org.uk/downloads/wwf_heat_report_summary_web.pdf)

Measures designed to target small and micro businesses should be designed with relatively quick returns on investment in mind, as indicated by the results of the FSB survey in May of 2015<sup>6</sup>.

### 93 Calor

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**H) Responses in full to question 6) Do you agree with the impact assessments associated with this draft strategy?**

- **Equality Impact Assessment**
- **Rights of the Child Impact Assessment**
- **Welsh Language Impact Assessment**
- **Rural Assessment**
- **Privacy Impact Assessment**

## 1.Eco Home Centre

Where is the Health Impact Assessment???

The major impact of the strategy at the moment is to put a third of all houses and their occupants in Wales at risk!

The key risks are:

- Creation of major thermal bridges in houses (*environment & economic*)
- Creation of conditions for damp and mould in houses (*environment, health & economic*)
- Structural damage due to water ingress (*environment & economic*)
- Trapping moisture behind External Wall Insulation (*environment & economic*)
- Creation of chronic health problems esp. respiratory illnesses (*health & economic*)
- Not getting the savings / carbon saving that are projected (*economic*)
- Long term maintenance costs (*environment & economic*)
- Costly insurance claims or high costs for owners in stripping out / off 'improvements' (*environment & economic*)
- Wales losing it's character buildings and part of its identity (*environment & culture*)
- No major economic change as work will go to larger companies (*economic*)
- No economic advantage by having a more informed workforce (*education & economic*)
- No new innovative industries that put Wales ahead of the curve (*economic*)
- There are more ....

## 2. Neath Port Talbot Group of Colleges

AGREE, with the caveat, they may need amendment as result of this consultation.

## 3. Gwynedd County Council

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## 4. Certsure

From our review of the various impact assessments we agree with them

## 5. Institute of Civil Engineers

No comments offered



**6. Torfaen County Borough Council**

Yes

**7. NSA Afan**

-

**8. Royal Town Planning Institute**

-

**9. Saint Gobain**

No comment

**10. Coed Cymru**

-

**11. Tabitha Binding**

-

**12. Renewable UK**

-No comment

**13. British Gas**

6.1 No additional comment.

**14. One Voice Wales**

Yes.

**15. Natural Resources Wales**

Yes

**16. UKLPG**

-

**17. Wolseley**

No response

**18. James Coulter**

-

**19. Mineral Wool Insulation Manufacturing Association**

-

**20 CastleOak**

-

**21 ACE**

-

**22 Newydd**

-

**23 Isle of Anglesey County Council**

-

**24 Energy Effective Ltd**

-

**25 City & County of Swansea**

-

### **26 The Detail Hub**

Yes.

### **27 My Green Home Ltd**

Yes.

### **28 Ynni Cymru Energy Solutions**

On the whole. The one question is the Welsh 'question' costs industry a lot of money. There would need to be more support for industry to accommodate this.

### **29 The EPC Man**

Yes.

### **30 Bond Demolition Ltd**

No.

### **31 Colin Edwards**

-

### **32 Wrexham County Borough Council**

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### **33 Gaia Renewable Energy Ltd**

Not sure that these items these items though important are relevant.

### **34 Green Renewable Wales Ltd**

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### **35 Powys County Council**

No comment.

**36 GATC Ltd**

Yes.

**37 Celsius Energy Ltd**

Yes.

**38 C&K SUPPLIES**

-

**39 Llangynog Memorial Hall**

-

**40 Dr James Henshall**

Yes.

**41 John Griffiths - Chartered Surveyor**

Yes.

**42 Equity Redstar**

Yes.

**43 North Wales Housing**

-

**44 NSA Afan**

In general – fully agree.

**45 T L C Energy Limited**

Yes...but need a review of the Local Development Plan - Why are developers conducting Impact Assessments when they should be conducted by Independent Organisations?

#### **46 ECO CARBON TRADERS LTD**

-

#### **47 Asset Energy Solutions Ltd**

-

#### **48 WDS Green Energy**

Energy is vital to our economy and should be treated independently of any impact assessments - try living without electricity no matter what colour creed, age or sex.

#### **49 Torfaen CBC**

Yes.

#### **50 Warmwalls Ltd**

Yes.

#### **51 Gas Tech Wales**

-

#### **52 GB-Sol Ltd.**

-

#### **53 South East Wales Energy Agency**

-

#### **54 BDT installations**

-

**55 Salix Finance**

Yes.

**56 Aberystwyth University**

Yes

**57 William Morris Energy Assessments**

Agree

**58 Geraint Williams Plumbing & Heating Ltd**

-

**59 URBAN SOLAR LTD**

-

**60 Peter Jackson**

-

**61 Ignite Mechanical Contracting Ltd**

-

**62 Jamie Black OCDEA/DEA/GDA**

-

**63 Westflight Ltd**

-

**64 Pembrokeshire Power**

-

**65 Greener Heat**

-

**66 SAM Drylining Ltd**

Yes.

**67 Dean Crocker Energy Assessor**

Yes.

**68 Biofutures Ltd**

If necessary!

**69 E W Consultancy**

Agree.

**70 Christopher Williams – Individual**

Yes.

**71 Business Wales**

Agreed.

**72 Institution of Mechanical Engineers**

No comments

**73 Smart Energy GB**

-

## **74 Community Housing Cymru Group**

CHC agrees with the impact assessments. CHC supports the development of the children's rights impact assessment and how the strategy is supporting objectives in the Welsh Governments child poverty strategy 2015.

### **Rural issues**

CHC welcomes Welsh Governments rural proofing and rural screening tools as part of good policy making. The CHC Group and its members also wish to work with the Welsh Government to develop a targeted energy efficiency programme targeting rural off gas areas. In Wales fuel poverty can be more of an issue for people living in rural areas than for those living in urban locations. Therefore action to tackle fuel poverty needs to reflect this and not be separated into single issues that fall under different policy silos, as this bears little resemblance to the everyday circumstances of people living in this situation. Although it can be more expensive to upgrade homes in rural areas, there is still a big demand and need that needs to be addressed. Regional energy efficiency targets could be set across Wales to help to take into account issues in rural areas. We know that poor energy infrastructure means that many homes in Wales are off grid (almost 20%) and therefore will typically pay more for their energy. There is no regulator for off-grid fuels, which is a key issue that needs to be addressed. Rural poverty in itself is very often well hidden and isolated in pockets, and this means that it may not be recognised by measures such as the Welsh Index of Multiple Deprivation. Furthermore, with Digital Exclusion typically being higher in rural parts of Wales, Digital exclusion means that many households don't have access to the best tariffs, which more often than not are available online only. In rural areas, fuel poverty is more closely associated, as well, with the quality of housing stock, which can remain poor.

We cannot properly protect Welsh consumers from price rises without obtaining further energy powers and the ability to regulate the energy market. In Wales, we pay an average of between 5 per cent and 10 per cent more for our energy than elsewhere. This is due largely to poor energy infrastructure for rural and post-industrial areas, the failure of competition to work in the market; and poor digital infrastructure.

The CHC Group feels that rural fuel poverty needs to be recognised and addressed specifically by the Welsh Government. There is a need for the Welsh Government to develop specific rural fuel poverty policies to support rural tenants in fuel poverty. The cost of living in rural areas is higher than in more densely populated areas. Tenants and homeowners living in rural areas are more likely to be in fuel poverty as they are required to pay more for energy, transport and food. Many of our members operate in rural areas of Wales where fuel poverty can be distinctive due to the number of hard to treat properties and the number of properties off the gas grid which house many vulnerable tenants. Wales as a whole has a high proportion of hard to treat properties. These are properties where low cost solutions to improving energy efficiency such as cavity wall insulation and loft insulation are not appropriate, for example, buildings with solid stone walls such as traditional tenements, multi-storey flats and timber frame buildings. Wales also has a high proportion of properties that are off the gas network and households that do not



have access to mains gas are more likely to experience fuel poverty than households who do, because of the higher costs of other fuels.

Rural traditional HAs have a smaller number of stock and members have stated that this affects their ability to attract energy efficiency funding for energy inefficient housing stock. A number of our member's housing in rural areas is classified as hard to treat, with low SAP ratings. Many householders and tenants living in rural off gas areas do not have the choice on the type of fuel they can have in their properties and have to rely on costly oil and LRG gas to heat their homes. The cost of oil and LPG gas is a problem for many tenants; it is harder to budget compared to gas and other heating systems. Rural HA's also have the highest proportion of homes that are off grid with higher energy costs. One HA in South West Wales has 451 off grid properties, amounting to 19% of its total stock. Various HAs working in rural areas are continually looking at new technology (including renewable technologies) to address rural heating of new and existing houses and deal with the tenants in rural fuel poverty. The CHC Group is keen to work with the Welsh Government to develop specific rural fuel poverty policies to support rural tenants and homeowners in fuel poverty. The CHC Group also wishes to work with the Welsh Government to develop a targeted energy efficiency programme targeting rural off gas areas.

A report from the construction council in the UK states that at least a million off-gas solid walls need to be targeted for energy efficiency improvements. CHC would assume that the figure is even higher and that a large percentage of that is in rural Wales. At the moment, there is no real solution to that problem and feedback from members suggest that current and past energy efficiency programmes do/did not sufficiently target those areas. ECO started to help address these particular problems but as noted above, the changes and cuts to ECO have impacted the sector hugely. When you are working in rural areas, housing stock is more dispersed. It costs more, therefore, to run programmes and it is harder to put programmes together. There is recognition that there is a premium to delivering improvement programmes in some areas of rural Wales. There is also a much lower construction capacity in those areas in terms of expertise and skill. Therefore, further support for rural areas is required to enable those programmes.

CHC believes that renewable energy technologies have a greater part to play in tackling fuel poverty than is being implemented at present. While the use of more clean renewable energy has to be a priority, for those fuel poor households who are currently using domestic oil for the foreseeable future, more needs to be done to develop and promote affordable payment plans. As many domestic oil distributors in Wales are small, family-run businesses, the possibility of financial assistance from the main oil suppliers and/or Government to help cover the costs involved in setting up such plans should be explored. Communities should be advised on how to set-up bulk-buying groups to help minimise delivery costs for smaller amounts of oil. These have already been successfully implemented in some areas. There are current issues surrounding filling central heating oil tanks, tenants struggling to finance this approach, etc.

#### 75 SSE

-

#### 76 CITB

-

#### 77 CLA

-

#### 78 EON

-

#### 79 NEA

-

#### 80 Rockwool

-

#### 81 EDF Energy

Yes, we agree with the impact assessments associated with this draft strategy. However, an area that should receive greater emphasis is the multitude of benefits, in particular health, achieved from a better insulated and warmer home. The reduction in health related ailments caused by cold homes can lead to a considerable improvement in a householder's health whilst also reducing health spending. This can lead to further widespread social, physical and mental benefits to householders and health care services. This area is often overlooked and there is an opportunity to align healthcare spending with funding for energy efficiency improvements.

#### 82 Royal Institute of Chartered Surveyors

Agreed

### **83 Flintshire County Council**

Overall, the impact assessments appear to identify the vast majority of the many and varied issues around the use of energy and consequential impacts.

### **84 Constructing Excellence in Wales**

No comment

### **85 RWE nPower**

With regards to the specific consultation questions asked (question 1-6) we agree with the areas of action set out and we do not have any additional questions or issues to be addressed. We would welcome confirmation of any proposed interim milestones that will be used within the broader strategy; particularly for those actions that relate to supporting and addressing fuel poverty, given the statutory target to eradicate fuel poverty (as far as is reasonably practicable) by 2018.

### **86 Melin Homes**

Melin Homes agrees with the impact assessments within this draft

### **87 Citizens Advice**

-

### **88 Energy Savings Trust**

We have no additional comment to make on the impact assessments related to this draft strategy.

### **89 Glass and Glazing Federation**

-

### **90 WWF**

-

### **91 Egnida**

-

## 92 Federation of Small Businesses

-

## 93 Calor

-

**I) Responses in full to question 7): We have asked a number of specific questions. If you have any related issues that we have not specifically addressed, please use this space to report them.**

## 1.Eco Home Centre

My comments are driven by the latest research that has been made available to DECC to organisations like BRE (Buildings Research Establishment), STBA (Sustainable Traditional Buildings Alliance), UCL (University College London). So Government and DECC know the issues around EPCs, rdSAP, Green Deal, Thermal Bridging, U value calculators etc. BRE already have demonstrated 126 unintended consequences associated with 'improvements' to solid walls!

However, it is a huge political issue as so much has been invested in these inaccurate and potentially dangerous tools. Welsh Government can choose (to a certain extent) to be BETTER than the UK Gov and really lead the way to a more sustainable future, but it will take courage. However there are lots of long term benefits to putting Wales at the vanguard of the energy efficient / sustainable building world.

### **Other issues**

There are a wide range of topics / issues that fall out of this. We MUST have a new modus operandi and this is a key document to change this. Our built environment is AT RISK thanks to the blinkered race for energy efficiency, we MUST look holistically both for the sake of the FGA, but also for the future of our built environment.

