

REPORT TO THE CARE SCRUTINY COMMITTEE

Date:	September 2022
Title:	Update on the New Energy Service
Purpose:	To update the Committee on the operation of the New Energy Service along with the Climate Change work
Contact officer:	Carys Fôn Williams, Head of Housing and Property Department
Cabinet Member:	Cllr Craig ab Iago

1. Introduction / Background

- 1.1 The purpose of this report is to provide an update on the New Energy Service, detailing what has happened, what is in the pipeline and what has been planned for the next few months. In addition, we will report on the Carbon Management Plans and how these intertwine with the Climate Change work and the climate emergency to which the Council has committed.
- 1.2 At its meeting on 15 December, 2020 the Cabinet approved the **Housing Action Plan for 2020/21-2026/27** - a plan worth £77m that has various projects with one specifically concerning Energy conservation in the domestic sector:
- Set up a new Energy Conservation service for home-owners
- 1.3 Since 2010, the Council has taken action on reducing carbon in our operational buildings but this is the first time we have examined de-carbonisation in private homes. We will elaborate on the carbon reduction work in the second part of the report.
- 1.4 The aim of the Housing Action Plan is to "Ensure that the people of Gwynedd have access to a suitable home of a high standard, that is affordable and improves their quality of life." Of course, part of this is ensuring that homes are heated as effective as possible and at an affordable cost.

Part 1 - New Energy Service

2. A look at individual projects and fields

Field / project:	De-carbonising homes	Reference
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2.1. Background

2.1.1. Gwynedd's housing stock is among the worst in terms of energy performance in Britain.

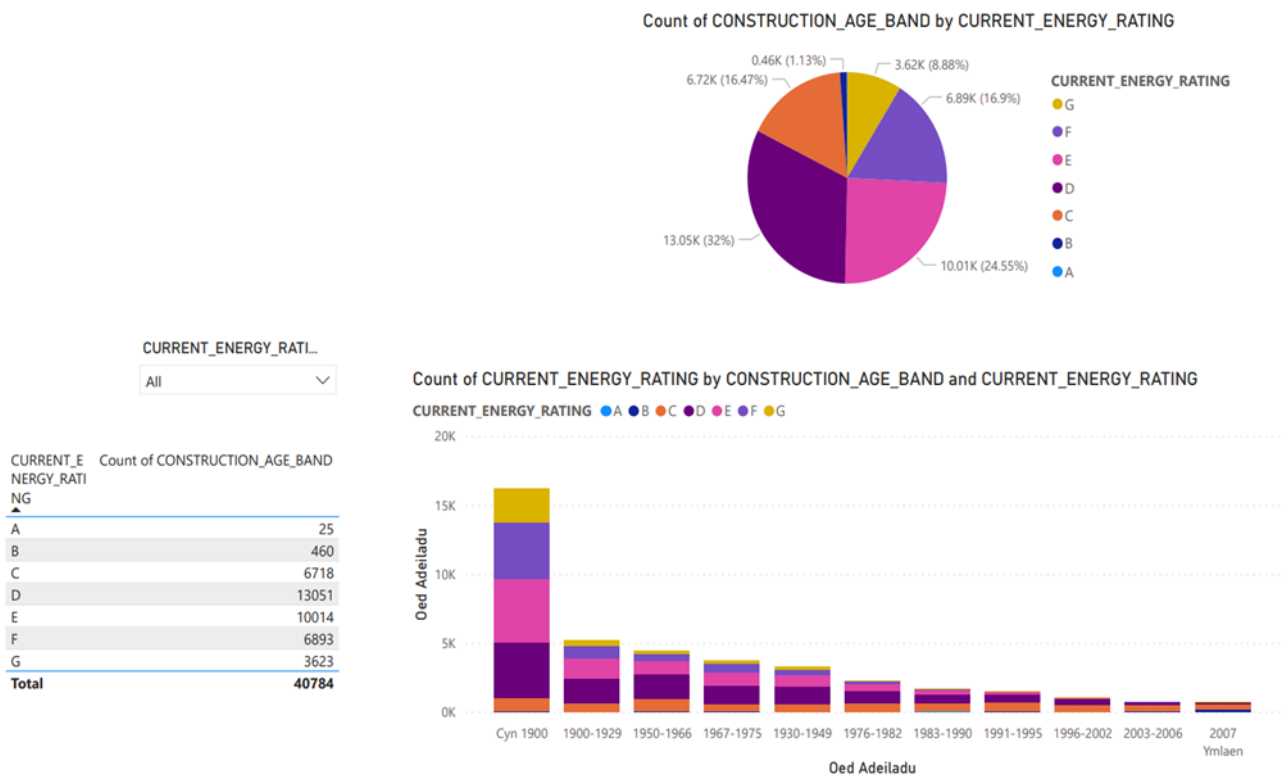
You can see from the graph and table in figure 1 that the vast majority of the county's housing stock are in category EPC D or lower and that most were constructed pre-1900. It is astounding that only 25 homes in Gwynedd are EPC A.

EPC (Energy Performance Certificate) [Standard Assessment Procedure - GOV.UK \(www.gov.uk\)](http://www.gov.uk) is the methodology used in the UK to measure housing efficiency in terms of energy conservation.

Since 2015, it is a requirement for every RSL (social rented property) property to reach a standard that equates to EPC D.

In the private rent sector, it has been a requirement since 2020 for properties to reach EPC E standard.

Figure 1



2.1.2. Historically, three schemes have been available to de-carbonise and address fuel poverty namely the Nest, Eco and Arbed schemes.

2.1.3. **Nest** - [Home - Nest Wales - nyth.llyw.cymru](#) Nest, Welsh Government's Cosy Homes Programme provides support to undertake energy efficiency improvements to low income homes across Wales. See appendix 1 at the back of the report for Nest's current figures. It is important to note here that under claiming means-tested benefits is a barrier to this scheme. Being eligible for a penny of council tax reduction means that a resident is eligible for substantial improvements.

2.1.4. **ECO** [Energy Company Obligation \(ECO\) | Ofgem](#) - ECO is a Westminster Government Scheme.

Eco is split into two parts this year - 50% via 'HHCRO' (Home Heating Cost Reduction Obligation) and 50% via 'ECO LA Flex' . ECO LA Flex improvements are provided by private companies that have been approved by Gwynedd Council. The sole role of the Council is to verify documents and approve applications. The Eco LA Flex 3 scheme has expired and the fourth phase commences in Autumn 2022.

2.1.5. **Arbed** [Get help with energy efficiency \(households\) | GOV.WALES](#) The Arbed Am Byth scheme from Welsh Government was a strategic fuel poverty/de-carbonisation scheme based on LSOA/Wards.

