

16th February 2022

WLGA Decarbonisation Masterclass No 3: Buildings

Achieving Carbon Reduction via Re:fit Cymru

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Cyngor **Sir Gâr**
Carmarthenshire
County Council



Towards Net Zero Carbon

Notice of Motion

The meeting of Carmarthenshire County Council on 20th February 2019 unanimously resolved that the following [Notice of Motion](#) be supported:

“...we propose that Carmarthenshire County Council:

1. Declare a climate emergency
2. Commit to making Carmarthenshire County Council a net zero carbon local authority by 2030
3. Develop a clear plan for a route towards being net zero carbon within 12 months
4. Call on Welsh and UK Governments to provide the necessary support and resources to enable effective carbon reductions
5. Work with Public Services Board and Swansea Bay City Deal partners to develop exciting opportunities to deliver carbon savings
6. Collaborate with experts from the private sector and 3rd sectors to develop innovative solutions to becoming net zero carbon.”

20th February 2019
Notice of Motion

Route towards becoming a **Net Zero Carbon** Local Authority by 2030

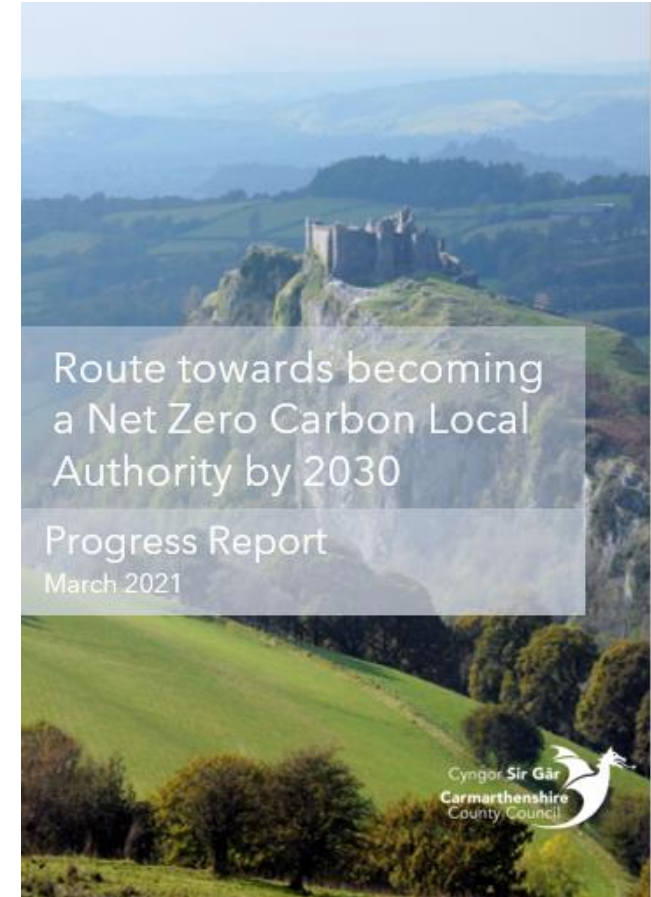


V1 - 2018 - 2019

carmarthenshire.gov.wales

Cyngor Sir Gâr
Carmarthenshire
County Council

12th February 2020
Net Zero Carbon (NZC) Plan



22nd March 2021
NZC Plan Progress Report

[Net Zero Carbon by 2030 | Carmarthenshire County Council](#)

Towards Net Zero Carbon

NZC Plan ≠ Climate Change / Decarbonisation Plan

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Our NZC Plan mirrors the Notice of Motion unanimously agreed by County Council on 20th February 2019 to become a NZC local authority by 2030.

We have consciously adopted a pragmatic approach that focuses on measurable, operational issues within our control.



The Plan is a living document and whilst it's focus is to outline a route towards becoming a NZC local authority, it also recognises some of the wider actions that are taking place across the Council that contribute towards addressing the climate emergency.

