

Route towards becoming a Net Zero Carbon Local Authority by 2030

Progress Report March 2021



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Executive Summary

The County Council approved a Net Zero Carbon (NZC) Plan on 12th February 2020.

Action NZC-28 of this Plan requires performance reports on progress towards becoming a net zero carbon local authority by 2030 to be published annually.

This Progress Report was approved by our Executive Board on 22nd March 2021.

In 2019/20 our overall carbon footprint reduced by 2.9% compared to 2018/19; however, it should be noted that our total energy consumption increased by 1.8% (this attributed to the increased use of energy for heating due to colder weather) and our mileage increased by 3.4% (this attributed to the inclusion of travel undertaken for Domiciliary Care resulting from the transfer of staff from care provider Allied).

The Progress Report refers to preliminary work to identify the impact of COVID-19. For the period April – June 2020 electricity consumption in our non-domestic buildings was less than 34% (a carbon saving of 738 tCO₂e) and business mileage was less than 45% (a carbon saving of 139 tCO₂e) compared to the same period in 2019. However, the full impact won't be reflected until next year's update when we report on 2020/21 data. It is likely that the continuation of staff home working, together with changes in working practices such as an increased use of video conference facilities and online communication, will see a lasting reduction in carbon emissions in the longer term.

Welsh Government has an ambition for a carbon neutral public sector by 2030 and was to establish Wales-wide methodologies for carbon emissions reporting by the end of 2019/20. Unfortunately, this Guidance has not yet been published and this delay has impacted on several Actions in the NZC Plan which were dependent on the Guidance being published in April 2020.

We know that Welsh Government's reporting methodologies will differ from our current approach; however, until we have the specific detail there appears to be little merit in setting targets etc. as these will inevitably have to be reviewed / amended when the Guidance is published. Following its publication, we will review our carbon reporting methodologies and set targets to reflect the new Guidance. This will not prevent the work outlined in the NZC Plan to reduce our carbon footprint being progressed.

Whilst we are committed to reduce our carbon footprint significantly further, we recognise that however energy / carbon efficient our Services become they will inevitably still have a residual carbon footprint. We aim to primarily compensate for this by increasing the amount of renewable energy we generate on our Estate. Unfortunately, recent applications to connect to the local electricity distribution network have continued to attract significant reinforcement costs that have rendered schemes financially not viable. This is a major concern as enhancements to the capacity of the local electricity distribution network are beyond our direct control as require a combination of major infrastructure works plus balancing local consumption, generation, and storage.

Furthermore, the continuing decarbonisation of the electricity distribution network (National Grid) means that the emission conversion factor for electricity is decreasing. Whilst this has a positive impact in reducing our carbon footprint, it conversely has a negative impact in reducing the equivalent carbon savings from renewable energy generation, thus requiring more wind turbines / solar PV panels to offset our (reducing) carbon footprint.

Public services across Wales have pledged (July 2020) to ensure that action on decarbonisation is embedded through:

- (1) Understanding their carbon footprint, in line with guidance for public sector greenhouse emissions reporting
- (2) Agreeing to a set of net zero commitments / pledges for the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow on 1st – 12th November 2021
- (3) Closely monitoring and reporting their current and future carbon emissions
- (4) Ensuring all Local Authorities have robust, evidence-based net zero action plans in place, as living documents, by March 2021 (Note: We approved a net zero carbon plan on 12th February 2020)
- (5) Work with the new Decarbonisation Strategy Panel (Note: Our Chief Executive is a Member of this Panel).

Achieving net zero carbon by 2030 will require a range of ambitious actions and targets. A 'Public Sector Net Zero Carbon Route Map' is currently being developed by the Local Government Decarbonisation Strategy Panel as a high-level thematic framework to guide its approach. Where possible, we also propose to use this Route Map to help guide our approach. It should be noted that some of the Targets in the Route Map are particularly challenging, and appropriate Actions are currently being discussed with the relevant Lead Officers for incorporation into our NZC Plan.

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.

