



Sero net yn ymarferol: sector cyhoeddus Cymru

Llandudno
10 Mehefin 2026

Net zero in practice: Wales' public sector

Llandudno
10 June 2026

Agenda

| Time | Item |
|---------------|---|
| To 10:00 | Arrival and Registration |
| 10:00-10:10 | Welcome and Introduction from Salix chair Heather Jones – Salix |
| 10:15 – 10:30 | Service delivery for the public sector Salix |
| 10:30 -10:55 | Summary of WGES work Dave Powlesland – Welsh Government Energy Service |
| 11:00-11:30 | Break |
| 11:30 – 11:45 | Coleg Cambria Sophie Hughes-Saunier |
| 11:50 – 12:05 | North Wales Fire and Rescue Service Tim Christensen |
| 12:10 – 12:25 | Funding net zero Salix |

| Time | Item |
|---------------|--|
| 12:30 – 13:30 | Lunch |
| 13:30 – 13:40 | Who's your carbon hero? Kely Togba- Salix |
| 13:40 - 13:55 | Optimising your electric vehicles Jim Cardy – Welsh Government Energy Service |
| 14:00 – 14:15 | Denbighshire Council Martyn Smith |
| 14:20 – 14:50 | Breakout – barrier mapping for project development Salix |
| 14:50 – 15:00 | Closing |
| 15:00 | End of day |

Why are we here?

Pam rydyn ni yma?

Cofnodi diwrnod poethaf Mai erioed wrth gyrraedd 32.9C



26 Mai 2026

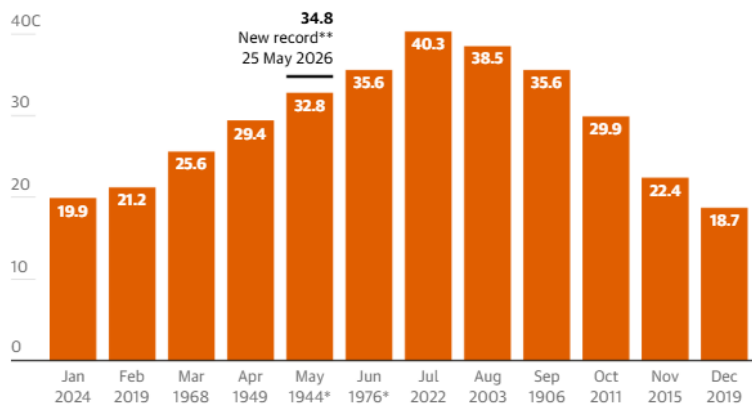
Dydd Mawrth ydy'r diwrnod poethaf ar gofnod ar gyfer mis Mai, gyda record newydd am yr ail ddiwrnod yn olynol.

Cafodd tymheredd o 32.9C ei gofnodi ym Mharc Bute yng Nghaerdydd, y diwrnod cynhesaf hyd yma eleni.

Records have been broken / Mae recordiau wedi eu torri

Monthly record temperatures

Highest temperature recorded in each month, prior to May 2026



Guardian graphic. Source: Met Office. * Most recent years. 32.8C was also recorded in May 1922 and 35.6C was also recorded in June 1957. ** Provisional

Oil price hits highest since 2022 after report Trump to be briefed on new Iran options



Energy price cap in Great Britain to rise by 13% from July

Average gas and electricity bill to jump to £1,862 a year from July until end of September, in part because of Iran war



Met Office Weather & climate Research programmes Service

Who we are How we are run News & media Contact us

NEWS

Dull and mild February brings wet winter to a close

Author: Met Office

Cannoedd heb drydan wrth i Storm Amy daro Cymru



MATTHEW HORWOOD

Coeden wedi cwmpo ar Romilly Road yng Nghaerdydd

4 Hydref 2025

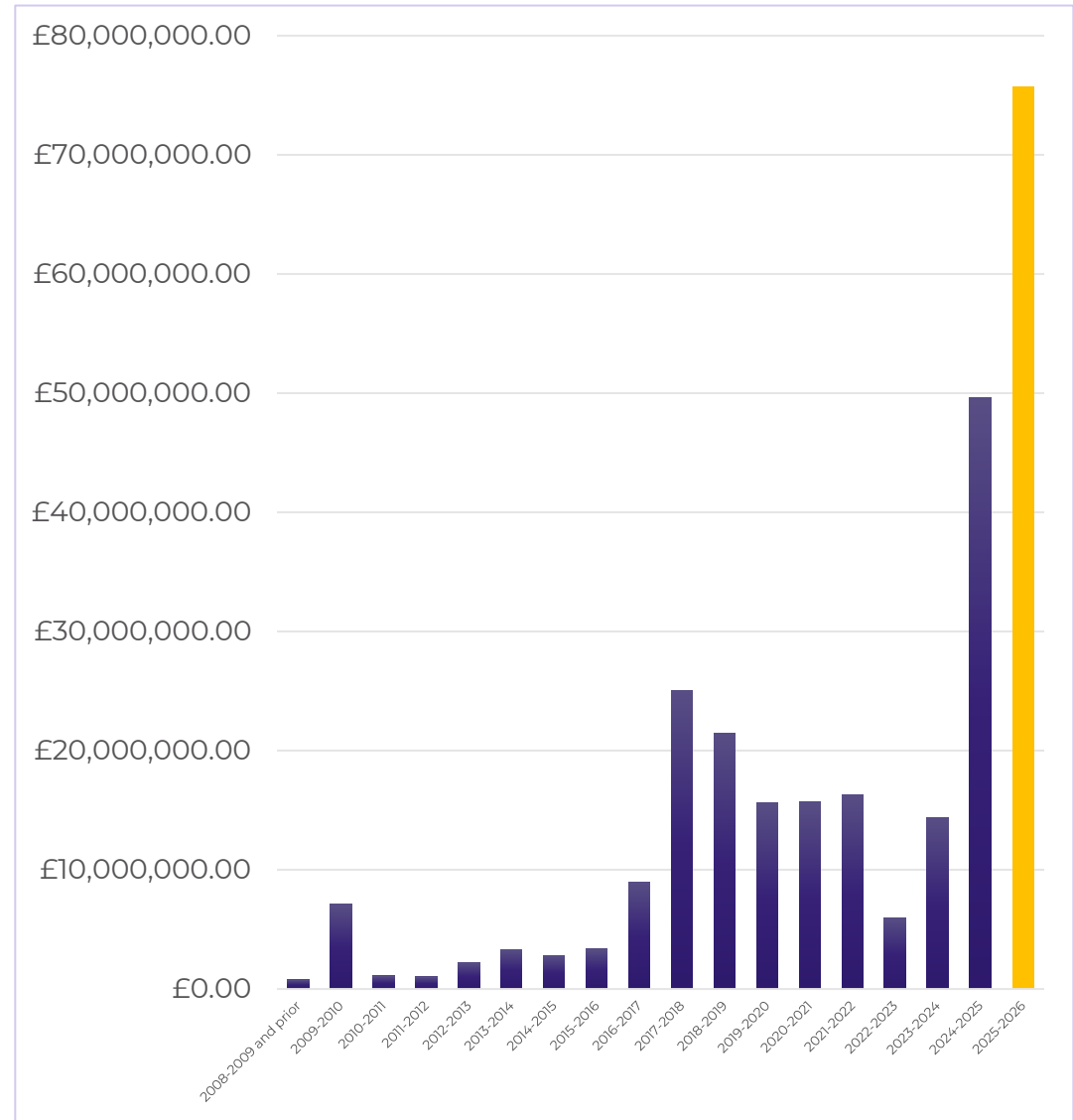
Why are we here?

Pam rydyn ni yma?

**A record-breaking
year for Salix in
Wales**

Blwyddyn hanesyddol
i Salix yng Nghymru

| Scheme Cynllun | Value Gwerth |
|---------------------------|-----------------|
| WFP | £6.6m |
| Invest 2 Save (NHS) | £27.1m |
| Digarbon 2 | £42m |
| Total Cyfanswm | £75.7m |



Why are we here?

Pam rydyn ni yma?

Reduce energy costs

Lleihau costau ynni

Reduce carbon emissions

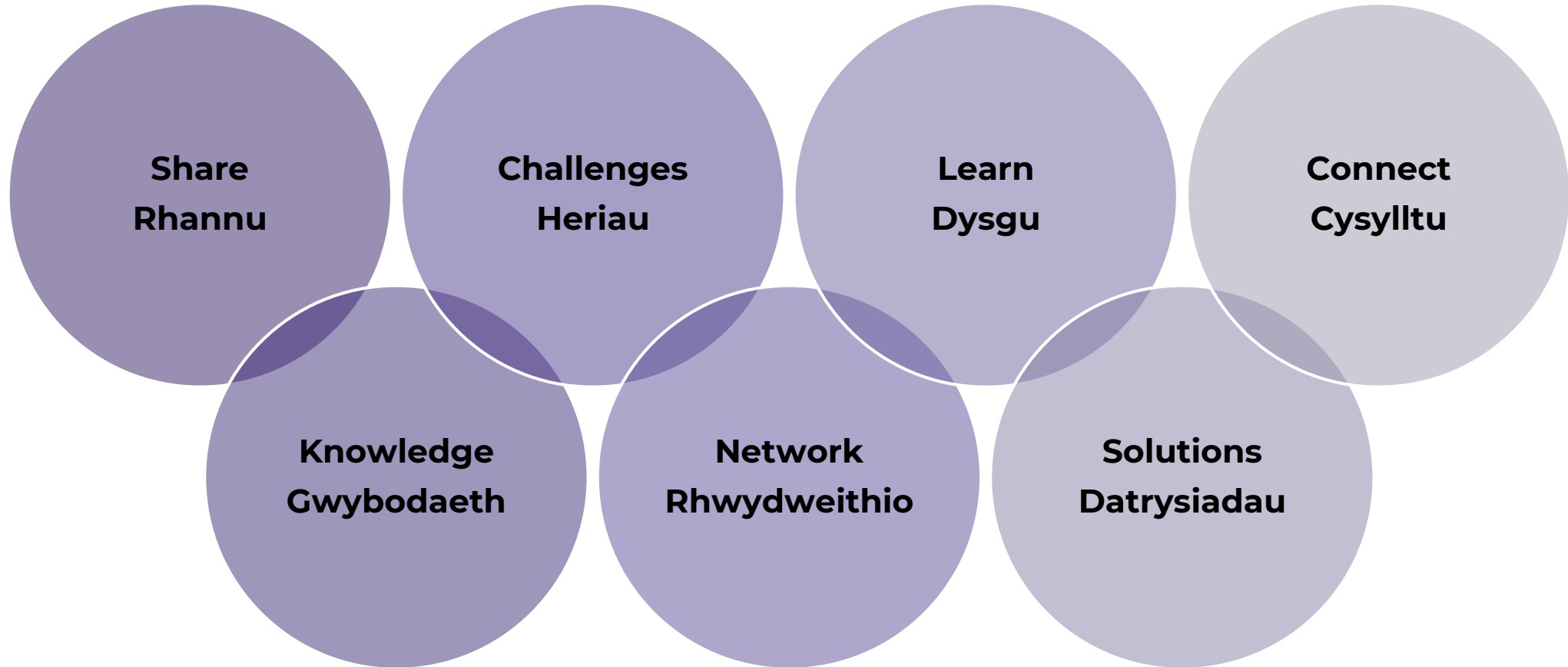
Lleihau allyriadau carbon

Celebrate our successes

Dathlu ein llwyddiannau

Purpose of today

Pwrpas heddiw



Bingo

- Event wide game of bingo
- Find an attendee who fits the criteria to cross off all the points
 - Make a note of their name
- Let the chair know when you have a full house
- Prize for the winner

Bingo

- Gêm bingo i bawb yn y digwyddiad
- Dewch o hyd i rywun sy'n cyd-fynd â'r meini prawf i ddileu'r holl bwyntiau
 - Gwnewch nodyn o'i enw.
- Rhowch wybod i'r cadeirydd pan fydd gennych chi nhw i gyd
- Gwobr i'r enillydd

Meet your neighbour

Cwrdd â'ch cymydog



Introduce yourself
Cyflwynwch eich hun



What organisation do you work for?
Pa sefydliad ydych chi'n gweithio iddo?



What project or net zero initiative are you most proud of at your place of work?
Pa brosiect neu fenter sero net ydych chi'n fwyaf balch ohono yn eich gweithle?



Darparu gwasanaethau i'r sector cyhoeddus **Service delivery for the public sector**

Salix



Who we are

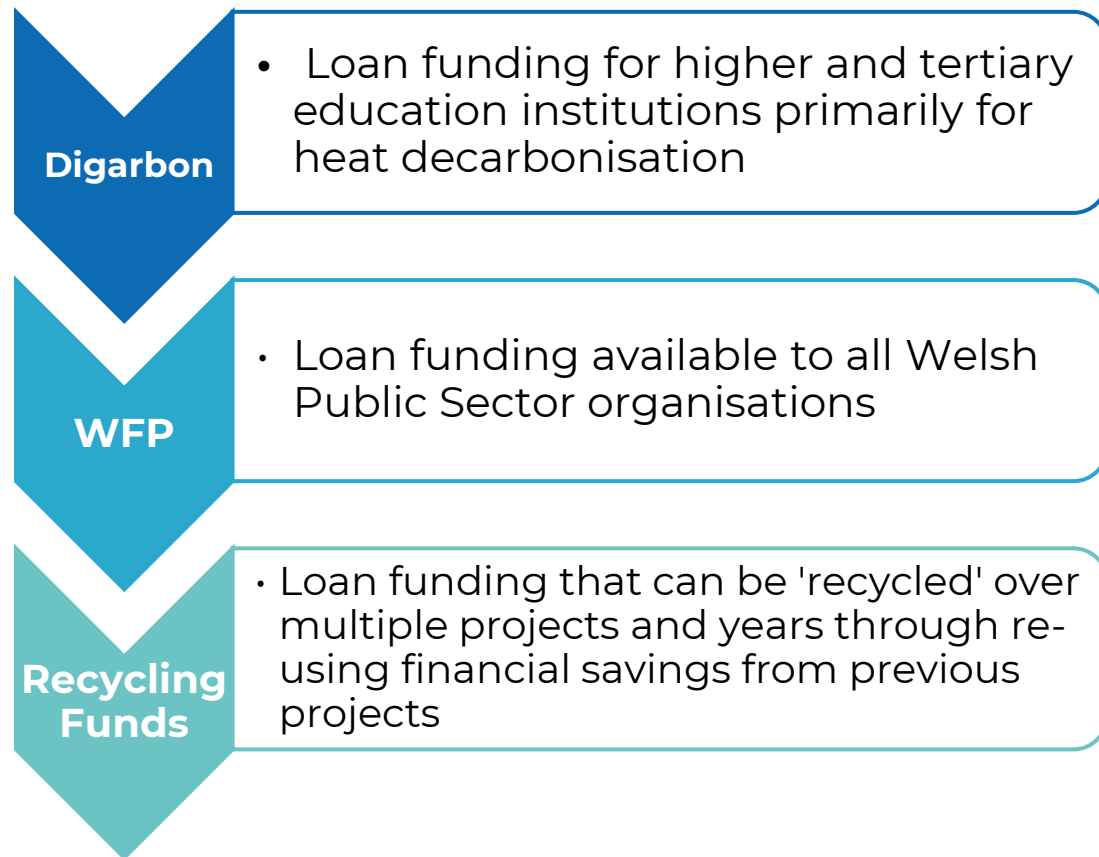
- At Salix, our aim is to deliver decarbonisation, create clean power and lower energy bills for consumers.
- We are a trusted delivery partner to the UK, Scottish and Welsh governments, regional combined authorities and public sector organisations across the country.
- Our mission is to support organisations to lower their energy costs, create warmer and healthier buildings and achieve their net zero ambitions.

Pwy ydym ni

- Yn Salix, ein nod yw cyflawni datgarboneiddio, creu pŵer glân a gostwng biliau ynni i ddefnyddwyr.
- Rydym yn bartner cyflawni dibynadwy i lywodraethau'r DU, yr Alban a Chymru, awdurdodau rhanbarthol cyfunol a sefydliadau'r sector cyhoeddus ledled y wlad.
- Ein cenhadaeth yw cefnogi sefydliadau i ostwng eu costau ynni, creu adeiladau cynhesach ac iachach a chyflawni eu huchelgeisiau sero net.

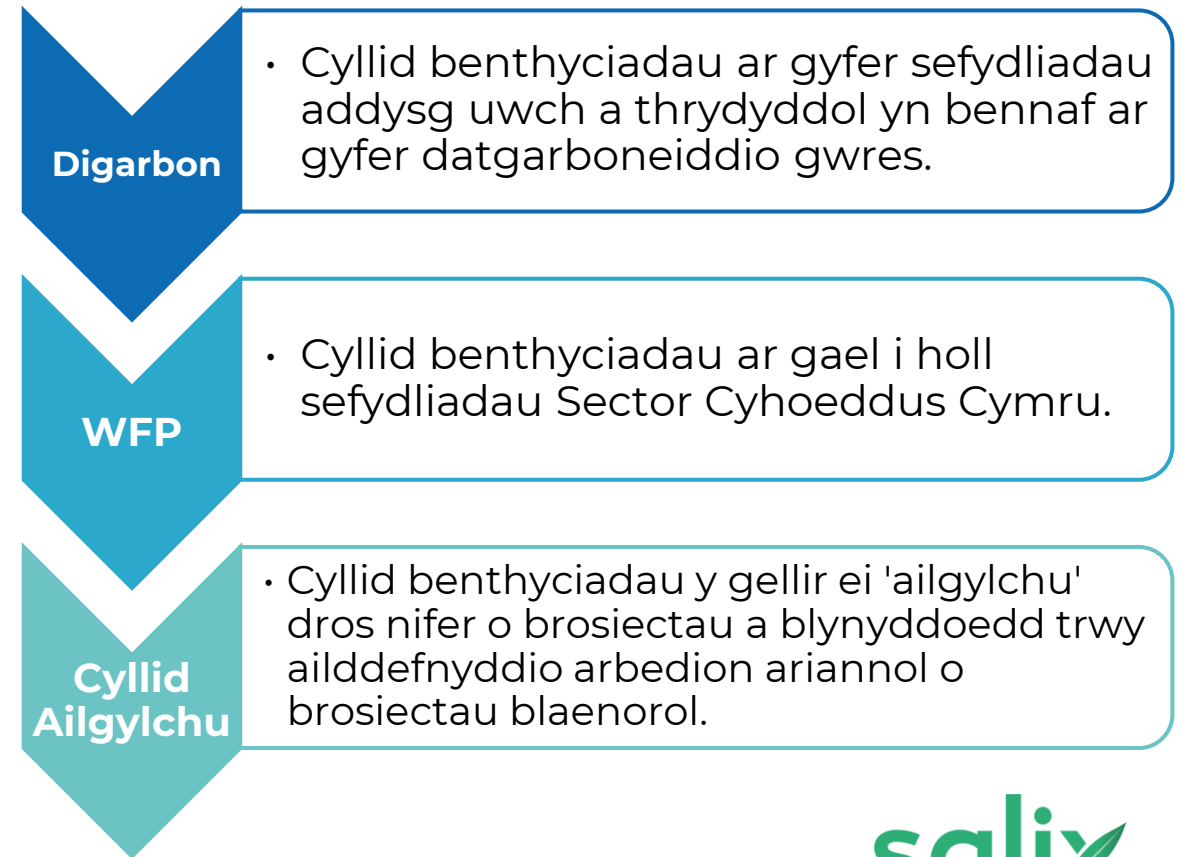
What we do

- Deliver three loan funding schemes available to public sector bodies in Wales:



Beth rydyn ni'n ei wneud

- Darparu tri chynllun cyllid benthyciadau sydd ar gael i gyrff sector cyhoeddus yng Nghymru:



Since 2009...
Ers 2009...

