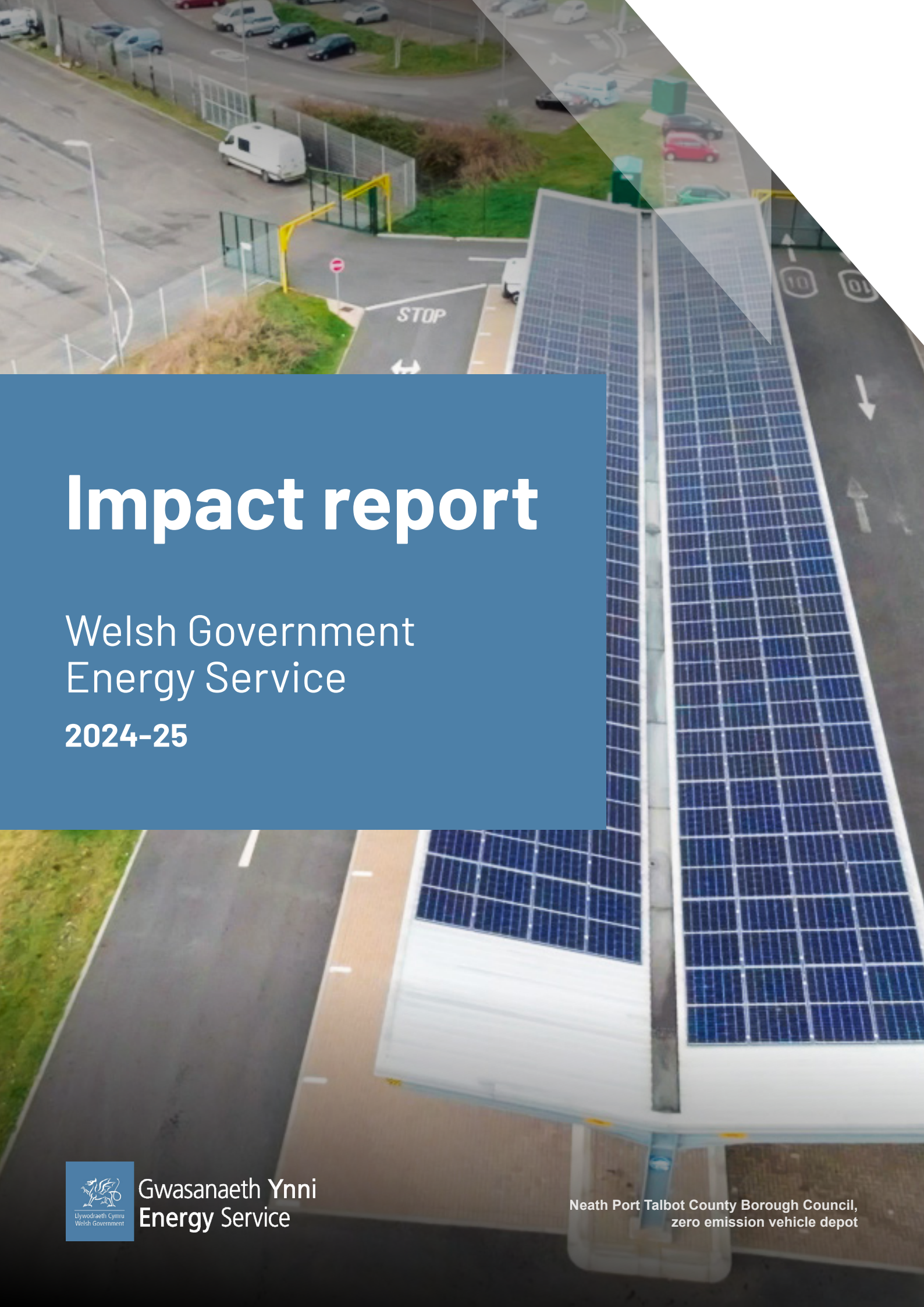
Impact report

Welsh Government Energy Service

2024-25



Llywodraeth Cymru
Welsh Government

Gwasanaeth **Ynni**
Energy Service

Neath Port Talbot County Borough Council,
zero emission vehicle depot

Welsh Government Energy Service: Our impact

The Welsh Government has set ambitious targets to reduce greenhouse gas emissions and generate locally owned, renewable energy, aiming to create a greener, stronger, and fairer Wales.

Since 2018, the Welsh Government Energy Service has been providing public sector organisations and community groups across Wales with grant and loan funding, as well as technical, commercial, funding, and procurement advice to support the transition to net zero.

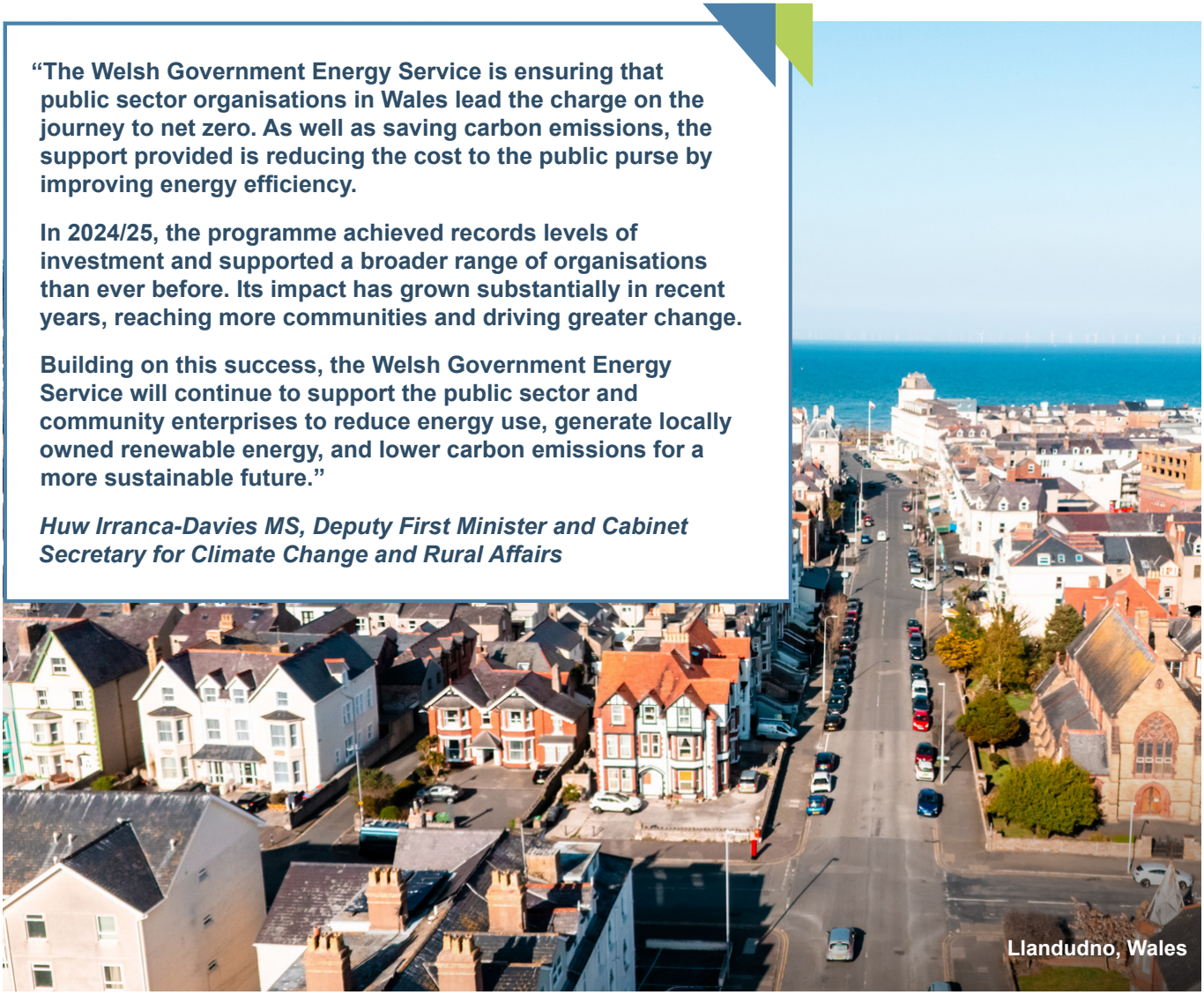
This work includes renewable energy generation projects, solar photovoltaic (PV) installations, energy efficiency improvements, low carbon heating system updates, and zero carbon fleet rollouts, all of which contribute to the Welsh Government's net zero ambitions across Wales.