Tools like rdSAP need to work in conjunction with MOISTURE tools. Moisture tools also need to be based on REAL WORLD situations not the current tests that actually state that they are not fit for purpose for 'in service' conditions. STBA (& soon BRE) work for DECC on solid walls demonstrates that we are storing up problems by using inappropriate test regimes for moisture / damp.

Health NEEDS to be part of this. We spend so much time indoors we need to ensure that the internal environment is as good as it can be, both for the inhabitants and the building structure. We need to measure and value IAQ, moisture levels, humidity and noise if we are to have sustainable buildings.

Wales MUST opt for low risk solutions in the immediate future and this might be focused on things like renewable energy generation solutions rather than energy efficiency. This might be seen as tackling the wrong

end of the energy pyramid (and that would be correct), however we must focus on risk, as it is very easy to get it wrong especially when we have an ill informed construction industry and populace. We need to address education / training / awareness first so that we get it right. So initially focusing on low risk activities allows us to work whilst also getting prepared for the more complex structural works.

## 2. Neath Port Talbot Group of Colleges

The only point, we would raise, is there is a good deal of activity already in the skills arena, and should be captured, as part of this consultation. This would provide good insight into the opportunities, resources, challenges and costs, involved in making such provision available. We also need clear and defined statements as well as commitments from Wales Government, in relation to the energy efficiency policy, to give the market confidence to react positively, given the UK Governments position as well as other reversal of policies, such as Home Inspectors.

## 3. Gwynedd County Council

### Case Study Carbon Management Plan

#### Summary of Carbon Management Plan

Category	Street lights	Flood	Business Travel	Waste	Renewable Energy	Total Outgoings	Energy of Buildings
Co2 Outgoings 2005/06	3,899	5,324	2,095	930		30,748	18,906
Co2 Outgoings 2014/15	2,802	4,927	1,720	405	-76	23,031	13,175
Change since 13/14 (%)	-4.5%	-0.70%	-11.1%	-9.84%	N/A	-1.64%	0.33%
<b>Change since the baseline (%)</b>	<b>-28.13%</b>	<b>-7.45%</b>	<b>-17.9%</b>	<b>-56.39%</b>	<b>N/A</b>	<b>-26.07%</b>	<b>-30.1%</b>

#### **Examples of projects with financial savings over the life of the project:**

- Upgrade of lights (£1,781,000 over 20 years);
- Insulating heating pipes (£877,460 over 20 years);
- Boiler Upgrades (£721,460 over 20 years);
- Upgrading Heating Controls (£1,004,160 over 10 years);
- Insulating Walls (£522,216 over 30 years);
- Installing Voltage Control Units (£3,185,760 over 30 years);
- Raise awareness to encourage efficient use of buildings and equipment (£160,248 over 3 years);
- Combined Heat and Power Units (CHP) in swimming pools (£952,680 over 20 years);
- IWEMS (Integrated Water and Energy Management System) in swimming pools (£348,620 over 20 years);
- Solar Panels (£1,907,780 over 20 years)

**Capital Costs:**

£3,749,213

**Financial Savings:**

£770,415 per year

£2,212,025 cumulative total since 2010/11

**Carbon Savings:**

8,123 tonnes of Co2 per year

20,627 cumulative tonnes since 2010/11

**Payback Period:**

4.8 years

**Avoid 'CRC'**

Save £1,744,576

**Financial implications of not decreasing energy use within council buildings:**

- Last year, Gwynedd Council spent £3,104,971 on energy (buildings) – 1% of this is £31,050
- If the cost of electricity **increases by 1p per kWh, it will add £134,093** on top of the council's energy bills over a year, if the same amount of electricity is used in comparison to last year.
- If the cost of gas, propane and oil **increases by 1p per kWh, it will add £380,008** towards the council's fuel bills over a year, if the same amount of fuel is used in comparison to last year.

**Solar PV Panels:** A total of 500kW of photovoltaic panels have been installed on 54 buildings, including 30 Primary Schools; 12 Secondary Schools; 4 Leisure Centres; 2 Offices and 6 Residential Homes.

**Success of the school plan:**

- At the top of the energy saving league table last year was Ysgol Morfa Nefyn (-36.5%), Ysgol Penybryn (-34.4%) and Ysgol Llanrug (-24%).
- The most common example of wasted energy in schools is having the heating on 7 days a week.
- School are succeeding in saving energy in a time where they depend more and more on IT systems and also where kitchens are upgraded which, as a result, increases the school's electricity usage.

**Avoidance of 'Carbon Reduction Commitment' costs:**

- Have reduced the electricity usage in our larger buildings, which means it is less than the 'CRC' threshold and therefore have **avoided** this tax between 2010 and 2018.
- Tax of £12 per tonne of Co2 (buildings energy usage only) between 2010/11 and 2013/14, and £16 per tonne of Co2 (buildings and street lighting energy usage) between 2014/15 and 2017/18.
- This has **saved £1,744,576** for Gwynedd Council over a period of 8



<ul style="list-style-type: none"> <li>• Feedback from schools suggest that students and staff are more mindful of wasting energy, and some suggest that this is true for a period of time, but after a while, things slip back, therefore the message needs to be reinforced.</li> <li>• The plan also further supports the circulation of the message to reduce the carbon footprint in the community, as the pupils take the message home with them.</li> </ul>	<p>years, which is on average of £218,072 per year.</p>
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#### 4. Certsure

None

#### 5. Institute of Civil Engineers

No additional comments offered

#### 6. Torfaen County Borough Council

Data – it is very difficult to access certain data when putting together bids, e.g. means tested benefits, financial data, housing stock details. Greater assistance in accessing this data or developing a national Private Sector Stock Condition Survey (Wales wide House Condition Survey) would be beneficial.

Energy Efficiency is only one aspect of Fuel Poverty, so how will this strategy link with other priorities. Is the Fuel Poverty strategy also going to be updated?

The Finance section is completely silent on Green Deal and ECO. These are clearly important funding streams for energy efficiency work and whether or not Green Deal is ultimately successful; the ECO funding should and can be used to leverage maximum benefit for those in fuel poverty.

WG emphasise the need for value for money whilst also encouraging Local Authorities to use locally based companies and businesses to support the local economy. However, this can sometimes lead to a conflict as local providers are not always the cheapest, so value for money is not always being achieved.

## 7. NSA Afan

NSA Afan has considered the consultation document and wholeheartedly support the aims and objectives of the Welsh Government. We have two case studies that you may like to consider:

### NSA Afan Case study 1

NSA Afan has installed 64 solar PV installations around the area 61 on domestic properties and 3 commercial. The income from these installations helps to provide a sustainable income for the organisation for the next 20 years and at the same time helps householders to reduce energy costs and contributing towards tackling fuel poverty for many households.

### NSA Afan Case Study 2

NSA Afan has installed 35kWp on its Employment Academy thereby reducing the energy costs and providing a sustainable income for the Academy in its social enterprise activities.

## 8. Royal Town Planning Institute

The Royal Town Planning Institute (RTPI) is the largest professional institute for planners in Europe, representing some 23,000 spatial planners. RTPI Cymru represents the RTPI in Wales, with 1,100 members. The Institute seeks to advance the science and art of spatial planning for the benefit of the public. As well as promoting spatial planning, the RTPI develops and shapes policy affecting the built environment, works to raise professional standards and supports members through continuous education, training and development.

The response has been formed drawing on the expertise of the RTPI Cymru Policy and Research Forum which includes a cross section of planning practitioners from the private and public sectors and academia from across Wales.

Thank you for the opportunity to contribute our views to the above consultation. We also refer to our recent response to the 'Smarter Energy Future for Wales?' inquiry - <http://www.rtpi.org.uk/the-rtpi-near-you/rtpi-cymru/policy-in-wales/>

It is disappointing to note that the potential role of planning, in the promotion of sustainable urban form and in particular reducing energy consumption from transport is not referenced in the strategy. This misses the opportunity to highlight the potential contribution of Welsh Government's policies on both planning and sustainable transport towards the energy efficiency agenda. Highlighting the connection between these and other policy areas is especially important in light of the Well Being of Future Generations (Wales) Act 2015 and the emerging Environment (Wales) Bill. It is important that the process of designing a building takes on sustainable building standards as a central principle, rather than relying on potentially expensive renewable energy bolt-ons to meet energy savings. Building Regulations is the route for sustainable building standards but issues such as siting and orientation etc. are best dealt with through the planning system. Both disciplines need to work closely together, ensuring roles are clearly defined to avoid uncertainty and duplication.

Planning has an important role in encouraging and facilitating buildings and urban design that meet high sustainability standards. The role of planning should be emphasised in expecting new development to contribute to energy efficiency, filling in any gaps left by building regulations to ensure higher environmental standards in new build, layout and site design etc. Planning should actively support the retrofitting of energy efficiency improvements to existing stock, for example through playing a proactive role in urban regeneration schemes. The strategy notes the age of energy inefficient stock, and planning also plays an important role in guiding sensitive change to improve the energy efficiency of homes whilst also protecting the local distinctiveness and heritage of the area. To enable 'Green Growth', planning should be highlighted in promoting the infrastructure that is required for the development of a low carbon economy.

By influencing the location and density of new development, planning can reduce car travel and influence the level of demand on transport and journey distances to encourage walking and cycling. Whilst Welsh Government may not control all of the levers which impact upon transport-based energy consumption, as transport is a devolved function, through legislation such as the Active Travel (Wales) Act 2014, and decisions on transport investment, Welsh Government is in a position to have a significant influence upon the use of sustainable and less energy-intensive modes of transport.

The seven wellbeing goals defined in the Well Being of Future Generations (Wales) Act 2015 will be achieved through a combination of actions across a broad spectrum of policy areas. Under the Act, public sector bodies will be required to identify and measure how their policies, programmes, projects etc. will contribute both individually and in combination towards the delivery of the seven wellbeing goals. Besides energy saving, increasing sustainable travel will help delivery of many of the social, economic and environmental outcomes highlighted in the strategy (Figure 1, page 15) which also contribute to well-being goals.

This illustrates why the contribution of transport policies to energy saving must be quantified. The commitment to carbon budgeting in the Environment (Wales) Bill further strengthens the case for this. Welsh Government's Climate Change Strategy for Wales stated that transport accounted for one fifth of the emissions covered in the strategy target of an annual 3% reduction in greenhouse gas emissions. Land use and transport policies in combination have a considerable influence upon travel behavior, transport-based energy consumption and greenhouse gas emissions. Under the provisions of the Environment (Wales) Bill and the Well Being of Future Generations (Wales) Act 2015, these impacts will need to be measured and accounted for.

## **9. Saint Gobain**

Saint-Gobain UK supports the campaign led by the Energy Bill Revolution for the treatment of retrofit, especially of those households at risk of fuel poverty, as a national infrastructure priority. This would be an ideal opportunity for Wales to

commit to making energy efficiency a national infrastructure priority, as Scotland has recently.

Energy efficiency has failed to interest many homeowners who, for whatever reason, are not bought into the benefits, be it reduced energy bills or helping the battle against climate change. Taking a whole house approach where significant improvements are made to standards for comfort, safety and well-being greatly improves the business case. Well-designed homes with improved lighting, acoustics, thermal properties, etc. can promote health and wellbeing, help with the management of dementia, help prevent respiratory diseases and other conditions and in the workplace similarly can lead to increased productivity levels, in schools to enhanced learning, etc. To achieve this we need to move away from single measures to a whole building fabric first approach. We feel that this strategy could do more to encourage this approach and be more successful as a result.

## 10. Coed Cymru

Please may I submit the following documents to the consultation on 'Energy Efficiency for Wales'.

Ty Unnos portfolio 3

Which is a history of the Ty Unnos project, set up to turn Welsh timber into affordable, sustainable, energy efficient housing.

Ty Unnos Evaluating Glan Gors April 2014

Which contains the research I compiled on the four, 3 bed, 5 person houses occupied in January 2011.

The properties which are built to code 4 and are all electric, have proved to be 25% more efficient than predicted.

A fabric first approach to new housing could enable the use of Welsh timber to provide sustainable jobs from the forest, through the sawmill, manufacturer and build. Energy efficient homes from our timber, for us and future generations.

## 11. Tabitha Binding

Actual energy performance of a property is very difficult to establish as we all live our lives differently.

Monitoring my own usage (2 people) in a 1990 built 3 bed 5 person house, we consume on average (4kw electric per day in the summer and 8Kw in the winter)2200 Kw/pa along with 500 litres of heating oil and 1m3 of firewood, we have solar thermal for hot water.

Having done a thorough research of ways to monitor energy usage I am trialling - Smappee - an app to monitor individual items within the home with live usage relayed to your smart device <http://www.smappee.com/uk/>

I passionately believe that the Welsh Government are right in looking at energy efficiency, reduction and generation and supporting the work needed to achieve the targets.

New builds need to be looked at holistically, starting with fabric first, orientation of build to benefit most from passive solar gain, covered clothes drying facilities, short pipe runs, photovoltaics, solar thermal, and the education/peer pressure of the occupier to consider energy consumed.