3 funding schemes
delivered
cynllun cyllido wedi
eu cyflawni

1.11m tCO₂e lifetime carbon
savings
arbedion carbon
gydol oes

67 Organisations
supported
sefydliad wedi
eu cefnogi

1,375 projects funded
o brosiectau wedi eu
hariannu

Projects totalling
Prosiectau gwerth cyfanswm o

£200m+

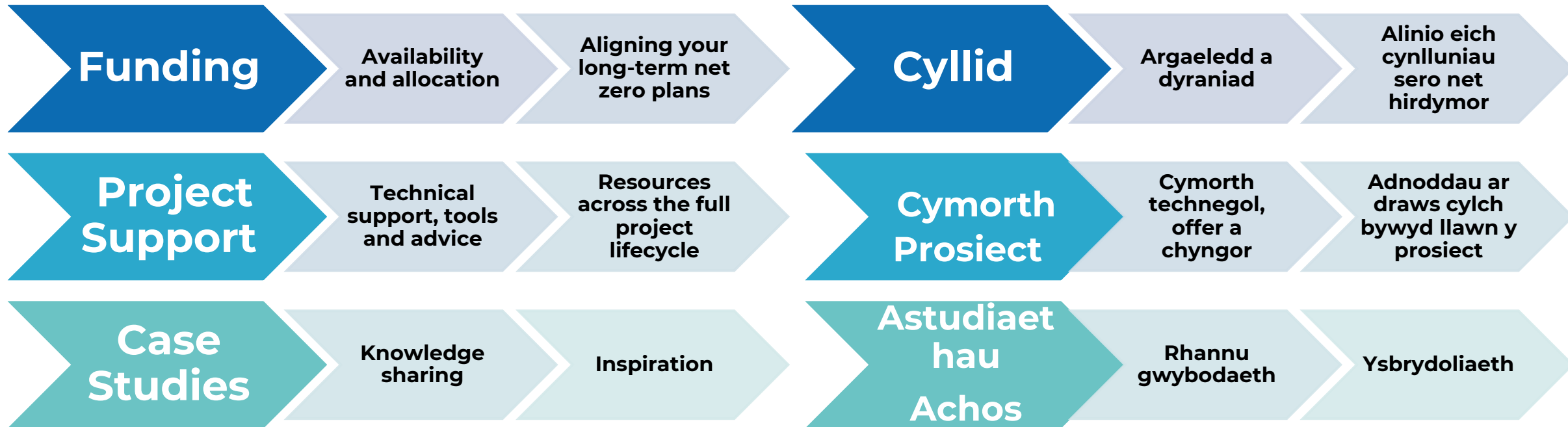
£22.45m

annual cost savings
arbedion cost
blynyddol



Salix – what we offer

Salix – Yr hyn rydyn ni'n ei gynnig



Today's Key Objectives

How we can support you?

- Funding available to you
- Services we offer across the full project lifecycle

Highlighting work across Wales

- Championing your work
- Insight into designing your projects to the multiple funding programmes available to you

Feedback and discussions

- Help us identify key pain points in project design, delivery, and funding
- Discuss work with your peers across Wales

Prif Amcanion Heddiw

Sut y gallwn eich cefnogi?

- Cyllid sydd ar gael i chi
- Gwasanaethau rydym yn eu cynnig ar draws cylch bywyd llawn y prosiect

Amlygu gwaith ledled Cymru

- Hyrwyddo eich gwaith
- Mewnwelediad i ddylunio eich prosiectau i'r nifer o raglenni cyllido sydd ar gael i chi

Adborth a thrafodaethau

- Helpwch ni i nodi'r prif bwyntiau anodd wrth ddylunio, cyflawni a chyllido prosiectau
- Trafod gwaith gyda'ch cymheiriaid ledled Cymru

Energy and Carbon team

What we do

- Lead on technical aspects of schemes
- Assess applications, change requests and conditions
- Ensure technical feasibility and deliverability
- Review performance plans and M&V

Tîm Ynni a Charbon

Beth rydyn ni'n ei wneud

- Arwain ar agweddau technegol ar gynlluniau
- Asesu ceisiadau, ceisiadau am newid ac amodau
- Sicrhau dichonoldeb technegol a chyflawnadwyedd
- Adolygu cynlluniau perfformiad a monitro a gwerthuso

Measurement and Verification

- We measure the avoided energy resulting from heat decarbonisation projects
- This helps us to identify the impact of funding programmes as well as the efficiency of installed systems

Mesur a Gwirio

- Rydym yn mesur yr ynni sy'n cael ei osgoi sy'n deillio o brosiectau datgarboneiddio gwres
- Mae hyn yn ein helpu i nodi effaith rhaglenni cyllido yn ogystal ag effeithlonrwydd systemau sydd wedi'u gosod

Tools and Resources

Website

- Guidance on technologies
- Eligibility criteria

Calculation Tools

- Peak heat loss
- Heating load
- Solar PV
- Insulation

Offer ac Adnoddau

Gwefan

- Canllawiau ar dechnolegau
- Meini prawf cymhwysedd

Offer Cyfrifo

- Colli gwres brig
- Llwyth gwresogi
- Solar Ffotofoltaidd
- Inswleiddio

Tools and Resources Offer ac Adnoddau

Funding Guidance:

- Information on eligibility
- Guidance notes for each scheme
- Application forms
- Contact details for queries and support

Case Studies

- Real-world examples of funded projects to support learning and best practice

Canllawiau Cyllido:

- Gwybodaeth am gymhwysedd
- Canllawiau ar gyfer pob cynllun
- Ffurflenni cais
- Manylion cyswllt ar gyfer ymholiadau a chymorth

Astudiaethau Achos

- Enghreifftiau o brosiectau yn y byd go iawn a ariennir i gefnogi dysgu ac arfer gorau



Gwasanaeth Ynni Llywodraeth Cymru Welsh Government Energy Service

Carwyn Davies and David Powlesland





Gwasanaeth Ynni
Energy Service

Cefnogi ymdrech Cymru i greu economi sero net llwyddiannus
Supporting Wales' drive to a successful net zero economy

Gwasanaeth Ynni Energy Service

Sero Net yn Ymarferol- Digwyddiad Cymru 2026
Net Zero in Practice - Wales event 2026



Gwasanaeth Ynni Energy Service

Cefnogi ymdrech Cymru i greu economi sero net llwyddiannus
Supporting Wales' drive to a successful net zero economy

1. Cyd-destun argyfwng hinsawdd 1. Climate emergency context

New report suggests more global temperature records ahead

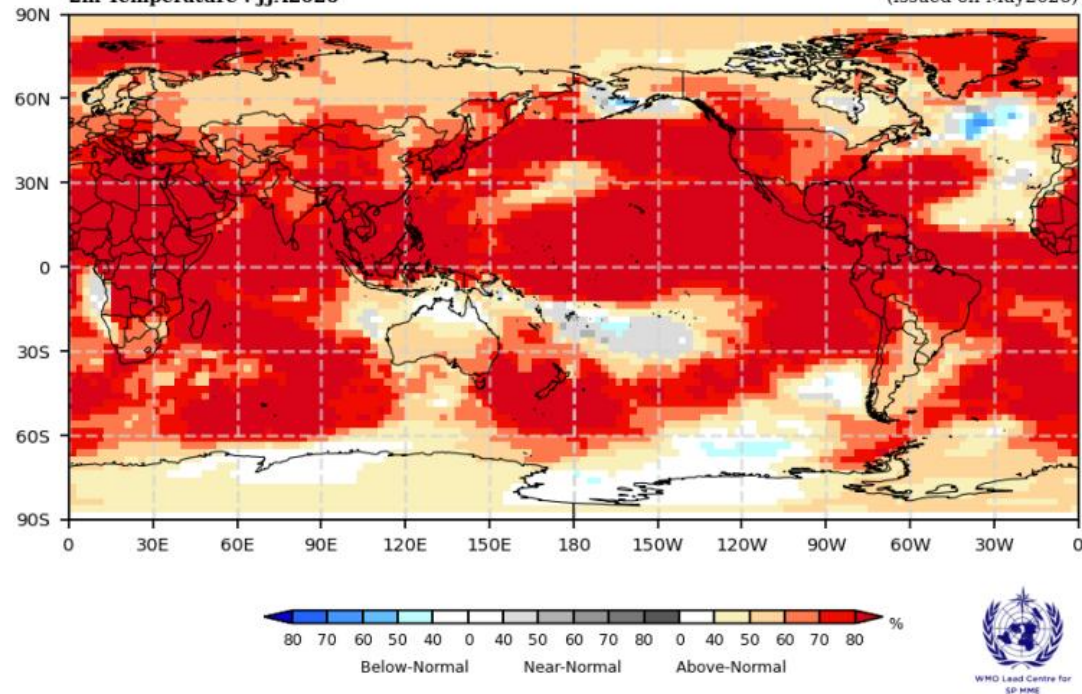
● PRESS RELEASE

Probabilistic Multi-Model Ensemble Forecast

CPTEC,ECMWF,Exeter,Melbourne,Montreal,Moscow,Offenbach,Seoul,Tokyo,Toulouse,Washington

2m Temperature : JJA2026

(issued on May2026)



World Meteorological Organisation, Report by UK Met Office (May 26)

2024 hottest year on Earth to date – 91% chance that it will be beaten in 2026-30

Is a 'Super El Niño' on the way and how will it affect the UK?



Sarah Keith-Lucas
Lead Weather Presenter

Ref: BBC

UN:
At 6°C above average, tropical Pacific Ocean temperature readings are fueling concerns that this El Niño could feed on this extra heat and devastate vulnerable and unprepared communities worldwide.

The billion-barrel Hormuz oil shock is about to crash demand

By Bloomberg • Last Updated: Apr 26, 2026, 12:16:00 AM IST

Ref: Economic Times / Bloomberg

NEWS

Wales heatwave underscores urgent warning: UK built for a climate that no longer exists'

© 28 May 2026 ⌚ 3 minute read



Image: South Wales Fire and Rescue Service

Nation.Cymru – headline of the article referencing CCC and Climate Cymru comments

'Collapsing wildlife and polluted rivers now a life or death issue'



Only 40% of water bodies in Wales are classed as being in good condition

BBC – headline following NRW's State of Natural Resources 2025 report

"Parts of the country also have some of the worst air quality in Britain - causing up to 1,400 premature deaths a year"

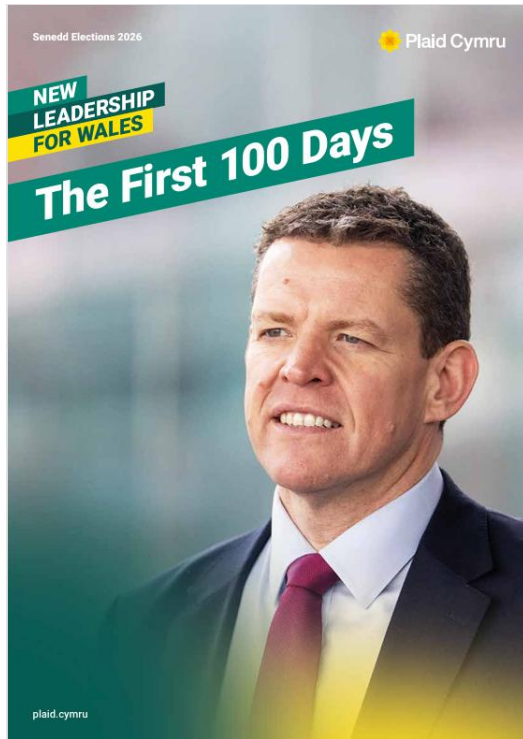
'Disease-carrying mosquitoes and heat deaths if temperatures soar'



MATTHEW HORWOOD/GETTY IMAGES

Wales' 10 hottest years on record have all happened since the early 2000s

BBC – headline referencing CCC. Future cooling measures needed in hospitals and care homes.

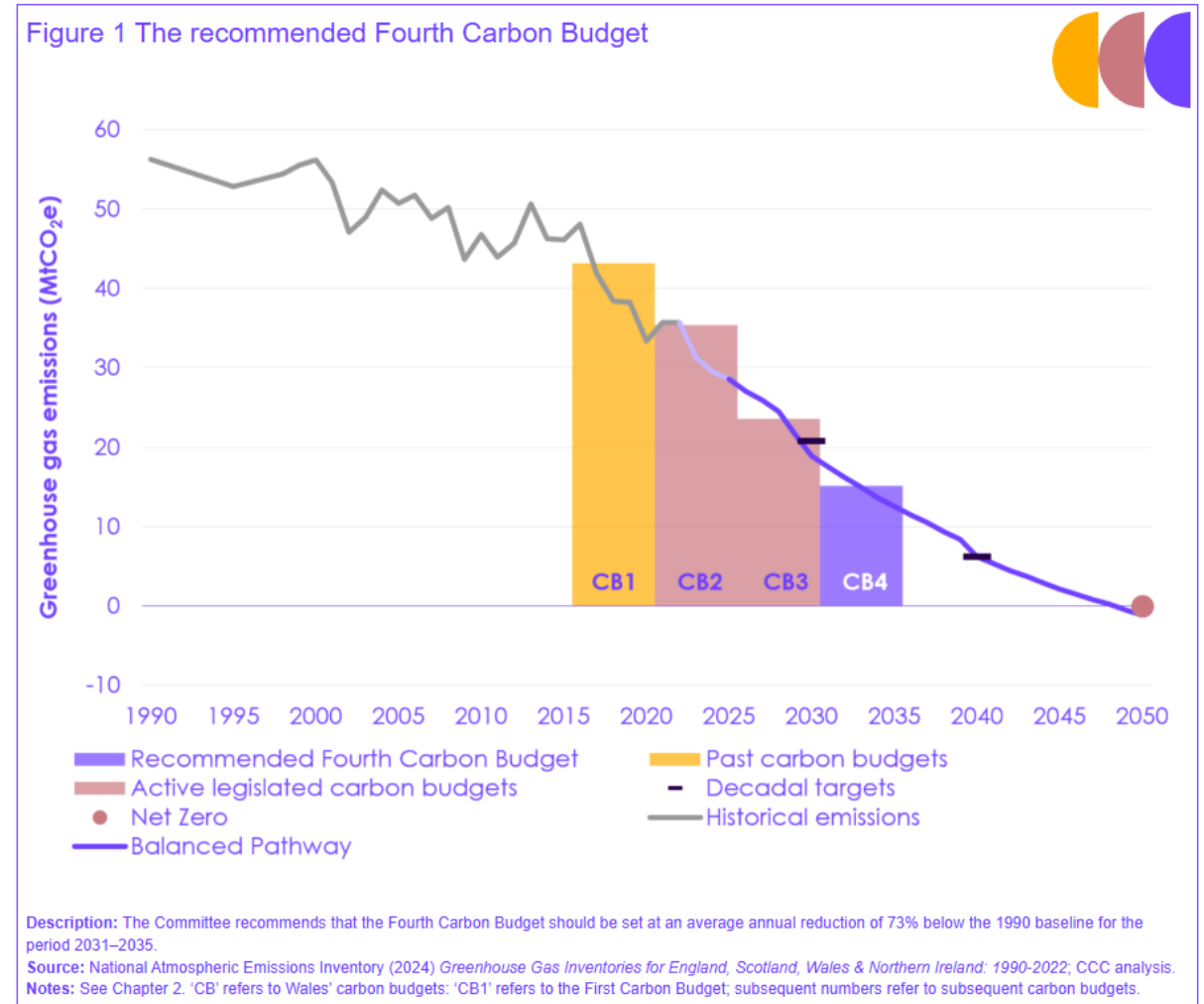


Plaid Cymru – new government

First 100 days – bold new steps to address the climate and nature emergencies

Nature Action Plan for Wales - pathway to net zero by 2040 and substantive nature recovery by 2050

Renewable Energy Sector Deal, strengthen Trydan Gwyrdd Cymru, and promote community-owned renewables



Ref: CCC - ~Wales 4th Carbon Budget advice to WG (2025)

Now at the end of CB2 – 2021-25 – budget is just met!?! WG now progressing plan for CB3 26-30



Gwasanaeth Ynni Energy Service

Cefnogi ymdrech Cymru i greu economi sero net llwyddiannus
Supporting Wales' drive to a successful net zero economy

2. Adrodd Sero Net 2. Net Zero Reporting

Adrodd ar draws y sector cyhoeddus

- Casglu data canolog
- Adroddiadau blynyddol ar allyriadau ar gyfer sector cyhoeddus Cymru a sefydliadau cyfansoddol.
- Datblygu cynllun ar gyfer ardaloedd her.

Public-sector wide reporting

- Centralised data collection
- Annual emissions reporting for the Welsh public sector and constituent organisations
- Scheme development for challenge areas

Ymgysylltu a chefnogaeth

- Ymgysylltu ag arferion a phrosesau adrodd sy'n benodol i sefydliad
- Mynychu gweithgorau a sesiynau
- Ymateb i ymholiadau a darparu cefnogaeth, trwy mewnlwch Adrodd Sero Net a Teams

Engagement and support

- Engagement with organisational-specific reporting practices and processes
- Attending working groups and sessions
- Responding to queries and providing support, via Net Zero Reporting inbox and Teams site