"The Welsh Government Energy Service is ensuring that public sector organisations in Wales lead the charge on the journey to net zero. As well as saving carbon emissions, the support provided is reducing the cost to the public purse by improving energy efficiency.

In 2024/25, the programme achieved records levels of investment and supported a broader range of organisations than ever before. Its impact has grown substantially in recent years, reaching more communities and driving greater change.

Building on this success, the Welsh Government Energy Service will continue to support the public sector and community enterprises to reduce energy use, generate locally owned renewable energy, and lower carbon emissions for a more sustainable future."

Huw Irranca-Davies MS, Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs



Llandudno, Wales


Caernarfon Gwynedd, Wales

Overall impact July 2018 – March 2025

Impacts from implemented projects*

We have successfully supported the installation of renewable energy, building energy systems, low carbon heat and zero emission transport projects across Wales:

Level of investment
Public sector and community enterprises have invested £270.7m to install renewable energy, building energy systems, low carbon heat and zero emission transport projects.

Energy generation
Installed 49.18MW of new renewable energy capacity in Wales – generating enough electricity to power all the homes in Port Talbot, Wales.

Savings forecast
An estimated £443m in local income and savings over the lifetime of the projects.

Carbon savings forecast
These projects will save an estimated 1.1 million tonnes of CO_2e over the lifetime of the projects, equivalent to the total annual greenhouse gas emissions of nearly every resident in a city the size of Swansea.

Projects

Number of installed projects we supported by technology type, 2018-25

184
building energy efficiency and rooftop solar installations

84
low carbon heating systems

12
standalone solar farms

4
wind power projects

3
hydropower projects

34
energy efficient street lighting installations

317
zero emission vehicle fleet and electric vehicle charging projects

Number of installed projects we supported by organisation type, 2018-25:

- 447 projects for local authorities
- 57 projects for NHS Wales health boards and trusts
- 27 projects for universities
- 13 projects for colleges
- 22 projects for fire and rescue services
- 6 projects for national parks
- 8 projects for National Museum Wales
- 2 projects for Natural Resources Wales
- 3 projects for the Sports Council
- 44 projects for community organisations
- 9 projects for community councils

Aneurin Leisure Trust, solar PV roof installation

Our achievements in 2024-25

In 2024-25, £107.7m was secured in funding for energy efficiency, renewable energy, low carbon heat and zero emission fleet projects (supporting to financial close**):

4 projects for **2** colleges	**8** projects for **4** community enterprises	**12** projects for **3** fire and rescue services
6 projects for **5** health boards and trusts	**188** projects for **22** local authorities	**3** projects for **2** national parks
2 projects for Natural Resources Wales	**2** projects for National Museum Wales	**8** for **5** universities

The Welsh Government Energy Service supports public sector and community groups at every stage in the project development pipeline. Alongside the projects that reached financial close, we supported large-scale strategic renewables projects to meet key stage gates last year. We secured planning permission for six renewable projects with energy generation capacity of **28.59MW**. Over the coming years, these projects will boost renewable energy capacity across Wales, as well as a local ownership contribution to an investment of **£24.1m**.

Solar PV farm official opening in November 2024 at Bwlchgwynt Farm, near Meidrim, Carm

Record Energy Service grant and loan value awarded

In 2024-25, we supported public bodies and community groups to secure a **record £107.7m in grant and loan funding** to support energy efficiency, low carbon heat, renewable energy, and low carbon fleet projects. This record investment was made possible by increased ambition across the public sector, as well as new and increased funding mechanisms including Digarbon, Ynni Cymru, Low Carbon Heat Grants and Transport Grants for Zero Emission Vehicles (ZEVs) and Electric Vehicle Charging Infrastructure (EVCI).

In its first year of savings, this investment will cut emissions by an estimated 28,487 tonnes of CO_2e, equivalent to the annual emissions of approximately 10,000 UK homes.

"From an operational standpoint, the delivery of real, tangible projects is at the heart of what we do. It's incredibly rewarding to see the progress we're making across Wales, not just in renewables and building efficiency, but also in vital areas like transport and low carbon heat. Our focus is on ensuring the effective execution of these diverse projects that bring real benefits – supporting communities, improving public buildings, lowering bills, and driving change across various sectors.

The operational complexities are significant, but the dedication of the team and the visible impact on decarbonisation and local empowerment make the delivery of this work truly worthwhile."

Jim Cardy, Head of Service Operations at the Welsh Government Energy Service

Hear the stories of the people behind the projects: tap below to watch a video case study of two of our projects.

YnNi Teg, Bwlchgwynt Farm

Trinity Chapel, Blaenau Gwent County Borough Council

Welsh Public Sector Net Zero Reporting

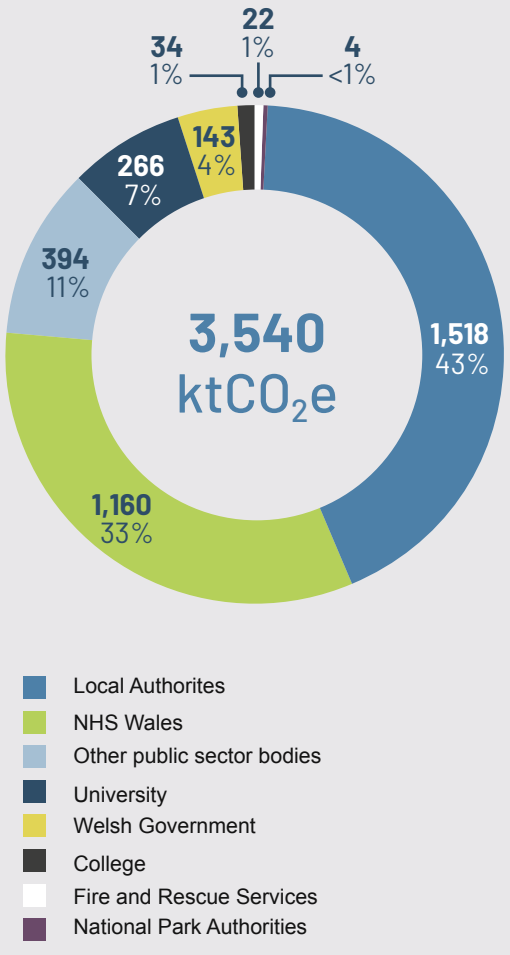
The Welsh Government has an ambition for the public sector to achieve net zero by 2030. Accurately measuring the emissions of the public sector is integral to tracking progress against this ambition and enabling more informed policy and funding decisions.