## 12. Renewable UK

4. The action areas stated within the consultation document are a mixture of 'business as usual' (such as continuation of the Resource Efficient Wales service) and new suggested approaches. This makes a consistent response more difficult, because (for example) we agree with the need to maintain information provision through REW, but the consultation does not explicitly guide the responder into suggesting what more could be made of existing services, given our knowledge of the sector and potential challenges for energy efficiency in future

5. Many of the action areas do not specify discrete activities; in other words, they seem to be a general statement of intent rather than outlining what will be carried out in practice. This lessens the likelihood that consultees can give strong guidance on Government activities as a result of the consultation

6. Whilst many of the action areas suggested are worthwhile – albeit weakly defined – most of them pale in comparison to the single biggest driver for innovation, business development, physical improvements in energy efficiency and skills and training; namely a huge improvement in the energy efficiency requirements in all new-build and renovation

7. Welsh Government has the ability to greatly increase the competitiveness of our engineers, housebuilders, tradespeople and architects by providing a compelling roadmap to 2020 specifying the improvements in new-build energy efficiency needed to get to passive house standards, as required under the Energy Performance of Buildings Directive<sup>2</sup>

8. The SOLCER project<sup>3</sup> in Wales demonstrated that exceptionally high levels of energy efficiency, and on-site generation, can be met at costs not significantly higher than those arising from 'traditional' standards of building construction

9. High standards of building energy efficiency will contribute to multiple strands of Welsh Government policy and goals of the Future Generations Act, including:

- a. A healthier Wales: reduced mortality and morbidity due to improved temperatures and reduced exposure to indoor pollutants
- b. A more prosperous Wales: whole-life savings to residents of £19,500 per household over 25 years of occupancy
- c. A more equal Wales: improved energy efficiency would reduce lifetime fuel costs which are disproportionately paid by low-income households

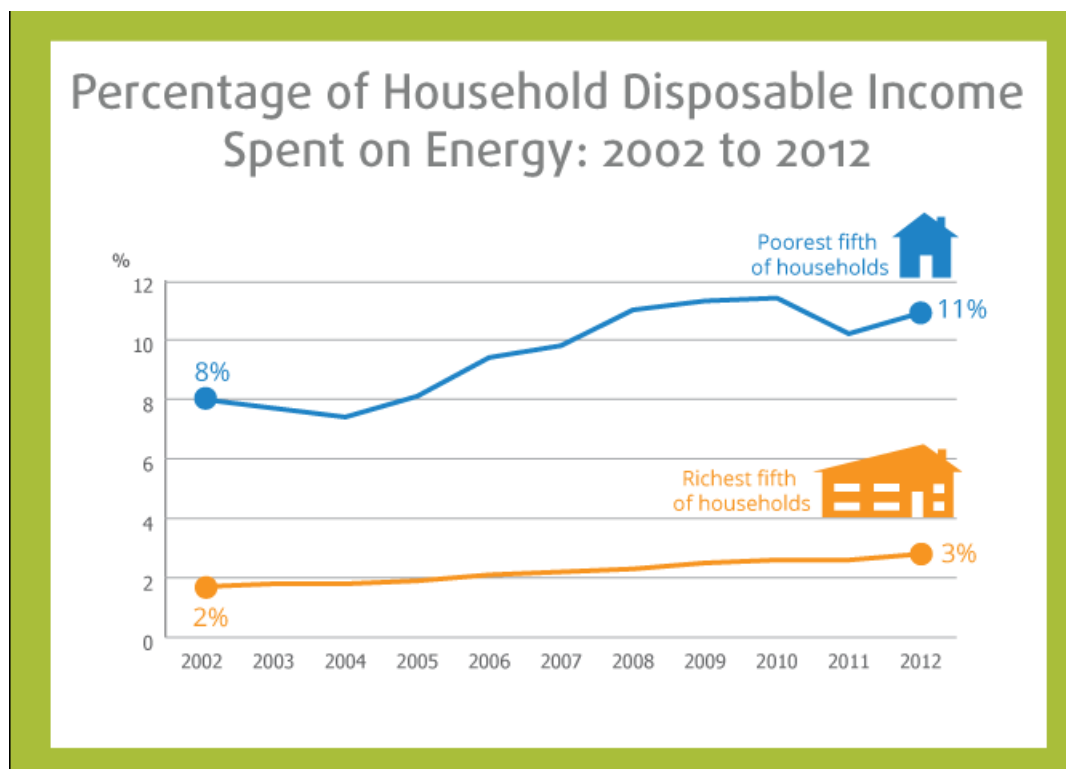


Figure 1: Reference Office for National Statistics<sup>5</sup>

<sup>2</sup> Further details available at <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>

<sup>3</sup> Information about the project can be found at [www.solcer.org](http://www.solcer.org)

<sup>4</sup> Note references available in our submission to the National Assembly consultation on Smart Energy, available at <http://www.renewableuk-cymru.com/wp-content/uploads/2015/08/Smart-Energy.pdf>

<sup>5</sup> Link at <http://goo.gl/KU5fnp>

### 13. British Gas

British Gas is pleased to work with the Welsh Government on energy efficiency. In the past year we have had active involvement across the departments for Natural Resources and Economy, Science and Transport on this agenda. We would suggest that the new strategy presents an opportunity to ensure synergy across Welsh Government on this vital issue.

### 14. One Voice Wales

One Voice Wales is recognised by the Welsh Government as the national representative body for community and town councils in Wales. It represents the sector on the Local Government Partnership Council and over three-quarters of the 735 community and town councils are already in membership, with numbers growing year on year. As well as our representative role, we also provide support and advice to councils on an individual basis and have previously launched, with Welsh Government support, a modular training programme for councillors, which continues to deliver effectively. We believe strongly that community councils are well-placed to develop the economic, social and environmental well-being of the areas they serve and, as such, are active and proactive in debating key issues such

as energy policies, environmental issues and strategic planning. Our sector will support and wish to participate in much of the locally based aspects of this strategy, and it is hoped that our members will increasingly be enabled to do so with the help and support of the Government, both financially and generally, in relation to the range of powers and responsibilities that the sector will be given and encouraged to evolve over the coming years.

## **15. Natural Resources Wales**

No

## **16. UKLPG**

LPG is a key off grid energy used both domestically and commercially for heating, hot water and cooking. As a result of its intrinsic chemical properties LPG burns cleanly with regard to pollutants such as NOx and particulates, and is the lowest carbon conventional off grid fuel. For example oil emits 18% more carbon, conventional electricity is up to 50% higher whilst solid fuels such as wood and coal emit 90% more carbon. In addition to domestic and commercial space heating uses, LPG is used for agricultural heating and crop drying, fork lift trucks and automotive use, where its low carbon credentials and air quality benefits are recognised by Government road fuel duty support.

LPG as a fuel for current and emerging technologies has a role to play in lowering carbon emissions whilst delivering energy security, whilst the distributors can play a role in educating their customers and working to improve skills of those people delivering energy “on the ground”. The installation of a condensing boiler using LPG reduces carbon compared to other fuels, and even compared to older LPG boilers, whilst the emerging hybrid boilers coupled with air source heat pumps can bring even further reduced carbon and lower bills whilst meeting the heating peaks and troughs necessitated by the British climate.

In 2013 UKLPG commissioned Delta Energy and Environment to review the credentials and potential of LPG off grid technologies, in particular their availability, their potential for consumer cost reduction, potential for performance improvement and importantly their retrofitability. The latter is important as much of Off Grid Wales, as in the rest of Off Grid Britain there is preponderance of older hard to treat houses and providing solutions for existing housing stock remains one of the more intractable parts of energy efficiency strategies. The report concluded that “LP Gas has the potential to make a major contribution to the UK’s demanding carbon reduction targets”. Within the report hotels and larger detached homes are examined specifically to demonstrate the likely outcomes of installing appropriate technologies.

A two page summary and a full copy of the report are attached to this submission.

The LPG industry understands the hierarchy expressed in Figure 2, page 13, but contends that 3 & 4 should be reversed. Whilst clearly the growth of genuinely low



cost renewable energy is a long term goal, addressing carbon impact of existing fuels and technologies can make an immediate impact on emissions that threaten global climate. The LPG industry in Wales therefore proposes a Welsh Government/LPG working group to look at the provision of secure and affordable energy, address skills development in the rural energy market and to drive energy efficiency improvements and education.

## 17. Wolseley

No response

## 18. James Coulter

- education of the user, use of FE so everyone in wales has a basic understanding of energy - especially coal and wind which many are passionate of.
- use deep geothermal like iceland and eden project where available in wales.
- video or promotion in the media so people understand its not just one mobile phone charger plugged in or tv on standby its everyone's
- free or subsidised thermal vests
- education of householders to wear clothes - layers
- install smart meters
- install elec current optimisation or voltage otimisation
- separate out fridge and freezer switchboards so you can literally flick one switch when you leave home and everything is OFF but the fridge.
- use usb power delivery standard and retro fit to council homes - easy to replace sockets in walls.
- deep retrofit of all public buildings - heritage permitting
- provide showers for use by cyclists basically everywhere - paid for by advertising
- greatly improve the building regs part L making all new homes airtight - if stakeholders have issues ask them to leave wales or provide other solutions.

## 19. Mineral Wool Insulation Manufacturing Association

### **1. Introduction:**

The Mineral Wool Insulation Manufacturers Association (MIMA) is a trade body providing an authoritative source of independent information and advice on glass and stone wool insulation. MIMA actively promotes the benefits of mineral wool insulation and the contribution it makes to the energy efficiency of buildings and the comfort of their occupants. We represent four of the leading insulation companies in the UK- Isover St Gobain, Knauf, Rockwool and Superglass.

MIMA welcomes the opportunity to comment on the draft strategy document "Energy Efficiency for Wales" and looks forward to on-going engagement with the Welsh Government on this important issue.



Overall we warmly welcome the Welsh Government's clear and strong commitment to place energy efficiency at the heart of a range of policy goals including climate change mitigation, energy security, jobs and growth and the future well-being of the population.

The recognition that it makes economic sense to continue to drive and finance energy efficiency schemes, even during times of austerity and a changing policy context is critical, and Wales is demonstrating a solid track record in doing just that.

MIMA also notes the Welsh Government's commitment to eradicate fuel poverty as far as is reasonably practicable in all households in Wales by 2018. And we agree that the most effective way this can be achieved is through energy efficiency measures. As you state, while the overall number of households in fuel poverty has increased in Wales, research shows that a further 36,000 households would have been in fuel poverty without the impact of energy efficiency improvements.

We support objectives to drive energy efficiency by working across a range of areas including showcasing benefits, reducing barriers, increasing supply chain capacity, and supporting innovation and skills, and leveraging finance. The importance of stable and long-term strategies to drive energy efficiency in buildings is central to achieving success.

#### ***i) Benefits***

As the strategy points out, the opportunities presented by energy efficiency are varied, including cost savings for businesses, households and the public sector, increased resilience to economic shocks, the stimulation of innovation and the potential for job creation.

MIMA agrees that communicating benefits is key and would also highlight the increasing amount of research pointing towards consumer acceptance and recognition of benefits of energy efficiency improvements associated with comfort and well-being, not only hard facts on the financial savings possible or avoidance of health issues.

MIMA will be interested to see the outcomes of your planned project to link data on energy efficiency improvements with health outcome data.

As an association representing mineral wool insulation manufacturers, we would also like to see the finalised strategy include figures on the technical potential for measures in Wales, for example, how many properties can still benefit from wall or loft insulation. These estimates should include the potential for installing Party Wall Insulation, which can offer significant energy savings for householders. PWI has been included in the ECO as a primary measure and the Green Deal following research carried out on behalf of MIMA. For example, there are 4-5 million party walls in existing homes in England that can benefit from being fully insulated. There could be a similarly high number in Wales.

## 20 Castleoak

-

## 21 ACE

-

## 22 Newydd

-

## 23 Isle of Anglesey County Council

-

## 24 Energy Effective Ltd

-

## 25 City & County of Swansea

-

## 26 The Detail Hub

No.

## 27 My Green Home Ltd

The aim for both householder and businesses must be long term stability of supply, unlike what we have seen over the past 2/3 years from Central Government. Many jobs have been lost over this period, and much money lost by companies investing in initiatives that were closed not long after they were opened. This makes householders (and businesses) skeptical and confused about what is actually available to them.

## 28 Ynni Cymru Energy Solutions

Not at the moment.

### **29 The EPC Man**

Customer focus on providing the right solutions is paramount. This industry does not have the best reputation, e.g. bad publicity about call centres based in Wales, rip-off Green Deal installers etc. Please let me know if I can help.

### **30 Bond Demolition Ltd**

-

### **31 Colin Edwards**

-

### **32 Wrexham County Borough Council**

-

### **33 Gaia Renewable Energy Ltd**

The technology is developing faster than the bureaucracy.