Arbed no longer exists. An announcement is expected by WG in the Autumn on its successor. Arbed focused on improving the energy efficiency of residents living in serious fuel poverty, often in some of the most deprived areas in Wales. The aim of Arbed was to reduce the footprint of Wales' current housing stock and in doing so, help to provide resilience to households against increasing energy costs. Here are some areas where Arbed addressed the need in Gwynedd:

Arbed 1 – Deiniolen, Gwynedd – Arbed 2 Carmel and Fron, Gwynedd. Arbed 3 Tanygrisiau, Gwynedd. The Arbed 3 scheme has started to engage with residents in Talysarn and Aberdaron in Gwynedd, properties with EPC E, F, or G. However, Welsh Government decided to bring the Arbed 3 scheme to an end at short notice.

2.2. What has happened / is in the pipeline?

2.2.1. Since the beginning of the new Energy service in May 2021 we have appointed two Fuel Poverty Officers to undertake the work and by referring to the schemes available. This work is happening hand in hand with other departments within the council who are meeting the challenges of the cost of living crisis.

The following interventions have been achieved in Gwynedd.

- 349 ECO 3 referrals in 21/22
- 257 referrals to Nest in Gwynedd in 21/22 (see appendix 1)
- 47 houses in Tanygrisiau were issued measures under Arbed 3 before the scheme ended in November 2021

The average expenditure per property via the Nest scheme is £5,000 - there is no current data for the ECO scheme

2.2.2. ECO 3 - as seen above, there were 349 referrals. It is not possible to confirm exactly how many of the referrals were acted upon.

2.2.3. ECO 4 – A revenue of 4 Billion is available for ECO 4 across the UK between 2022 and 2026.

Below, some of the 'day to day' progress that is not part of a specific scheme is listed.

2.2.4. ECO 'approved applications' data was added to our work flow. An application has been made to companies on the ECO framework to share EPR (Energy Performance Report) data, which effectively is EPC that has not been recorded on the Government system.

2.2.5. **Tanygrisiau Feasibility Study**

A project to research opportunities to merge the upgrading of building fabric and using locally-generated electricity to feed the heating network and individual ASHP heating solutions. Also examine the possibilities of supplying local industry.

It is a partnership that is led by Gwynedd, which includes Adra, Grŵp Cynefin, the Welsh Government's Energy Service, Y Dref Werdd and Ynni Twrog. The advantages of local multi-sector partnership methods such as these is the local knowledge to realise national, regional and local energy schemes and targets. During October 2021, the partnership commissioned a consultant - Sustainable Energy (SE) to carry out a feasibility study on the best way to de-carbonise the village with the intention of using this as a pilot for similar areas. The result of the study was that individual heat pumps were the favoured option but major obstacles were identified in terms of obtaining cheaper electricity from local sources.

Therefore, we have asked Ambition North Wales to explore further the fuel poverty element in the Smart Local Energy System work. There are early examples of local heating networks and local energy across the UK. It is still early days for the sector but there is hope that it will grow.

2.2.6. Ambition North Wales (ANW) Feasibility Study

ANW have managed to secure £380,000 from the UK Government's Community Renewal Fund to carry out a Feasibility Study of a Smart Local Energy System for a number of Local Authorities, including Gwynedd Council.

EA Technology have been appointed by ANW to note the opportunities and demonstrate the case for creating a Smart Local Energy System in Gwynedd and the area. The aim of Smart Local Energy Systems is to merge the supply and demand for energy within a defined area for the benefit of a range of stakeholders.

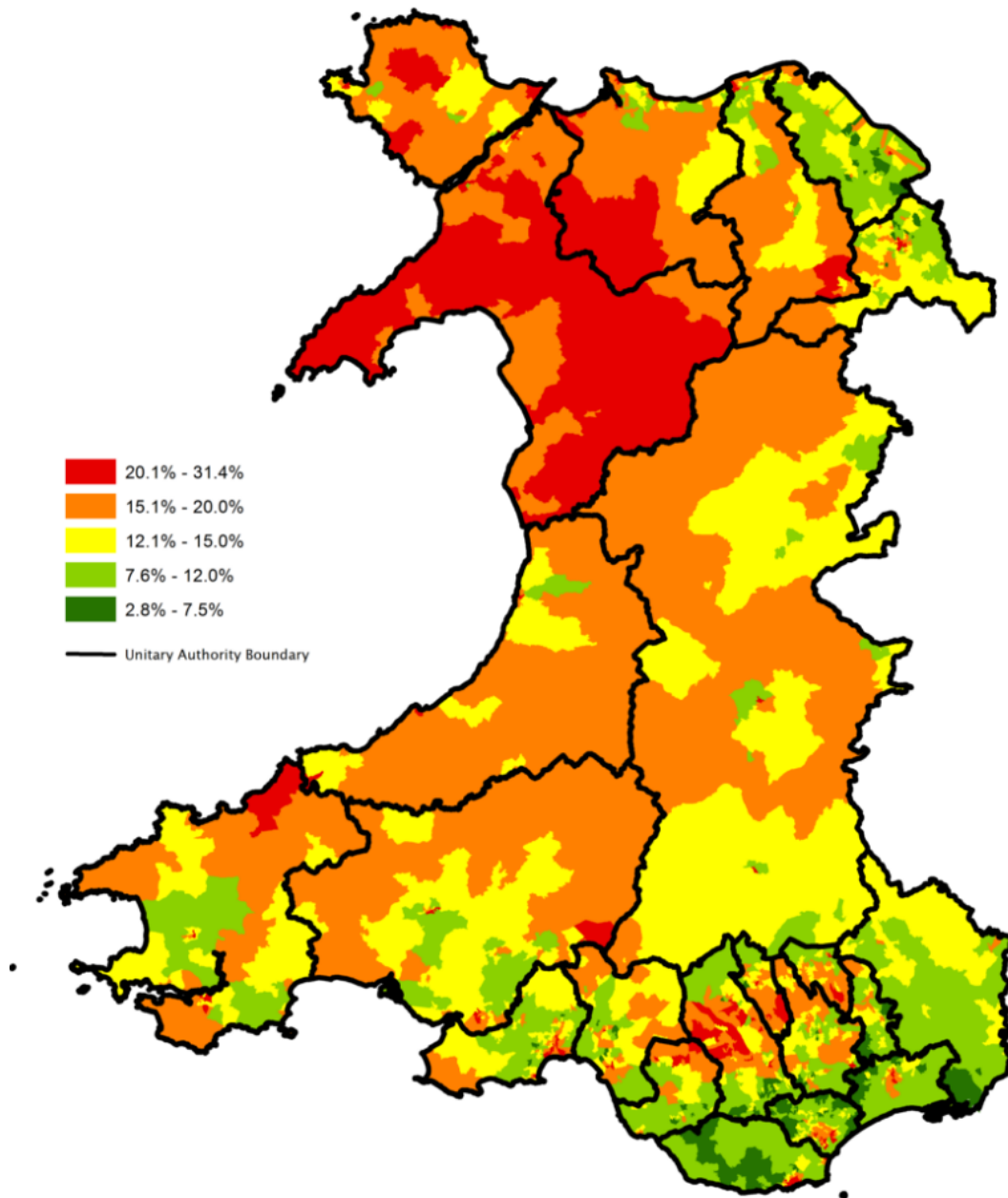
One of the projects identified is the Tanygrisiau Heating Plan and it is hoped to build on SE's work with the aim of finding a way to get local electricity cheaper for local people.