Public sector organisations voluntarily submitted their emissions data via an emissions data collection tool, between April and September 2024. The Energy Service analysed patterns and learnings, sharing the results in a report and presentation to 120+ members of the public sector in April 2025.

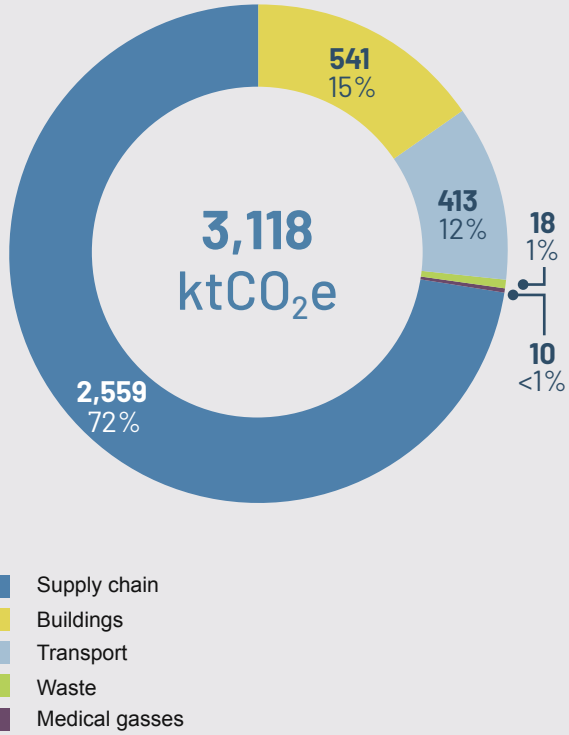
The Energy Service delivered the main reporting requirements, as well as improving accuracy, providing new tools and standardising the reporting processes. The reporting can also be used by public bodies during decarbonisation feasibility stages and the development of action plans.

Total emissions for all Welsh public sector bodies in 2024 were 3,540,000 tonnes (3,540 kt) of CO_2e, shown below by organisation type and emission source:

Organisation type



Emission source



How the Energy Service is supporting the public sector and communities to achieve their net zero ambitions

Building Energy Systems

During 2024-25, we partnered with public bodies across Wales to help meet the Welsh Government's goal of achieving a net zero public sector by 2030. We supported the implementation of energy efficiency and renewable energy projects for public sector buildings through the installation of heat pumps, LED lighting, solar PV panels, new air handling systems, insulation and Building Management System controls, all aimed at reducing energy consumption.

In March 2025, a further £10m was announced for Digarbon, a green scheme aimed at the further and higher education sector, which is administered by Salix Finance on behalf of the Welsh Government. This is the second round of loan funding issued through Digarbon, helping to drive the public sector to reach net zero emissions.

Adapting buildings across Wales for net zero

Number of projects reaching financial close in 2024-25**

38 building energy efficiency and on-site renewable energy projects for 22 organisations.

Investment

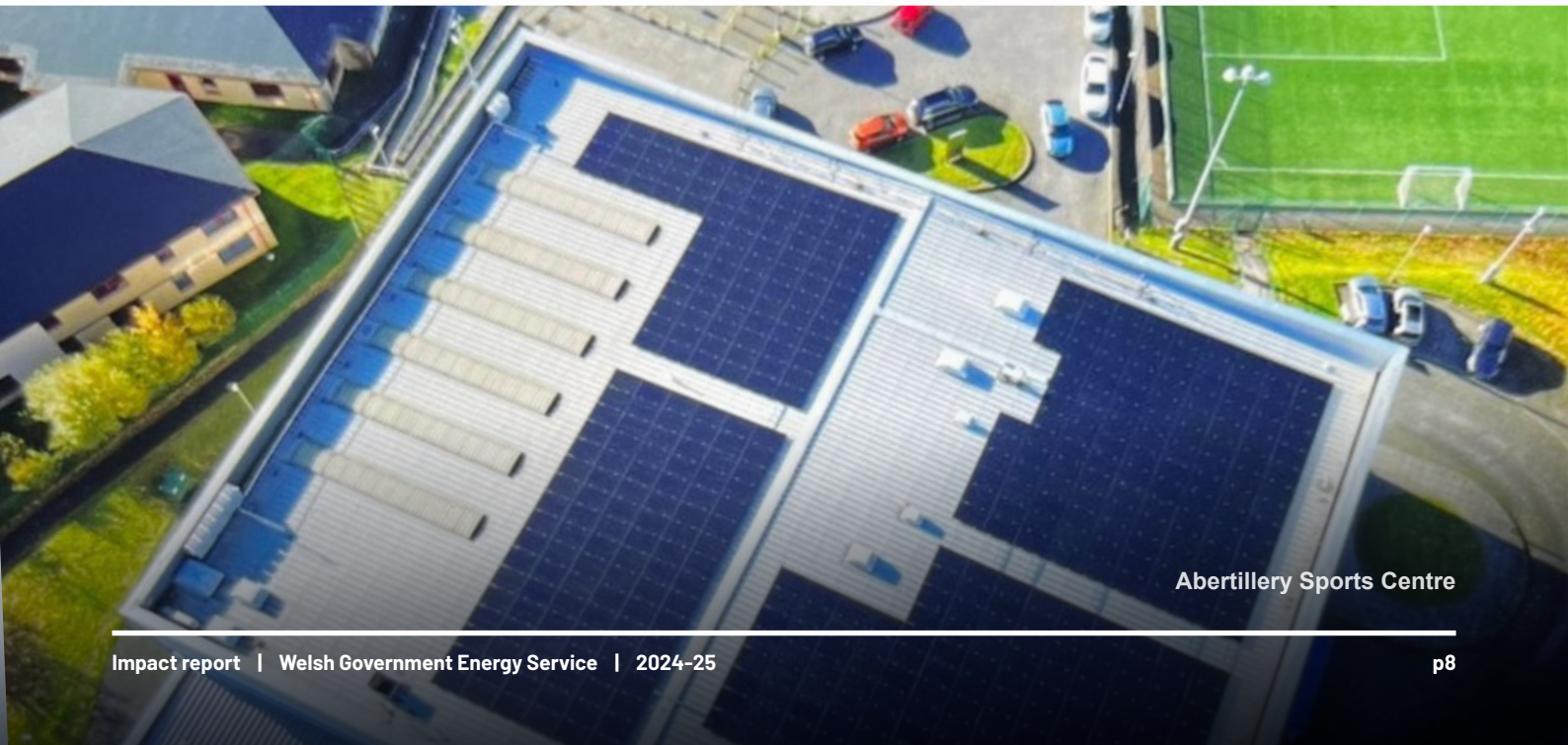
A total of £53.83m secured.

Carbon savings forecast

192,511 tonnes of CO_2e.

Cost savings forecast

£103.2m in estimated savings over the economic lifetime of the projects.