Towards Net Zero Carbon

NZC Plan, extract

Ref	Action to be undertaken	Lead Officer	By When
Carbon Footprint – Non-domestic buildings			
NZC-01	Deliver Re:fit Cymru (Energy Efficiency) Phase 1 project to achieve energy/carbon savings	Head of Property	Apr 2022
NZC-02	Develop further phases of Re:fit Cymru (Energy Efficiency) project, or similar, to achieve accelerated energy / carbon savings	Sustainable Development Manager	On-going
NZC-03	Incorporate the 'Passivhaus' standard, where appropriate, in new building construction projects	Property Design Manager	On-going
NZC-04	Continually review and amend design specifications and briefs to reflect new technologies and energy efficient equipment	Property Design Manager	On-going
NZC-05	Extend 'smart' and sub-metering technology to ensure accurate and timely capture of energy consumption data	Various	On-going
NZC-06	Develop appropriate carbon reduction target for the Council's non-domestic buildings as part of annual review of action plan	Sustainable Development Manager	Mar 2023

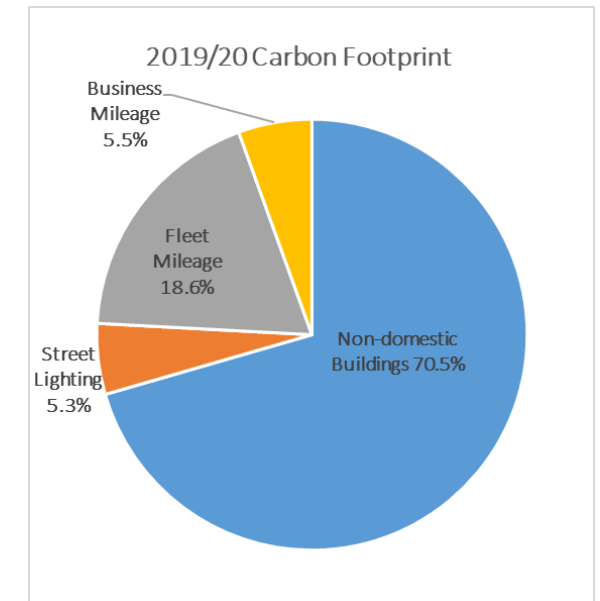
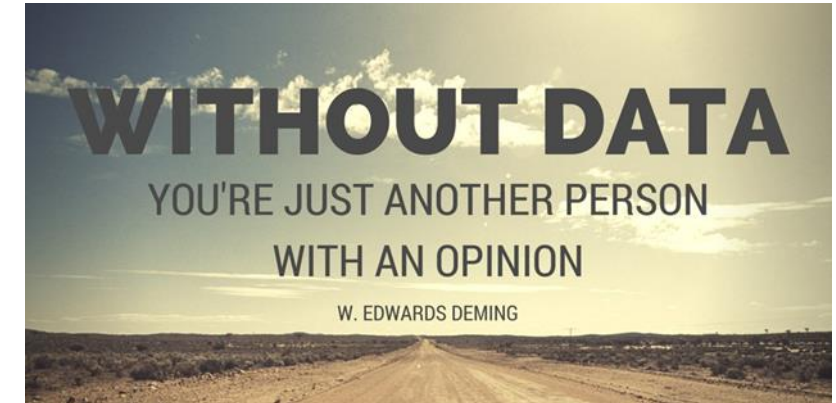
Towards Net Zero Carbon

Carbon Footprint

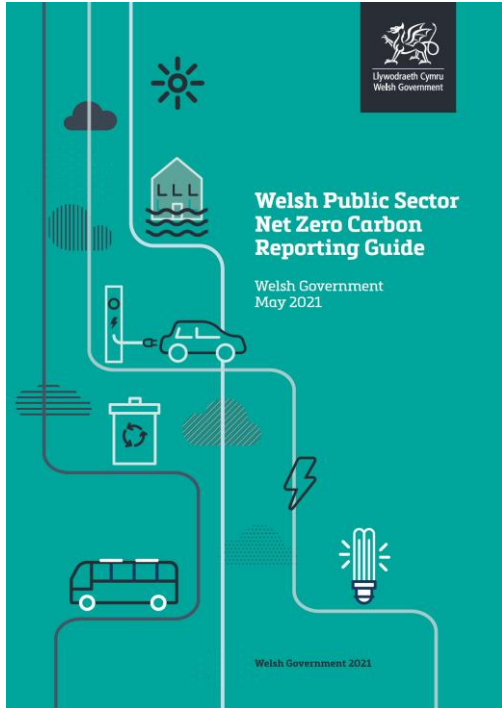
	2016/17	2017/18	2018/19	2019/20	2018/19 vs 2019/20	
	Results				Progress	% change
Non-Domestic Buildings						
Consumption (kWh)	66,808,735	63,690,923	64,857,362	66,407,242	Declined	+2.4%
Carbon Emissions (tCO ₂ e)	18,923	16,258	14,822	14,443	Improved	-2.6%
Street Lighting						
Consumption (kWh)	5,718,531	4,873,979	4,202,381	3,925,149	Improved	-6.6%
Carbon Emissions (tCO ₂ e)	2,569	1,874	1,291	1,088	Improved	-15.7%
Fleet Mileage						
Mileage (Miles)	5,127,150	5,121,289	*5,293,249	5,154,668	Improved	-2.6%
Diesel Used (litres)	1,416,276	1,441,751	1,434,583	1,419,336	Improved	-1.1%
Carbon Emissions (tCO ₂ e)	3,790	3,852	3,856	3,814	Improved	-1.1%
Business Mileage						
Mileage (Miles)	4,186,640	3,948,586	3,846,615	3,971,513	Declined	+3.2%
Carbon Emissions (tCO ₂ e)	1,260	1,159	1,118	1,132	Declined	+1.2%
TOTAL						
Consumption (kWh)	72,527,266	68,564,902	69,059,743	70,332,391	Declined	+1.8%
Mileage (miles)	9,313,790	9,069,875	8,829,043	9,126,181	Declined	+3.4%
Carbon Emissions (tCO ₂ e)	26,542	23,143	21,087	20,477	Improved	-2.9%