### **34 Green Renewable Wales Ltd**

-

### **35 Powys County Council**

-

### **36 GATC Ltd**

-

### **37 Celsius Energy Ltd**

As stated, the biggest barrier to take up of energy efficiency measures in both domestic and commercial sectors is funding. If we are to reduce carbon emissions and fuel poverty then a wider range of householders should be assisted with funding and or green loans. The commercial sector should be given incentives to improve the energy efficiency of their buildings to include tax incentives and or funding. We feel that there has been enough education regarding energy

efficiency... people understand that energy efficiency can reduce carbon emissions and reduce fuel bills but simply cannot afford to implement even the most cost effective measures (Draught proofing, insulation) without funding assistance. If the ECO is to be understood, the onerous task to simply sign up one job (RdSAP assessments, hundreds of photographs, Chartered Surveyors reports etc) means that many householders are unaware of what they are getting, how much it will cost, whether it will be free, why they need several appointments before the measure is even installed. This in itself causes a massive amount of confusion and therefore apathy to what should be seen as a very good thing

### **38 C&K SUPPLIES**

This is not a rant its just frustration because what you require exists it just needs someone with a spine and the gumption to get it done this is another survey because the powers to be don't know what they are doing and they don't care they want the public to do there jobs for them LED and other forms of low energy lighting have been available for years the quality of the products have increased dramatically and the prices have decreased dramatically stop paying consultants horrendous fee's stop all the talking and start installing these products are affordable and available I know because I sell them I can show you a range of items that are every day products with a five year warranty they work and they do exactly what they are supposed to do and they are no more expensive than standard lighting products I have the projects and customer recommendations to prove it I dare you to challenge me we have product to suit all applications. stop having the same meetings about the same problems you had 5 years ago you could have saved all the energy you needed by now there is no need to build NEW Nuclear power stations concentrate on REDUCTION of both domestic and industrial markets you can reduce there lighting consumption by 60% times that by how many users are in the UK you will be shutting power stations down not building them you have the answer the sin is not to do anything about it or to pretend you don't know I have been to more energy meetings then I can remember they are all talk and no action what we need is FOCUS A CLEAR GOAL AND A TIME FRAME AND IMPLEMENTATION if you need me help give me a call I can save you all the energy you need without harming the planet CHRIS PRICE MANAGING DIRECTOR C&K SUPPLIES UK LTD [chris@ck-supplies.com](mailto:chris@ck-supplies.com) Chris Price managing director C&K Supplies UK Ltd

### **39 Llangynog Memorial Hall**

-

### **40 Dr James Henshall**

-

#### **41 John Griffiths - Chartered Surveyor**

It's got to be fair and reasonable.

#### **42 Equity Redstar**

-

#### **43 North Wales Housing**

-

#### **44 NSA Afan**

The third sector has a major role to play in raising awareness of energy efficiency - especially linked to poverty and the need to raise education standards regarding fuel poverty and rising energy costs. More use of Welsh Government influence on recipient organisations of WG funding could prove to be a valuable toll in the fight to reduce poverty in Wales

#### **45 T L C Energy Limited**

The Energy Sector needs a Welsh Government regulated Training Body.

#### **46 ECO CARBON TRADERS LTD**

-

#### **47 Asset Energy Solutions Ltd**

-

#### **48 WDS Green Energy**

-

#### **49 Torfaen CBC**

No.

#### **50 Warmwalls Ltd**

-

#### **51 Gas Tech Wales**

-

#### **52 GB-Sol Ltd.**

We should also maximise local job creation.

#### **53 South East Wales Energy Agency**

-

#### **54 BDT installations**

-

#### **55 Salix Finance**

As the new Programme Manager at Salix Finance, I would very much like to continue supporting the energy efficiency strategy in Wales and look forward to working with Welsh Government in reducing carbon emissions and saving money on energy.

#### **56 Aberystwyth University**

A long term plan is required and the biggest improvements that can be made in Wales will be through existing instruments of infrastructure and education improvement, planning regulation and government contracts. Most of the rest will be ephemeral political window-dressing or market meddling. By all means help the energy-impooverished, but this needs to be goal-driven alongside bigger-picture issues (poor rail links, clogged roads) and government procurement. Lead by example. The best thing that Welsh Government could do would be to commit to being a zero-carbon government (entirely possible) by, say 2030 and defining milestones along the way. Start with the buildings it owns, neither build nor fund any new ones in Wales, in universities, schools or other, that are not at least BREEAM level 5 with immediate effect and BREEAM level 6 by 2020.

#### 57 William Morris Energy Assessments

No.

#### 58 Geraint Williams Plumbing & Heating Ltd

-

#### 59 URBAN SOLAR LTD

-

#### 60 Peter Jackson

-

#### 61 Ignite Mechanical Contracting Ltd

As a company that is heavily involved with the microgeneration certification scheme, gas, oil and solid fuel industry I can't help but be very sceptical of the plans. It's good to see that the Welsh government recognise that there is need for change and renewable energies over all are a good idea but there are some huge problems to overcome. The lack of understanding of how renewables are installed and how to educate the customer in how to use them correctly is probably the biggest obstacle. The price compared to fitting a gas or oil appliance is usually three times as expensive. The fact that the government keep moving the goal posts when it comes to their climate change policy and the fact that they keep cutting the RHI (renewable heat incentive) tariff doesn't fill me or customers with confidence to head into the renewable sector. There is a lot of planning, research and liaising with customers before you can figure out the best suited system to their needs which is obviously very time consuming and expensive. I'm sure your well aware of these issues but these are just some of the problems we face on a day to day basis. Quality control and stringent selection of what company's are used as installers will be key if this is going to work. I will be interested to see your progress over the coming months and hope that the Welsh government can make this work as I really believe that renewable energy, if managed and installed correctly is the way forward. Hope this help. Regards

#### 62 Jamie Black OCDEA/DEA/GDA

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### **63 Westflight Ltd**

-

### **64 Pembrokeshire Power**

-

### **65 Greener Heat**

-

### **66 SAM Drylining Ltd**

n/a

### **67 Dean Crocker Energy Assessor**

-

### **68 Biofutures Ltd**

-

### **69 E W Consultancy**

There should be more spot checks on Landlords-Estate Agents-Property Companies with reference to Domestic & Rental EPC's& Non Domestic EPC's on properties including LRA Surveys,many are non compliant on these matters.

### **70 Christopher Williams – Individual**

No.

### **71 Business Wales**

No.



## 72 Institution of Mechanical Engineers

The thrust of the strategy implies a contentment with status quo policies. This route is not innovative and does not adhere to the Welsh Government's duty to sustainable development. A coherent plan is required for advanced, modern processes and programmes to activate 'real change'. In its current form, it is difficult to see how this strategy will do any more than maintain the existing state of affairs.

## 73 Smart Energy GB

-

## 74 Community Housing Cymru Group

CHC welcomes the opportunity to respond to Welsh Government's "The development of an energy efficiency strategy for Wales" consultation. Considering the numbers of Welsh households currently in fuel poverty, housing associations (HAs), as managers of 10% of the Welsh housing stock have a crucial role to play in tackling fuel poverty. They are the best placed organisations to deliver large scale retrofit in Wales.

Care & Repair agencies can also help support vulnerable older people, living in the private sector. Care & Repair agencies work with older people to improve the energy efficiency of their homes and maximise their income. Navigating and comprehending fuel poverty schemes and energy company information, particularly in Wales, due to the number of national, UK and locally available schemes, is incredibly difficult for the consumer. Care & Repair have ensured that their advisors are able to support older people to access schemes, which are best for them.

In 2013/14 Care & Repair agencies provided over 1800 people with energy advice and assistance and over 1000 older people were supported with damp problems. Care & Repair Cymru also administer 'Health Through Warmth' funding on behalf of N Power. This funding provides up to £750 or 50% of total funding costs to enable agencies to support older people with heating measures, helping them to live in warmer, more comfortable homes.

The Welsh Government has rightly tried to focus on homes at the greatest risk of fuel poverty and sought improvements which can be made at the lowest cost to the taxpayer. This approach has at times had the unintended consequence of excluding housing associations from certain Government schemes. Housing Associations, who house some of the most vulnerable people in society, have a higher average energy performance for households compared to the private rented sector but still significant numbers of low performing and hard to treat properties which house many low income families.

Current energy efficiency programmes have not gained sufficient critical mass to transform the energy efficiency market in Wales and allow a truly compelling market solution to fuel poverty to emerge. By prioritising housing association residents for

fuel poverty alleviation measures, the Welsh Government could reach large numbers of people in up to 158,000 properties by working with only 36 organizations. The same could be said for prioritising Care & Repair clients, with Care & Repair having great access to a significant number of vulnerable older people through the work of Care & Repair agencies. Such an approach would allow housing association expertise and investment to work in tandem with Government schemes, helping to ensure a whole neighbourhood approach which allows better economies of scale, delivering higher impact improvements at a lower overall cost. Housing Associations in Wales have shown in their delivery of Arbed phase 1 their flexibility in developing and running successful energy efficiency schemes. They also have valuable knowledge, skills and experience of installing and dealing with hard to treat properties in Wales.

It's important that we avoid any political barriers throughout the process of achieving this vision set out in the consultation document. A lack of clarity, a lack of long term plans and a lack of a clear roadmap from Government can be major barriers. Actions to tackle fuel poverty need to be firmly embedded within wider action across the Welsh Government to tackle poverty.

The CHC Group has focused on actions that it feels should be prioritised throughout this consultation response.

### **Energy efficiency and impacts on health**

CHC welcomes the references made to the impacts of living in a cold home on health throughout the consultation document. CHC welcomes the commitment; "We want to build a stronger evidence base on the health impacts of our home energy efficiency improvements and are investing jointly with the Economic and Social Research Council (ESRC) in a project to link data on energy efficiency improvements with health outcome data. The project will run for three years and aims to provide conclusive evidence of health impacts to inform future policies and programmes."

There has to be better integration with health policy not only in the way directorates work together in Welsh Government but also in the way funding packages work together. Improving the housing stock and making it more energy efficient is part of the preventative health agenda and needs to be recognised as such. Recent "Boiler Prescription Scheme" projects in Oldham and through Housing Associations in Sunderland show how this can be done and some pilots are required in how this could be achieved in Wales. The longitudinal study undertaken by Carmarthenshire Council on the health benefits of Welsh Housing Quality Standard delivery also provide good evidence on why actions like these are effective and save money in the long run.

Fuel poverty is responsible for a number of excess deaths. In England and Wales there were 18,200 estimated excess winter deaths (EWDs) in 2013/14 representing 11.6% more deaths in the winter period, compared with the non-winter period. It also contributes to the exacerbation of other health issues, such as respiratory conditions, cancer and blood circulation problems. 54% of all parents are worried that their children's health will suffer because their house is too cold. We know that our schemes are delivering on tackling fuel poverty, tackling carbon emissions,

regenerating communities and delivering jobs and growth, but we also want to understand more about their impact on health and wellbeing. We also need to understand more about the characteristics of households that are most at risk of living in a cold home and would benefit most from the energy efficiency improvement schemes, so CHC welcomes the resource being put into this. Fuel poverty can have a massive impact on people's health and wellbeing and the impact of cold housing on health and the stresses brought on by living in fuel poverty have been recognised for decades by researchers, medical professionals and policy makers alike. A report by Age UK claims that illness related to living in a cold home costs the NHS £1.36bn every year. Living in a cold home has huge implications for health and is detrimental to physical health and social and emotional well-being. CHC noted the number of excess winter deaths in Wales earlier in this consultation response. We need to do more to protect individuals and communities from the effects of severe winter weather due to cold housing. A good practice example includes the warm homes healthy people fund which was actually established by the Department of Health in the UK Government. These are funds for local initiatives that demonstrate how local authorities will reduce deaths over the winter months. It provides funding to deliver energy efficiency and heating improvements to the most vulnerable people, provides residents with benefits advice, ensures better public awareness of the impacts of cold weather and provides staff and volunteers with fuel poverty/cold weather awareness training. More funding like this should be made available for organizations in Wales, including RSLs and Care & Repair Agencies.

As part of their 'Fighting Fuel Poverty' winter campaign, Care & Repair Cymru has set up a hardship fund with 100% of funds going directly to help older people living in cold homes. They are urging better off pensioners who don't need their Winter Fuel Payment, a payment of between £100 and £300 which is paid automatically to pensioners each year, to donate it to Care & Repair to provide more solutions to those in real need. If people were to donate their Winter Fuel Payment to Care & Repair, they would ensure that it is used to help those who need it most. As we head into this winter, Governments need a rebalancing of policy focus to ensure that tackling fuel poverty and stopping winter deaths of older people receives as much attention as reducing CO2 emissions. There is a lot of confusion among older people in particular about what help and support is available and people are missing out. The current system needs to be improved because we still have people dying in winter due to fuel poverty, who wouldn't be dying in other months of the year.

Further evidencing the impacts of energy efficiency on health might well lead to the potential for funding energy efficiency works from health budgets as well as other budgets. Good practice schemes exist which could potentially be replicated in Wales. As well as the warm homes healthy people fund, schemes such as the 'Boiler on prescription' scheme exist which can transform lives and save the NHS money. This scheme includes family doctors prescribing double glazing and loft insulation for patients living in cold, damp homes. The scheme has the ability to slash the huge sums spent by the NHS on cold-related ill health according to a ground-breaking trial. The pilot project in Sunderland found GP and outpatient visits plummeted by a third after patients' homes were made warmer and cheaper heat to the tune of hundreds of pounds a year. The impact of cold weather on health is

estimated to cost the NHS £1.5bn a year and over 18,000 people died prematurely last winter. However, energy bills have soared in recent years, leaving millions of people in fuel poverty and unable to heat their homes properly.