Abertillery Sports Centre

Case study: Aneurin Leisure Trust, Blaenau Gwent County Borough Council

Summary

Since November 2022, Aneurin Leisure Trust (ALT) has closely partnered with the Energy Service to deliver transformational improvements in energy efficiency, sustainability and carbon reduction across its estate. The Energy Service's initial audit provided ALT with a comprehensive opportunity register, identifying key technologies and interventions to reduce energy use and carbon emissions. This formed the basis of a coordinated programme of work, including the successful application to the Wales Funding Programme to extend the solar PV array at Ebbw Vale Sports Centre, ALT's largest and most energy-intensive facility. ALT's energy efficient improvement programme has used a blend of funding sources, including Sport Wales Capital Grant, the National Lottery Community Fund and the Wales Funding Programme.

Measures

- ALT secured £314,000 to upgrade the swimming pool plant room in Abertillery Sports Centre and pump upgrades across the centre.
- £138,600 was secured through the Wales Funding Programme to increase the size of the solar PV array at Ebbw Vale Sports Centre and install pipework where required.

Impact

- A 34% annual reduction in carbon emissions, cutting energy consumption by over 450,000kWh.
- Projected financial savings of £59,000 for Abertillery Sports Centre with an estimated reduction of 32 tonnes of CO_2e.
- The financial savings have supported ALT's broader social mission, allowing them to reinvest funding into services that benefit the health and wellbeing of the Blaenau Gwent community, and safeguard jobs for the Trust.

"The support from the Welsh Government Energy Service has gone beyond consultancy; they've been an embedded and responsive partner throughout. From helping fine-tune stakeholder-facing funding applications to guiding the technical delivery of green technologies, the Energy Service has consistently been at the end of the phone to ensure progress was both smooth and strategically sound. As we look ahead to future projects, including continued decarbonisation of our ageing building stock and the integration of low carbon technologies across our leisure portfolio, the Energy Service remains a valued and strategic partner in our net zero journey."

Tom Kivell, Sport and Wellbeing Manager at Aneurin Leisure Trust

Aneurin Leisure Trust, solar PV roof installation


Ysgol Gymraeg Casnewydd Primary School, Newport City Council

Case study: Ysgol Gymraeg Casnewydd Primary School, Newport City Council

Summary
The Energy Service has supported a multi-faceted approach to decarbonisation at Ysgol Gymraeg Casnewydd Primary School in Newport, through a combination of technical support, grants and loans, including the Local Authority Low Carbon Heat Grant. Renewable energy retrofits have been completed at six schools.

Timeline

- In 2020, the Energy Service supported Egni Co-op to install a 37kWp solar PV system comprising 128 panels at a capital cost of £36,000.
- In 2023-25, the school received a £540,961 Low Carbon Heat Grant for the installation of three Mitsubishi air source heat pumps, replacing existing old gas boilers. Two heat pumps will serve the heating distribution system, with the third running at a higher temperature for domestic hot water.
- In 2024-25, the school used a low-interest loan of £11,589 through the Wales Funding Programme to replace old lighting with new LED installations.

Impacts

- The new 450kW heat pump system is expected to save 4,680 tonnes of CO_2e during its lifetime.
- The energy efficient lighting is expected to generate lifetime savings of 35 tonnes of CO_2e and £20,000, as well as foster an improved working and learning environment for staff and students.

Low Carbon Heat

In 2024-25, the Energy Service supported local authorities and the wider public sector to retrofit low carbon heating systems in public buildings through two grant schemes, the Local Authority Low Carbon Heat Grant (LALCHG) and the Public Sector Low Carbon Heat Grant (PSLCHG). This funding aims to help local authorities and other public sector bodies across Wales accelerate the transition away from fossil fuels and reduce carbon emissions as part of their drive towards net zero.

Delivering low carbon heating across Wales

Number of projects reaching financial close in 2024-25**

- 58 low carbon heat projects for 11 local authorities.
- 7 low carbon heat projects for 6 other public sector organisations.

Investment

A total of £28.27m invested, of which £22.52m was secured through the LALCHG and £1.61m through the PSLCHG.

Capacity and carbon savings

12.62MW of new installed low carbon heat capacity, with lifetime savings of 222,423 tonnes of CO_2e.

Local Authority Low Carbon Heat Grant

The Local Authority Low Carbon Heat Grant (LALCHG) is available to all local authorities in Wales for projects that are ready for implementation. It is intended for capital works associated with retrofitting low carbon heat solutions in non-domestic, local authority-owned buildings. Feasibility funding was trialled in 2022, following which two capital funding rounds were awarded in 2023 and 2024. Round 3 applications closed in December 2024.

Trinity Chapel, Blaenau Gwent County Borough Council, heat pump

Case study: Trinity Chapel, Blaenau Gwent County Borough Council

Summary
Built in 1877, Trinity Chapel, which was originally converted for retail use 20 years ago, required significant structural refurbishment. With no heating or hot water, Blaenau Gwent Council wanted to transform the site into a modern and decarbonised Library and Adult Education Centre.

The Council was awarded £206,778 through the Local Authority Low Carbon Heat Grant, which covered 90% of the project costs. The project had previously secured funding from the Welsh Government's Cultural Transformation Fund, as well as match funding from the UK Shared Prosperity Fund, which supported the financing of the wider project in addition to Blaenau Gwent's own resources. The heating retrofit took place between January and September 2024, with the building handed over to Aneurin Leisure Trust and opened to the public in October 2024.

"The environmental targets for Trinity Chapel align very closely with the Trust. This started as a project to do the right thing. Everyone wants to cut their energy consumption. Over the years, and with the energy crisis, this has evolved into making our buildings more sustainable and cost-effective. It's a win-win all round."