Penawdau Adrodd 2024/25 | Reporting Headlines 2024/25



3,958 ktCO₂e

+12%

52.1 GWh

Ynni adnewyddadwy
Renewables

+8%

82

#sefydliadau
organisations

+6%

7,900,000 km

Pellter a deithiwyd gan fflyd
o gerbydau trydan
EV fleet distance travelled

+348%

4,200

Data ar lefel safle
site level data

New

0.248 kgCO₂e/£

Dwysedd y gadwyn
gyflenwi
Supply chain intensity

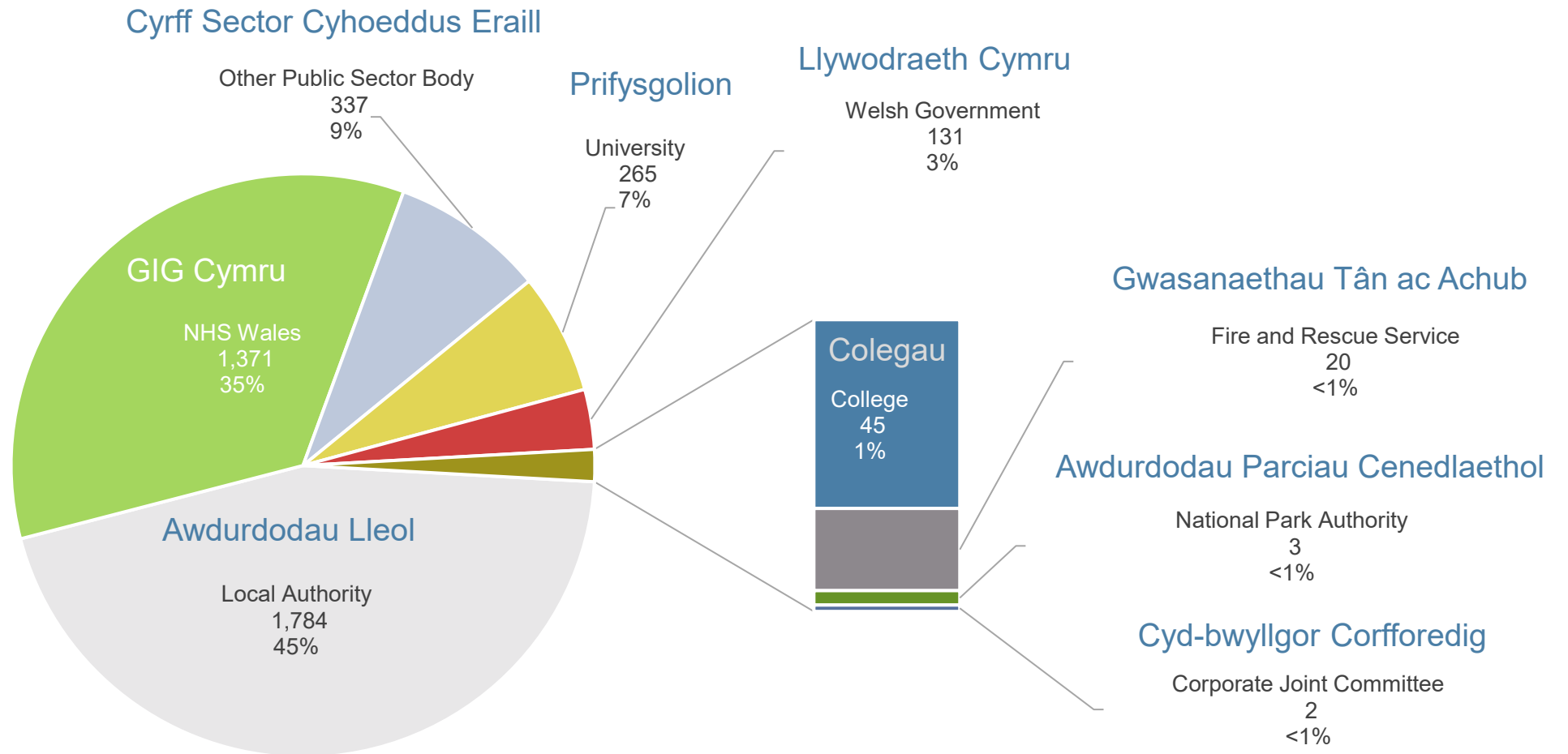
+15%

Allyriadau (ktCO₂e) 2024/25 | Emissions (ktCO₂e) 2024/25



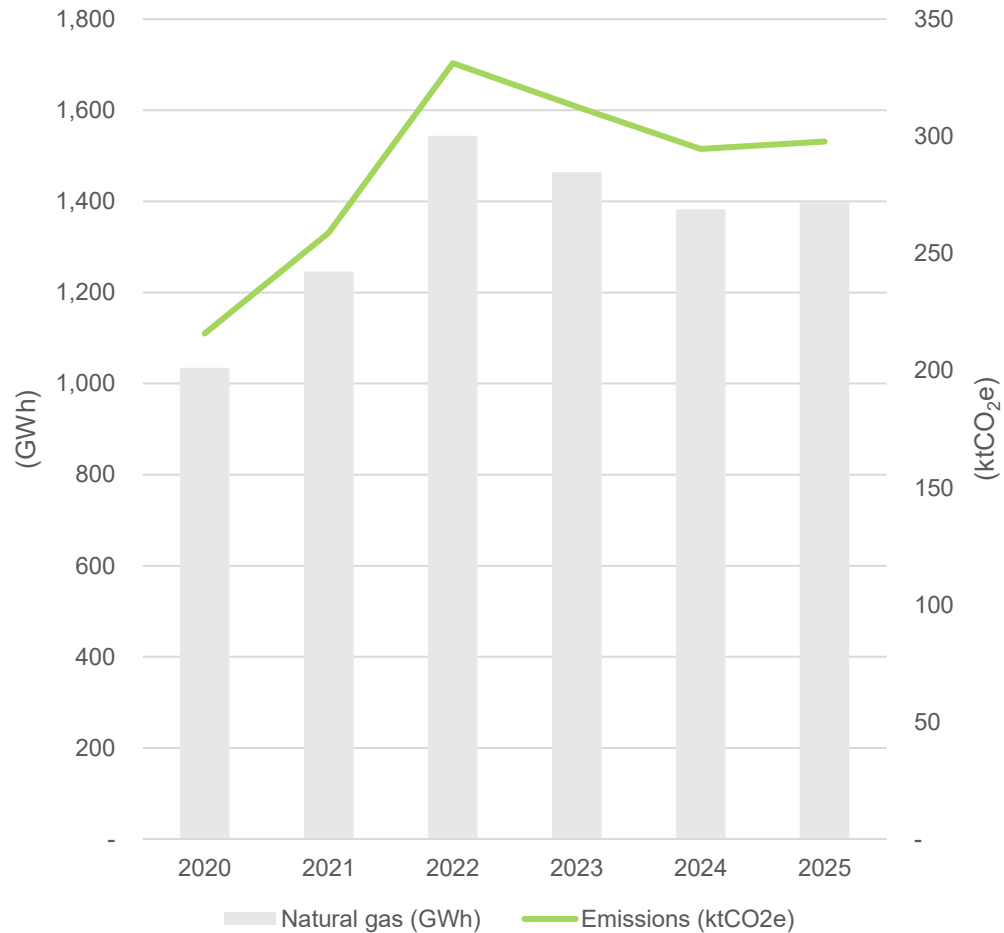
Gwasanaeth Ynni
Energy Service

3,958
ktCO₂e

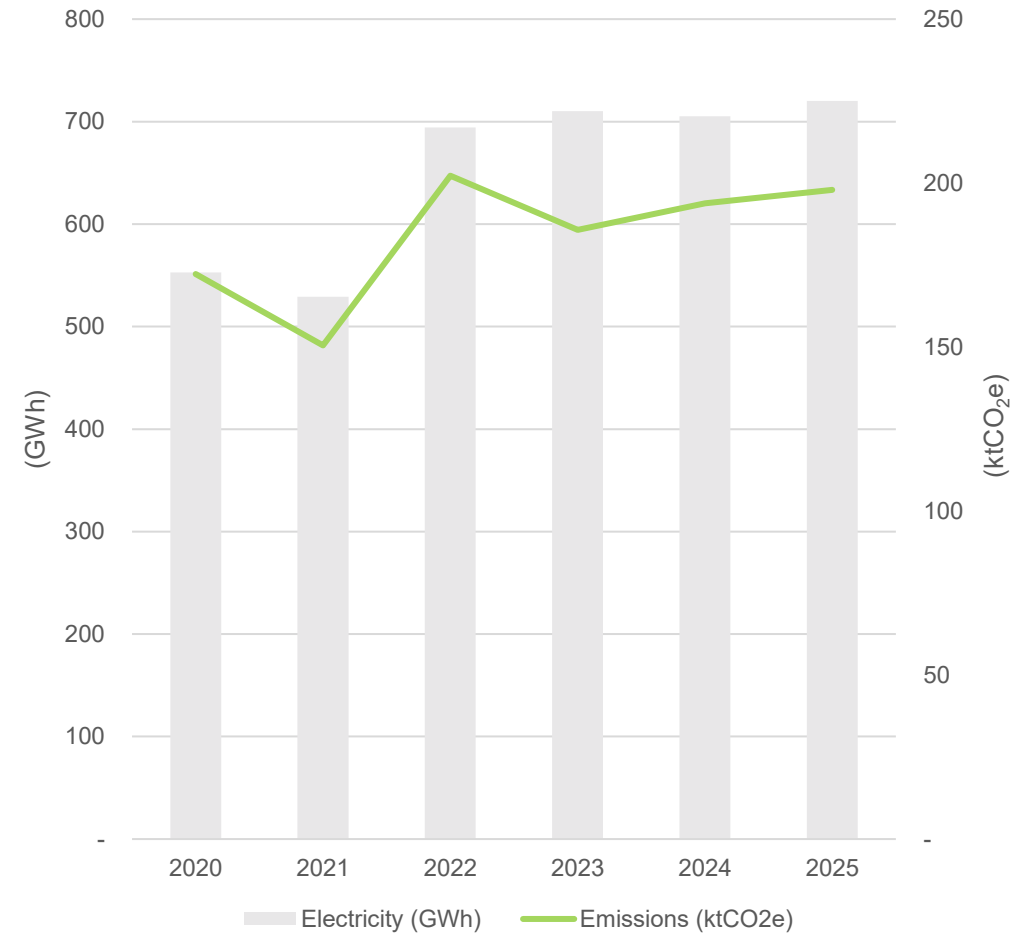


Ynni adeiladau ac allyriadau | Building energy & emissions

Nwy Naturiol Natural Gas



Trydan Electricity



Cynnydd: yr hyn rydyn ni wedi'i gyflawni |

Progress: what we have delivered



61.8MW

Cynhyrchiant adnewyddadwy
Renewable generation

19.7MW

Gwres carbon isel
Low carbon heat

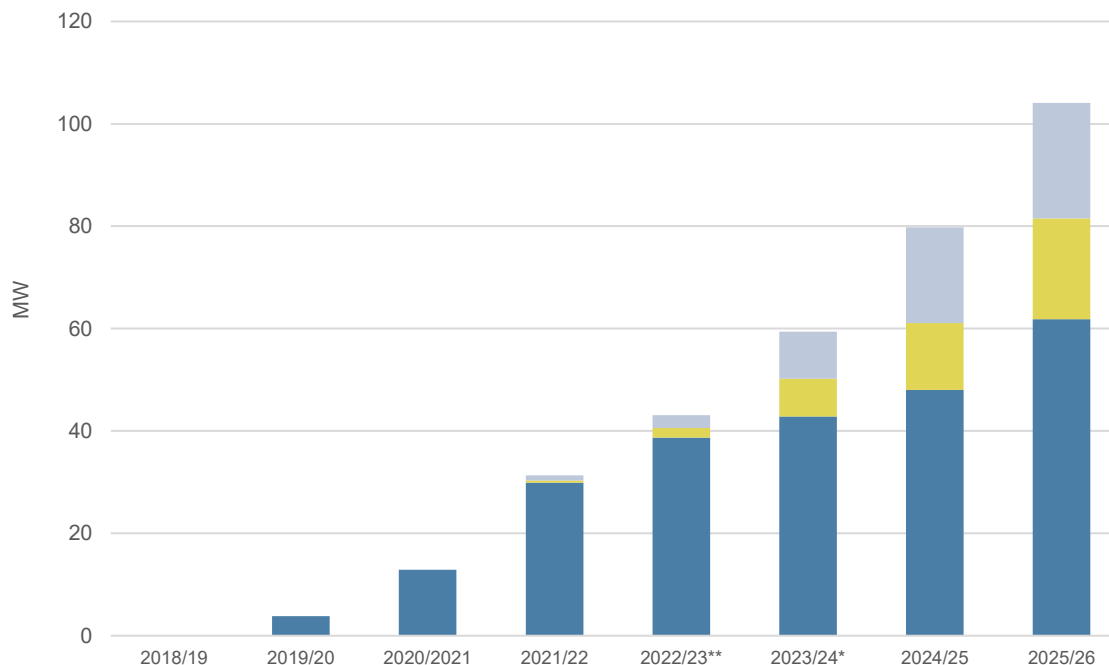
22.6MW

Seilwaith gwefru cerbydau trydan
EV charging infrastructure

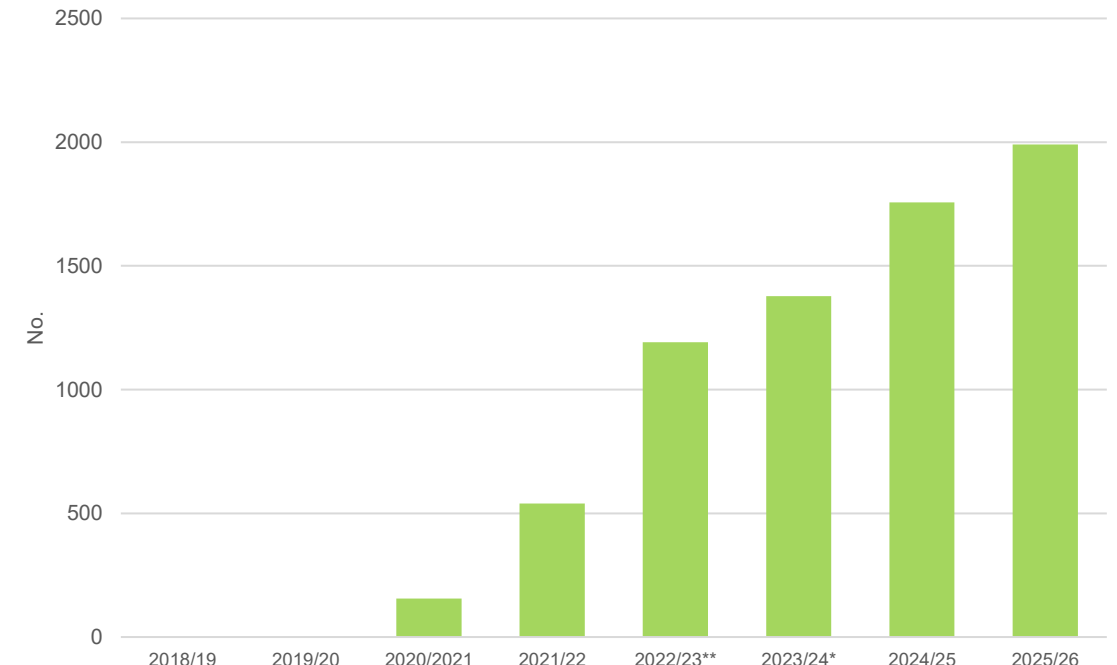
1,991

Cerbydau di-allyriadau
Zero emission vehicles

Capasiti wedi'i osod yn tyfu o flwyddyn i flwyddyn (MW) Installed capacity growing year on year (MW)



Cerbydau allyriadau sero a gefnogir hyd yma
Zero emission vehicles supported to date



Cynnydd: cyfalaf wedi'i ddefnyddio | Progress: capital deployed



Gwasanaeth Ynni
Energy Service

5x

Cynnydd mewn cyfalaf blyneddol a ddefnyddiwyd ers 2018/19

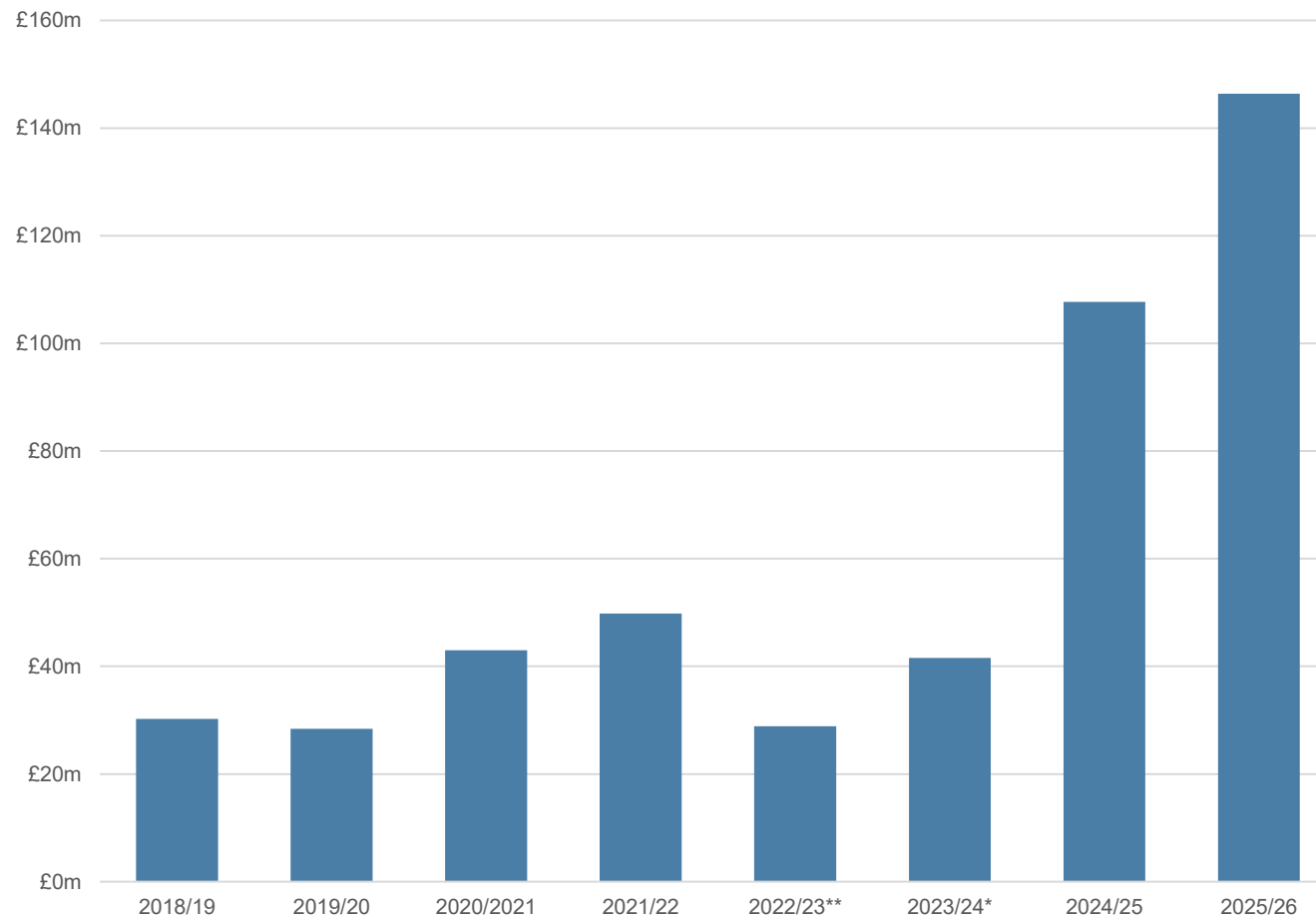
Increase in annual capital deployed since 2018/19

£340m

o gyfalaf wedi'i fuddsoddi yng Nghymru hyd yma

of capital invested in Wales to date

Buddsoddiad Cyfalaf ar Gwblhau'r Agweddau Ariannol Capital Investment at Financial Close





Gwasanaeth Ynni Energy Service







Cefnogi ymdrech Cymru i greu economi sero net llwyddiannus
Supporting Wales' drive to a successful net zero economy