The idea for the trial began after Gentoo social housing and sustainability Group, which has 28,500 homes in Sunderland, noticed that tenants said they felt happier after their homes were made more energy efficient. Gentoo contacted Sunderland's clinical commissioning group, which agreed to provide £50,000 for a proper trial. They selected 12 homes with very poor insulation and lived in by people with chronic obstructive pulmonary disease (COPD), which is a serious lung condition made worse by cold, damp conditions and which affects over 1m people in the UK. Half the homes received £5,000-worth of double glazing, efficient boilers and loft, cavity and wall insulation, improving their energy efficiency rating from a G Rating up to D. To ensure the trial was objective, the people in the study were not themselves Gentoo customers. The results of the first six months showed those in the warmer, drier homes visited their GP, outpatients and A&E departments significantly less, while there was no change in the control group. While energy bills dropped by £30 a month, the temperature in people's living rooms and bedrooms rose by over 3 degrees. The work had made a "massive" difference to people's quality of life. The scheme is proof positive that warmer homes cut the costs to the NHS and transform people's lives as saving £30 per month is a life-changing sum of money for many vulnerable customers.

Outpatient appointments are estimated to cost the NHS about £100, GP visits about £20, while an emergency hospital admission costs £2,500. Peoples' home and social circumstance play a big role. Life expectancy in the less affluent districts of Sunderland where the trial took place is 67 years, compared to 80 years just a couple of miles away in richer parts of the city. Cold homes can have direct effects on hypothermia, particularly in older people and impact respiratory conditions, with asthma and COPD patients suffering particularly badly in cold, damp houses. It also damages mental health and wellbeing. The success of the pilot in improving health and cutting NHS costs has attracted interest from other clinical commissioning groups in the North East and interest in setting up schemes to enable GPs to prescribe energy efficiency across the country. The CHC group would support the development of such schemes in Wales. Recognising the effects of poor housing upon health, particularly for those who are already vulnerable such as older people, Care & Repair Cardiff and the Vale established the Healthy @ Home service through the Intermediate Care Fund. Many clients upon referral to Care & Repair are at the point of a crisis, such as after a fall or due to a cold related illness, however this service allows the agency to identify older people and initiate intervention with the aim of preventing such emergencies.

The Healthy @ Home service works in partnership with primary care across the county. Through General Practitioners Care & Repair are able to identify people who may most need their services. As well as initiating home repairs, maintenance and adaptations the Healthy @ Home caseworker can provide assistance with welfare benefits, home safety checks, energy efficiency and information regarding health and well-being, including falls prevention. Through expanding this partnership with primary care across Wales Care & Repair could help to support

vulnerable older people and help to prevent excess winter deaths, particularly if this was supported by funding energy efficiency measures.

A recent report from the International Energy Agency highlighted the benefits to physical and mental health of warmer homes, on top of lower bills and reduced carbon emissions. It cited a retrofit programme for low-income households with existing health problems in New Zealand, which showed a benefit-cost ratio of 4 to 1, with up to 90% of the benefit coming through better health. In the UK, the National Institute for Health and Care Excellence (NICE) have been produced new guidelines on reducing cold-related deaths and illnesses and recommend that a single point of contact regarding health and housing be created in every local authority area for people living in cold homes and that every health and social care worker takes the responsibility for recognising people who live in cold homes.

The links between many diseases that are caused or worsened by living in cold conditions are now clear. However, we are still seeing many thousands of vulnerable people perish each year because of cold and damp housing with many people still dying from excess winter deaths. As NICE recommends, the health service could ensure that advice about warm homes and the various schemes to upgrade housing is available in GP surgeries, and doctors could be encouraged to advise their patients on warm homes.

### **Research project-fuel poverty levels and energy efficiency**

CHC welcomes the announcement that the Minister for Natural Resources has agreed funding for a research project to provide more up-to-date estimates of fuel poverty levels and the energy efficiency of dwellings in Wales in 2015/16. This research will be important in forming part of wider work to analyse the evidence needs for housing conditions in Wales and explore the range of options for meeting those needs in the short, medium and long term.

## **75 SSE**

SSE welcomes this further opportunity to respond to the Welsh Government's consultation on an Energy Efficiency Strategy and agrees with its broad thrust. SSE believes that governments should have an ambitious commitment to energy efficiency as a way to tackle fuel poverty and the most sustainable way to reduce bills in the long term. Energy efficiency has a crucial role to play in addressing the energy 'trilemma' – delivering secure, affordable energy that is low in carbon. However, whilst SSE supports efforts to improve the energy efficiency of the UK's housing stock, this must be achieved in a way that is fair and affordable for those funding these improvements – energy customers. SSE would recommend that any government's approach to energy efficiency should be targeted effectively and aim to reduce complexity where possible.

### **Funded in a Progressive Manner**

To ensure that energy remains affordable, SSE believes that social and environmental policies should be funded by the tax-payer, not the bill-payer. Funding policies such as the UK Government's ECO scheme through energy bills is regressive and can mean that the most vulnerable consumers pay

disproportionately more than others; ultimately this could undermine the policy as it risks pushing more people into fuel poverty by adding to energy prices than it takes out through delivery of the measures to an increasingly targeted subgroup of customers. SSE wants to see these costs shifted into means-tested taxation so that those least able to pay for such schemes are sheltered from the burden, including those living in rural off-gas grid areas, who effectively pay 'twice' for schemes from which they will not necessarily benefit.

## **76 CITB**

CITB Cymru Wales is pleased to respond to the Welsh Government's draft Energy Efficiency Strategy for Wales. There is little doubt that energy efficiency and carbon reduction policies will drive significant change in the construction industry and in doing so generate substantial opportunities and challenges.

As Green Skills Alliance research demonstrates, in order to overcome these challenges and capitalise on the opportunities presented it will be vital to create a construction skills environment that allows the industry to deploy the right skills, in the right place, at the right time<sup>1</sup>. In practical terms, this must include widespread training to upskill the existing construction workforce and a renewed emphasis on making current qualifications and apprenticeships responsive to changing needs.

The Welsh Government has previously set out its aspirations through the environmental goals in the Wellbeing of Future Generations Act 2015 and through energy efficiency schemes such as Arbed and Nest.<sup>2</sup> The current proposals for an energy efficiency strategy for Wales come at a time of significant change in the qualification system, with the ongoing review into apprenticeships being of particular importance. This provides an opportunity to strengthen Welsh energy efficiency measures by underpinning them with an appropriately skilled construction workforce.

<sup>1</sup> Pye Tait *A Green Deal Competency Framework*

<sup>2</sup> Wellbeing of Future Generations (Wales) Act 2015 [Online]. Available at:

<http://www.legislation.gov.uk/anaw/2015/2/contents/enacted&Arbed> – Strategy Energy Performance Investment Programme [Online]. Available at:

<http://gov.wales/topics/environmentcountryside/energy/efficiency/arbed/?lang=en> & NEST [Online]. Available at: <http://www.nestwales.org.uk/> (accessed 7th September 2015).

## **77 CLA**

The CLA is the membership organisation for owners of land, property and businesses in rural England and Wales. We help safeguard the interests of landowners, and those with an economic, social and environmental interest in rural land. Our 3500 members in Wales own or manage around a million acres in Wales together with a significant proportion of the domestic and non-domestic privately rented properties in rural Wales. Additionally we represent more than 250 different types of business.

We welcome the opportunity to contribute to the development of a new Energy Efficiency Strategy for Wales.

### **CLA Position on energy efficiency requirements**

The CLA fully supports the mitigation of climate change, the reduction of fuel poverty and increased energy security. We recognise that energy demand reduction has an important role to play in cost effectively reducing the UK's carbon emissions and improving our energy security and is an important part of the EU and UK energy policy. We do therefore support incentivisation and compulsion in support of these objectives, provided that these are effective, proportionate, and evidence-based.

Energy efficiency has the potential to deliver against all three facets of sustainability with potential benefits to all households and business in Wales. The term energy efficiency encompasses and is influenced by a wide remit and is capable of delivering benefits to many areas of policy. Planning, housing and building regulation also have a fundamental influence as to how energy efficiency can be delivered. If energy efficiency is to be realised, it must become a cornerstone of all considerations with regard related fields, silo thinking and action will not achieve the vision you seek.

### **General Observations**

Previously reported research on the minimum income standard identifies a greater cost of living in rural areas, fundamentally driven by transport costs. Major rural concerns around the higher cost of living also include fuel poverty, housing affordability relative to wages and higher prices in local shops due to the absence of larger supermarkets. The measurement of poverty is often linked to the receipt of state benefits and yet it is often cited that people in rural areas are less likely to take-up benefits, so indicators based on benefits will underplay rural deprivation levels. We therefore welcome the commitment given by Welsh Government to engage with householders who lie outside the traditional definition of households in need.

CLA Cymru suggests that barriers for household and communities recognising the benefits of energy efficiency can largely be attributed to convenience, apathy, lack of knowledge or understanding and limited resources. The assumption of easy access to unlimited energy resource is fundamental in today's society. CLA Cymru would highlight the worrying trend in excessive red tape surrounding small scale renewable energy. There are examples of planning authorities suggesting that households utilising biomass heat systems be required to prepare contingency plans for potential problems both on and off site. Such bizarre requirements will only serve to encourage people to continue using hassle free fossil fuel options. Changing the attitude of the individual to combat this barrier will be the single largest issue for improving energy efficiency in Wales. Education will be the most effective tool combined with access to more affordable innovative energy efficiency solutions.

CLA Cymru welcomes the commitment to overcoming barriers for businesses. For the average householder or business, benefits will substantially be realised through changing the way we perceive and utilise energy. This will be problematic as such cultural change is difficult to achieve.



Job creation and green growth will be realised through the development of a resilient end to end energy efficiency industry based on private enterprise. This will not be realised through extensive regulation and red-tape and Welsh Government must seek to adopt an attitude of flexibility based on sound evidence if they are to see their vision succeed. CLA Cymru has had many members reporting difficulties of excessive bureaucracy and time delays when they have sought to embrace energy efficient technologies, indeed in some instances the delays in decision making have ultimately rendered the project as financially unviable. Permitting (both the need for and the costs of), planning fees and the different attitudes and policies purported by 25 separate planning authorities provide significant disincentive to pursue energy efficiency.

CLA Cymru commend the need for synergy between governmental departments, local authorities and other statutory bodies as essential if you want to see beneficial change. To unlock the potential of energy efficiency projects in Wales we need an agile relationship between all parties so that the industry can be responsive to become the world leaders we aspire to be.

Whilst Smart meters offer the potential to better monitor and manage consumption, we are aware of areas where their effectiveness is compromised by poor mobile connectivity. Recent membership comments indicate that the mobile connectivity has declined in some areas of Wales, in both rural and urban areas. We therefore endorse the need for improved connectivity in all areas if smarter meter rollout is to be successful and the full capability of smart meter technology realised.

### **Specific concerns**

Whilst we acknowledge that it is not within the remit of Welsh Government to change UK rules, we would draw your attention to particular concerns with the way the Private Rented Sector Energy Efficiency Regulations have been structured, the quality of EPC Assessments on which the regulations are based, and the impact that the recommendations being promoted will have on the Wales stock of pre 1919 properties. The uncertainty created by the withdrawal of Government funding from the Green Deal Finance Company also adds confusion for our members who are preparing to comply with the regulations and confusion to compliance.

We have briefly outlined our concerns below and recommendations for correcting these as we believe that they are of particular relevance to the housing stock in Wales. It should be highlighted at this stage that correcting the problems identified does not require major change, can be delivered at low cost and with relative ease.

#### **1. EPC Assessment methodology**

The methodology used to assess the energy performance of buildings is currently under estimating the energy performance of solid wall properties and over estimating the benefit that some types of insulation bring to the energy performance of these buildings. This is the finding of a report commissioned by DECC with £1.5 million of public money undertaken by BRE in 2014 and finally published in January 2015. See the report available here

<https://www.gov.uk/government/publications/solid-wall-heat-losses-and-the-potential-for-energy-savings-literature-review>



These findings have serious implications for the validity of the EPC ratings being applied to solid wall properties and therefore the actions required for a solid walled building to comply with regulations.

The assessment methodology is misleading building owners and tenants as to the operating costs of properties, but also means that the energy savings potential identified by some measures will never be realised and therefore questions their cost effectiveness. There are also impacts for the long term carbon and energy savings being identified with implications for UK and EU targets around energy and climate change.

If buildings owners are to be required to invest in energy efficiency measures based on the findings of an energy performance assessment then it is reasonable for them to expect that the energy savings being predicted by the assessment are reasonably reliable. Currently there is little confidence in the assessment methodology being used and the measures it promotes. As a result building owners are discouraged from investing in energy efficiency improvements. We recognise that no methodology for assessing an area as complex as energy performance will be completely accurate, however, it would seem negligent to fail to correct a methodology which is known to be wrong. Despite the implications of the report's findings, DECC is yet to comment publicly on the findings nor has it taken any action to correct the methodology by which buildings are assessed.