This work has not yet reported back but it is hoped that this will happen during the Autumn this year.

Field / project:	Consult with the public on fuel poverty	Reference	
<p>2.3 Background</p> <p>Gwynedd is one of the areas with the largest fuel poverty level in Wales as shown in the map below. You will note that the map taken from the Welsh Government website is old data and, therefore, the situation has obviously worsened since then. Also, the increase in everyone's bills this winter is causing great concern and reinforces the purpose of our work.</p>			

Figure 2

Estimated percentage of Full Income Fuel Poverty Households in 2004
by 2001 Census Lower Super Output Area



Source: Gordon, D. and Fahmy, E. for Welsh Government, A small area fuel poverty indicator for Wales, September 2008

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2.4. What has happened / is in the pipeline?

- 2.4.1. Set up a [Discretionary Assistance Fund \(DAF\) | GOV.WALES](#) account (main WG fuel crisis vouchers - already exist)
- 2.4.2. Set up a Fuel Bank Foundation account [Home | Fuel Bank Foundation](#) (new £4m WG funding for customers with prepayment meters)

- 2.4.3. Set up a [MyTurn2us - Turn2us](#) account (Quickly checks benefits in order to secure ECO/Nest eligibility)
- 2.4.4. Set up a Charis Grant account [Grant Administration Services | Fund Administration Services | Charis \(charisgrants.com\)](#) (a last resort option for energy vouchers for residents using prepayment meters (There are 12,225 in Gwynedd according to 2017 figures))
- 2.4.5. Set up a Power BI account. Power BI can be used to analyse and cross-reference a wide range of data, such as EPC, LSOA, council tax reduction claimants' data etc. A powerful tool to highlight factors that contribute towards FP
- 2.4.6. Arrange a meeting in Galeri for stakeholders who operate in the field of FP. CAB, Energy Wardens (RSLs), Net Zero Energy Wardens, Groundworks and BCUHB were in attendance.
- 2.4.7. A Visit to Barmouth Food Bank. The latest information was shared about the proposed vouchers and the digital support offer to put everything into action by the Autumn.
- 2.4.8. Research software - try to find out if a system was available that would meet needs across the sector, and make it possible to collaborate with external partners when complying with GDPR regulations.
- 2.4.9. Establish initial connections with hubs in Gwynedd. We visited Y Dref Werdd in order to establish and confirm the process for collaboration.
- 2.4.10. Met with Bill Hamilton (UK stakeholder relations MAGNOX). Highlighted the county's FP situation and reminded him of the strap-line 'Being a Good Neighbour', which is associated with the decommissioning socio-economic fund. The NDA/Magnox is in the middle of restructuring/re-branding. We will prepare reports on 'area specific' areas by using Power BI on an area.
- 2.4.11. Regular meetings with Dylan Mclennan from NEST (partnerships development manager) - re-established the 'Partner Portal' - 'fast track' referral form - established that referrals from GC had been verified in terms of eligibility before reaching the NEST call centre in the hope of speeding up the process.
- 2.4.12. Secured a seat on Welsh Government's Fuel Poverty Cross Party Group via NEA - a minister is usually present, therefore, it is a good opportunity to report back to WG on the situation in Gwynedd.
- 2.4.13. Work on 3rd party consent Pro Forma form in order to discuss with energy supplier on behalf of vulnerable customers.
- 2.4.14. Presentation to a CAB monthly meeting with Tal Michael. Present our vision. Further discussions with CAB centrally on test access to a system.
- 2.4.15. Map abilities that meet the Fuel Poverty situation across the county - Third Sector / Statutory. Excel has been populated (see schedule); this will need to be updated / re-examined regularly in order to support further training or information for our partners.
- 2.4.16. Invitation to attend Energy Wardens' Steering Group (by invitation from Ieuan Davies, Grŵp Cynefin)

- 2.4.17. Continue with work on the Tanygrisiau project, mainly seeking to keep the focus on direct benefits for the residents. Will seek the help of Fflur Lawton (Smart Energy GB) to see whether there is a strategic role for them to increase the number of SMETS2 meters in the area, and to alleviate residents' concerns about the technology.
- 2.4.18. Share some findings/statistics with the researcher of Liz Saville Roberts after she sent us a request - Power BI useful to create 'hyper-local' reports of FP situation in specific communities.
- 2.4.19. Share Power BI statistics with CAB – CAB interested in the data for their campaigning/lobbying work.
- 2.4.20. There are 12,225 prepayment meters in Gwynedd, which is a high number. There is work to be done to convince residents of the benefits of 'Smart Meters' - Collaborating with Fflur Lawton will be an important part of this work.
- 2.4.21. Prepare to set Council Tax Reduction households' post code data on Power BI in order to cross-reference CTR with low EPC.
- 2.4.22. A meeting has been arranged with Fflur Lawton - Smart Energy GB
- 2.4.23. A meeting has been arranged with tenancy support workers.

2.5. What are the next steps?

2.5.1. There has been a busy period in terms of establishing and setting up systems. So much is at stake as several schemes rely on the direction of the Westminster Government. Should the idea of freezing energy bills be implemented, it would allow us some relief as a team, but the two-fold task of decarbonisation in the long-term, along with sustainable solutions for fuel poverty in the short-term, is a momentous task.

Feedback from the first conference on fuel poverty in Galeri was encouraging:

Sandra Kargin, Grŵp Cynefin Energy Warden: "It was an exciting conference. It was also a relief that we as Wardens are 'not going it alone' this winter in terms of serious fuel poverty. Receiving support from others working in this field really helps us to assist those in need."

Our intention is to develop a series of similar events, and to put in place a regular tour of visits to community hubs in order to disseminate good practice, and to circulate information about whatever will be available - this currently changes on a daily basis.