Breakdown of carbon footprint by percentage of emissions by each area:

Offset Equivalents

Carbon Footprint 2019/20 (tCO2e)	Equivalent Offsetting Requirement									
	Solar Panels	Wind Turbines	Forested Land (ha)							
	2018/19	2019/20	% change	2018/19	2019/20	% change	2018/19	2019/20	% change	
Non-domestic Buildings	14,443	175,450	189,398	7.9%	41	44	7.3%	24,099	23,482	-2.6%
Street Lighting	1,088	15,282	14,267	-6.6%	4	3	-25.0%	2,099	1,769	-15.7%
Fleet Mileage	3,814	45,644	50,015	9.6%	11	12	9.1%	6,269	6,201	-1.1%
Business Mileage	1,132	13,234	14,844	12.2%	3	3	0.0%	1,818	1,840	1.3%
TOTAL	20,477	249,610	268,524	7.6%	59	62	5.1%	34,285	33,293	-2.9%
Equivalent Installed Capacity (MW)	62.4	67.1		29.5	31.0					

Comparators:

- Equivalent number of 500 kW wind turbines (~327 tCO2e/year | ~1,180 MWh/year) (capacity of wind turbine at Nant y Caws)
- Equivalent number of individual 250 W solar PV panels (~0.07626 tCO2e/year | ~275 kWh/year)
- Equivalent area of Forested Land based on Welsh Government draft carbon reporting guidance. Presumes forested land planted is in place of grass land. For context, we own ~6,500 ha of land not including Housing

Renewable Energy Generation

Renewable Energy Generation	2016/17	2017/18	2018/19	2019/20	2019/20 vs 2018/19	
	Result	Progress	% change			
Solar PV						
Installed Capacity (kWp)	1,153	1,153	1,193	1,193	No Change	0%
Electricity generation (kWh)	670,401	937,330	979,071	997,480	Improved	+1.9%

Equivalent Carbon Savings (tCO2e)	301	360	301	277	Declined	-8.0%
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The continuing decarbonisation of the electricity distribution network (National Grid) means that the emission conversion factor for electricity is decreasing. Whilst this has a positive impact in reducing our carbon footprint, it conversely has a negative impact in reducing the equivalent carbon savings from renewable energy generation, thus requiring more wind turbines / solar PV panels to offset our (reducing) carbon footprint.

Progress against Actions - Carbon Footprint – Non-domestic buildings

	Action	By When	Progress
NZC-01	Deliver Re:fit Cymru (Energy Efficiency) Phase 1 project to achieve energy / carbon savings	Apr 2021	On track
NZC-02	Develop further phases of Re:fit Cymru (Energy Efficiency) project, or similar, to achieve accelerated energy / carbon savings	On-going	On track
NZC-03	Incorporate the 'Passivhaus' Standard, where appropriate, in new building construction projects	On-going	On track
NZC-04	Continually review and amend design specifications and briefs to reflect new technologies and energy efficient equipment	On-going	On track
NZC-05	Extend 'smart' and sub-metering technology to ensure accurate and timely capture of energy consumption data	On-going	On track
NZC-06	Develop appropriate carbon reduction target for the Council's non-domestic buildings as part of annual review of action plan	Mar 2021	Delayed due to on-going delay in publishing Wales carbon reporting guidance (this had been anticipated in April 2020)

Progress against Actions - Carbon Footprint – Street Lighting

	Action	By When	Progress
NZC-07	Develop appropriate carbon reduction target for the Council's street lighting as part of annual review of action plan	Mar 2021	Delayed due to on-going delay in publishing Wales carbon reporting guidance (this had been anticipated in April 2020)

Progress against Actions - Carbon Footprint – Fleet Mileage

	Action	By When	Progress
NZC-08	Review the most appropriate fuel powered vehicles for each of the Council's Services	On-going	On track

NZC-09	Develop appropriate carbon reduction target for the Council's fleet mileage as part of annual review of action plan	Mar 2021	Delayed due to on-going delay in publishing Wales carbon reporting guidance (this had been anticipated in April 2020)
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Progress against Actions - Carbon Footprint – Business Mileage