3. Cyllid 3. Finance

Cronfeydd rydyn ni'n eu gweinyddu | Funds we administer



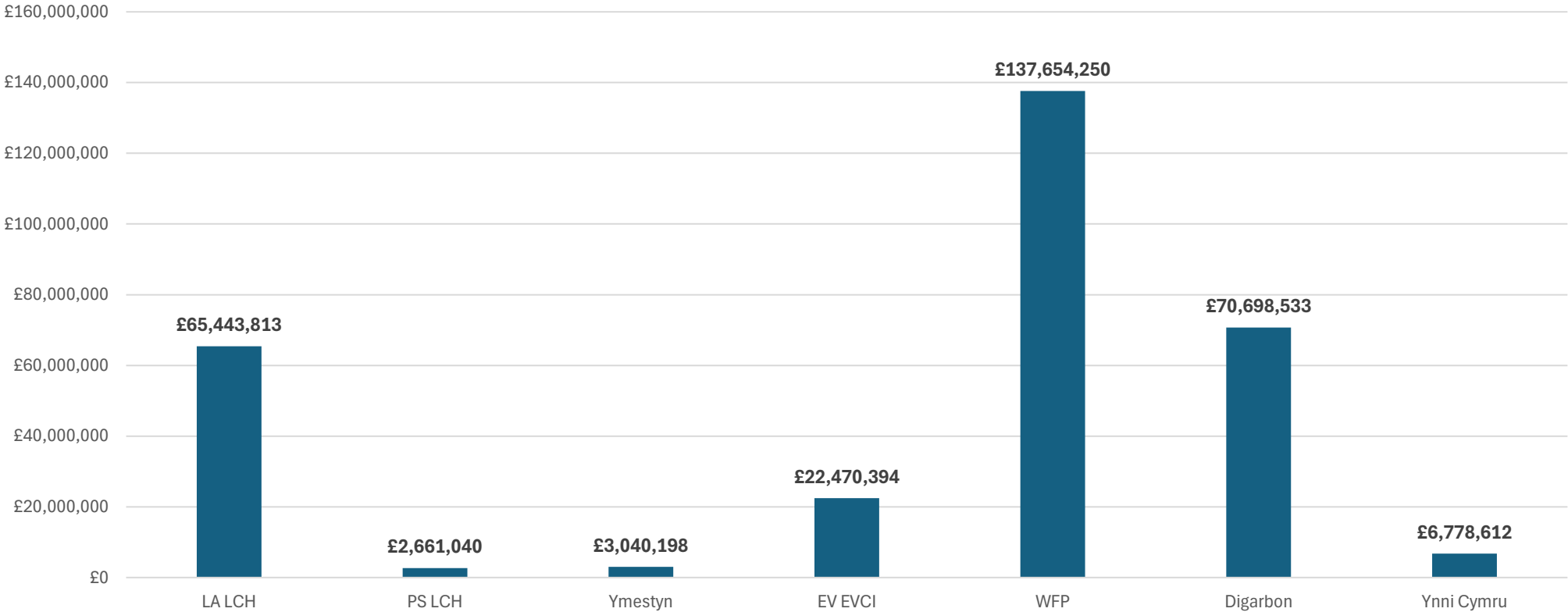
Gwasanaeth Ynni
Energy Service

| | | |
|---|---|--------|
|  | Gwres Carbon Isel ALI a SG LA and PS Low Carbon Heat | 90% |
|  | Grant cerbyd di-allyriadau a seilwaith gwefru cerbydau trydan ZEV & EVCI Grant | 90% |
|  | Grant SLES Ynni Cymru Ynni Cymru SLES Grant | 75% |
|  | Ymestyn Ymestyn | Top up |
|  | Grant Datblygu Development Grant | 50% |
|  | Arloesi Hinsawdd – Cronfa Atebion Newydd Climate Innovation – New Solutions Fund | New |

Cyllid LIC – 2018 i 2026 | WG Funding - 2018 to 2026

£308,746,840

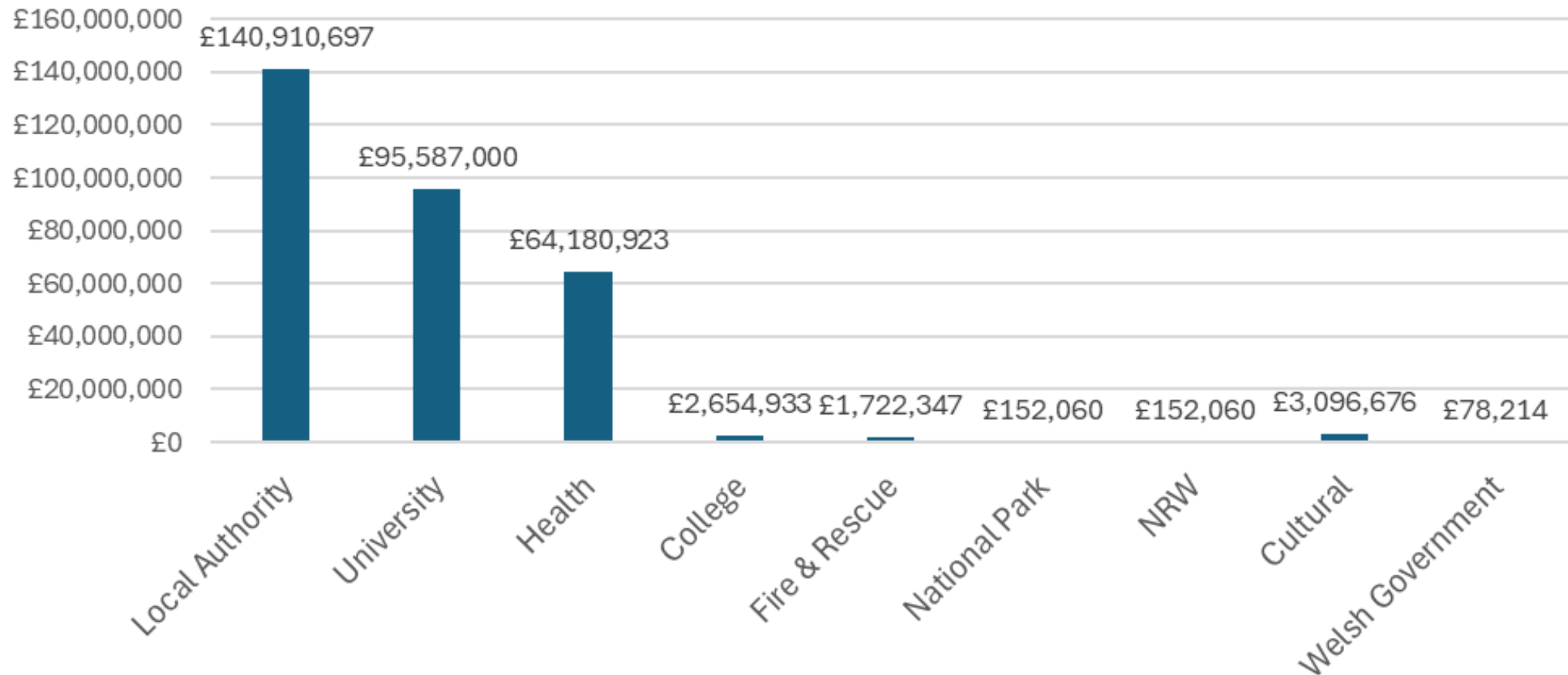
Adrannau Hinsawdd ac Ynni Llywodraeth Cymru ar gyfer y sector cyhoeddus
WG Climate & Energy divisions for the public sector



Cyllid LIC - 2018 i 2026 | WG Funding - 2018 to 2026

£308,746,840

Cyllid yn ôl Sector
Funding by Sector

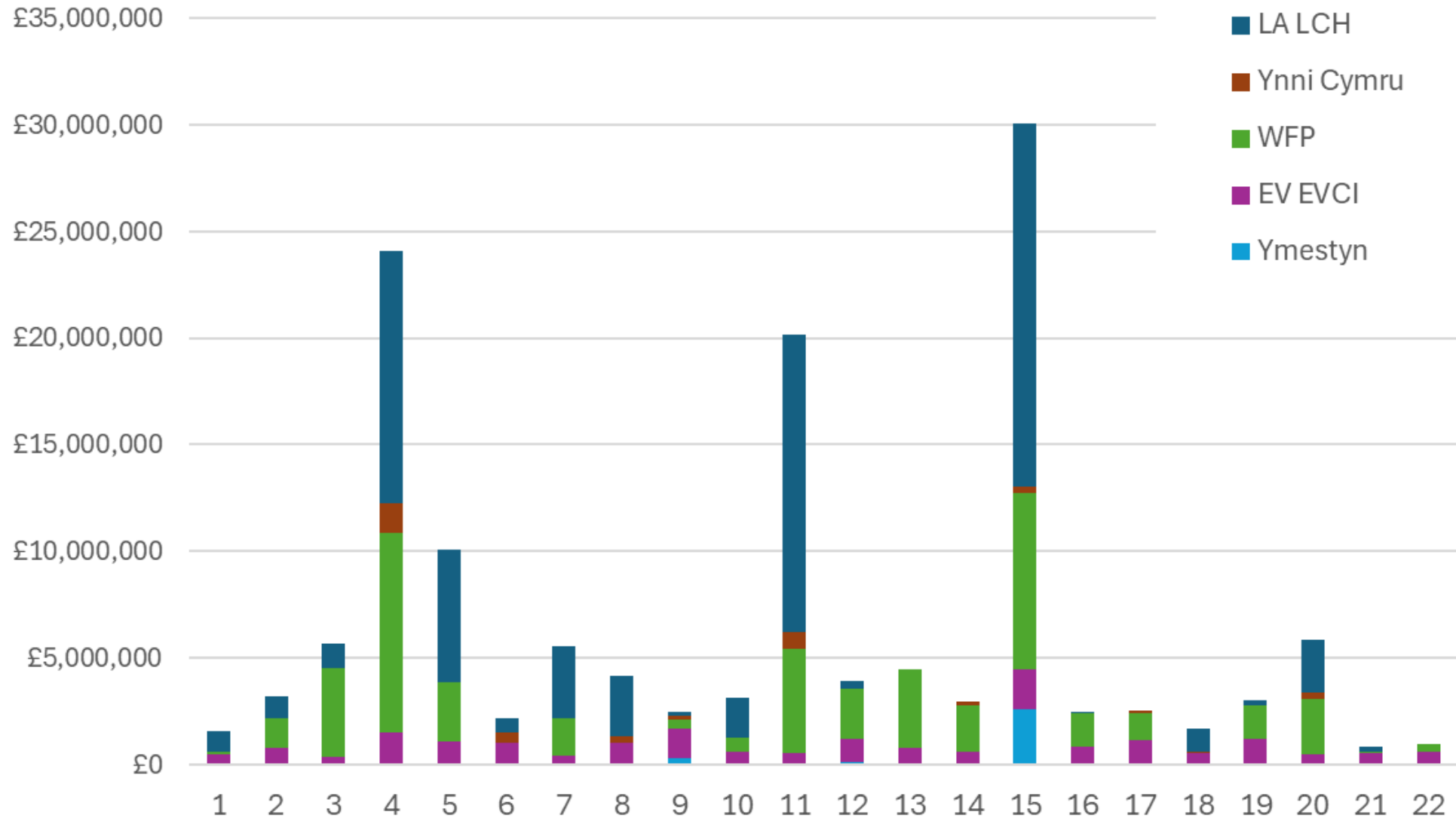


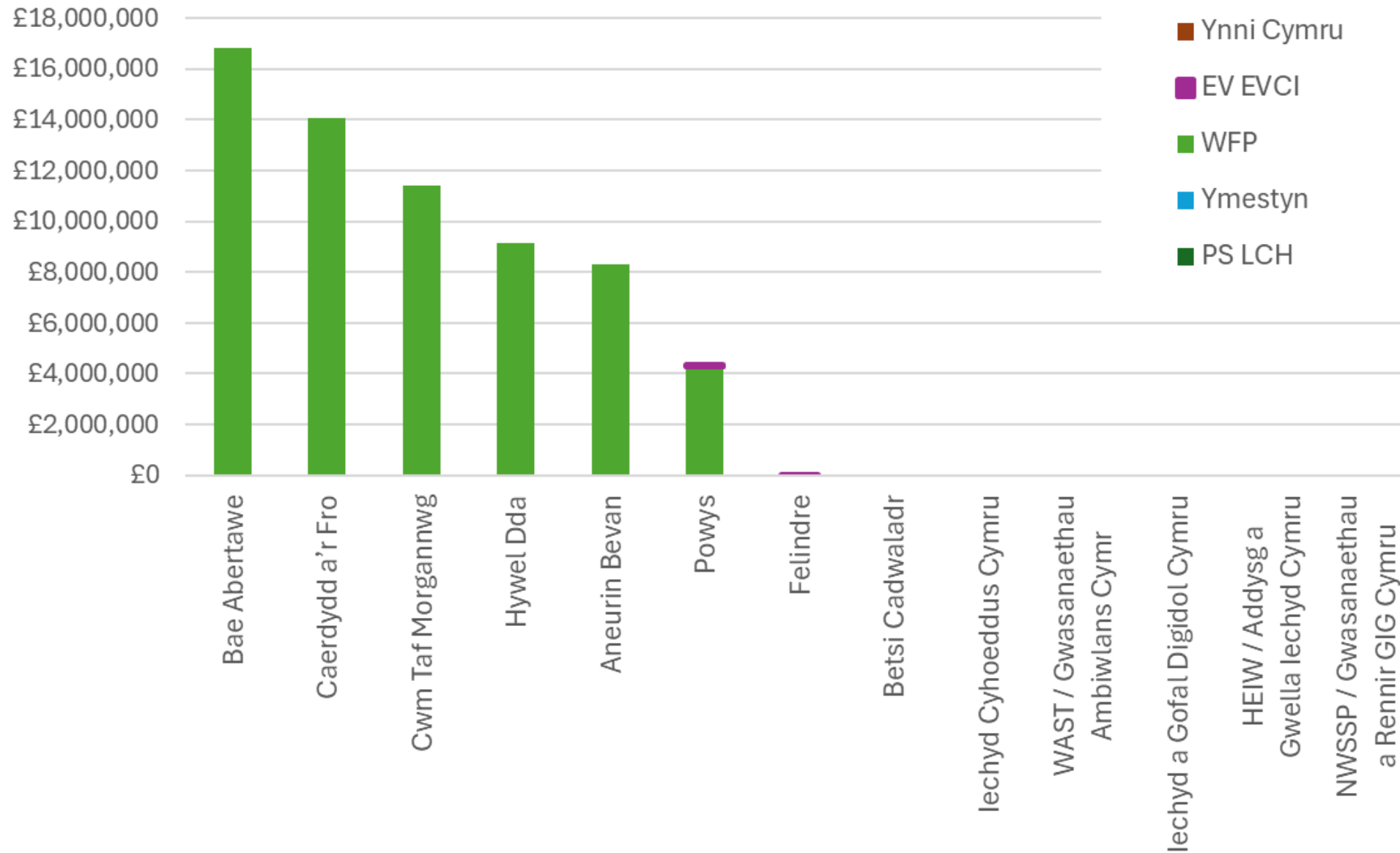
The following slides are sector-by-sector organisational breakdowns based on the WG PS Decarbonisation, Ynni Cymru (WG Energy Division) funding only, and LA Low Carbon Heat (WG Local Government Division).

This does not consider dedicated decarbonisation funding from other departments or discretionary funding for decarbonisation – for example, the NWSSP administered fund for health decarbonisation.

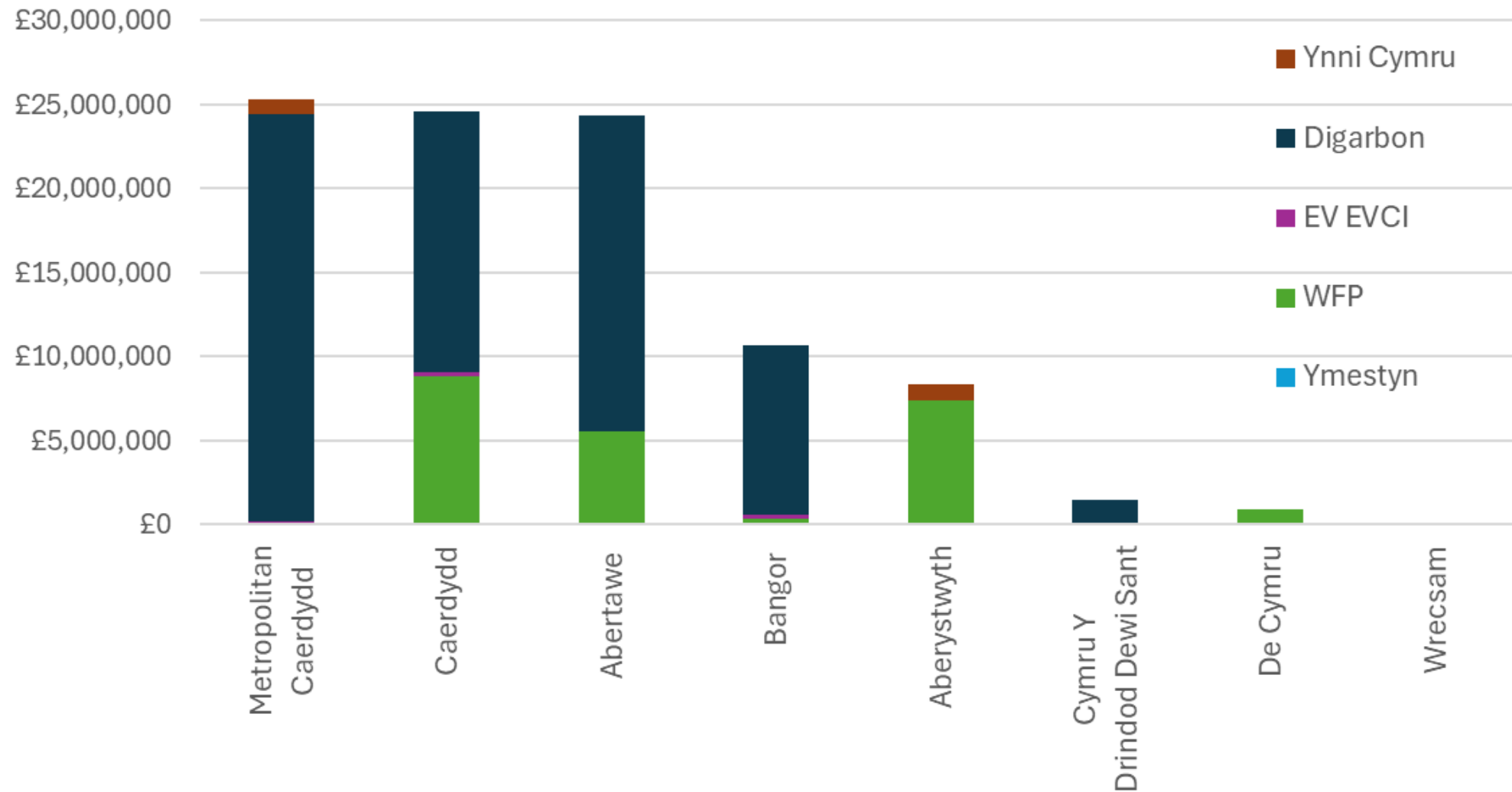
The data does not reflect internal capital, other borrowing, or revenue investment.