Collaborating with community hubs that were established during Covid will be crucial to the work, along with empowering communities to identify opportunities. Before the 1947 nationalisation via the 'Electricity Act' there were more energy production companies in North Wales 'per capita' than anywhere else in the UK - maybe that will ultimately be the direction, that we use our own resources.

Part 2 - Carbon Management Plan

Field / project:	Carbon Management Plan	Reference	
<p>2.6. Background</p> <p>2.6.1. Gwynedd Council formed a partnership with the Carbon Trust in 2009 and, as a result, two Carbon Management Plans have been approved.</p> <p>2.6.2. The Carbon Management Plans (CMP) were comprehensive strategic plans which outlined:</p> <ul style="list-style-type: none">• Gwynedd Council's carbon performance in the baseline year of 2005/6• Identified improvement and carbon reducing opportunities			

- Provided recommendations to improve and reduce carbon
- Set carbon reducing targets

2.6.3. In 2005/6, carbon emissions from buildings, street lighting, waste, fleet and business transport were 31,155tCO₂.

2.6.4. The Council committed to reduce carbon emissions by 40% by 2021 compared to the data of the baseline year.

2.6.5. The plan included a number of projects, including insulation, upgrading boilers and lighting in buildings, upgrading thermostats, replacing street lamps with LED lamps, using more efficient vehicles, reducing our landfill waste.

2.7. What has happened / is in the pipeline?

2.7.1. The table below shows that the Council has exceeded its target earlier than expected.

Table 11

	Street Lighting	Fleet	Business Travel	Waste	Buildings and PV	Total Emissions
C02 Emissions 2005/06	3,899,302	5,324,520	2,095,068	929,760	18,905,843	31,154,493
C02 Emissions 2019	926,462	4,116,803	1,963,406	403,290	9,231,780	16,641,741
% change since the baseline - 2019	-76.2	-22.7	-6.3	-56.6	-51.2	-46.6
C02 Emissions 2020*	766,388	3,424,877	879,266	413,373	7,581,552	13,003,324
% change since the baseline - 2020	-80.3	-35.7	-58.0	-55.5	-59.9	-58.3

2.7.2. After the Council declared a Climate Emergency and set a Net Zero target by 2030, Welsh Government's Energy Service (WGES) was appointed to assess the key opportunities to reduce carbon across its estate.

2.7.3. A desktop review of current energy management practices was undertaken along with a quantitative analysis of the efficiency of those buildings used by Gwynedd Council. Specific energy saving opportunities were noted. Appendix 2 lists the projects that have been identified.

2.7.4. The following list elaborates on each measure:

- Better M&T - Monitoring and Targeting measures fossil fuel every half an hour and the electricity data that uses Energy Management Software. This enables the energy team to identify waste quickly and efficiently.

The savings quoted are associated with better use of the software, staff being proactive, following policies in addition to adopting the "internet of things" where equipment is managed through the network.

- Improvements to Building Fabric - this includes insulation, draft prevention etc., much of this has already been done and this is why costs are substantial.
- Further extension of PV - PV or Photovoltaic Panels generate electricity and for this study we have examined buildings with these as well as car ports and solar farms.
- Heat Pumps - a heat pump heats a building by transferring thermal energy from a colder space (air or ground) to a warmer space (building) using the fridge cycle. They run on electricity and, therefore, they are currently more expensive to run than heating methods that use conventional fossil fuels and release more carbon. Therefore, careful consideration must be given to introducing the technology as suggested.
- EC Fans - electrically commutated fans run on DC current rather than AC and are managed digitally, which involves a more efficient and quieter operation.
- Room Thermostats - wireless technology enables the control of individual radiators without expensive wiring costs. This will enable rooms to be heated at different temperatures and also to switch off heating when the room is empty.
- Specialist lighting - LED lights have improved where they are now suitable for use in sites such as swimming pool halls and outdoor play areas. Careful design is required especially in terms of safety in swimming pool halls where life guards must see the pool clearly.

2.7.5. The above schemes will be part of a series of projects that will be submitted to the Climate Change Panel to receive its seal of approval.

2.7.6. In addition, the Team has identified additional projects, such as:

- Extending our BEMS (Building Energy Management System) systems, namely on-line remote heat control systems etc. We tend to see a correlation between sites that generate energy and sites that rely on local control of heating, e.g. heating on during holidays.
- Using "internet of things" technology to monitor sites that use LPG or oil for heating. Historically, these have not been monitored as thoroughly as it was not cost effective to obtain the 'half-hourly' data due to the associated high revenue costs. By working with the IT Department, it is now possible for us to collect and use this data without revenue costs (but capital costs will be associated with the installation work at the starting point).
- Maximising the carbon value of the public charging points programme for the Council. By leading on the above programme in the past, the Team has ensured that points are installed in the most beneficial manner for the Council and the public in terms of carbon. Specifically, where possible, the installations have been designed to be installed in buildings that already exist. As well as reducing revenue costs, this will enable us to maximise the proposed size of the solar systems on

our roofs and to use the extra electricity generated to charge the cars rather than "lose" it to the grid. A side effect of this is extending the Council's carbon system limit. In addition, it strengthens the financial business case as it would be possible to sell on the freely generated electricity for substantial profit. However, it should be noted that achieving these projects leaves a substantial gap in our journey of reaching zero. As shown in appendix 3, even if every WGES project is realised (that would save nearly 3,000 tonnes) it involves a deficit on the buildings' side of over 6,000 tonnes. This of course shows how difficult it is to reduce carbon in the buildings field as we have already reduced our emissions by nearly 60%.

2.7.7. We have also listed the land assets that could give room to solar farms following a land asset review (appendix 4). In essence, a carbon impact of 10,201tCO₂e means that Council assets would exceed the deficit to a net zero target and be carbon positive by 3,934tCO₂e should every farm be developed. To put this into context, carbon emissions as a result of Council fleet and business travel operations in 2019 were 6,080tCO₂e (carbon factor 2019).

2.7.7..1. It is possible to develop solar farms, and what is generated by them may rectify our emissions, but there is a substantial associated cost.

2.7.7..2. Currently, these costs are on a high level as obtaining accurate costs mean that a formal application is needed this usually costs approximately £4,000 for each site.

2.7.7..3. Furthermore, due to current regulations on carbon reporting, even if these farms were to be developed, we could not allocate these carbon savings if the electricity is exported to the grid. In this situation, it would be included in the general energy mix that is reflected in the national carbon figures.

2.7.7..4. For Gwynedd Council to take advantage of the carbon, what is generated in the sites would need to be used on site or through a private wires arrangement. The Cilgwyn Waste Site may offer this option but it is unlikely in the other locations.