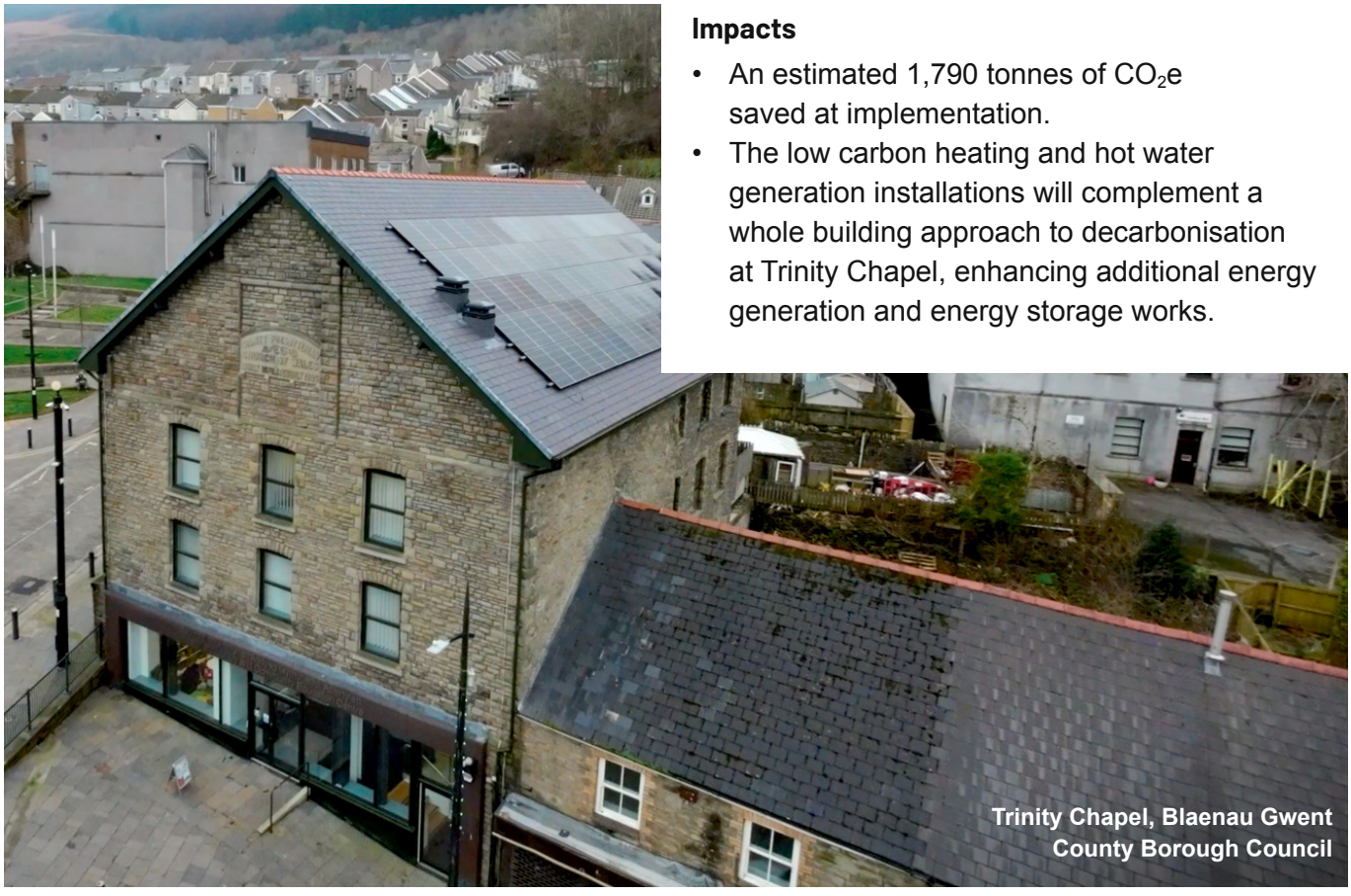
Phill Sykes, Director of Operations at Aneurin Leisure Trust

Measures

- 4 air source heat pumps, with a total output of 34kW.
- Underfloor heating system (wet system).
- Electric point-of-use water heating system.
- Thermal insulation to solid walls.
- Upgraded electrical connection to the National Grid.

Impacts

- An estimated 1,790 tonnes of CO_2e saved at implementation.
- The low carbon heating and hot water generation installations will complement a whole building approach to decarbonisation at Trinity Chapel, enhancing additional energy generation and energy storage works.



Trinity Chapel, Blaenau Gwent County Borough Council

Case study: Bridgend Resource Centre, Bridgend County Borough Council

Summary

The Bridgend Resource Centre is a modern facility that serves as an adult social care day centre, offering community support, social care services and treatments. The building, which includes a swimming pool, has excellent thermal insulation and a consistent year-round demand for heating. Existing systems included a Trend Building Management System (BMS), Mechanical Ventilation Heat Recovery (MVHR) and zoned heating controls.

The Energy Service provided financial and technical support to replace the existing heat sources, including a 400kW natural gas boiler and two 79kW natural gas boilers used for domestic hot water, with a 320kW air source heat pump (ASHP) system. This was funded through the Local Authority Low Carbon Heat Grant.

Impacts

- The upgraded BMS resulted in increased control across all integrated systems and has reduced heating running hours, optimised heat pump usage and decreased ventilation operating time, leading to significant electrical savings.
- Removing the gas supply eliminated an annual standing charge of approximately £6,000.
- The heat pumps and underfloor heating maintained the comfortable temperatures needed in the building for therapeutic treatments.
- The lifetime carbon savings of this project are forecasted to be 734 tonnes of CO_2e.

Public Sector Low Carbon Heat Grant

Introduced in 2024-25, the Public Sector Low Carbon Heat Grant (PSLCHG) is available for public sector organisations (excluding local authorities) with projects ready for implementation. It is intended for capital works associated with retrofitting low carbon heat solutions in non-domestic, public sector-owned buildings.

This funding gives public sector organisations the support to implement low carbon heat projects as part of their journey towards achieving net zero. Round 1 applications closed in November 2024, while Round 2 closed in March 2025.

Case study: National Museum Wales

Summary

In 2024, National Museum Wales secured over £1m in grant funding through the Public Sector Low Carbon Heat Grant. With this funding, the Energy Service supported National Museum Wales to implement low carbon heating solutions across four of its seven sites: St Fagans National Museum of History, the National Slate Museum, the National Wool Museum and the Big Pit National Coal Museum.

Measures

St Fagans National Museum of History

- Replacing four natural gas boilers between 8 and 15+ years old with a total output of 310kW, with new air source heat pumps with a total output of 210kW.

National Slate Museum

- Replacing a 10+ year old 25kW boiler running on gas oil with an 18kW air source heat pump.

National Wool Museum

- Replacing two 12 year old liquified petroleum gas (LPG)-fired boilers with a total output of 214kW, with air source heat pumps with a total output of 153kW.

Big Pit National Coal Museum

- Replacing a 12 year old 79kW natural gas boiler with a 64kW air source heat pump.

Impacts

- The air source heat pumps at the four museum sites will save almost 50 tonnes of CO_2e each year.
- Building Management System upgrades at all sites will improve the control of the new heating systems, with additional insulation installed where possible to reduce heat loss and further improve the efficiency of the air source heat pumps.
- National Museum Wales will also eliminate deliveries of oil and LPG to its more remote sites, benefitting from greater energy security after making the switch to air source heat pumps.

> "It is fantastic to see our museums progressing their journey to reducing emissions, all with the help of Welsh Government funding. This means we can continue to protect our heritage while embracing new technology."
>
> ***Huw Irranca-Davies, Welsh Deputy First Minister with responsibility for Climate Change***

Heat pump being installed at St Fagans

Case study: South Wales Fire and Rescue Service

Summary

In January 2025, South Wales Fire and Rescue Service secured over £198,000 in funding through Round 1 of the Public Sector Low Carbon Heat Grant. This contributed to 90% of the capital works costs associated with the installation of low carbon heating solutions across three sites in South Wales: Blaenavon, Abersychan and Ogmore Vale.

Measures

- Gas heaters were replaced with 14kW Mitsubishi air source heat pumps and National Grid connections upgraded at all three sites.

Impacts

- Across the three sites, the air source heat pumps are expected to save 13 tonnes of CO_2e in the first year after installation, with 275 tonnes of CO_2e saved over the 15-year lifetime of the heat pumps.
- The systems have been installed using twin-coils within the immersion heaters to allow for solar PVs to be added in the future.

"With Energy Service finance and support, we were able to decarbonise heat at three of our fire stations: Blaenavon, Abersychan and Ogmore Vale. Air source heat pumps and electric heating in appliance bays were installed with projects turning around quickly and smoothly. We appreciated the support and expertise offered by the Energy Service and hope to continue with the momentum around low carbon heat, to continue diversifying and futureproofing how our service is powered and collaborate on solutions."