Awdurdodau Lleol | Local Authorities

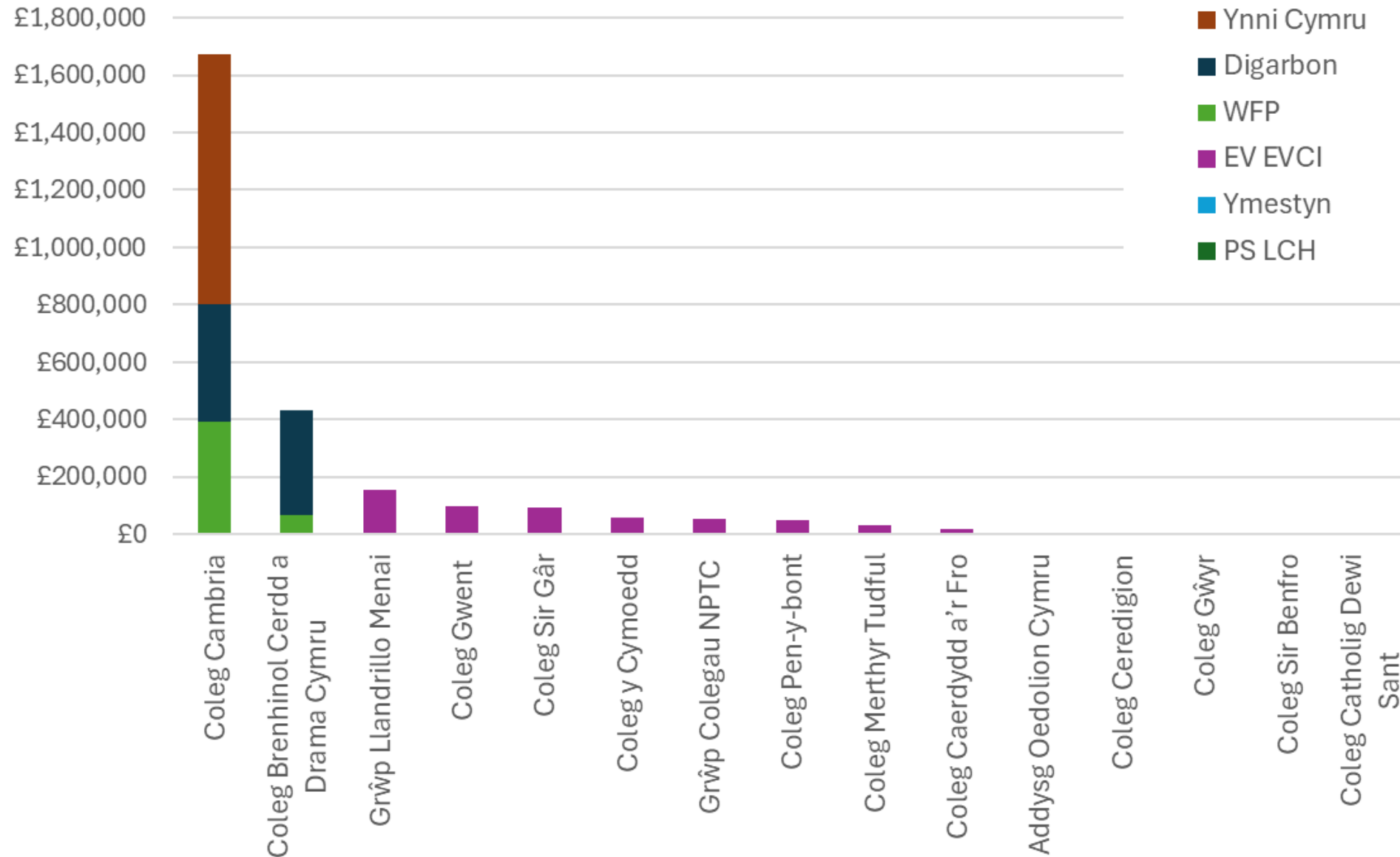


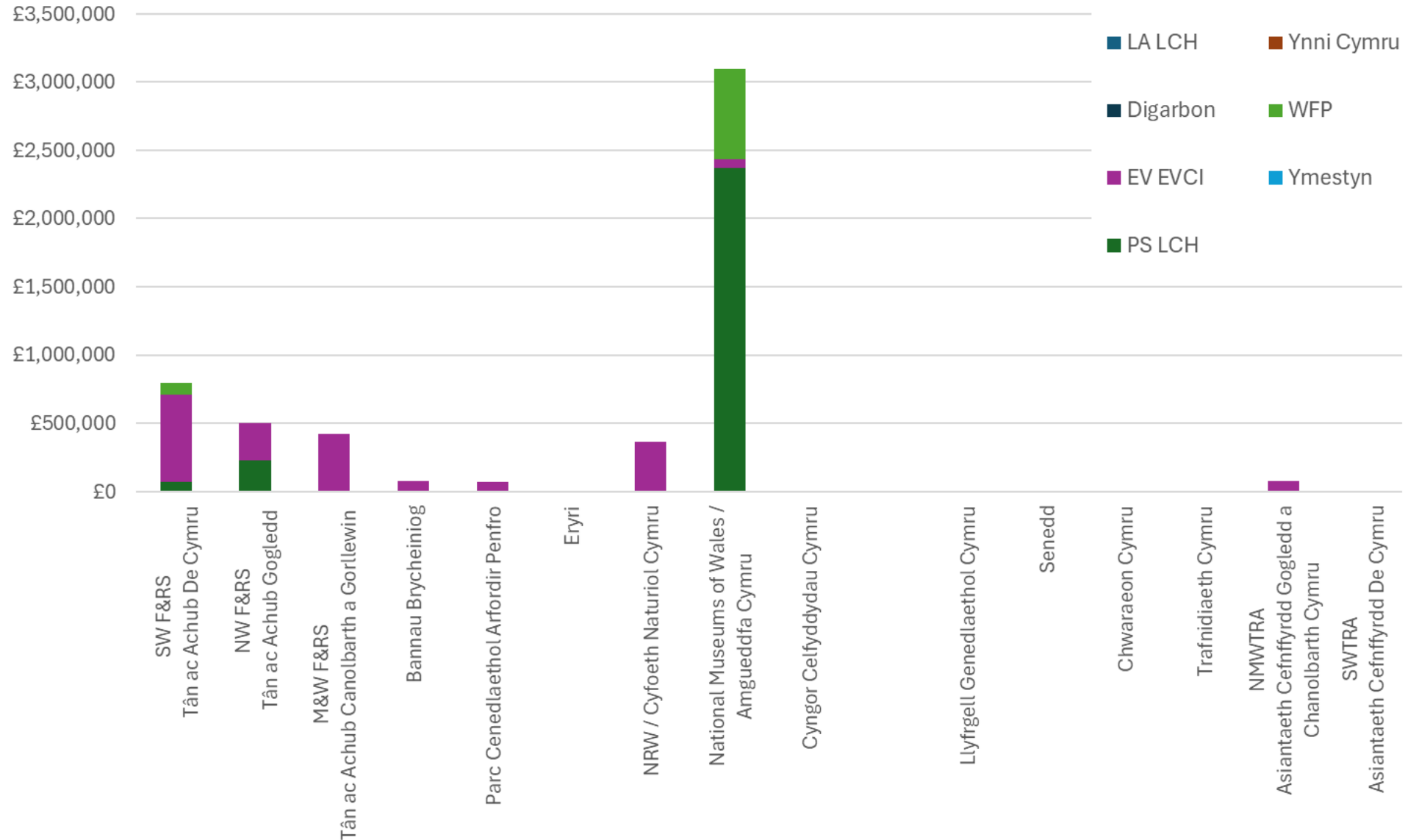


Prifysgolion | Universities



Colegau | Colleges



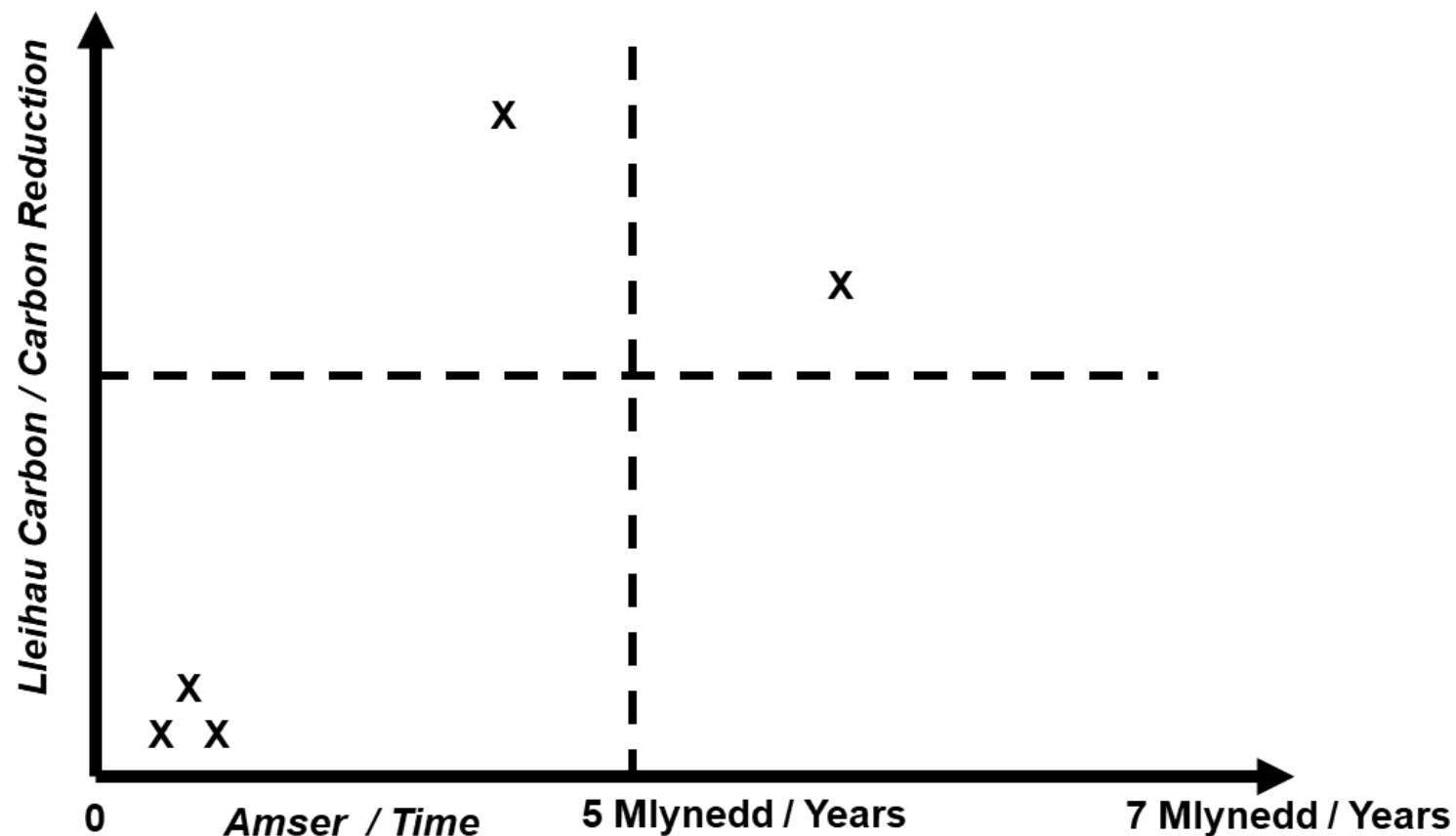


Hunan asesiad | Self assessment



Pa mor effeithiol yw eich rhaglenni a'ch prosiectau?

How impactful are your programmes & projects?



What are the barriers preventing your organisation from pursuing a more ambitious decarbonisation programme.

Resource 11

Funds 6

DNO 5

Capacity 4

Grant funding 4

Organisation 4

Short delivery 3

Dno timescales a huge barrier in fitting in with grant timescales

Estates strategy

No political buy in for decarb projects which increase energy costs

Aging estate

Reliance on grant funding Difficulty in developing a pipinr

Overall cost saving priorities outweighing carbon reduction ambitions

Short window of being able to spend money over multi year projects

Single year grant timescale

Conflicting prioritise

Huge infrastructure costs to improve insulation

Low gas / High electricity prices

Lack of strategic level direction or decision making

A clear management plan, identifying areas for improveme

Short term funding windows

Staff expertise and capacity

Pre grant work for viability of project

Low gas / High electricity prices

Currently working through the process but need to understand the fine detail of how the revenue payback works.

Financial risk

Supply DNO issues

Short delivery times

Unrealistic investment vs output expectations

Policy uncertainty.

Payback too long

Risk Aversion from partner organisations

What are the barriers preventing your organisation from pursuing a more ambitious decarbonisation programme.

Resource 11

Funds 6

DNO 5

Capacity 4

Grant funding 4

Organisation 4

Short delivery 3

Budget cuts

Short delivery times

Resource, governance,

Grant funding timescales

Other priorities taking resources

Staff resource

Poor quality support

Electrical sub station capacity limitations

Lack of granular local monitoring

Time

Technical knowledge

Budget cuts

Resources

Decision making / delays at an Executive Level

Funding priorities

Grant funding timescales

Overly Bureaucratic processes within organisation

Competing funding challenges

Lack of leadership

Resource availability

Fear of change

DNO

Procurement

Internal decision making processes



What are the barriers preventing your organisation from pursuing a more ambitious decarbonisation programme.

Cyswllt | Contact

Ar-lein | Online:

llyw.cymru/y-gwasanaeth-ynni-ar-gyfer-grwpiaur-sector-cyhoeddus-grwpiau-cymunedol
gov.wales/energy-service-public-sector-and-community-groups

X: [@_gwasanaethynni](#) | [@_energyservice](#)

E-bost | Email:

- ymholiadau@gwasanaethynni.cymru | enquiries@energyservice.wales
- **Gogledd a'r Canolbarth | North & Mid** : carwyn.davies@energyservice.wales
- **De a'r Dwyrain | South & East** : jane.forshaw@energyservice.wales
- **De-orllewin | South west** carwyn.davies@energyservice.wales or jane.forshaw@energyservice.wales



Fframwaith Caffael | Procurement Framework



- **Fframwaith caffael** – y gallu i gyfarwyddo cymorth ychwanegol yn ôl y gofyn
- **2 Lot** – Gwasanaeth Ynni (Lot 1), ac Adrodd Sero Net (Lot 2)
- **Consortiwm y Gwasanaeth Ynni** – Mae'r Ymddiriedolaeth Garbon a'r Ymddiriedolaeth Arbed Ynni yn cyd-arwain consortiwm o 14 o bartneriaid, gan weithio gyda Partneriaethau Lleol (Local Partnerships) fel arweinwyr strategol
- **Templedi dogfennau contract yn ôl y gofyn** – dogfennau contract i gyd-fynd â chontract fframwaith y Gwasanaeth Ynni
- **Rheolwr Fframwaith Llywodraeth Cymru** – cyswllt Buddug.Turner@llyw.cymru
- **Procurement framework** – ability to direct call-off additional support
- **2x Lots** – Energy Service (Lot 1), and Net Zero Reporting (Lot 2)
- **Energy Service consortium** – Carbon Trust & Energy Saving Trust co-lead a consortium of 14 partners, working with LP as strategic leads
- **Template call-off documents** – contract documents to align with the Energy Service framework contract
- **Welsh Government Framework Manager** – contacts Buddug.Turner@gov.wales



Gwasanaeth Ynni Energy Service

The Welsh Government Energy Service (“**WGES**”) is funded by the Welsh Government with the aim of developing energy efficiency and renewable energy projects that contribute to public sector decarbonisation and national energy targets. The WGES is delivered by the Carbon Trust, Energy Saving Trust and Local Partnerships (the “**Delivery Partners**”). This report (the “**Report**”) has been produced by the Delivery Partners and, whilst the views expressed in it are given in good faith based on information available at the date of this Report:- (i) these views do not necessarily reflect the views of the Welsh Government, which accepts no liability for any statement or opinion expressed in the Report; (ii) the Report is intended to provide general guidance only, rather than financial, legal or technical advice for the purposes of any particular project or other matter, and no-one in receipt of the Report should place any reliance on it in substitution for obtaining their own advice from an appropriate third party advisor; and (iii) any person in receipt of this Report should therefore obtain their own financial, legal, technical and/or other relevant professional advice insofar as they require specific guidance on what action (if any) to take, or refrain from taking, in respect of any project, initiative, proposal, involvement with any partnership or other matter to which information contained in the Report may be relevant; and (iv) the Delivery Partners accept no liability in respect of the Report, or for any statement in the Report and/or any error or omission relating to the Report.

Website gwasanaethynni.llyw.cymru | energyservice.gov.wales

Twitter [@_gwasanaethynni](https://twitter.com/_gwasanaethynni) | [@_energyservice](https://twitter.com/_energyservice)

Email ymholiadau@gwasanaethynni.cymru | enquiries@energyservice.wales

LinkedIn [Welsh Government Energy Service](#) | [Welsh Government Energy Service](#)

Amser egwyl

Time for a break

11:00-11:30



www.salixfinance.co.uk

salix 

Coleg Cambria

Sophie Hughes-Saunier



Taith Coleg Cambria i Sero Net

Journey to Net Zero



person
27,000
Myfyrwyr / Students

groups
1,500
Staff

domain
40
Adeiladau / Buildings

cloud
2,581 tCO₂e
Ôl-troed Carbon / Carbon
Footprint

Ein Nodau Strategol / Our Strategic Aims



Coleg Cambria Iâl — Bloc Elwy

Yale College — Elwy Building



1998



2,390 m²



195,777 kW



225,850 kW



10,000 kW



141 tonnell / tonnes CO₂e 



Ateb Technegol – Gwres Carbon Isel, Ynni Adnewyddadwy ar Safleoedd, Systemau Clyfar ac Isadeiledd

Technical Solution – Low Carbon Heat, On-Site Renewables, Smart Systems & Infrastructure

Cyllid / Funding: £1.2 m (Ynni Cymru 75%, Salix Digarbon 25%)



330kW

5 x ASHP | 1 x DHW



30 kW

150 paneli / panels



PAS 1899 EVCI

4 x 11kW Gwefrwyrr / Chargers

Casgliad a Gwersi a Ddysgwyd

Conclusion & Lessons Learnt



£18k

Arbedion Blynnyddol / Annual Savings



39 tonnell / tonnes

Gostyngiad Carbon / Carbon Reduction

Gwersi a Ddysgwyd / Lessons Learnt

- Cydweithio yn allweddol i lwyddiant y prosiect / Collaboration is key to project success.
- Pwysigrwydd monitro data mewn amser real / Importance of real-time data monitoring.
- Ymgysylltu â rhanddeiliaid yn gynnar / Engaging with stakeholders early in the process.
- Addasu i heriau technegol yn gyflym / Rapidly adapting to technical challenges.



Cynlluniau i'r Dyfodol

Future Plans



Rhaglen Ariannu Salix Cymru Salix Wales Funding Programme

- 290 kW PV
- Is-fesuryddu / Submetering



Ynni Cymru / Digarbon.3

- DHW ASHP, PV
- Synwryddion clyfar / Smart sensors, ZEV

Sesiwn Holi ac Ateb Q&A

Sophie Hughes-Saunier

Arbenigwr Cynaliadwyedd a'r Amgylchedd
Environmental Sustainability Specialist

phone 01978 267219

[email sophie.hughes-saunier@cambria.ac.uk](mailto:sophie.hughes-saunier@cambria.ac.uk)

[email sustainability@cambria.ac.uk](mailto:sustainability@cambria.ac.uk)



Ein Nodau Strategol / Our Strategic Aims



Gwasanaeth Tân ac Achub Gogledd Cymru **North Wales Fire and Rescue Service**

Tim Christensen

The Salix logo features the word "salix" in a lowercase, sans-serif font, followed by a stylized leaf icon to the right. The background of the entire slide is a photograph of a large solar farm with rows of blue photovoltaic panels stretching across a green field under a clear blue sky with some light clouds.

salix

North Wales Fire and Rescue Service



Gwasanaeth Tân ac Achub
Fire and Rescue Service

Net zero in practice: Wales' public sector
Venue Cymru, Llandudno

10th June 2026

Tim Christensen
Environment and Climate Change Manager



ATAL AMDDIFFYFN YMATEB
PREVENTING PROTECTING RESPONDING

www.tangogleddcymru.llyw.cymru
www.northwalesfire.gov.wales

About the Service

Who and what we protect

- Six counties: Anglesey, Gwynedd, Conwy, Denbighshire, Flintshire and Wrexham
- 2,400 square miles
- Resident population over 670,000
- 2 million overnight visitors every year

- 327 Wholetime and Apprentice Firefighters
- 511 Retained Firefighters
- 184 Control Room and Corporate Staff
- 9 Command & Department Heads