2.7.7..5. Therefore, for the time being, it does not seem likely that our emissions can be reduced in this way.

2.7.8. In light of the substantial increase in energy costs that are felt across the county, it is now more important than ever to achieve carbon reducing projects, and to ensure that our buildings are managed as effectively as possible.

2.7.9. Day to day M&T work - following the substantial work that has been achieved to reduce our emissions, there is a need to ensure that this reduction is here to stay on a permanent basis. Over time, there is a tendency to return to old habits, whether it be through equipment breaking down or, as what happens most often, equipment is left switched on. This is why Monitoring and Targeting (M&T) work is essentially important.

2.7.10. Recently, we have updated our M&T software, namely SystemsLink. By upgrading SystemsLink, we have been able to merge the software with our smart meters that record use every half an hour. Specifically, we have added SmartSpaces onto our SystemsLink software, which inform us immediately

if there is any waste on our sites. In the past, waste could remain for a long time, with schools usually turning on heating for school Eisteddfodau, a concert or on Saturdays and forgetting about it. The significance of this since we upgraded our software with SmartSpaces is we have seen a substantial reduction in gas waste on our sites, and we have certainly been able to take action sooner than in the past.

2.7.11. It is important that the site managers of our buildings and Council staff collaborate with us and are on the same wavelength in order to reduce our emissions and make progress on our Zero Net target by 2030. The energy team cannot achieve the task of reaching our targets without cooperation by site managers and Council staff. The element of changing behaviour and being more aware of energy use is essentially important here. By being proactive and ensuring that small actions are carried out, such as switching off unnecessary lights, switching off equipment and more, this can have a huge impact not only on the Council's footprint, but also on the carbon footprint of individuals outside work, as tendencies from work transfer over to the lives of staff outside the workplace.

2.7.12. Work has also been achieved to analyse and amend heating, hot water timetables etc. on our sites in order to ensure that we prevent any waste and use only what is needed. Likewise, we have analysed and amended site thermostats to appropriate temperatures. Through a combination of this, we have seen substantial savings on gas consumption. This highlights the importance of extending our BEMS systems.

We report on this work on a monthly basis to the Performance Challenge Board, which ensures that the work receives appropriate attention.

2.8. What are the next steps?

2.8.1. We will continue to examine our work of putting the listed projects in place.

2.8.2. We are always looking for new projects with the emergence of new technology. During the work of both Carbon Management Plans, various projects that were not in the original plan were introduced and it is hoped that this will happen again. Indeed, in the time since the Carbon Trust formulated a desktop report and wrote this report, a LED lighting in buildings business case has changed. As a result, we are drawing up a business case around this opportunity.

2.8.3. We will continue to monitor our buildings in detail in order to get rid of any unnecessary use.

2.8.4. As referred to above, despite the reliance on technology, a change in behaviour has a crucial role to play if the Council wants to realise its aim of de-carbonisation by 2030. Unfortunately, examples are seen across the Council of poor energy conservation practices that undermine our efforts. For example:

- External lighting left on all night, every night, as a security measure (even if PIR sensors have been installed on them). No evidence has ever been submitted to support the claim that this is an effective security measure, and every decision should be made on scientific basis rather than personal opinion.

- Personal electric heaters being used in the workplace. On one occasion, to increase the temperature to 27 degrees!
- External doors in primary schools being left wide open during break time in the middle of winter.
- Serious consideration should be given to the matter of strengthening our policies and we would appreciate a further discussion to this end.

We would welcome an opportunity to return to the Scrutiny Committee in future to provide a further update on Housing Action Plan activity.

Nest Local Authority Report: April to June 2022

Cyngor Gwynedd

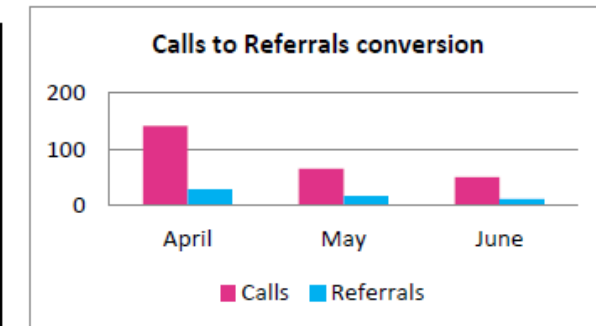
Top Line MI					
	April	May	June	Qtr Total	YTD
Calls	142	65	50	257	257
Referrals	28	16	11	55	55



Call to Referral Rate			
April	May	June	Average
20%	25%	22%	22%

Installation Data								
	Loft Insulation	CWI	EWI	Draught Proofing	Boiler Replacement / Central Heating System	Solar Water Heating	Air Source Heat Pump	Other
Quarter Total	1	0	0	0	48	0	0	6
Total Approximate Carbon Saving (kgCO2)*	720	0	0	0	35,616	0	0	
Total Approximate Fuel Bill Saving (Annual)*	£175	£0	£0	£0	£7,584	£0	£0	

*indicative figures based on Energy Saving Trust average figures. These are approximate figures only and the averages quoted may well differ from actual savings in individual properties. Assumptions include average household boiler efficiency of 78% and 2011 fuel prices, this does not include any allowances for future price increases. In savings figures EST allow for a comfort factor and heat replacement effect, wherever appropriate. Please contact your Nest Partnership Development Manager for more up to date reports and further detail on