Bethan Harvey, Sustainability Officer at South Wales Fire and Rescue Service

Blaenavon Fire Station air source heat pump

Transport

We work with public bodies across Wales to help them adopt zero emission vehicle (ZEV) fleets. By offering funding for electric vehicles as well as advice on charging infrastructure, the Energy Service is helping organisations across Wales transition to zero emission travel.

In 2024-25, the Energy Service continued to offer the Zero Emission Vehicle (ZEV) and Electric Vehicle Charging Infrastructure (EVCI) grants to support Welsh public sector organisations transition to zero emission vehicles and install charging infrastructure. Three rounds of the grant were offered to promote the use of clean, zero emission vehicles in public spaces and encourage the adoption of ZEVs as the standard for cars and light vans by 2025, and heavy goods vehicles by 2030.

Transitioning to a zero-emission fleet

Number of projects reaching financial close in 2024-25**

120 fleet projects for 34 organisations.

Investment

A total of £16.86m invested in electric vehicles and charge points.

Total carbon savings

Estimated savings of 5,656 tonnes of CO_2e – equivalent to removing approximately 4,000 vehicles from the UK's roads for a year.

Neath Port Talbot County Borough Council, zero emission vehicle fleet

Case study: Welsh Fire and Rescue Services

Summary

The Welsh Fire and Rescue Services faced the significant challenge of meeting the Welsh Government's target requiring all new light cars and vans to be ultra-low emission vehicles (ULEV) by 2025. This required a comprehensive charging infrastructure network capable of supporting a rapidly transitioning fleet across numerous, geographically dispersed operational sites. The Energy Service provided £650,000 of critical grant funding and assessed all three Fire and Rescue Services to support the final phase of this ambitious infrastructure plan, which was completed in March 2025, with full operational status by April 2025.

Measures

- 1.8MW of charging infrastructure installed across North Wales, including 45 standard chargers.
- 15 twin chargers across Mid and West Wales.
- 6 high-speed 50kW charging units with necessary grid upgrades in South Wales.
- 12 zero emission vans for South Wales Fire and Rescue Service.

Impacts

- At South Wales Fire and Rescue Service, charging installations funded through the EVCI and ZEV grants are expected to reduce lifetime emissions by 253 tonnes of CO_2e with financial savings of £105,223.
- At Mid and West Wales Fire and Rescue Service, a total of 4,170 tonnes of CO_2e will be saved across the project lifetime, reducing costs by £2.1m.

"We are very grateful for the grant support provided by the Welsh Government Energy Service, which has been instrumental in completing our rollout of electric vehicle charging infrastructure. This phase of the project has successfully delivered 45 charging points across 22 sites, significantly advancing our fleet electrification goals and ensuring we meet our 2025 targets. The new infrastructure not only serves our organisational needs but also provides our staff with convenient charging options, complete with Welsh language functionality – reflecting our commitment to accessibility and cultural heritage."

Tim Christensen, Environment and Climate Change Manager at North Wales Fire and Rescue Service

South Wales Fire and Rescue Service

Case study: Neath Port Talbot County Borough Council

Summary

Neath Port Talbot County Borough Council (NPT) needed to transition its fleet from diesel to electric vehicles as part of plans to meet Welsh Government targets for zero emission light vehicles by 2025. The Energy Service provided comprehensive support, which included data collection and analysis, facilitating access to grant funding through the Welsh Local Government Association's (WLGA) Electric Vehicle Charging Infrastructure (EVCI) grant programme, and delivering strategic assistance in developing a phased transition plan to ZEVs. In total, NPT invested £2.05m, including a £300,000 EVCI grant via WLGA for the charging hub. It received a further £82,000 in grants for nine zero emission vehicles from the Energy Service in 2024-25.

Neath Port Talbot County Borough Council, zero emission vehicle fleet

Measures

- Installation of EV charging infrastructure at The Quays depot location.
- Funding for 23 electric vehicles.
- Additional investment in an electric street sweeper charger.
- Collaboration with local suppliers where possible to support the regional economy.

Impacts

- Significant carbon emission reductions, with 8 Renault Kangoo vans saving 119.1 tonnes of CO_2e across their lifetime.
- Reduced operational costs through lower fuel and maintenance expenses over the vehicles' lifetimes.
- Improved air quality in Neath Port Talbot, benefitting the health and wellbeing of the local community.
- Development of internal skills and expertise in EV fleet management.
- The 80kWp solar canopy at The Quays provides renewable energy directly to a bank of 22kW chargers, creating a self-sustaining system where vehicles are powered by clean energy generated on site.

"Neath Port Talbot County Borough Council has had a very positive experience working with the Energy Service and Welsh Government, which helped kickstart the EVCI project as well as transitioning to full EV from diesel vehicles where possible. We have been fortunate to have received quite substantial funding to help with the transition to net zero vehicles as well as the infrastructure required to help operate zero emission vehicles. Neath Port Talbot also provided data which the Energy Service used to produce reports on vehicles, depots and energy needs; we found this was essential in planning our vehicle transition to net zero."

Kevin Lewis, Fleet Manager at Neath Port Talbot County Borough Council

Renewable Energy

Our support for large-scale renewable energy projects across Wales extends from initial project identification, through all development stages to implementation and operation, helping to harness the country's natural resources for the benefit of local communities. We work with public sector and community organisations to provide support in the transition to net zero.

Investing in community and public sector renewable energy projects

Number of projects reaching financial close in 2024-25**

1 standalone renewable energy project for 1 organisation, in addition to 8 community solar PV projects.

Investment

A total of £8.76m invested in standalone renewables.

Total energy generation and carbon savings

6MW of new standalone renewable energy projects.

1.59MW of new community solar PV projects with lifetime carbon savings of 4,250 tonnes of CO_2e.

Public Sector Renewables

The Energy Service works with public sector organisations to design, plan and install large scale renewable projects including solar farms, wind turbines and hydropower schemes.

In 2024-25, we began engaging with clients to support maximising solar generation from existing building-integrated PV arrays. This work is now extended to all renewable generation technologies. Guidance and tools are published on the Energy Service webpage and direct support is available to clients. In 2025-26, clients can apply for funding for asset management technologies to invigorate new and existing renewable energy generating stations. Careful management of the performance of renewable generating stations is crucial in preparing for local energy schemes and flexible tariffs coming to market.

Coed Ely Solar Farm, Rhondda
Cynon Taf County Borough Council

Case study: Coed Ely Solar Farm, Rhondda Cynon Taf County Borough Council

Summary

The Energy Service worked with Rhondda Cynon Taf on the early feasibility work of the Coed Ely Solar Farm. Rhondda Cynon Taf County Borough Council led the procurement and delivery, with works commencing on site in February 2025. The project is expected to be operational by September 2025.

Measures

- Estimated 9,408 solar PV panels installed.
- Estimated of 6MW renewable energy capacity installed.
- Installation of a private wire from the solar farm direct to the local hospital.

Impacts

- Lifetime carbon savings of approximately 7,355 tonnes of CO_2e.
- The solar farm will produce enough clean electricity to power approximately 8,000 homes in the local area.
- The innovative power purchase agreement will see Royal Glamorgan Hospital take electricity from the solar farm, making a significant, positive impact on their carbon footprint. This approach ensures that up to 15% of the hospital's annual electricity demand is met by sustainable energy sources, rising to 100% on peak summer days.

Coed Ely Solar Farm, Rhondda Cynon Taf County Borough Council

Community Renewables

The Energy Service also works with community organisations across Wales to design, plan and install large-scale renewable projects including solar farms, wind turbines and hydropower schemes.