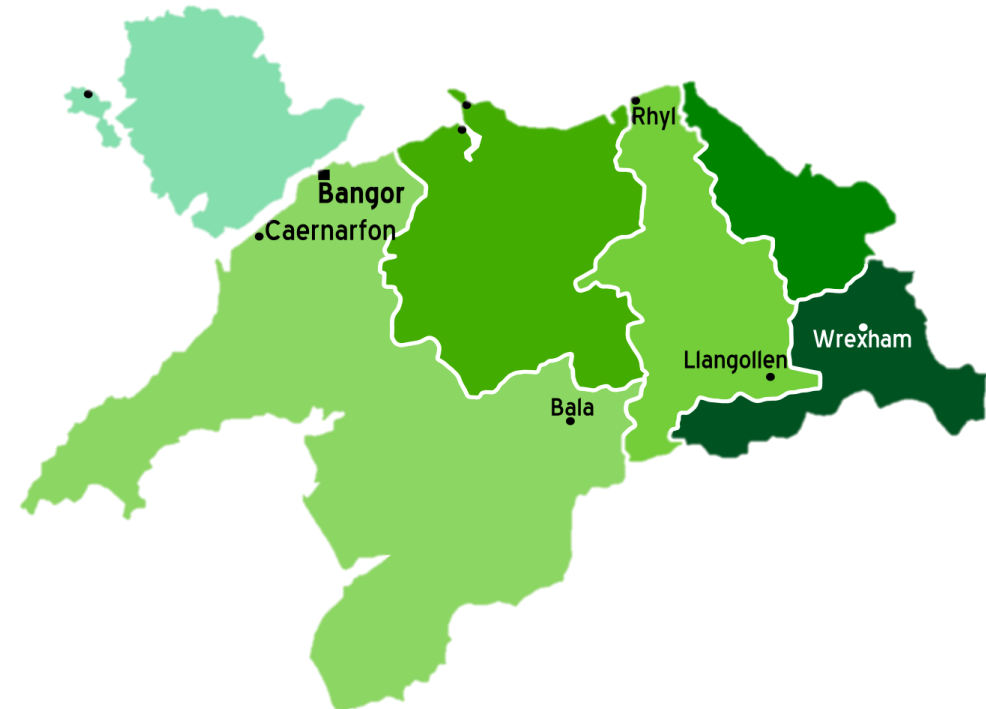
About the Service

Our estate and fleet

- Wholetime (24/7) – 3 stations
- Day crewed – 3 stations
- Retained – 38 stations

- 54 firefighting appliances
- 3 aerial ladder platforms
- 1 incident command unit
- 28 specialised response units (enviro / foam / HVP)
- 158 support and corporate vehicles

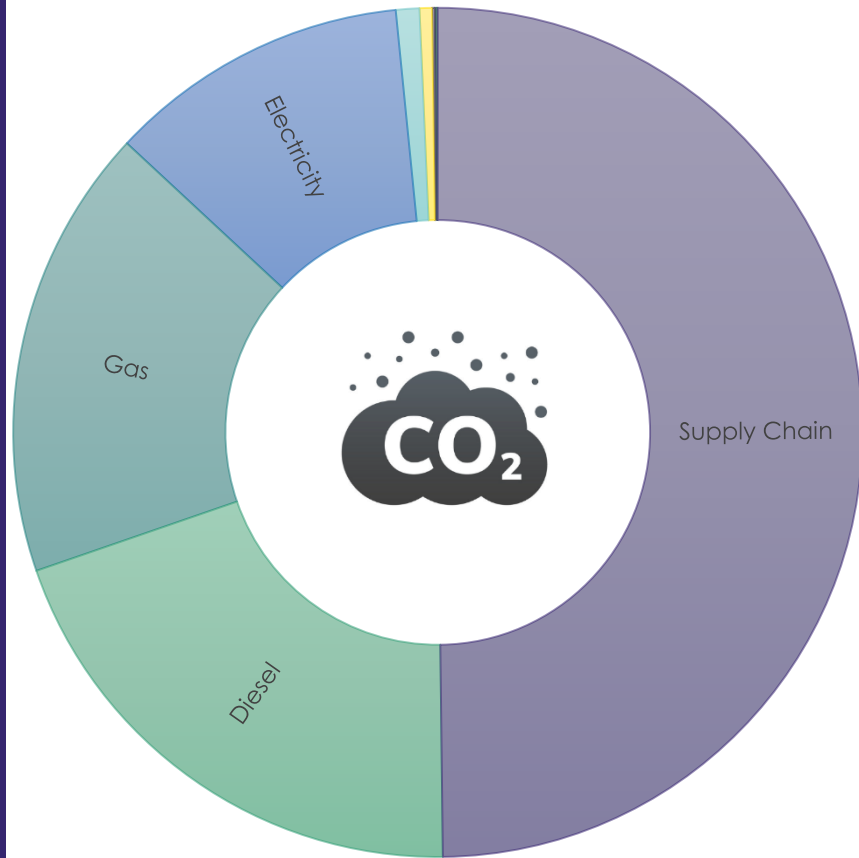
- Operating budget of £51.7m (2025/26)



What is our environmental impact?

Our carbon footprint

3,673 tCO₂e



- Supply Chain
- Diesel
- Gas
- Electricity
- Petrol
- LPG
- Sewage
- Water
- Waste



What are the most significant changes? Estates

- Efficiency refurb across whole estate
- No new gas/LPG heating systems since 31/03/2024
- Replacement of existing heating systems (targeted)
- Solar PV and battery storage
- Efficiency measures to reduce gas consumption where systems are to be retained past 2030



What are the most significant changes? Fleet

- EV charger rollout across estate
- Personal vehicle charging
- New cars and vans are EV since 01/01/2025
- Red fleet to transition to Hydrogenated Vegetable Oil (HVO) by 2030
 - Drop-in replacement, mix with mineral diesel
 - No adaptation required
 - Supply chain resilience / tanks at stations
 - Concerns over land use / mitigation
 - Fixed prices
 - Chemical stability – lifespan, temperature



Environmental Strategy 2023 - 2030



Diolch!
Thank you!

Ariannu Sero Net Funding Net Zero

Salix and WGES



Funding schemes

- Delivered by Salix
 - Digarbon round 3
 - Wales Funding Programme
- Delivered by WGES
 - Public Sector Low Carbon Heat Grant
 - ZEV and EVCI grant
 - Decarbonisation Project Design and Development Grant

Cynlluniau cyllido

- Cyflawnwyd gan Salix
 - Rownd 3 Digarbon
 - Rhaglen Cyllido Cymru
- Cyflwynwyd gan GYLC
 - Grant Gwres Carbon Isel y Sector Cyhoeddus
 - Grant ZEV a EVCI
 - Grant Dylunio a Datblygu Prosiectau Datgarboneiddio

Digarbon round 3

- **Delivered by:** Salix
- **Funding available:** £10.2m
- **Eligible organisations:** Further and Higher education sector
- **Type:** loan (2.45% interest)
- **Eligible technologies:** low-carbon, building fabric, energy efficiency, renewables, electric vehicles
 - Low carbon heating system project type
 - Fabric first project type
- **Closing date:** 25 June 2026 (2pm)
- **How to apply:** Application portal

Rownd 3 Digarbon

- **Darperir gan:** Salix
- **Cyllid ar gael:** £10.2m
- **Sefydliadau cymwys:** Y sector addysg bellach ac uwch
- **Math:** benthyciad (llog o 2.45%)
- **Technolegau cymwys:** carbon isel, deunydd adeiladu, effeithlonrwydd ynni, ynni adnewyddadwy, cerbydau trydan
 - Math o brosiect system wresogi carbon isel
 - Math o brosiect gwneuthuriad yn gyntaf
- **Dyddiad cau:** 25 Mehefin 2026 (2pm)
- **Sut i wneud cais:** Porth Ceisiadau

The impact of Digarbon so far

- **£70m** allocated
 - Driving large-scale decarbonisation across the public sector
- **3,300+ tonnes** of expected annual carbon savings
 - Supporting the path to Net Zero by 2030
- Average annual financial savings of **£47,000**
 - Helping organisations reduce operational costs

Effaith Digarbon mor belled

- Dyrannwyd dros **£70m**
 - Ysgogi datgarboneiddio ar raddfa fawr ar draws y sector cyhoeddus
- Disgwylir arbedion carbon blynyddol o dros **3,300 tunnell**
 - Cefnogi'r llwybr i sero net erbyn 2030
- Arbedion ariannol blynyddol cyfartalog o **£47,000**
 - Helpu sefydliadau i leihau costau gweithredol

Wales Funding Programme

- **Delivered by:** Salix
- **Eligible organisations:** all public sector bodies
- **Type:** loan (with 2.45% interest)
- **Eligible technologies:** energy efficiency and decarbonisation
- **When to apply:** Open for applications, funding paused
- **How to apply:** send application form and supporting documents to wales@salixfinance.co.uk
- Supporting document guidance on Salix website, incl. PMP

Rhaglen Cyllido Cymru

- **Darperir gan:** Salix
- **Sefydliadau cymwys:** holl gyrff sector cyhoeddus
- **Math:** benthyciad (gyda llog o 2.45%)
- **Technolegau cymwys:** effeithlonrwydd ynni a datgarboneiddio
- **Pryd i wneud cais:** Ar agor ar hyn o brydcyllid wedi'i oedi
- **Sut i wneud cais:** anfon ffurflen gais a dogfennau ategol at wales@salixfinance.co.uk
- Canllawiau dogfennau ategol ar wefan Salix, gan gynnwys PMP

Public Sector Low Carbon Heat Grant

- **Delivered by:** WGES
- **Eligible organisations:** public sector bodies (excluding local authorities, universities and health boards)
- **Type:** capital grant (up to 90%, 10% match funding required)
- **Eligible spend:** capital works for the retrofit of low carbon heat solutions
- **When to apply:** EOIs requested soon
- **Contact:**
lowcarbonheat@energyservice.wales

Grant Gwres Carbon Isel y Sector Cyhoeddus

- **Darperir gan:** GYLC
- **Sefydliadau cymwys:** cyrff sector cyhoeddus (ac eithrio awdurdodau lleol, prifysgolion a byrddau iechyd)
- **Math:** grant cyfalaf (hyd at 90%, rhaid cael 10% o arian cyfatebol)
- **Gwariant cymwys:** gwaith cyfalaf ar gyfer ôl-osod datrysiadau gwres carbon isel
- **Pryd i wneud cais:** Gofynnir am Fynegiannau o Ddiddordeb yn fuan
- **Cyswllt:**
lowcarbonheat@energyservice.wales

Zero Emission Vehicle and Electric Vehicle Charging Infrastructure Grant (ZEV a EVCI)

- **Delivered by:** WGES
- **Eligible organisations:** all public sector bodies
- **Type:** Capital grant
- **Eligible technologies:** ZEVs, EVCI and battery storage
- **When to apply:** TBC
- **How to apply:** Send EoI to transportgrant@energyservice.wales

Grant Seilwaith Codi Tâl Cerbydau Trydanol a Cherbydau Dim Allyriadau (ZEV a EVCI)

- **Darperir gan:** GYLC
- **Sefydliadau cymwys:** holl gyrff sector cyhoeddus.
- **Math:** Grant cyfalaf
- **Technolegau cymwys:** cerbydau heb allyriadau, seilwaith gwefru cerbydau trydan a storio batri
- **Pryd i wneud cais:** I'w gadarnhau
- **Sut i wneud cais:** Mynegi Diddordeb wrth transportgrant@energyservice.wales

Decarbonisation Project Design and Development Grant

- **Delivered by:** WGES
- **Eligible organisations:** all public sector bodies that complete Net Zero reporting
- **Type:** Capital grant, 50% of total D&D cost up to £100k
 - Max. award: £50k
- **Eligible spend:** design and development costs
- **When to apply:** TBC
- **Contact:**
enquiries@energyservice.wales

Grant Dylunio a Datblygu Prosiectau Datgarboneiddio

- **Darperir gan:** GYLC
- **Sefydliadau cymwys:** bob gorff sector cyhoeddus sy'n cyflwyno Adroddiadau Sero Net
- **Math:** Grant cyfalaf, 50% or D&D cost
 - Dyfarniad uchaf: £50k
- **Gwariant cymwys:** Gostau dylunio a datblygu
- **Pryd i wneud cais :** I'w gadarnhau
- **Cyswllt:**
enquiries@energyservice.wales

Amser cinio Lunch time

12:30-13:30

Peidiwch ag anghofio'ch taflen bingo!
Don't forget your bingo sheet!

www.salixfinance.co.uk



salix 

Who's your carbon hero?

- Based on discussions with your neighbour this morning
- Share a colleague's proudest achievement linked to net zero

Pwy yw eich arw carbwn?

- Yn seiliedig ar drafodaethau gyda'ch cymydog y bore yma
- Rhannwch gyflawniad mwyaf balch cydweithiwr sy'n gysylltiedig â sero net

Optimeiddio eich Cerbydau Trydan Optimising your Electric Vehicles

Jim Cardy



The Welsh Government Energy Service

The public sector fleet transition: progress so far, where it stalls, and what would move it faster.



Gwasanaeth Ynni
Energy Service



The ambition is shared



Gwasanaeth Ynni
Energy Service

Audit Wales' independent read across Wales' 48 largest bodies:

Progress underway

Audit Wales found genuine commitment and considerable activity across the public sector

Pace is vital

Their central recommendation was to increase the pace of delivery, a challenge within the sector's control

No doubt about the destination, but a question of delivery – and fleet is where progress can be demonstrated now

Targets and deliverables currently under review

Fleet is already moving



Gwasanaeth Ynni
Energy Service

The part of net zero that's already underway in every organisation – so it's worth getting right



Already in motion

Fleets renew on a rolling cycle, so procurement decisions are already being made every year. No new capital programme needed.



Proven & fundable

For cars and vans the tech is mature and the whole-life case increasingly stacks up. Even HCVs are now moving into the mainstream.



Measurable and reportable

Fleet emissions are among the easiest to quantify, and they feed directly into your statutory carbon reporting.

From a standing start to one in seven

<1%

2020



14%

of the public sector fleet is now
zero-emission

x7

In ~5 years

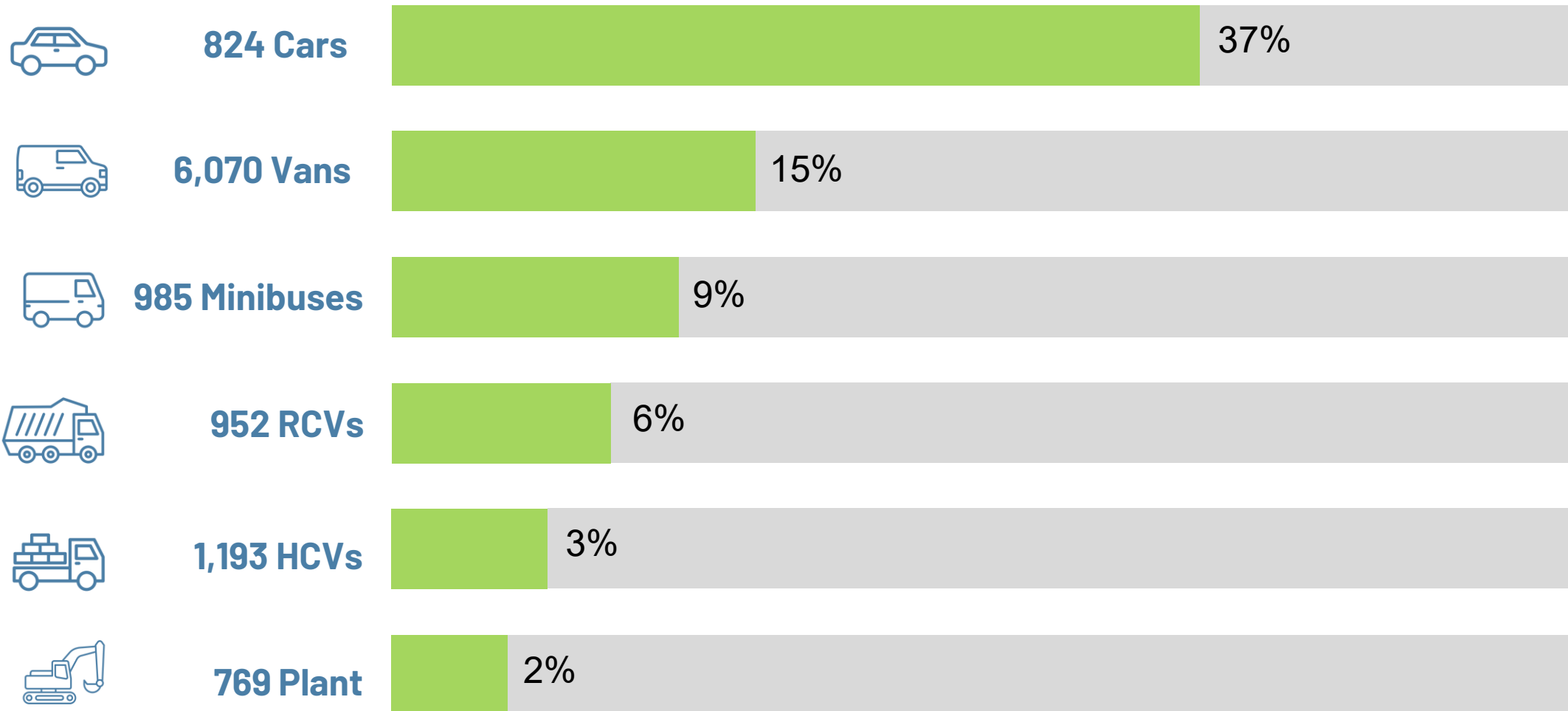
These are operational vehicles on everyday public sector
duty cycles

LA Progress

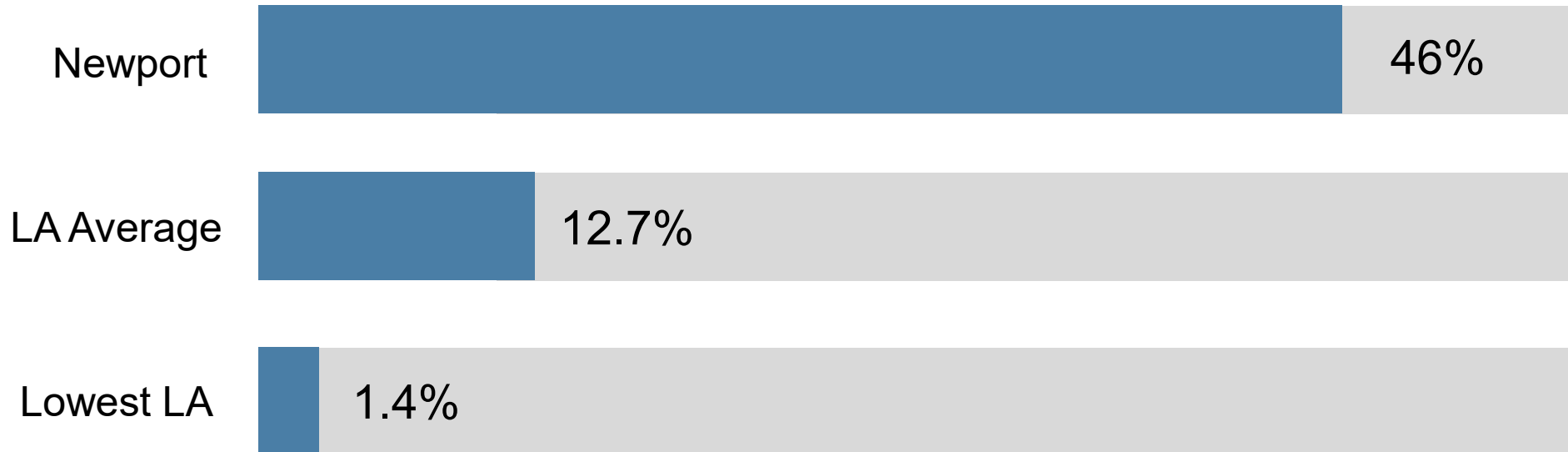



Gwasanaeth Ynni
Energy Service


Uptake across vehicle types – 9,653 in total, 1,223 ZEV's on the road




Same vehicle and same targets. A 33-fold difference in outcome



 Newport Urban

 Denbighshire Rural

 Merthyr Tydfil Valleys

 Neath Port Talbot Mixed

Not just easy wins

45.9%

of Newport's road fleet is
now zero-emission

Transition across a wide range of vehicle
types – not a fleet of small cars/vans

Cars

Vans

Specialist / operational

Heavier duty cycles

How they delivered – and how we helped

1

ZEV by default – the exec board agreed the rule – zero emission first procurement; diesel only where demonstrable case (usually nothing suitable on the market).