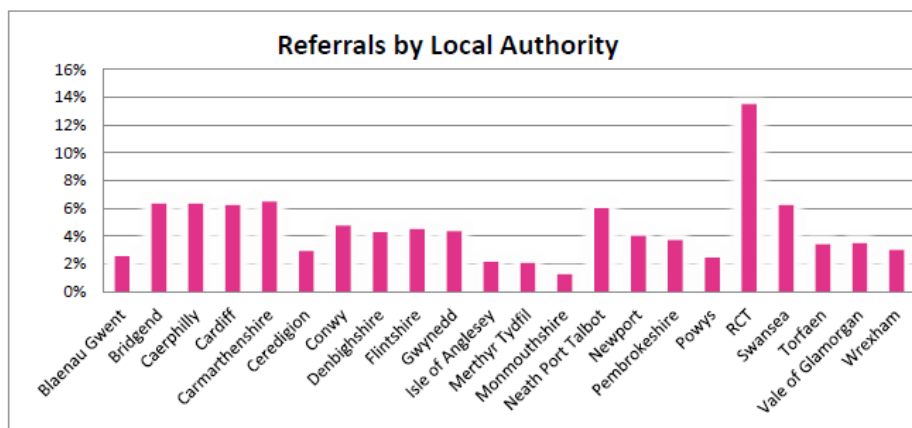
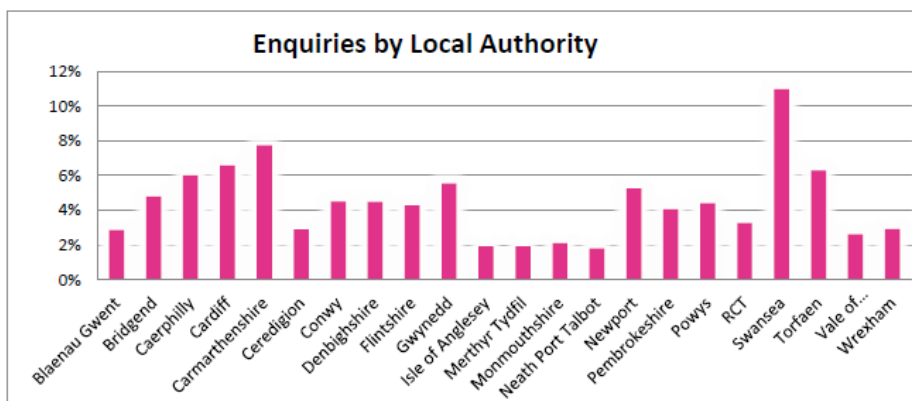


Please note that the data shown in this document is based on data provided from the Nest Customer Relationship Management system and installation status data uploads. This may vary when compared to the Nest annual report, particularly due to the time of reporting and customer journey timescale. The data may contain some anomalies therefore cannot be classed as exact or entirely accurate data. Nest will not be held responsible for any inaccuracies in the data and advises that, for any public releases or marketing purposes the Nest annual report data is utilised. Please contact your Nest Partnership Development Manager for any

Nest Local Authority Report: April to June 2022

Total Enquiries and Referrals by Local Authority

Enquiries and Referrals		
Local Authority	Enquiries	Referrals
Blaenau Gwent	3%	3%
Bridgend	5%	6%
Caerphilly	6%	6%
Cardiff	7%	6%
Carmarthenshire	8%	6%
Ceredigion	3%	3%
Conwy	5%	5%
Denbighshire	4%	4%
Flintshire	4%	5%
Gwynedd	6%	4%
Isle of Anglesey	2%	2%
Merthyr Tydfil	2%	2%
Monmouthshire	2%	1%
Neath Port Talbot	2%	6%
Newport	5%	4%
Pembrokeshire	4%	4%
Powys	4%	2%
RCT	3%	14%
Swansea	11%	6%
Torfaen	6%	3%
Vale of Glamorgan	3%	3%
Wrexham	3%	3%



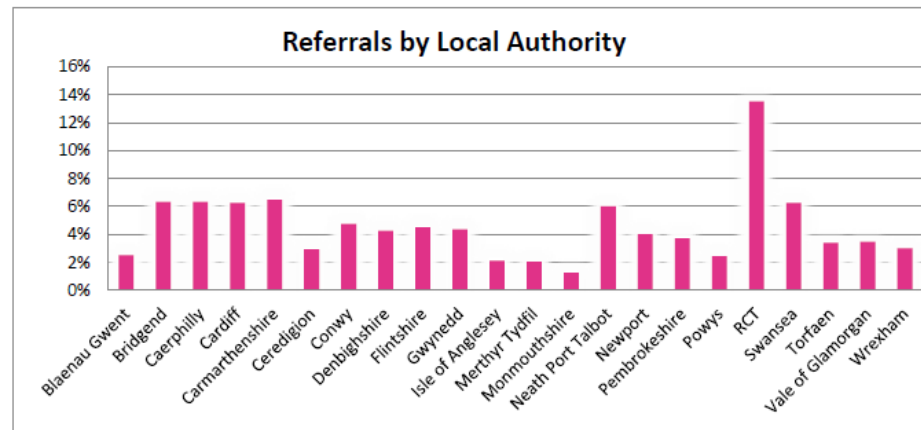
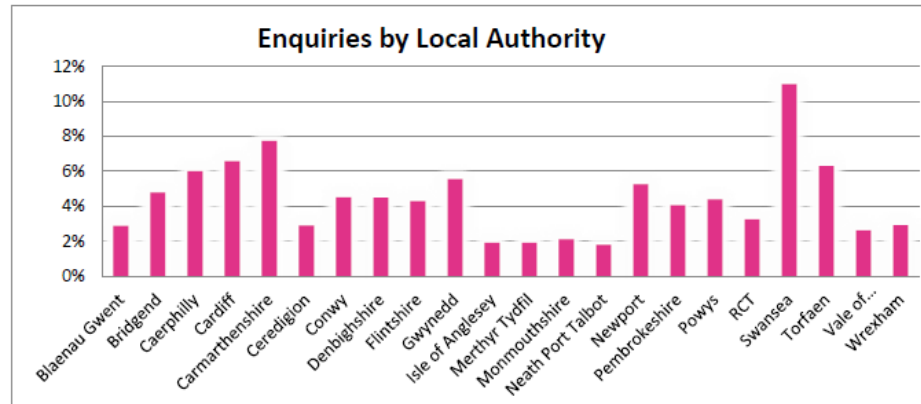
Please note data is an approximate percentage of enquiries and installs within the local authority area. The data may contain some anomalies therefore cannot be classed as exact or entirely accurate data. EST will not be held responsible for any inaccuracies in the data and advises that more accurate data is available in the annual report. Data shown here may differ from data in the annual report.



Nest Local Authority Report: YTD 2022/2023

Total Enquiries and Referrals by Local Authority

Enquiries and Referrals		
Local Authority	Enquiries	Referrals
Blaenau Gwent	3%	3%
Bridgend	5%	6%
Caerphilly	6%	6%
Cardiff	7%	6%
Carmarthenshire	8%	6%
Ceredigion	3%	3%
Conwy	5%	5%
Denbighshire	4%	4%
Flintshire	4%	5%
Gwynedd	6%	4%
Isle of Anglesey	2%	2%
Merthyr Tydfil	2%	2%
Monmouthshire	2%	1%
Neath Port Talbot	2%	6%
Newport	5%	4%
Pembrokeshire	4%	4%
Powys	4%	2%
RCT	3%	14%
Swansea	11%	6%
Torfaen	6%	3%
Vale of Glamorgan	3%	3%
Wrexham	3%	3%



Please note data is an approximate percentage of enquiries and installs within the local authority area. The data may contain some anomalies therefore cannot be classed as exact or entirely accurate data. EST will not be held responsible for any inaccuracies in the data and advises that more accurate data is available in the annual report. Data shown here may differ from data in the annual report.