Case study: Gwyrdd Bangla, solar installations on mosques

Summary

The Bengal Dragons Foundation (BDF) aimed to help the Muslim community in South Wales engage in the transition to cleaner energy systems and save on energy costs. The Energy Service supported this ambition by helping to upskill these communities, with the BDF acting as intermediaries and project promotors. The Energy Service brought the project to Ynni Teg, community-led developer, and assisted with the proposition, grant applications and project management. The development work was funded by Ynni Teg as community benefits, with capital costs 100% funded by Ynni Cymru.

"The Energy Service was instrumental in bringing the Bengal Dragons Foundation and Ynni Teg together and helping us to scope the community's ambitions into realisable projects. We are grateful for their continued interest in our progress and the advice given. We look forward to their continued support as we develop the next stages of the wider project."

Bengal Dragons Foundation

Measures

- 7 solar PV systems varying in size from 9kWp to 18kWp.
- 20kWh battery storage systems at each location.
- 7kW electric vehicle charging points with 4 charging sockets.
- Solar-linked immersion controllers for hot water storage tanks at 5 properties
- Infrared heaters at 1 property.

Impacts

- The project employed two local installation companies as principal contractors, with each engaging local subcontractors for scaffolding and electrical services.
- Approximately 0.22MW of renewable energy capacity installed, with 335 tonnes of CO_2e savings forecasted across the project lifetime.

Left hand side: Babru Miah (Bengal Dragons Foundation), middle: Arif Badat (Iqura Mosque), right hand side: Nazrul Islam (Bengal Dragons Foundation)

Regional Energy Planning

The Energy Service is supporting local energy planning across Wales, supporting various regions in their efforts to implement sustainable energy solutions. From advising on governance updates to securing funding for innovative projects, the Energy Service plays a crucial role in advancing decarbonisation initiatives.

Overview of activities and initiatives in 2024-25

Welsh Local Authority Local Area Energy Plans Forum

The Energy Service has chaired the Welsh Local Authority Local Area Energy Plans (LAEPs) Forum, to continue to provide a collaborative space for all Welsh local authorities to convert LAEPs into investable local energy programmes.

Topics of discussion are chosen by members, with recent conversations focusing on sharing lessons from the three LAEP pilots in Pembrokeshire, Conwy and Newport, and discussing alternative methods for financing energy projects beyond traditional means.

North Wales

The Energy Service advised on an update to the governance and membership of the North Wales Steering Group, which will enable the coordination of regional and local energy planning, as well as support key officers to remain engaged in ongoing work. This group will be important as local area energy planning moves into delivery.

Mid Wales

A key highlight for the region in 2024-25 has been securing funding for five innovative feasibility studies, as part of Welsh Government's Whole Systems Research and Innovation for Decarbonisation (WSRID) Challenge fund. The studies build on Powys and Ceredigion's Local Area Energy Plans, which highlight the need for a £559m investment into grid infrastructure in the region and have a strong focus on increasing community ownership and participation in energy generation.

Cardiff Capital Region

The Energy Service supported the development of a reporting structure that brings together all local authorities in the Cardiff Capital Region (CCR) to discuss energy-related matters and updates on progress made with LAEP. The Energy Service worked with Cardiff Council and CCR officers to procure the Solar Together initiative from iChoosr across seven local authorities. This brings 107,000 able-to-pay households in scope for low-cost, roof-mounted solar, together with the option of electric vehicle charging and battery storage.

South West

The Energy Service supported the Regional Energy Steering Group, which includes energy and sustainability officers from four local authorities and representatives from the South West Wales Corporate Joint Committee and Swansea Bay City deal, to review priorities. They agreed that officers needed to scope out some of the larger impact projects and agree delivery objectives.

The Energy Service advised on terms of reference for the South West Corporate Joint Committee to establish an energy sub-committee, reporting into the economic development committee. This sub-committee is now in place and impacts will be monitored.

Communities of Practice

The Energy Service encourages public sector organisations and community enterprises to deliver their own decarbonisation projects by providing technical guidance, hosting webinars, sharing case studies and enabling peer-to-peer learning.

In 2024-25, we produced technical advice notes and shared new guidance on how to optimise the performance of existing rooftop solar panels; improve and update building fabric; transition to zero emission vehicles; and manage standalone renewable electricity generating stations.

We launched the Energy Service newsletter, a bi-monthly update aimed at local authorities, public sector and community enterprises. Each edition brings together the latest news, case studies and funding opportunities, further strengthening the communities of practice through the dissemination of learnings.

In 2024, we co-hosted the Journey to a Net Zero Wales event series with Salix Finance and Welsh Government, providing advice on managing and actively monitoring solar arrays, and presenting case studies from the fleet and low carbon heat workstreams.

We also took part in the GREENFLEET Cymru event, speaking about the transformative impact of emission reduction targets on vehicle fleets across Wales.

Supporting net zero acceleration and innovation across the public and community sectors

Welsh Government Smart Living WSRID supplier networking event

Emerging solutions

Emerging (decarbonisation) solutions refers to innovative technologies and approaches beyond those of the standards used to achieve decarbonisation today. To meet a net zero future, innovation is required to help maximise carbon mitigation, scale up and de-risk delivery, and address residual emissions, moving beyond existing technology approaches and reliance on less favourable instruments such as carbon offsetting.

To support the identification of emerging solutions, the Energy Service has:

- Developed an understanding of decarbonisation innovations currently available, as well as those in development.
- Reviewed innovation opportunities and conducted deep dive reviews to understand their potential application in the Welsh public sector.
- Started to investigate the financial implications of decarbonising the Welsh public sector by 2030.

It is expected that the identified innovation will be investigated in more detail, and other Welsh Government departments engaged to align technologies with policy positions and identify potential funding for pilots or feasibility studies.

Smart Living

The Energy Service has supported Welsh Government with the delivery of Smart Living's innovation programme, the Whole System Research and Innovation for Decarbonisation 1.0 (WSRID 1.0) Small Business Research Initiative (SBRI) Contracts for Innovation Programme Phase 1.

Established in 2015, the Smart Living Scheme is the Welsh Government's decarbonisation innovation initiative. Its core aim is to catalyse and support diverse pre-market, innovative decarbonisation projects, focusing on place-based and needs-led solutions that require real-world trials before they can be adopted and rolled out at scale. The scheme also aims to accelerate the development of innovative activities by removing barriers and providing a continuous pathway for innovation in decarbonisation, from concept to pilot.

Building on successes and learnings from past Smart Living SBRI Contracts for Innovation programmes, Welsh Government launched WSRID 1.0 in September 2024. The WSRID 1.0 programme is supporting public sector organisations to develop, test and access innovative solutions to place-based decarbonisation challenges and needs, realising energy priorities identified in Regional Energy Plans and Local Area Energy Plans covering each local authority in Wales.


Conway Harbour, North Wales

Ynni Cymru

The Energy Service works with the YnNi Cymru team to support the development, financial administration and delivery of the Ynni Cymru Capital Grant. Welsh Government launched the £10m fund in summer 2024 to expand community-owned renewable energy generation and support the development of Smart Local Energy Systems (SLES) across Wales.

Many projects applying to the fund build on the Energy Service's pipeline development work across building energy efficiency, transport decarbonisation, and community renewables. This demonstrates how our technical and development support creates a pathway from concept to implementation for energy projects across the community and public sector in Wales.