Note:

* This figure has been updated to correct for incorrect mileage entries.



Towards Net Zero Carbon



	2019/20 tCO ₂ e	
Emissions	NZC Plan	Reporting Guide
Operational	20,477	28,547
Supply Chain		76,894
Land Use		-697
Total	20,477	104,744

Total carbon emissions reported under our NZC Plan effectively equate to the Reporting Guide's 'Operational Emissions' which additionally include:

- Landfill of municipal waste;
- Well-to-Tank (WTT) emissions; and,
- Water supply & treatment

Our approach:

- Report annual emissions in accordance with the Reporting Guide's requested dataset where data available,
- Continue with the existing scope of our NZC commitment but adopt the corresponding methodologies prescribed in the Reporting Guide.

Towards Net Zero Carbon

Our NZC commitment created an ambition and urgency that required a new approach to enable a range of energy conservation measures, and renewables, to be delivered at a greater scale and pace than was otherwise possible with our limited in-house capacity.

We found a solution in the [Re:fit](#) programme that incorporates an energy performance contract to guarantee energy savings (kWh).



The Re:fit Framework is specific to the public sector, initially developed by the Greater London Authority in 2009.

There are 16 pre-qualified providers on the Re:fit Framework, and, following a tender process, [Ameresco](#) were appointed as our preferred service provider.

Towards Net Zero Carbon

Re:fit Cymru is supported by Welsh Government, with up-to 100% interest-free loans provided via the invest-to-save Wales Funding Programme administered by Salix Finance

To qualify for funding projects must:

1. Deliver an overall financial payback of less than eight years, and
2. Cost less than £278 per tCO₂e saved over the lifetime of the project.



Cost savings arising from installed energy conservation measures, and from renewable energy production, are used to repay the loan. These savings are validated by ongoing measurement and verification.

Towards Net Zero Carbon

Our top 25 energy consuming / carbon emitting buildings (2019/20):