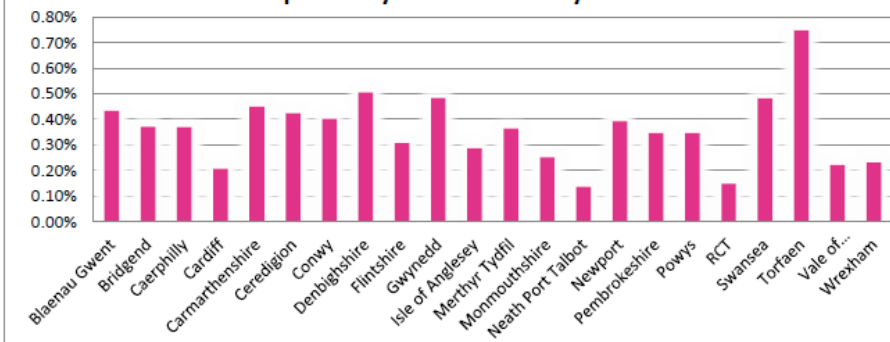
Nest Local Authority Report: April to June 2022

Total Enquiries and Referrals Per Capita by Local Authority

% Enquiries and Referrals (Per Capita)

Local Authority	Enquiries	Referrals
Blaenau Gwent	0.43%	0.10%
Bridgend	0.37%	0.13%
Caerphilly	0.37%	0.11%
Cardiff	0.21%	0.05%
Carmarthenshire	0.45%	0.10%
Ceredigion	0.42%	0.12%
Conwy	0.40%	0.12%
Denbighshire	0.50%	0.13%
Flintshire	0.31%	0.09%
Gwynedd	0.48%	0.10%
Isle of Anglesey	0.29%	0.09%
Merthyr Tydfil	0.36%	0.11%
Monmouthshire	0.25%	0.04%
Neath Port Talbot	0.14%	0.12%
Newport	0.39%	0.08%
Pembrokeshire	0.35%	0.09%
Powys	0.35%	0.05%
RCT	0.15%	0.17%
Swansea	0.48%	0.07%
Torfaen	0.75%	0.11%
Vale of Glamorgan	0.22%	0.08%
Wrexham	0.23%	0.07%

Enquiries by Local Authority



Referrals by Local Authority



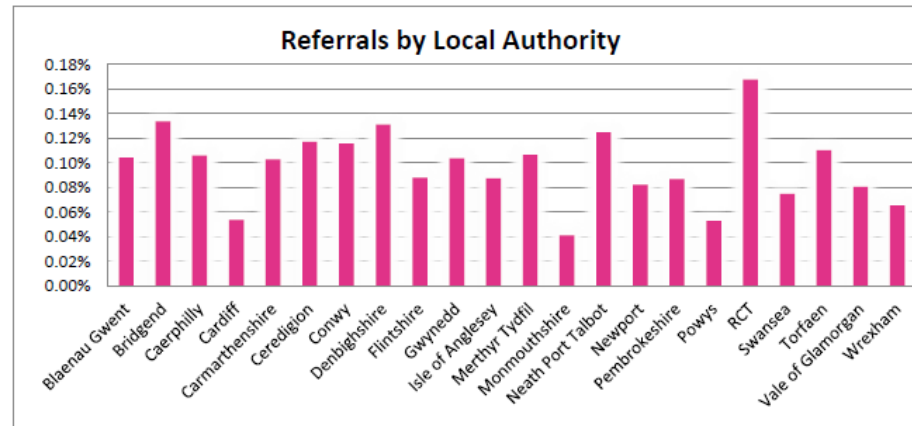
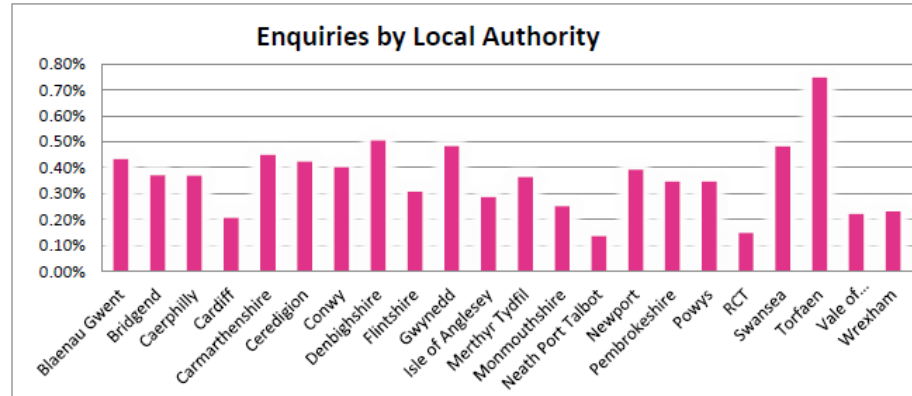
Please note data is a approximate percentage of enquiries and installs within the local authority area. The data may contain some anomalies therefore cannot be classed as exact or entirely accurate data. EST will not be held responsible for any inaccuracies in the data and advises that more accurate data is available in the annual report. Data shown here may differ from data in the annual report.



Nest Local Authority Report: YTD 2022/2023

Total Enquiries and Referrals Per Capita by Local Authority

% Enquiries and Referrals (Per Capita)		
Local Authority	Enquiries	Referrals
Blaenau Gwent	0.43%	0.10%
Bridgend	0.37%	0.13%
Caerphilly	0.37%	0.11%
Cardiff	0.21%	0.05%
Carmarthenshire	0.45%	0.10%
Ceredigion	0.42%	0.12%
Conwy	0.40%	0.12%
Denbighshire	0.50%	0.13%
Flintshire	0.31%	0.09%
Gwynedd	0.48%	0.10%
Isle of Anglesey	0.29%	0.09%
Merthyr Tydfil	0.36%	0.11%
Monmouthshire	0.25%	0.04%
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Wrexham	0.23%	0.07%



Please note data is a approximate percentage of enquiries and installs within the local authority area. The data may contain some anomalies therefore cannot be classed as exact or entirely accurate data. EST will not be held responsible for any inaccuracies in the data and advises that more accurate data is available in the annual report. Data shown here may differ from data in the annual report.