DECC should implement the findings of its report by amending the calculations used in the SAP methodology so that EPCs more accurately represent the actual performance of solid walled buildings and the performance of some insulation products. We would also recommend that DECC commission further study on the performance of different types of building construction to ensure that figures being used in assessments are representative of the in situ energy performance attained in day to day use. Whilst this will incur a cost there will be long term benefits for energy policy and encourage building owners to invest with confidence thus delivering greater energy savings.

Some members have reported problems caused by excessive condensation caused by lack of ventilation when properties have been retrofitted with energy efficiency measures. This would indicate the need for EPC assessors and/or installers to provide advice to householders on future use to avoid such problems.

## **2. Application of Energy Efficiency Performance Standards to listed buildings**

From our involvement in the DECC working group and from the consultation published by DECC in 2014 it was our understanding that listed buildings would not be within scope of the energy efficiency regulations on the basis that:

- Listed buildings were not within the scope of the EPC regulations 2012 and so their inclusion would represent unnecessary gold plating and undo the good work of the previous Government in removing them from the standards
- The energy savings potential for listed buildings was likely to be limited given the special nature of the buildings and consents required to undertake works
- Measures required to improve listed buildings are generally more specialised than can be identified by an EPC and are typically more costly than is practical

We were disappointed to see that listed buildings were not specifically exempt from the energy efficiency regulations. Worse than this however regulations have confusingly referred back to guidance and regulations which have since been superseded. This has left a situation where some listed buildings are caught by the regulation while others are not which is unfair, illogical and confusing.

Ultimately listed buildings make up only a small proportion of the privately rented buildings which are affected by these regulations and even then many of these buildings will be able to benefit from an exemption. As such totally excluding listed buildings is unlikely to have a significant impact on the energy savings delivered by these regulations. Exempting listed buildings may increase the energy saving measures since they will be able to voluntarily undertake EPC assessments without fear of being caught by the regulations as is currently the case.

CLA recommends that Secondary regulation should be amended to specifically exempt all listed buildings from the energy efficiency standards in line with existing guidance on energy performance certificates. This can be done by simply removing clause 19 (2) (a) of the PRS Energy Efficiency Regulations 2015

“it was not required, and is not part of a building which was required, to have an energy performance certificate (32) by the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007”

This would deliver the following benefits with minimal impact on the energy savings delivered:

- Greatly improve the clarity of the regulations for those expected to comply
- Align the new regulations with existing regulations and guidance for EPCs
- Remove regulation which places a largely unnecessary administrative and cost burden on owners of listed buildings in line with government objectives to reduce red tape
- Remove gold plating of EU regulations - UK regulations go beyond what is required
- Enable owners of listed buildings to undertake EPCs voluntarily to identify where cost effective energy saving measures could be made without fear of being drawn into scope of burdensome regulation

### **3. Quality and scale of the supply chain**

We are concerned about the quality and availability of the supply chain to deliver energy efficiency improvements to the hundreds of thousands of buildings to which improvements could be required by 2018. Although the minimum energy performance standards are still two years away this is a short time scale in terms of managing and improving properties. As such we are concerned by the lack of skills and service providers available which could hamper landlords in their efforts to comply or increase the cost of compliance as demand outstrips supply.

Pre 1919 properties are not well understood by many of the EPC Assessors currently accredited and few will have the knowledge to provide the level of service and appropriate recommendations needed for older, rural properties. The lack of adequately experienced assessors particularly in rural areas is making it difficult for

landlords to identify assessors able to assess older rural properties. This in turn could lead to inappropriate measures being recommended and unwittingly applied to older housing stock which at best will under deliver energy savings and at worst cause serious structural damage to housing stock.

We have particular concern about the promotion of Solid Wall Insulation (SWI) for the UKs pre 1919 building stock. The construction techniques employed in these properties mean that walls often need to have breathable surfaces. As such the installation of modern solid wall insulation can lead to damp problems and long term structural issues. Consideration must be given to avoiding the build-up of moisture in the house.

### **Consenting of Hydro Electric Schemes**

It has been identified that meetings between senior officers of Natural Resources Wales (NRW) and the Hydro power Association have resulted in wide-spread acceptance of the industry challenges of cost, speed of consent and low levels of water permitting for turbine use when compared to Scotland and England. Although there are indications of improvement, concerns remain that the realisation has not filtered down to the case officer level of the organisation and there remains a failure to react to the needs of the industry.

## **78 EON**

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## **79 NEA**

NEA Cymru is disappointed that fuel poverty is barely mentioned in the consultation and there is no specific question on fuel poverty. The consultation mentions its statutory obligation to eradicate fuel poverty, as far as reasonably possible by 2018, but does not mention whether the Welsh Government will meet the target or revise the target.

NEA Cymru welcomes news that the Welsh Government will be funding research into a project to provide more up-to-date estimates of fuel poverty levels and the energy efficiency of dwellings in Wales in 2015/16. This is long overdue and hopefully will enable the Welsh Government to develop short, medium and long term plans to eradicate fuel poverty.

Fuel poverty is a major public health issue and a significant cause of excess winter deaths. In 2013/14, there were 1,100 excess winter deaths in Wales, with the majority (73%) over the age of 75. Many EWDs can be prevented if we improve the thermal efficiency of homes, and keep people warm in the winter months.

Therefore, NEA Cymru welcomes the research being undertaken into impacts of its home energy efficiency schemes and which low income individuals or households are most at risk from the effects of living in a cold home. NEA Cymru looks forward

to the results of the research and how the Welsh Government uses the findings to further develop its energy efficiency policy and Warm Homes programmes.

However, NEA Cymru are concerned that there is no mention in the consultation to the recently published NICE guidance on “Excess winter deaths and morbidity and the health risks associated with cold homes” and whether the Welsh Government is considering transposing this guidance into the Energy Efficiency Strategy for Wales. The Welsh Government needs to implement and build on the NICE guidance recommendations as part of the Energy Efficient Strategy for Wales and set up procedures to prioritise fuel poverty and the reduction of excess winter deaths in Wales.

## **80 Rockwool**

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## **81 EDF Energy**

We recognise a key significant challenge for Wales to achieve gains in energy efficiency is the high percentage of solid wall properties that require insulation which are often in exposed rural locations.

Although targeting these rural hard to treat properties may be more expensive, a range of benefits will result. For example, these rural communities will gain new skills in the supply chain, improved health outcomes, more disposable income in the rural economy and the reduction of fuel poverty.

Considerable energy efficiency gains for the Welsh Government could also be achieved through focused consideration of heat pump technologies for off gas properties. This will be particularly helpful in rural locations where such technologies are ideally suited and provide a multitude of benefits, including improved efficiency, increased warmth and health benefits whilst reducing costs. Developing skills and a workforce related to this technology could also support rural communities.

## **82 Royal Institute of Chartered Surveyors**

The principle and commitment to energy efficiency and reducing green gas emissions is established but whilst Welsh Government (WG) has been proactive in the field of reducing greenhouse gas emissions –the role of other bodies such as the Climate Change Commission, Natural Resources Wales and the Energy Savings Trust-is not clear. A single authority should take the lead to oversee the climate change strategy and there is no single body or authority which oversees, holds and monitors energy efficiency data

There is a need to quantify the progress to date and assess the scale of the task the strategy will address together with prioritisation.

It is agreed we need to improve the energy performance of building in Wales, raise the quality of the building stock and reduce energy costs and Regenerate communities in Wales both through improvement in the fabric, through business opportunities that will lead to more cohesive, sustainable communities right across Wales (p.9)

We must maximise the benefits from public money spent on energy. The document says that the Welsh Government is committed to undertaking a full assessment of carbon reduction impact of any action taken.

Allied to the environmental and social benefits of reducing energy use are the benefits of saving expenditure. Data on the building stock is needed. We need to understand a lot more about the cost benefits and reinforce the multiple benefits delivered such as health and social benefits, reducing complexity and incentivise better energy use such as Council tax benefits and WG grants. The document says (p.14) that there is no Europe wide study investigating the macro economics of Europe wide energy efficiency measures in detail. Neither is there a Wales wide study. We would like to see such studies considered.

### **83 Flintshire County Council**

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### **84 Constructing Excellence in Wales**

No further comments

### **85 RWE nPower**

We are very supportive of the proposed Energy Efficiency strategy for Wales and look forward to working with the Welsh Government to deliver on its vision for Wales of ensuring Wales can meet its full energy efficiency potential and become a major exporter of energy efficiency technology and know-how.

We note that the proposed strategy will cover a ten year timeframe. We agree and support this intention to set out a longer term framework given that some of the key enablers for greater energy efficiency will be realised over the medium term (including the roll out of smart metering and the development of smart grids and a broader transition to half-hourly settlement for electricity).

RWE npower agrees with the proposed approach, whereby tackling the barriers to energy efficiency will be addressed through a multi-agency and partnership approach; understanding that different customer segments and sectors all have different needs, different levels of engagement regarding the benefits of improved energy efficiency and that these require diverse approaches and differing and tailored levels of support. Furthermore RWE npower remains very supportive of the Welsh Government's approach to continue to provide additional funding for support

and measures to improve energy efficiency through the Welsh Government Warm Homes Nest and Arbed.

Since the publication of this consultation, we note the announcements that no further funding will be made available to the Green Deal Finance Company, likely resulting in its closure and that an independent review to be undertaken by Dr Bonfield (into standards, consumer protection and enforcement of energy efficiency schemes). Until this review is completed and there is clarity as to what any future framework for financing, consumer protection and managing energy efficiency improvements may comprise, it is unclear to what extent this may impact the proposals to support the take up of energy efficiency measures amongst the able to pay. From that perspective, we are particularly supportive of action 1.6 (research into the feasibility and potential impact of establishing a paid for service that facilitates the assessment and installation of energy efficiency improvements for middle and higher households) and would welcome the opportunity to understand the research parameters and its future outputs.

## **86 Melin Homes**

Current programmes (Welsh or UK wide) do not readily allow for drilling down to areas smaller than LSOA's. Our work has identified pockets of severe rural deprivation within well performing LSOA's, but with limited ways in which assistance can be provided given Welsh or ECO requirements for funding to be directed to the 20% poorest performing.

It is our view that Welsh Government are in an ideal position to undertake a significant and high volume programme that will see far higher numbers of properties improved per annum, and that Wales is able to accommodate this programme utilising local contractors and local knowledge. A significant level of blended funding would also raise awareness across all householders and allow for these projects to commence in line with Welsh Government requirements.

Wales has already demonstrated to UK Government that it is better able to carry out such schemes. The next step must be to scale them up and more effectively tackle fuel poverty, energy efficiency and carbon emissions.

There is a clear case that investing in energy efficiency in the domestic sector provides excellent outcomes across the widest range including fuel poverty, employment, training, investment, health education and many others.

## **87 Citizens Advice**

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## **88 Energy Savings Trust**

Energy Saving Trust (EST) is delighted to respond to the Welsh Government consultation on the future energy efficiency strategy for Wales. Our response to the call for evidence in early January 2015 provided more specific details which have already influenced the consultation document. Announcements and development since January by UK Government, some of which have yet to be fully communicated and the impacts determined, have fed into this response. These include: onshore wind and large scale solar PV subsidies under the Renewable Obligations scheme; government support for Green Deal Finance Company (GDFCo) ending and the consultation on the Feed in Tariffs.

EST is concerned about these developments and their impact on the delivery of the energy efficiency strategy for Wales. We believe that renewable energy is an important part of building a low carbon future for the people of Wales, as is providing them with relevant support to make informed decisions about their energy use. The Strategy should be developed with as much autonomy as possible in order that the Welsh market and supply chain can see a long-term strategy, rather than fluctuations according to decisions taken at a UK level.

We anticipate the actions presented in the consultation, with relevant supporting mechanisms and policy, are affordable and deliverable by government even within austerity budgets. However we believe there is a strong case for direct government spending on home energy efficiency at scale across Wales – for the same reasons that government continues to invest in our transport network and other infrastructure projects. A major home energy efficiency programme, as an infrastructure priority, will deliver: carbon savings; lower energy bills; jobs; growth and savings for the NHS Wales – all with a long term benefit of a sustainable Wales.

One area key areas not covered in much depth in the strategy is water, both at home and in businesses. Heating water for use has a huge impact on energy consumption and demand, more needs to be done to dovetail the current water strategy with the final energy efficiency strategy with specific focus on how it will impact the public sector under sustainable development obligations.

A lot of activity is happening, and has taken place in Wales, but there has been to date very little robust evaluation of the savings made (carbon, financial, but also other tangible benefits such as skills, health, etc.) using a standard agreed methodology that is then communicated thoroughly and transparently. Evaluation is beginning to take place in some aspects of the Resource Efficient Wales contract framework, but the results need to be shared to help identify best practice.

### **Background to our response to the consultation**

EST works with citizens, businesses and governments at all levels to make our homes more energy efficient. EST has a unique dialogue with the public about their homes. We handle just over 500,000 home energy advice calls on behalf of UK and Scottish Governments, the greater proportion of who are in fuel poverty. We have 5.5 million visitors annually to our website and reach 80% of the UK population through the media.