Rank	Buildings	Consumption (kWh)			Carbon Emissions (tCO ₂ e)			Gross Internal Area (m ²)	(1) CIBSE	
		2018/19	2019/20	% Change	Elec	Heat	% Change		Elec	Heat
1	Ysgol Dyffryn Aman & Leisure Centre	4,440,915	3,877,318	-13%	876	759	-13%	22,444	Good	Typical
2	Carmarthen Leisure Centre	4,394,191	3,572,783	-19%	897	731	-19%	8,740	Good	Good
3	Parc Dewi Sant	3,025,423	3,052,836	+1%	656	635	-3%	22,069	Good	Typical
4	Llanelli Leisure Centre	2,614,683	2,629,918	+1%	540	528	-2%	5,259	Good	Good
5	Queen Elizabeth High School	1,983,175	2,058,117	+4%	458	446	-2%	15,414	Typical	Good
6	Ysgol Maes y Gwendraeth	1,974,011	1,913,451	-3%	436	410	-6%	22,264	Good	Good
7	Llys-y-Bryn Care Home & Day Centre	1,682,011	1,761,272	+5%	338	353	+4%	3,210	High	Good
8	Ysgol Bro Dinefwr	1,316,097	1,531,499	+16%	304	325	+7%	11,822	Good	Good
9	Y Ffwrnes Theatre	1,348,414	1,478,694	+10%	310	320	+3%	4,719	Good	Good
10	County Hall	1,154,382	1,155,934	0%	278	253	-9%	7,397	Good	Good
11	Dyffryn Taf Comprehensive School	1,240,267	1,184,004	-5%	269	249	-8%	8,887	Good	Good
12	Ysgol Gyfun y Strade	1,098,444	1,094,674	0%	247	236	-5%	10,268	Good	Good
13	Coedcae Comprehensive School	1,133,509	1,104,084	-3%	243	230	-6%	9,162	Good	Good
14	Parc Myrddin	998,532	1,042,108	+4%	221	222	0%	4,897	Good	Typical
15	Ysgol Gyfun Bro Myrddin	728,872	784,665	+8%	208	207	0%	7,033	Good	Good
16	Bryngwyn Comprehensive School	910,779	934,911	+3%	208	201	-4%	9,279	Good	Good
17	Awel Tywi Care Home	673,536	733,006	+9%	189	191	+1%	1,366	High	Typical
18	3 Spilman Street, Carmarthen	670,030	703,965	+5%	196	188	-4%	3,620	High	Good
19	Glan y Mor Comprehensive School	1,507,431	902,649	-40%	301	186	-38%	12,523	Good	Good
20	Ysgol Rhydygors	913,382	934,258	+2%	180	181	0%	3,249	Good	High
21	Dol y Felin Care Home	675,568	870,084	+29%	141	172	+23%	1,189	High	High
22	Pembrey Country Park	401,877	571,294	+42%	120	149	+24%	1,596	High	Good
23	Caemaen Care Home	728,473	691,221	-5%	162	148	-9%	1,781	High	Good
24	Ysgol Gyfun Emlyn	509,669	564,552	+11%	145	147	+1%	5,190	Good	Good
25	Maesllewellyn Care Home	503,503	543,635	+8%	146	144	-1%	2,058	High	Good
Top 25 total		36,627,173	35,690,930	-3%	8,069	7,610	-6%	187,218		
Total across all non-domestic buildings		64,857,362	66,407,242	2%	14,822	14,433	-3%	516,870		
Above sites as percentage of total		56%	54%		54%	53%		36%		

Included in our Re:fit Cymru Phase 1 project

Buildings in our Phase 1 project

Schools

1. Bryn Teg Primary School
2. Coedcae School
3. Glan-y-Mor School
4. Johnstown Primary School
5. Model Church in Wales School
6. Queen Elizabeth High School
7. St. John Lloyd Catholic Comprehensive School
8. Ysgol Gyfun Emlyn
9. Ysgol Gyfun Gymraeg Bro Myrddin
10. Ysgol Gymraeg Llangennech
11. Ysgol Gynradd Beca
12. Ysgol Gynradd Cynwyl Elfed
13. Ysgol Gynradd Gymunedol Cae'r Felin
14. Ysgol Gynradd Gymunedol Nantgaredig
15. Ysgol Gynradd Llannon
16. Ysgol Gynradd Wirfoddol Penboyr
17. Ysgol y Dderwen

Other

1. Ammanford Library
2. Carmarthen Leisure Centre
3. Dinefwr Bowls Centre
4. Llandovery Swimming Pool
5. Llys y Bryn Care Home / Ty'r Gelli Sheltered Housing Complex
6. Maes Llewelyn Care Home
7. Newcastle Emlyn Leisure Centre
8. Newcastle Emlyn Swimming Pool
9. Parc Dewi Sant Offices
10. Parc Myrddin Offices
11. Ty Parcyrhun Offices
12. Ysgol Dyffryn Aman Leisure Centre
13. Ysgol Maes y Gwendraeth (Drefach Site)

Towards Net Zero Carbon

We secured an interest-free loan of £2.4m to replace aging infrastructure and to optimise the running of existing equipment plus new solar PV systems.

Our Phase 1 project is projected to save £315,726 | 675 tCO₂e each year, with further phases being developed to help us reach our net zero carbon target by 2030.

Phase 1 has been delivered under the Re:fit 3 Framework as will Phase 2.

There is now a Re:fit 4 Framework running up-to April 2024.

Advice:

Whilst Re:fit Cymru provides a supported opportunity for a range of energy conservation measures, and renewables, to be delivered at scale and pace, don't underestimate the work required from you to successfully deliver such projects.