We provided comprehensive support in mobilisation, scheme management, evaluation, and financial management. We collaborated closely with Local Partnerships and the Welsh Government to administer the fund effectively, conduct second-stage due diligence on applications, and recommend projects based on technical and economic feasibility.

This partnership marks a significant step in Wales' transition towards a more efficient and sustainable energy landscape, with organisations delivering energy projects by March 2025. The fund complemented our ambition to accelerate SLES deployment, expand locally owned renewables, and optimise project efficiency.

NHS Primary Care Footprint

In previous years, the Energy Service has worked to analyse carbon emissions for NHS Wales and the Social Care sector. This year, the focus was on the Welsh Primary Care sector's carbon footprint, with the report published by Welsh Government in October 2024: https://www.gov.wales/primary-care-carbon-footprint

This project aimed to generate a high-level understanding of the carbon footprint of the primary care sector in Wales for the financial year 2022-23. Primary care services provide the first point of contact in the healthcare system and include GP, pharmacy, dentist and optician services.

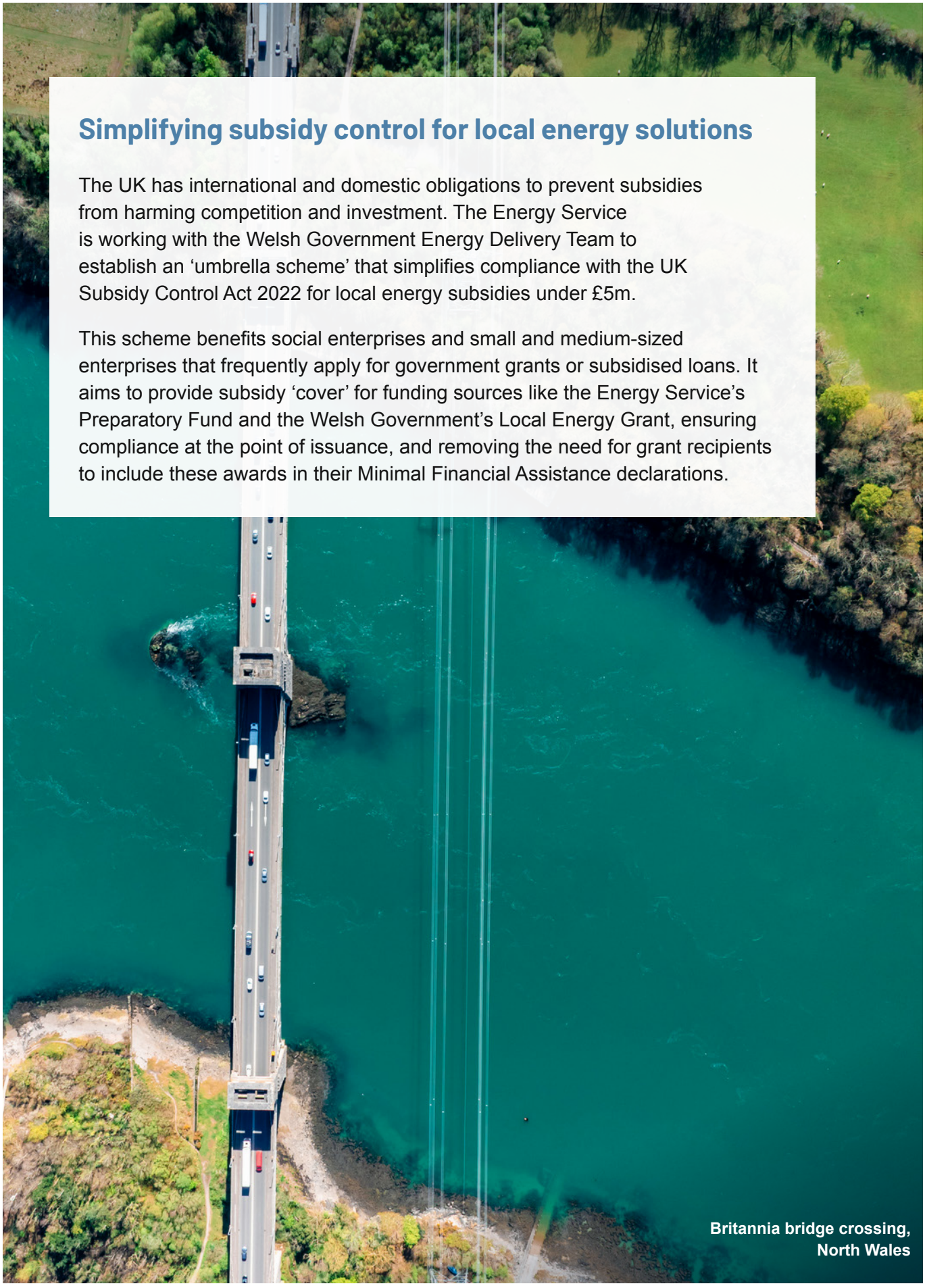
The Energy Service carried out desk research on building assets operated by the primary care sector to determine Scope 1 and Scope 2 carbon emissions. We also provided project management, data collection, data analysis and report writing services for the report. The data was assessed alongside procured goods and services costs and emissions data for the primary care sector, provided by NHS Wales Shared Services Partnership.

This project represented the first estimation of the Welsh primary care sector's carbon footprint, which can be used to help drive further carbon reductions in the future.

Simplifying subsidy control for local energy solutions

The UK has international and domestic obligations to prevent subsidies from harming competition and investment. The Energy Service is working with the Welsh Government Energy Delivery Team to establish an ‘umbrella scheme’ that simplifies compliance with the UK Subsidy Control Act 2022 for local energy subsidies under £5m.

This scheme benefits social enterprises and small and medium-sized enterprises that frequently apply for government grants or subsidised loans. It aims to provide subsidy ‘cover’ for funding sources like the Energy Service’s Preparatory Fund and the Welsh Government’s Local Energy Grant, ensuring compliance at the point of issuance, and removing the need for grant recipients to include these awards in their Minimal Financial Assistance declarations.



Britannia bridge crossing, North Wales

Neath Port Talbot County Borough Council, zero emission vehicle fleet

Find out more about how the Welsh Government Energy Service can help your community or public sector organisation:

Website: Click here

Email: enquiries@energyservice.wales

@_energyservice

welsh-government-energy-service

Calculation details

*The lifetime savings are an estimate of total financial and carbon savings over the operational lifetime of the project. Carbon savings have been calculated using the current carbon conversion factors provided by the UK Government Department for Energy Security and Net Zero and multiplied by the estimated economic life of a project. The carbon calculation now also appreciates the predicted UK grid decarbonisation over the economic life using forecasted electric carbon factors from the National Grid's Future Energy Scenarios. This is an improvement on the previously used 'persistence factor methodology' and takes into account reduced carbon savings as the UK continues to decarbonise the grid.

**'Financial close' means the projects have finance formally committed and there is a high likelihood that the project will progress to implementation/installation. This finance could come from a range of sources such as an organisation's own internal funds, the Wales Funding Programme, the Welsh Government Local Energy Loan Fund, community shares or other sources. A small proportion of projects do not progress to implementation, for various reasons. For any Welsh Government financed projects, discontinued project finance would be released for other decarbonisation projects.

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