There is a huge cost-effective potential to reduce energy use and carbon emissions from homes, at the same time lowering energy bills for ordinary households, supporting a vibrant and health population. EST strongly supports the framework of the Climate Change Act and the Carbon Budgets but shares the UK's [Committee on Climate Change's](#) concern that our current mix of policies is not sufficient to achieve the level of carbon saving needed in the long term:

*"[...] the policy landscape is complex and in places inconsistent. Our assessment of existing policies is that some of these are at risk of failing to deliver, either due to design and delivery problems, or because they are currently unfunded. Even if these policies delivered in full, there would be a policy gap to achievement of the fourth carbon budget (2023-27) and the cost-effective path to the 2050 target."*

Wales plays its part in this and has the added complexity of having to respond to UK Government policy as well as deliver with the limited devolved powers it currently has.

### **A roadmap to 2050 for every home and community**

Wales is not moving fast enough on home energy efficiency and building-integrated renewables; we need a national commitment from the Government response to the consultation to transforming our homes. A clear policy framework that will:

- Mobilise action and finance on energy efficient home retrofit from able-to-pay owner occupiers
- Provide finance to help fuel poor owner occupiers to invest in the energy efficiency of their homes
- Support landlords investing in the energy efficiency of their stock, and empower tenants to demand energy efficient homes
- Ensure new homes are built to an ambitious near-zero-energy standard
- Ensure transport is included within the mix of the energy efficiency strategy, reinforcing the need for action at home, at work and travelling between the two.

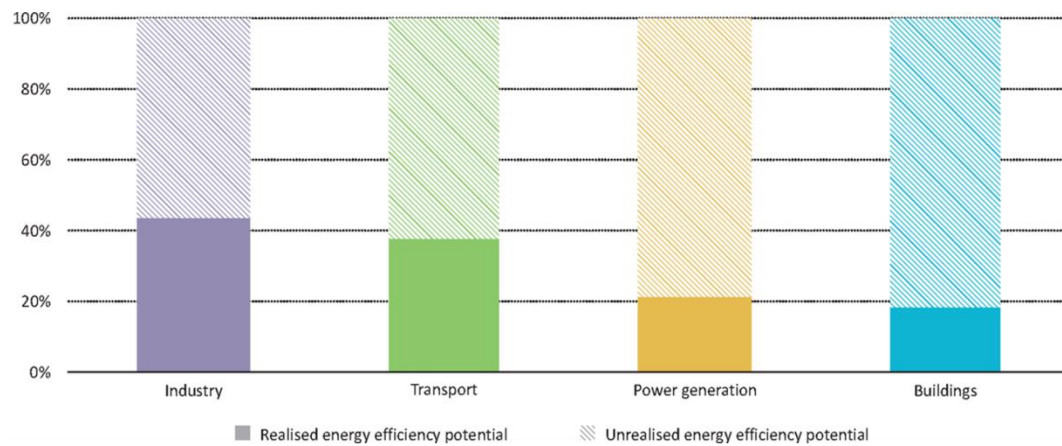
A Government-led national discussion on better homes could culminate in a clear roadmap for energy efficiency, showing how every home and community in Wales needs to change over the next 35 years – and then bringing that together in a longer term energy efficiency plan, clearly linked to the ambitions of Carbon Budgets and the Fuel Poverty Strategy for Wales. This longer term approach allows all parties involved in the delivery to reduce risk and provide greater consistency.

A national roadmap will be a key tool for policy makers and business. At local level it will work for home owners and occupiers who can understand the opportunities for their home and community. The road map will provide a long-term framework for investors and the supply chain, reducing risk and driving investment. Welsh Government need to make a strong commitment to setting and maintaining a steady direction on home energy policy over successive government terms, removing barriers to action being taken by citizens in Wales.

Improving energy efficiency is widely accepted as one of the most cost-effective means to reduce CO2 emissions through reduction in fossil fuel energy



consumption. However, benefits are not restricted to energy and GHG emission savings. There are other considerable benefits from improving energy efficiency that are now being coined the ‘multiple benefits of energy efficiency’ (IEA, 2014). These benefits extend from individual level to regional and national level and across economic, social and environmental outcomes. These wider benefits need to be considered in the measurement of delivery of energy efficiency activity.



IEA (2014), *Capturing the Multiple Benefits of Energy Efficiency*, OECD/IEA, Paris.

***2/3 of the economic potential to improve energy efficiency remains untapped in the period to 2035***

Figure 1: Economic potential of energy efficiency (IEA 2014)

In diagram IEA analysis shows that: under current policies in place across Europe (including those in Wales), around two thirds of the potential benefits from energy efficiency investments will go unrealised between now and 2035. To boost support for energy efficiency need to realise the importance of energy efficiency for delivering benefits - in real terms, capturing the multiple benefits.

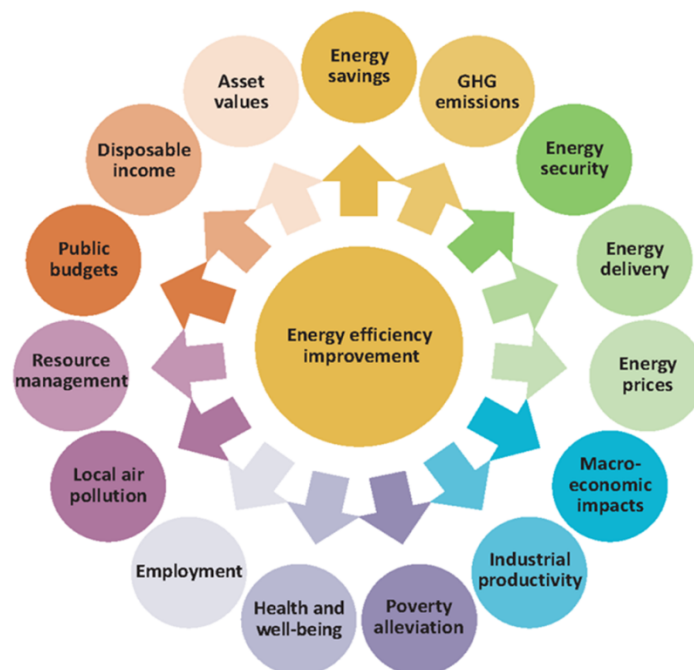


Figure 2: Capturing the multiple benefits of energy efficiency (IEA 2014)

We need to recognise the benefits of energy efficiency are not just in terms of carbon and bill reductions, there are much wider and significantly more diverse aspects that can be benefits of a cohesive and innovative approach to an energy efficiency strategy in Wales. The problem with the approach is it is not possible to easily provide one denominator to all the metrics, they are different and diverse. Just because it will be difficult to report does not mean we should not adopt a more inclusive approach as we strive to reach the 2050 statutory target for emission reductions.

Welsh Government has the opportunity in this refresh of its energy efficiency strategy to set out a broader path, inclusive of other bodies that have often been on the periphery of discussions in relation to energy efficiency to date. These agencies receive benefits – such as health – through a more concerted effort to move to a view not limited by budget or insular delivery outputs.

Carefully executed energy efficiency can deliver significant annual savings for Wales' public health sector by 2020. By offering warmth as medicine there is a different and powerful message for government to make to voters.

## **89 Glass and Glazing Federation**

I am writing as Group Chief Executive of the Glass and Glazing Federation (GGF), representing approximately 500 member companies covering over 1,500 business outlets across the UK. We provided a response to the Welsh Government's Energy Efficiency Call for Evidence back in January and I wanted to take this opportunity of further consultation to reiterate our support to the Welsh Government in building a vision for energy efficiency in Wales.

The GGF are wholly supportive of the move by the Welsh Government to improve energy efficiency and also highlight the multiple benefits to business and the consumer of improving the energy efficiency of housing stock. Recognising energy efficiency as an imperative tool for achieving energy sustainability and reducing household bills is fundamental. At a time when recent announcements regarding Department for Energy and Climate Change (DECC) schemes such as scrapping zero carbon homes and stopping funding to the Green Deal Finance Company have understandably caused serious concern for the sector across the UK, the GGF are keen to work with the Welsh Government to achieve the significant benefits energy efficiency brings.

The GGF's key focus is on improving the energy efficiency of households and commercial premises. That is why the GGF would underline that promoting energy efficiency has numerous economic benefits, including helping to achieve carbon reduction targets, contributing towards reducing costs to the NHS by keeping people out of fuel poverty and helping to create warmer, more comfortable homes and offices. Research by Age UK has found that cold homes cost the NHS £1.36 billion every year due to hospital and primary care costs. The Wales Fuel Poverty Projection Tool estimated that in 2012, 30 per cent of households (equivalent to

386,000 households) in Wales were spending more than 10 per cent of their income on fuel use to heat their home to an adequate standard of warmth, and so were therefore classified as in fuel poverty. The GGF are therefore keen to underline the impact of a clear and supportive strategy towards encouraging the uptake of energy efficient measures through a whole house approach which would help to realise the Welsh Government's objectives of improving the current housing stock whilst having a positive economic impact and reducing household bills.

The GGF would also like to take this opportunity to underline the importance of supporting measures that will further incentivise the installation of energy efficient glazing in domestic properties. The installation of energy efficient glazing plays a vital role in helping to create more energy efficient housing. A report<sup>15</sup> by the Energy Saving Trust confirmed that replacing inefficient windows is one of the key measures necessary to improve certain E and F energy-rated homes. In addition, the results of a twelve month project recently completed by the GGF have proven that energy efficient windows in all properties of the existing housing stock would reduce national emissions by 10% and would also reduce national domestic energy expenditure by 10%. The installation of energy efficient measures is therefore essential in order to reduce energy loss from homes as part of a "whole house approach", and we would like to see support for this in the final strategy for energy efficiency in Wales.

For the reasons outlined above, the GGF welcome the Welsh Government's steps towards increasing and supporting energy efficiency, recognising the invaluable role energy efficiency schemes play in boosting employment and economic growth.

<sup>1</sup> "F & G banded homes in Great Britain: Research into costs of treatment" Energy Saving Trust, July 2010

## **90 WWF**

Improving energy efficiency has long been advocated as a way to increase the productivity and sustainability of society, primarily through the delivery of energy saving refurbishments of the housing stock. The impact of energy efficiency measures can go far beyond energy savings, and energy efficiency improvements can be an important contributor to economic growth and social development<sup>16</sup>. We therefore welcome this recognition by Welsh Government and the development of a strategy to take forward this opportunity.

WWF Cymru consider a comprehensive strategy capable of delivering home refurbishment at the scale needed to address emission reduction targets as a cornerstone programme for implementation of WFG Act and as essential to a future programme for government.

WWF Cymru therefore supports the development of an energy efficiency strategy for Wales and agree with its principles and areas for action. However we expect an important strategy which cross cuts number of Welsh Government priorities to

<sup>15</sup> "F & G banded homes in Great Britain: Research into costs of treatment" Energy Saving Trust, July 2010

<sup>16</sup> Spreading the Net: the Multiple Benefits of Energy Efficiency: IEA  
[http://www.iea.org/publications/insights/ee\\_improvements.pdf](http://www.iea.org/publications/insights/ee_improvements.pdf)

include considerable evidence base and a comprehensive delivery plan. WWF Cymru considers the strategy not providing the anticipated detail on the future of the Welsh Government schemes and what impact the expected these changes will have.

For example, WWF Cymru is pleased to see energy efficiency referenced as a key way to tackle climate change, a key deliverable of the WFG Act, forthcoming Environment Bill and opportunity to progress green growth in Wales. We are however disappointed by the lack detailed evidence and ambition within the strategy in order to realistically tackle the considerable challenge to reduce our GHG emissions, particularly for the area we are most interested in – retrofit measures on residential sector. Our responses to the consultation questions will provide more detail against these points and also analysis from our work in this area.

### Chapter 3: The Need; Chapter 4: The Opportunity

In the Welsh Government call for evidence early this year we stated that to be able to properly assess the impact of Welsh Government energy efficiency programmes further analysis should be provided in the strategy on the current improvements in the residential sector to have contributed to the emissions in Wales. The strategy provides some top level analysis in Chapter 3: The Need and Chapter 4: The Opportunity, but it does not present what we feel is the depth needed to develop a route map for the scale of change required.

For example, we welcome the analysis of the emissions in residential sector Section 4: Opportunity. The statement that the energy consumption mix is increasing its carbon intensity rather than decarbonisation. This makes meeting 3% emission reduction target much more difficult as demonstrated in the increase in residential sector in 2012. This concurs with our analysis that Welsh Government needs to anticipate predicted decarbonisation of energy mix may not happen therefore energy efficiency policy implementations in the residential sector is very important.

We welcome that a numbers routes recognised to delivering emission reduction in housing sector. This agrees with our analysis – reducing demand, decarbonising the grid and renewable heat sources.

However we still think this is high level analysis. We would expect to see more detail including the breakdown of the impact of energy efficiency activities in Wales, both Welsh Government and UK programmes. This includes the emissions impacts and wider economic impacts. We also wonder why analysis of 2011 data is used when 2012/2013 data is available.

Part of this call for more evidence on impact of energy efficiency activity in the Welsh housing stock is not just within the strategy but more wider - there no publically available, comprehensive picture of impact of these measures in Wales. WWF Cymru considers this lack of evidence as a considerable barrier to the effectively delivering a robust programmes.