2

Ahead of the market – working with specialist suppliers on the framework to spot new vehicles early and run trials – staying at the front of the pack

3

Backed by Energy Service – grant funding, technical support and flexibility – keeping vehicle rollout and charging in step

Where progress stalls



590 vehicles new to fleet in 25/26 were not zero emission

“New to fleet” – 2025-26 = owned, long-term lease & long-term lease hire (not short-term hire)

344

58% - genuine constraints

246

42% - avoidable

Some of the 344 may be explained

3.5t vans, 3.5t tippers, 4x4 LCVs – where a capable ZEV equivalent isn't always available.

The 246 that should have been ZEV

106 cars + 140 vans – where a viable ZEV equivalent exists, but diesel was purchased

Decision making

246

106 cars + 140 vans

Each has viable ZEV equivalent

A default set the wrong way at the moment of purchase.

Every diesel purchased today locks in 7-15 yrs of emissions, oil imports, and high maintenance costs.

Replacement cycle forecasting is vital.

Financial support



Gwasanaeth Ynni
Energy Service

The support is open to all. Take up is uneven.

10x

difference in applications to our grant programme between authorities

Open to all public bodies

Yet applications vary hugely across Wales – uneven applications track uneven progress closely

How the Energy Service can help



For the hard 344

Whole-life costing on emerging models, trials and grid-aware depot planning – so you're ready for when the vehicles arrive



For the 246

Data-led fleet reviews that robustly test ZEV viability for decision makers



For the funding gap

The grant programme is open to all – get in touch to discuss bids*

One ask: before you agree vehicle replacement – talk to us first

transport@energyservice.wales

*26/27 funding still to be confirmed



Cyngor Sir Ddinbych
Denbighshire County Council
Martyn Smith

salix 

Maximum gain from solar PV: battery storage and EV charging

Martyn Smith, Property Energy and Carbon Manager,
Denbighshire County Council

Today's talk

1. A short recap
2. Human Evolution
3. A better understanding
4. Completed Projects
5. Quantum Superposition (Quantum mechanics)
6. Two birds (cats?) with one stone?
7. Lessons learnt

How it started



H. sapiens



c.200,000 to present.

Have the ability to store, retrieve, analyse and utilise data to inform opinions.

Most importantly – learn from experience.

H. Sapiens sapiens



Present.

Larger energy team, more data, greater understanding of limitations of heatpumps.

ADDENDUM

..... And batteries.

..... And EV charging

...And...



2 x 14kW ASHP

14.4kW PV

2 x 8.2kWh batteries

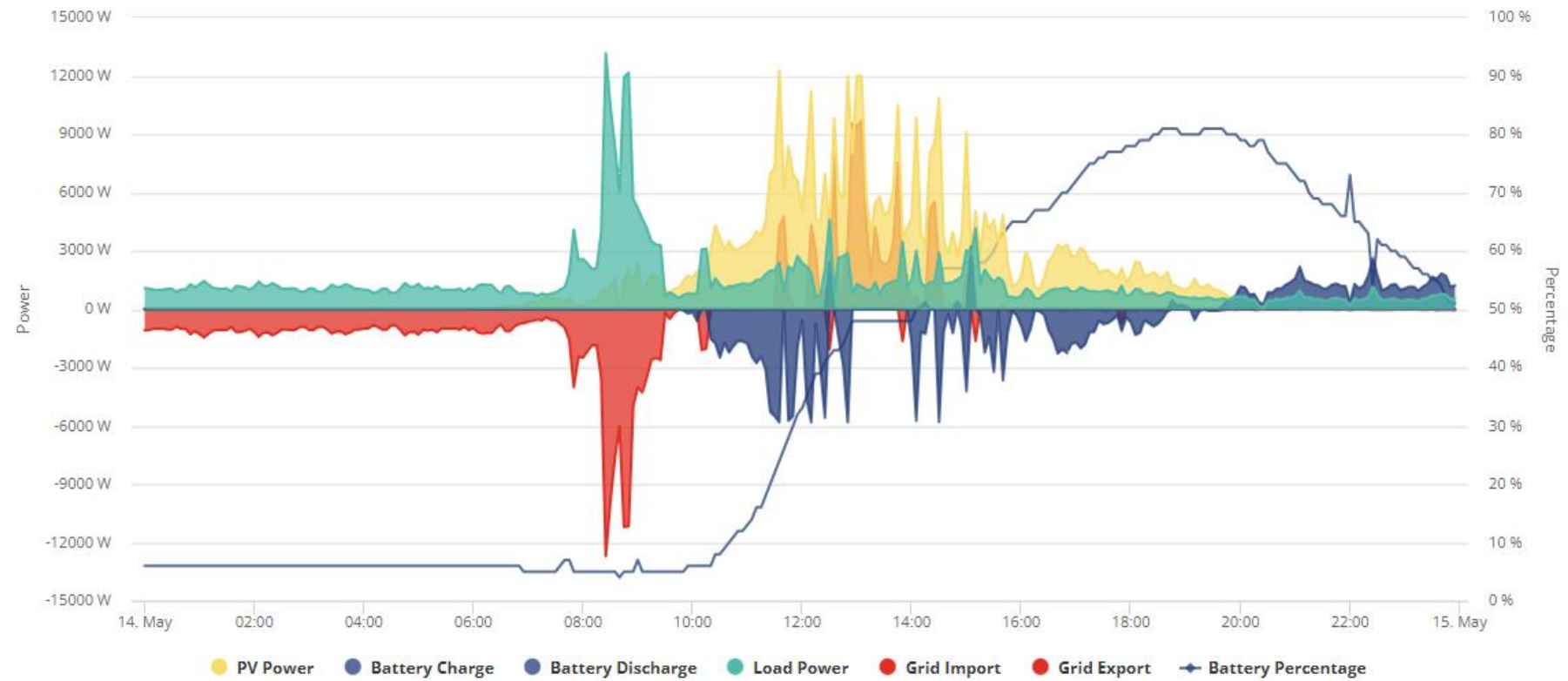
LED lighting

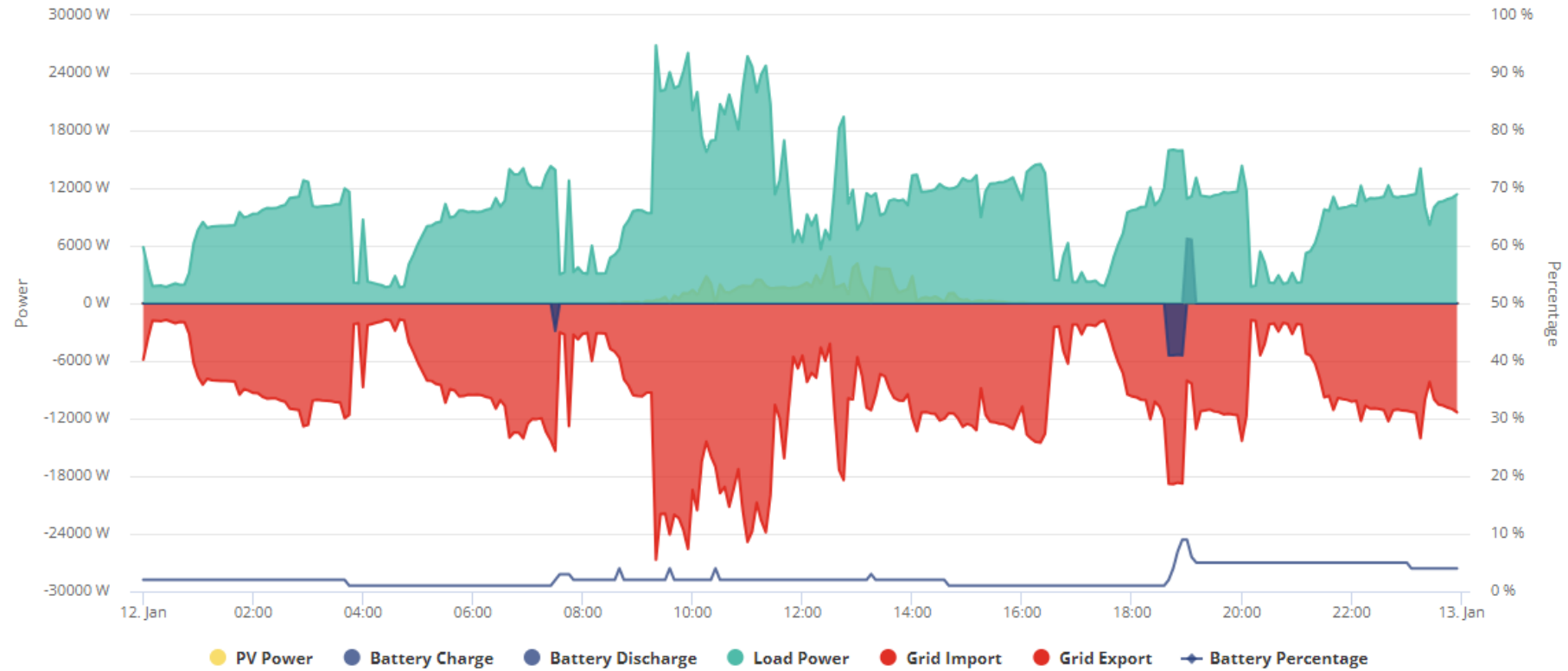
Loft insulation

CWI

New windows

Water heater timers





Uses for surplus PV generation

- Surplus generation is inevitable due to poor match between generation and load profile.
- This can be significant but can be utilised elsewhere:
 - EV charging
 - Battery storage
 - Somewhere else?

Cysgod y Gaer, Corwen



Carehome

Independence at home support workers use EV's 7 days per week

EV charging and consumption data was used.

Cysgod y Gaer, Corwen



Cysgod y Gaer, Corwen



East/West PV arrays have different output profiles to south facing.

We have an East/West and South arrays. Each aspect circa 10kW.

Cysgod y Gaer, Corwen



Installed a 40kWh battery
with a 15kW inverter

Installed an additional
21.36kWh of PV

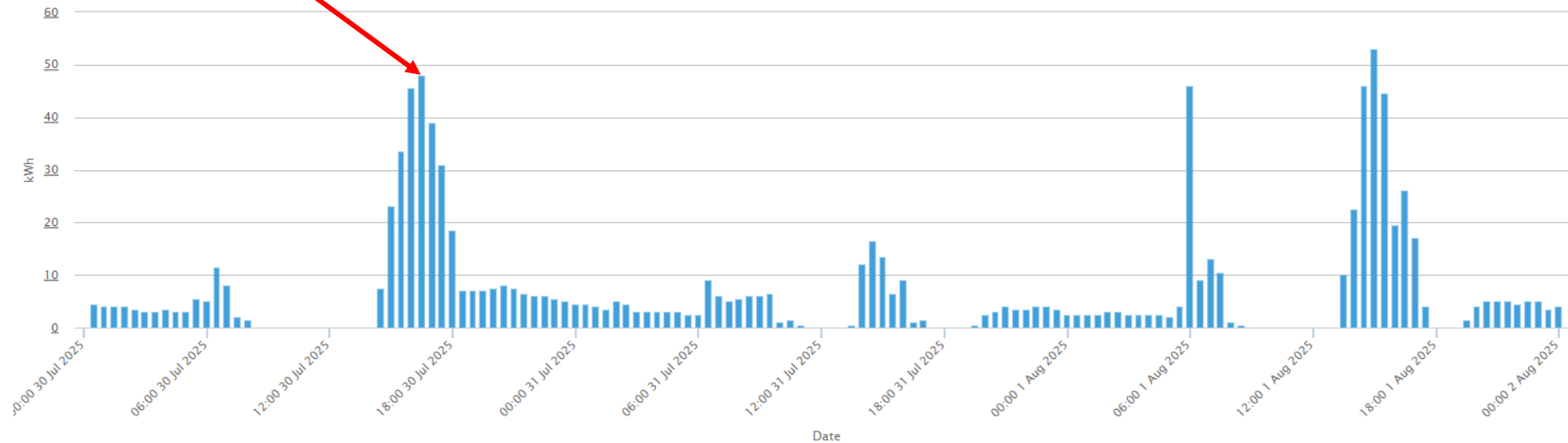
Battery had to be 4m
away from building

Waste Transfer Station Denbigh



Waste Transfer Station Denbigh

Vans 'come home' to charge after PV stops generating



A 'typical' half hourly profile over 3 days

Waste Transfer Station Denbigh



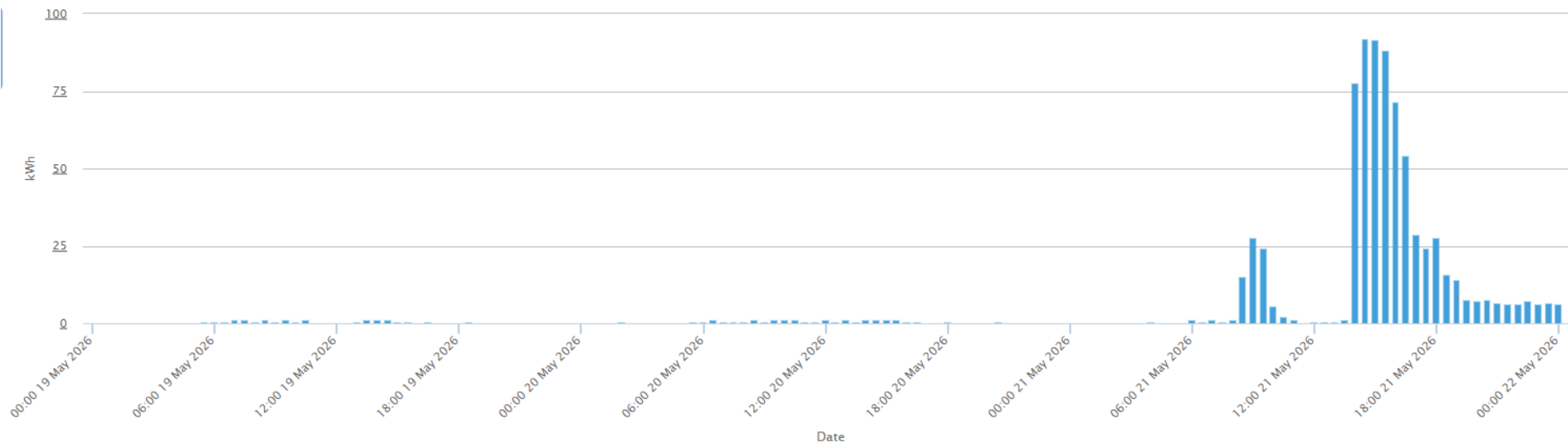
3 x 200 kWh batteries

Each with a 60kW inverter.

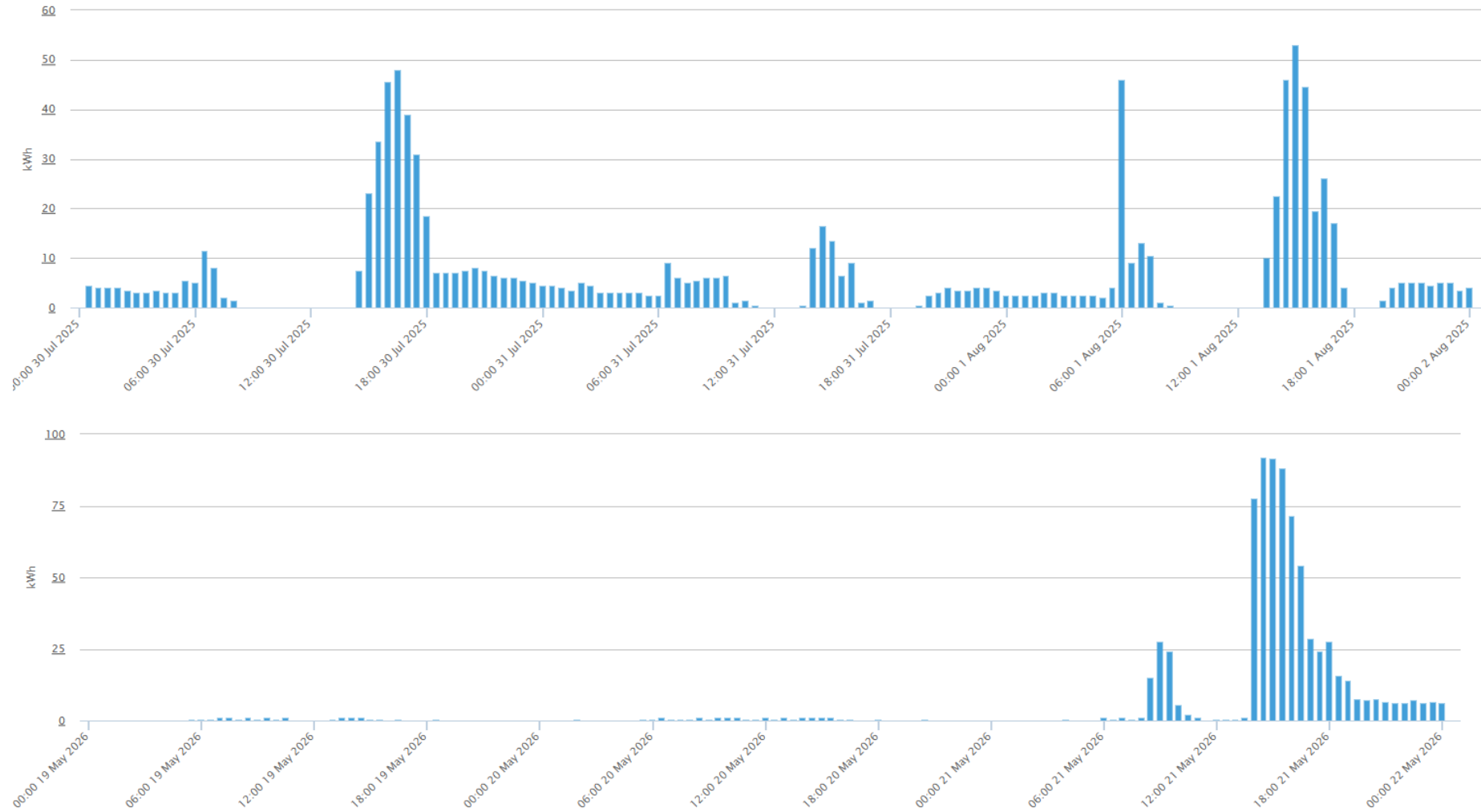
Raised min of 18” above ground level

Far away from fire risks.

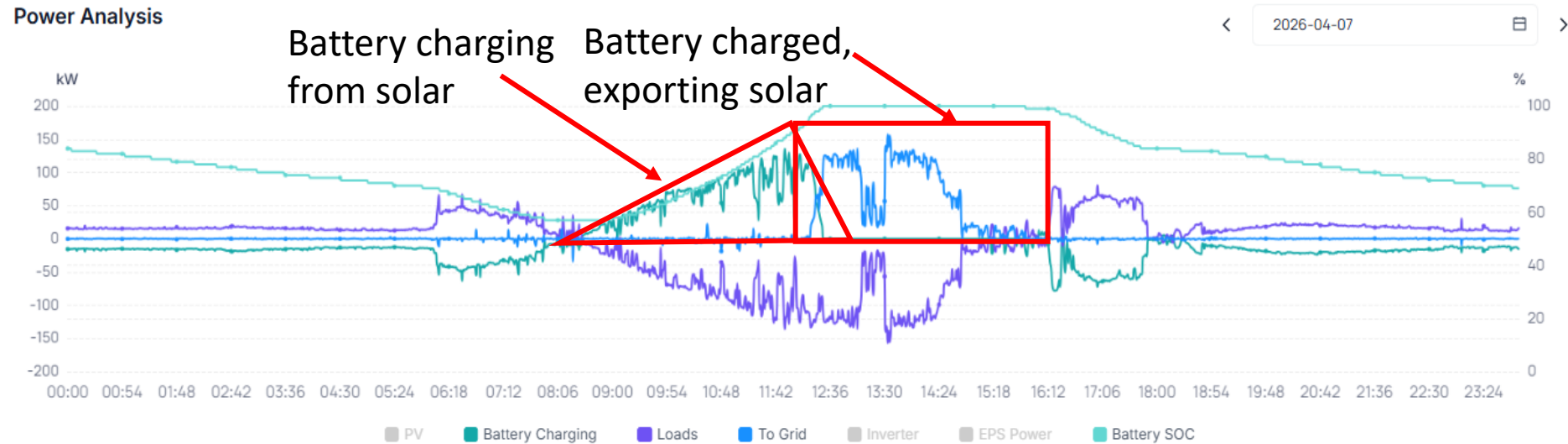
Waste Transfer Station Denbigh



A 'typical' half hourly profile over 3 days



Battery charge/discharge performance.