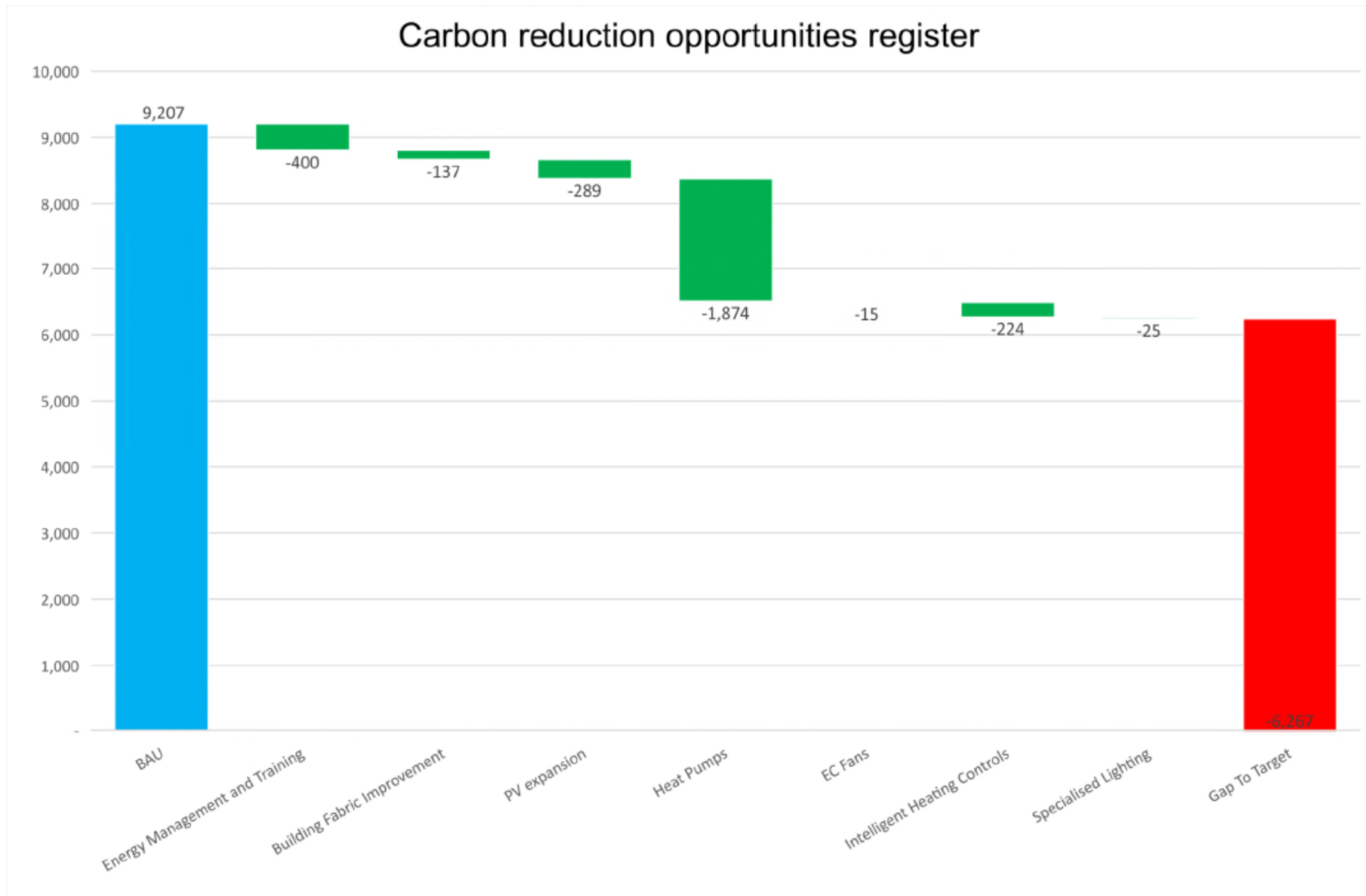
Household estimates based on 2011 census



Appendix 2 - List of Opportunities

Ref.	Site	Opportunity	Estimated Annual Energy Savings		Other costs	Total Savings (£)	Investment Cost (£)	Simple Payback	Carbon Impact	
			KWh	£	O&M			(Years)	Year 1 tCO2e	Life total tCO2e
R1	Across the Estate	Better Energy Management and Training	2,207,744	£165,393	£10,000	£155,000	£??,000	0.1	400	4,000
R2	Across the Estate	Better analysis and M&T								
R3	Across the Estate	extend M&T								
R4	Across the Estate	Improve building fabric	733,710	£27,148	£0	£27,000	£638,000	23.5	137	4,120
R5	Across the Estate	Further extension of PV	1,758,990	£320,136	£50,000	£270,000	£1,862,000	6.9	289	7,234
R6	Across the Estate	Heat Pumps*	9,996,390	-£113,284	£10,000	-£123,000	£2,777,000	-	1,874	18,740
R7	Across the Estate - where applicable	EC Fans	92,736	£16,878	£0	£17,000	£93,000	5.5	15	153
R8	Care Homes	A dedicated room in a care home with thermostats	1,232,492	£45,603	£0	£45,000	£68,000	1.5	224	2,240
R9	Leisure Centres	Upgrading specialist lighting	89,136	£13,722	£0	£13,722	£107,336	7.8	25.4	254

Appendix 3 - Carbon Reduction when realising projects



Appendix 4 - Large-scale individual solar farms

Site	Priority	MW Capacity	Annual Generation (kWh)	Carbon Impact - Year 1 (tCO2e)	Grid Connection Cost	Total (including upgrade when required*)
Dol Tŷ Isaf	A	1.75 MW	1,487,500	377	£2,400k	£2,400k
Former Domen Fawr Quarry, Talysarn	A	2.2 MW	1,870,000	473	£2,585k	£5,585k
Land at Brynllangedwydd	A	9.75 MW	8,287,500	2,098	£1,382k	£4,382k
Frondderw Land	A	2.2 MW	1,870,000	473	£2,400k	£2,400k
Nantporth	B	5.5 MW	4,675,000	1,184	£1,235k	£4,235k
Land at Pant Dreiniog, Bethesda	B	4 MW	3,400,000	861	£574k	£3,574k
Lôn Cob Bach, Pwllheli	B	2.5 MW	2,125,000	538	£1,559k	£4,559k
Glyn Rhonwy Site	C	7.5 MW	6,375,000	1,614	£1,641k	£4,641k
Land at Tyddyn Llwyndyn	C	1 MW	850,000	215	£236k	£3,236k
Cilgwyn Waste Site - Scenario 1	C	11 MW	9,350,000	2,367	£1,944k	£4,944k
Cilgwyn Waste Site - Scenario 2	C	1 MW	850,000	215	<i>Grid not upgraded</i>	
Total (including Cilgwyn - Scenario 1"				10,201	£18.956M	
Total (including Cilgwyn - Scenario 2)				8,049		