In absence of this and to help inform WWF Cymru's understanding and contribute to the discussions we commissioned EST undertake this analysis which has produced a report 'Progress towards residential energy reduction targets in Wales' July 2015<sup>17</sup>.

The purpose of the study was evaluate the impact of both the Welsh and UK governments programmes aiming to improve the energy efficiency of the housing stock on emissions and the ongoing activity required in order to achieve 2020 emission reduction targets. This involves quantifying the total level of energy efficiency activity which has taken place in the Welsh housing stock since the last detailed property survey in 2008, and calculating the emissions reduction this has achieved. The study then modelled a number of policy scenarios to 2020, showing the emissions reduction potential of each and therefore the activity required for 2020 target emission levels to be met.

The analysis does include an estimation of the total costs of these refurbishments but scope of analysis does not provide the potential economic impact of refurb in gross terms across the lifetime of the capital spend or impact on fuel poverty in Wales. This is mainly because there is a lack of data in Wales to enable this analysis.

### Programme impact

Our modelling indicates that, between 2007 and 2014, energy efficiency programmes in Wales prevented the release of around 2.0 MtCO<sub>2</sub>e. The programme responsible for both the greatest number of energy efficiency installations and the greatest carbon reduction was the Carbon Emissions Reduction Target (CERT), a UK government programme which ran from 2008-2012. However, whilst CERT accounted for over 70% of installations, our modelling suggests it was responsible for only 39% of the emissions reduction; other, smaller scale policies have had a much bigger impact on a per-measure basis. In particular, the Feed-in Tariff has contributed almost a third of the emissions reduction, despite accounting for only 5% of total installs.

The Welsh Government schemes Nest and Arbed, combined, accounted for 8% of the emissions reduction. Cumulatively, they have prevented the release of 0.17MtCO<sub>2</sub>e between 2007-2015. The remaining 92% of policy-based emissions reduction, 1.85 MtCO<sub>2</sub>e, is attributable to schemes led by the UK government.

### Meeting the 2020 targets

Our modelling indicates that progress towards the Welsh Government's climate change targets is mixed. To date, the residential sector is on-target for its 3% year-on-year reduction commitment, leaving the sector well placed to achieve the 2020 target even with minimal ongoing action. However, future progress towards this 2020 goal is heavily dependent on grid decarbonisation. In our scenario 1 (no uptake of energy efficiency measures post-2014), 73% of the reduction in emissions seen between 2014 and 2020 is due to grid decarbonisation. Since electricity generation is outside of the Welsh Government's devolved powers, this high

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<sup>17</sup> The report is provided with our submission. We are currently developing a report summary and policy recommendations based on this analysis which we will share when finalised.

dependence on decarbonisation leaves progress towards the target vulnerable to processes outside Welsh Government's control. To reduce this vulnerability, Welsh Government must focus greater efforts on reducing energy consumption, rather than relying on reduced carbon intensity of the energy itself. Reducing consumption will require ongoing action to continue improving the housing stock's energy efficiency.

Progress towards the 40% residential target has been much slower. Since 'source' emissions from the residential sector are predominantly due to heating, achieving the target will require investment both in methods to reduce heating demand (for example, through insulation) and to reduce the carbon intensity of heating fuels (for example, using renewable heating sources). Our scenarios indicate that significant action in these areas will be required between 2015 and 2020 if this target is to be met. Even under a scenario modelling 100% uptake of cavity wall insulation, loft insulation, draught proofing, condensing boilers and solid wall insulation source emissions are reduced only to 3.53 MtCO<sub>2</sub>e; this is still 0.52 MtCO<sub>2</sub>e above the 40% target level.

Achieving the target will therefore also require uptake of renewable heating. We modelled three scenarios incorporating renewable heat. The most viable scenario which could achieve the target was a scenario which requires: 100% uptake of cavity wall insulation, loft insulation, draught proofing and condensing boilers; 25% uptake of solid wall insulation; and uptake of renewable heat into 25% of homes. In total, this would require installation of over 2.2 million energy efficiency measures, at a cost of around £5.2 to £9.3 billion. It requires almost 3 times the number of installations made from 2007 to 2014.

We recognise the scale and the cost of this work is extremely challenging. Managing expectations as outlined in the Welsh Government strategy is needed but we do not think Welsh Government should shy away for recognising the scale of change needed. Getting buy-in from stakeholders to address the huge challenge collectively needs a comprehensive and transparent outline of the problem. We recommend that the strategy therefore includes detail on scale of challenge.

We believe this is particularly important with legislative obligations in this area. We see Section 2 of Environment Bill as potentially a very positive robust governance structure which will provide mechanisms to enable government to address the scale of challenge. The proposed 'report on policies and procedures' needs to provide the in depth level of analysis of emissions reduction needed and the measures that will deliver it. Energy efficiency measures from residential sector will need to play a significant part of this. However delay in production of this report till 2018 means an unsatisfactory delay to robust plan considering the level of action needed by 2020 to meet Welsh Government commitment of emissions reduction of 40%. We therefore recommend that RPP is produced sooner.

The more in depth analysis and route map we are recommending in the energy efficiency strategy will support this work. We would have serious concerns if Welsh Government delayed analysis of and commitment to substantial energy efficiency programmes until the RPP. We recommend that is is a key feature in the next programme for government.



The Scottish Government is leading the way in committing to action at the scale and pace needed on residential energy efficiency with its recent announcements on commitments to energy efficiency in housing as an infrastructure project. We strongly recommend that Welsh Government make similar commitment if it is demonstrate delivery against its ambitions including new legislative ones.

## **91 Egnida**

In relation to Question 7 the only area we would like to see addressed in more detail and to have a specific strategy across all areas from education through to innovation is a strategy to encourage more "Green Entrepreneurs" to develop and/or relocate and operate in Wales. This would add another valuable dimension to developing solutions and engaging stakeholders/customers in Wales to take appropriate action and in doing so creating sustainable local employment in markets that are not reliant on ongoing grant funding to remain viable. This is an approach recognised and promoted in other areas of the UK, such as London, and also internationally, particularly in the states. One good example of these types of activities in Wales and the resultant engagement would be the development of the proposed Swansea Bay tidal lagoon project by Mark Shorrock.

## **92 Federation of Small Businesses**

Energy Efficiency is a key plank of the drive to lower Wales' carbon emissions and offers numerous economic and regeneration opportunities for Wales. The small business community will have a crucial role to play in reducing Wales' energy usage: as a key sector of the economy providing employment and economic growth, as owners and occupiers of a large proportion of Wales' building stock, and as providers of new and innovative technologies. Successful engagement with Wales' small business community will be vital in ensuring a positive outcome from our drive towards an energy efficient future.

Early in 2015, the FSB undertook a survey at UK level<sup>1</sup> examining the attitudes of its members to Energy Efficiency; the results of this survey are appended to this report and inform our response.

### **Analysis**

There is little to disagree with in regard to the vision and analysis presented by the Welsh Government, and the document presents a readily usable case for energy efficiency both as a statutory obligation (under EU directives) and an economic imperative.

However, some areas of analysis are deserving of greater detail and we are keen to stress the importance of understanding the scale of the challenge facing Wales' non-domestic building stock. There is an urgent need to understand the small business building stock in Wales in order to design schemes to lower energy use within the non-domestic sector, beyond the obvious low hanging fruit of Wales' large energy consumers.

## **The Energy Market**

We know that many small businesses behave more like domestic customers in their purchasing of electricity and energy<sup>2</sup>, thus many interventions (such as Nest, and information campaigns in general) designed to assist households in better understanding their energy use and inform their purchasing decisions can and should be rolled out to small businesses.

## **Conclusion**

The Energy Efficiency Strategy for Wales provides a useful top line indication of the Government's direction of travel. However, it does not sufficiently reflect the segmentation of Wales' business activity in terms of energy consumption, or the reality of the shape of Wales' business community (where the vast majority are small and micro businesses). This will hamper Welsh Government's ability to effectively target energy efficiency measures at the vast majority of Welsh business. The Government should explore innovative ways of targeting energy efficiency measures at the non-domestic building stock in Wales in schemes similar to Arbed and Nest, which have successfully built local supply chains and lowered fuel poverty. Information about the cost and benefit of energy efficiency measures, as well as the finance to support implementation, should also be better designed to reflect the often lower overheads of small businesses and need for a quicker return on investment.

<sup>1</sup> FSB (2015) FSB Finds Small Firms Overwhelmingly Support Energy Efficiency  
<http://www.fsb.org.uk/news.aspx?rec=8986> (accessed 21 August 2015)

<sup>2</sup> FSB (2011) Small Business and Infrastructure: Energy  
<http://www.fsb.org.uk/policy/assets/fsb0723%20infrastructure%20energy.pdf> (accessed 21 August 2015)

## **93 Calor**

Calor is the UK's leading supplier of Liquid Petroleum Gas (LPG) and is fully supportive of a cost-effective and ambitious approach to improve energy efficiency in Wales. As such we welcome this Welsh Government consultation and are grateful for the opportunity to respond.

As identified by consultation Questions 1-6, the Welsh Government has outlined a number of areas of action within which energy efficiency needs to be addressed. While the majority of these fall outside of Calor's specialisms, we would, however, emphasise the need for a specific focus on rural Welsh areas where the housing stock is often less efficient and transportation costs are higher. Such barriers need to be overcome – in part by embracing new technologies – to ensure that all parts of Wales are able to benefit from improved energy efficiency.

Building on this focus in relation to Question 7, the LPG at the heart of our operations has a wide variety of applications, providing a versatile fuel for both heating and transport. This is of particular relevance in the aforementioned rural areas of Wales given that an average of 15% of Welsh households are not connected to the main gas network (off-grid properties). Some parts of Wales are of course far higher than this average due to a combination of factors. Ceredigion for instance is estimated to be 73% off-grid. Given such figures it is vital that off-grid



decarbonisation is given a full role in the Welsh Government's commitments to build a sustainable and efficient Wales.

Calor is already leading the sector in this area and is devoting significant resources to innovation and technological diversification. From this work huge opportunities exist for LPG customers to benefit due to the fuel having a lower carbon footprint than commonly used off-grid fuel alternatives such as heating oil, coal or charcoal.

It is Calor's view that the Welsh Government are yet to realise the full potential of low carbon LPG technologies for the cost-effective reduction of emissions in areas of the economy where transformation may be hardest to achieve i.e. off-grid rural areas. While we recognise that there are a range of controls out there with many of new products coming to market, Calor is working to ensure compatibility for our off-grid customers through sustained investing to bring low carbon space heating and electricity generation technologies such as micro CHP, boiler/heat pump hybrids and LPG driven heat pumps to market.

These products provide consumers with low carbon alternatives to the current range of LPG and Heating Oil Boiler technology. The past few years alone have seen a technical revolution in the boiler market via the deployment of smart control technologies designed to improve the operating efficiency of boilers. Smart control technologies are a cost-effective means of delivering carbon and energy bill savings. 1.5 million new efficient boilers were installed in 2014; assuming this trend continues significant energy savings could be achieved at low upfront cost if new boilers were fitted with smart control technologies. Deployed at scale, Calor is set to offer consumers in rural areas easily adoptable, low carbon solutions which utilise an established and secure fuel supply infrastructure and in some cases empower customers to take greater ownership and generate their own energy to feed back into Wales' increasingly diverse network.

Policy support is required at both a UK and Welsh level to start the UK market and achieve capital cost reductions to close the capital gap with standard condensing boilers. At a Welsh Government level, ECO should also be reviewed, with the aim of securing ECO funding to complement existing Welsh schemes such as NEST and Arbed, to ensure uptake of energy efficiency measures in off-grid homes.

Over the long term, a clear path could be set for future changes in Welsh building regulations Part L with respect to replacement of heating systems. At present, condensing boilers must be fitted. In future it may be possible to set a new minimum performance standard (for example, requiring controls, or a minimum efficiency for heating equipment or installations). A long term plan to transition to more efficient low carbon LPG heating in rural Wales would generate significant policy and economic benefits and render Wales a leader in this emerging field.

Heating technology	Carbon emissions (tCo2/year)	Carbon emissions (tCo2/lifetime*)
Heating oil boiler	3.39	28.17
LP-gas boiler	2.95	24.57
LP-gas driven micro-CHP	2.82	23.47
LP-gas driven heat pump	2.04	17.01
LP-gas driven hybrid heat pump	1.72	14.36
LP-gas driven fuel cell	1.36	11.32

\*lifetime, assumed to be 10 years for all technologies. Lifetime carbon emissions are discounted at 3.5% social discount rate

Furthermore, from 2016 bio-propane will be available for our UK consumers. This new product, which is exclusive in the UK to Calor, can provide a fully renewable fuel which can deliver lower carbon energy in any existing LPG appliance. Replacing existing fossil fuels with biopropane will result in significant carbon savings across Wales' off-grid network. Combined with the next generation of LPG technologies and extremely low carbon, yet entirely reliable, versatile and reassuring range of heating options will be available to support achievement of emissions targets.

Calor is keen to engage further with the Welsh Government on these issues and have provided an enclosed 'Efficient gas heating technologies as a realistic option for Wales heating decarbonisation' presentation for consideration and an annex to our consultation response.