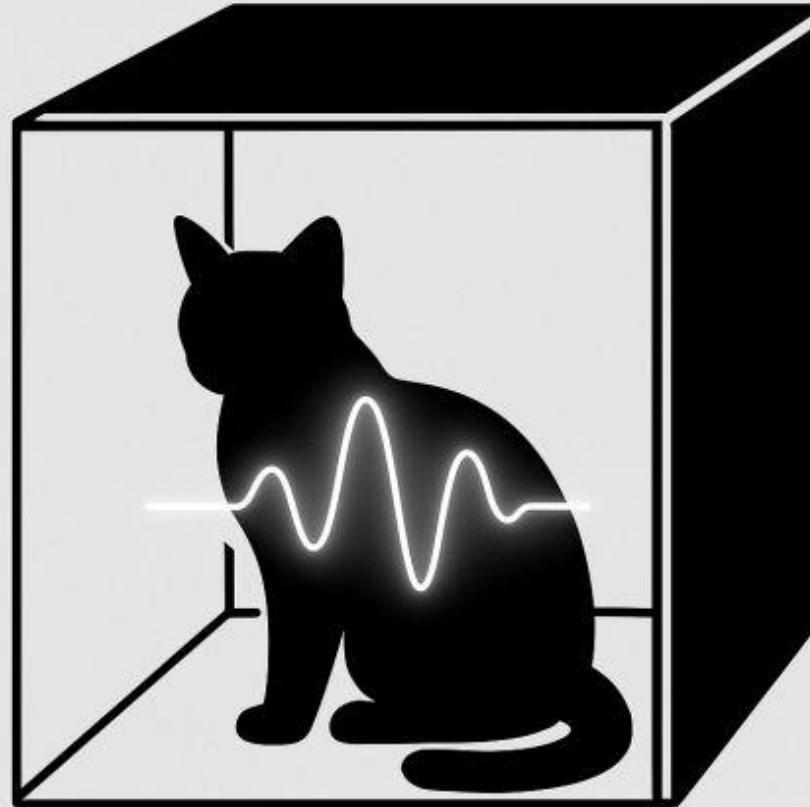


Very good match but still unavoidable export.

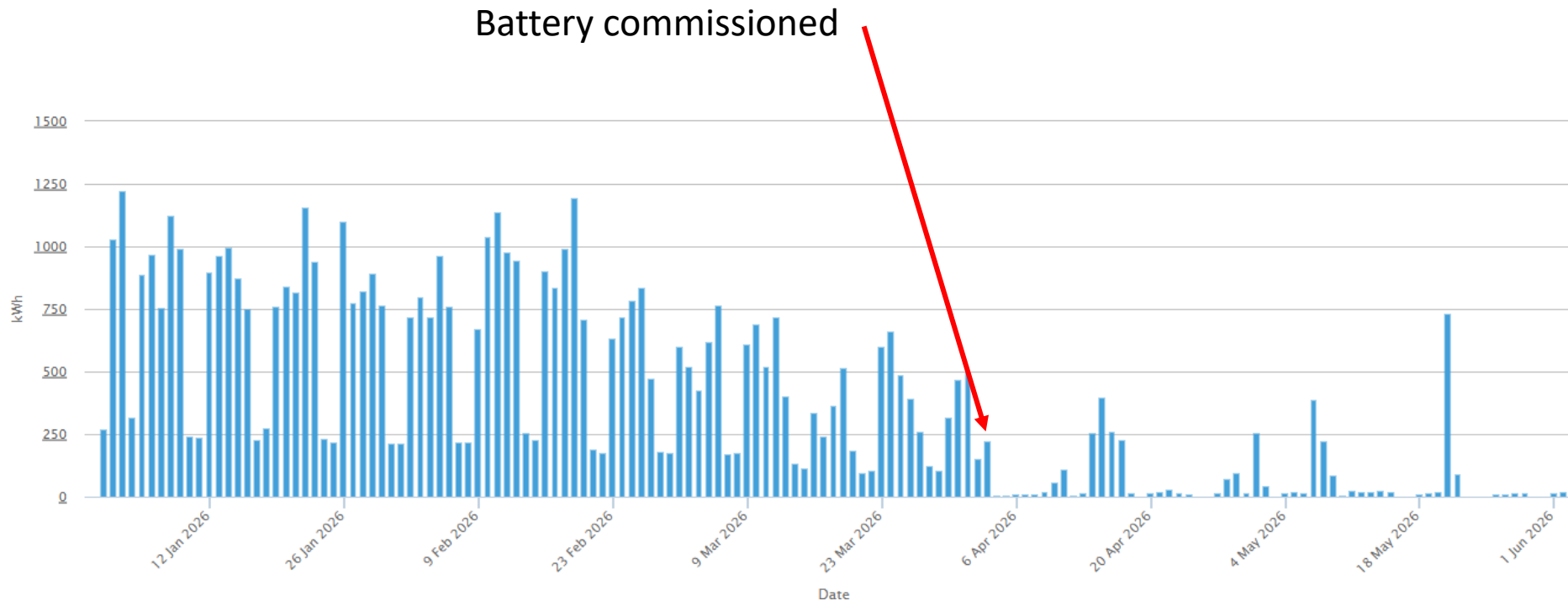
BATTERY STORAGE:
Is the battery –
Too big?
Too Small?
Or BOTH?



**SCHRÖDINGER'S
CAT — ALIVE,
DEAD... OR BOTH?**



Impact on consumption



Daily consumption pre and post battery installation

WTS Battery figures

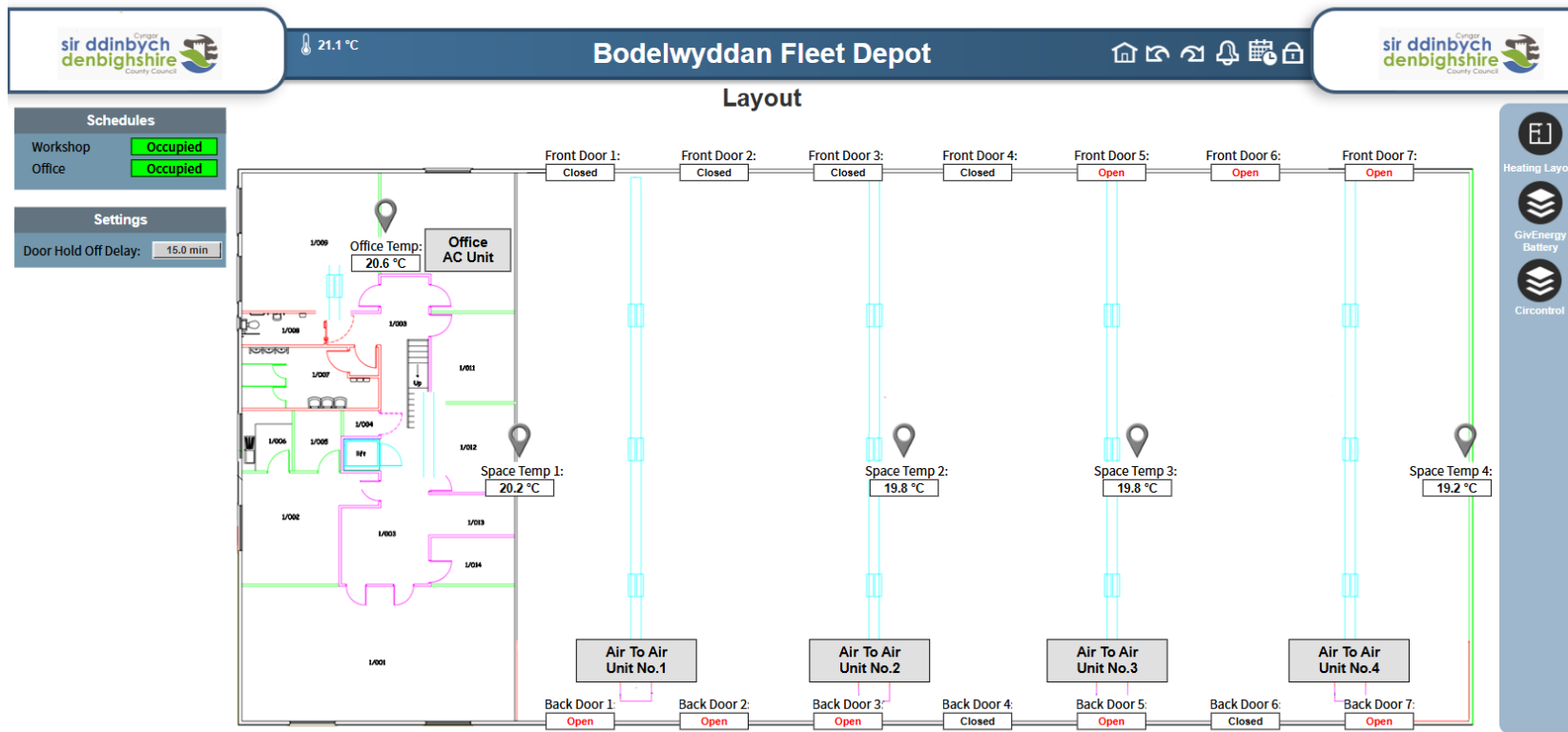
| Period | Total (period) | Min (day) | Ave (day) | Max (day) |
|-----------------|----------------|-----------|-----------|-----------|
| Apr to Jun '25 | 10,854 kWh | 35.5 kWh | 175.1 kWh | 485.5 kWh |
| Apr to June '26 | 4,618 kWh | 0.5 kWh | 74.5 kWh | 732 kWh |
| Change | -57% | -99% | -57% | +51% (?) |

The weather shows significant variance. Total loading can be inconsistent, subject to demands on site.

Uses for surplus PV generation

- Surplus generation is inevitable due to poor match between generation and load profile.
- This can be significant but can be utilised elsewhere:
 - Cooling
 - EV charging
 - Battery storage

Smart Local Energy Systems



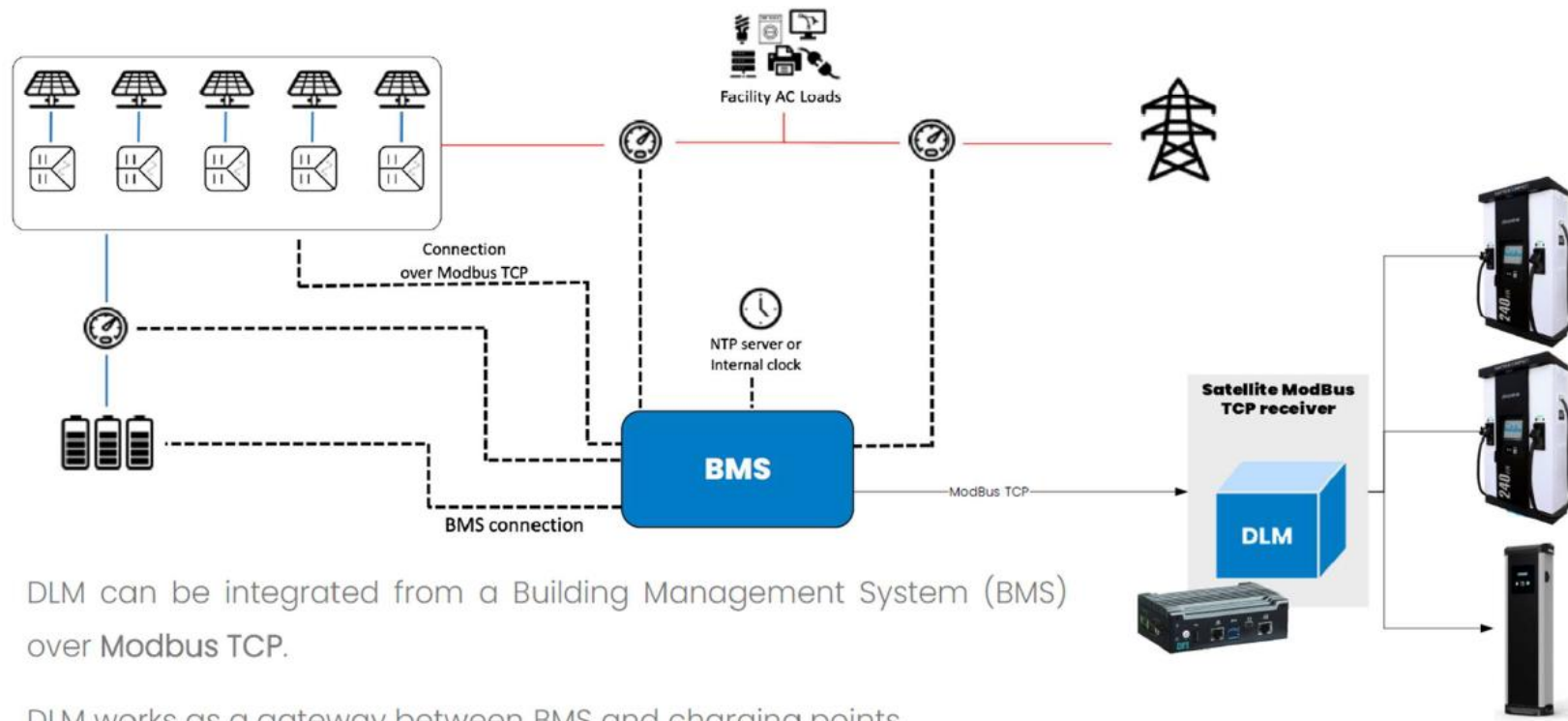
Cooling



Dynamic load management

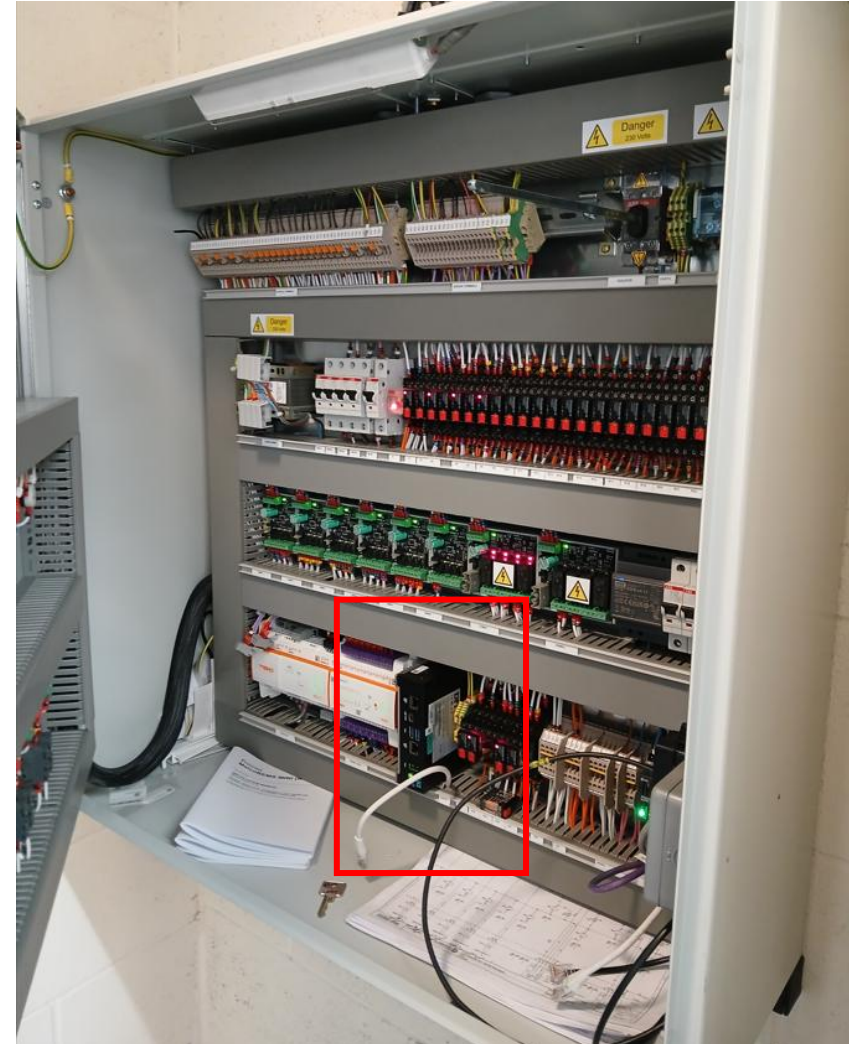
Modbus TCP

aircontrol



DLM can be integrated from a Building Management System (BMS) over Modbus TCP.

DLM works as a gateway between BMS and charging points.



Lessons

- Solar PV generation doesn't charge batteries; it can and will when there is capacity (either way)
- Detailed and accurate consumption/generation modelling is critical.
- Batteries have a whole host of fire considerations.
- Just because you paid for a new 500kVA substation doesn't mean SPEN will let you connect 500kVA.

Lessons (2)

- Grid connection/limitation is becoming more frequent – not less
- Batteries can be too big, too small and both at the same time
- Load shifting/management is critical (SLES?):
 - Cooling can use ‘surplus load’ & avoid export limitation
 - Dynamic load management (EV’s) can assist
 - Vehicle to grid has a marginal, but worthwhile impact
 - This is the only way we can get close to net zero.

Mapio rhwystrau ar gyfer datblygu prosiect Barrier mapping for project development

Sesiwn Grŵp

Breakout session



Overview

- Explore the barriers faced during project development
- Work in groups, assigned a sector
 - Local Authority
 - Education
 - Health board
- Worksheet to support discussions
- Add examples to Slido
- Finish session with a whole group discussion

Trosolwg

- Archwilio'r rhwystrau a wynebir wrth ddatblygu prosiect
- Gweithio mewn grwpiau, neilltuo sector
 - Awdurdod Lleol
 - Addysg
 - Bwrdd Iechyd
- Taflen waith i gefnogi trafodaethau
- Ychwanegu enghreifftiau at Slido
- Gorffen y sesiwn gyda thrafodaeth grŵp cyfan

Assigned sector:

Barrier mapping for project development



| Project description | Barrier <i>Detail the obstacle</i> | Solution <i>Action(s) to overcome barrier</i> | Lessons learnt <i>Learnings to take forward</i> |
|----------------------------|--|---|---|
| | | | |
| | | | |
| | | | |



Points to discuss

- 15 minutes to discuss
- Discussion points
 - What was difficult when developing the project?
 - Was sourcing funding difficult?
 - How did you overcome the barrier?

Pwyntiau i'w trafod

- 15 munud i drafod
- Pwyntiau trafod
 - Beth oedd yn anodd wrth ddatblygu'r prosiect?
 - A oedd dod o hyd i gyllid yn anodd?
 - Sut wnaethoch chi oresgyn y rhwystr?



Slido code:
1659 225



Diolch am ymuno heddiw! Thank you for joining today!

Mae croeso i chi ddefnyddio'r amser hwn i ofyn cwestiynau
Feel free to use this time to ask questions

www.salixfinance.co.uk

salix 