	Action	By When	Progress
NZC-10	Undertake a review of the Council's pool cars to identify opportunities for carbon reduction	TBC	On track
NZC-11	Finalise electric vehicle strategy for the County	TBC	On track
NZC-12	Develop appropriate carbon reduction target for the Council's business mileage as part of annual review of action plan	Mar 2021	Delayed due to on-going delay in publishing Wales carbon reporting guidance (this had been anticipated in April 2020)

Progress against Actions - Carbon Footprint – Renewable Energy Generation / Carbon Offsetting

	Action	By When	Progress
NZC-13	Work with Welsh Government Energy Service to explore and deliver opportunities for large scale renewable energy projects	On-going	On track
NZC-14	Work with National Procurement Service (NPS) to support greater procurement of energy from locally generated renewable energy projects	On-going	On track
NZC-15	Explore the feasibility of tree-planting, and other such measures, on Council controlled land to contribute towards carbon offsetting	On-going	On track
NZC-16	Develop appropriate target for renewable energy generation as part of annual review of action plan	Mar 2021	Delayed due to on-going delay in publishing Wales carbon reporting guidance (this had been anticipated in April 2020)

Progress against Actions - Carbon Footprint – Working with Welsh Government

	Action	By When	Progress
NZC-17	Collaborate with Welsh Government and other 'early adopter' Public Bodies to introduce national carbon reporting framework as part of ambition to achieve carbon neutral Welsh public sector by 2030	Jun 2020	Completed

Progress against Actions - Carbon Footprint – Working with Carmarthenshire Public Services Board / Swansea Bay City Deal partners

	Action	By When	Progress
NZC-18	Work with Carmarthenshire Public Services Board's (PSB's) Healthy Environment Delivery Group to undertake a Climate Change and Environmental Risk Assessment for the County	On-going	On track
NZC-19	Work with Carmarthenshire PSB partners to identify and develop opportunities for collaboration regarding carbon reduction	On-going	On track
NZC-20	Work with Welsh Government and Swansea Bay City Region partners to establish a Regional Energy Plan for South West Wales	On-going	On track

Progress against Actions - Carbon Footprint – Collaboration with experts from the private sector and 3rd sectors

	Action	By When	Progress
NZC-21	Work with the Council's contractors to explore innovative approaches to carbon reduction	On-going	On track
NZC-22	Participate in the Carmarthenshire 3rd Sector Environment Network established by Carmarthenshire Association of Voluntary Services (CAVS)	On-going	On track
NZC-23	Work with Ynni Sir Gâr, and others, to deliver and support local renewable energy projects	On-going	On track

Progress against Actions - Carbon Footprint – Integration and Communication

	Action	By When	Progress
NZC-24	Undertake Staff survey to identify how individuals can contribute to the Council's commitment to become a net zero carbon local authority	May 2020	Overdue
NZC-25	Incorporate climate change / carbon reduction in Integrated Impact Assessment process to be introduced by Council	TBC	On track
NZC-26	Support the 'Walk the Global Walk' project in the County's schools to promote awareness of climate change	On-going	Completed
NZC-27	Review action plan following publication of Welsh Government guidance regarding new national carbon reporting framework	Mar 2021	Delayed due to on-going delay in publishing Wales carbon reporting guidance (this had been anticipated in April 2020)
NZC-28	Publish performance reports on progress towards becoming a net zero carbon local authority by 2030	Annual	On track

COVID-19 and Climate Change

"There are decades where nothing happens; and there are weeks where decades happen." (quote

widely attributed to Vladimir Lenin).

On 12th February 2020 the County Council approved a Net Zero Carbon (NZC) Plan.

On 11th March 2020 the World Health Organization declared COVID-19 a pandemic.

On 23rd March 2020 the UK Prime Minister announced a COVID-19 national lockdown.

The impacts of COVID-19 are continuing to unfold.

Impact of COVID-19

'Impact of COVID-19 on Carmarthenshire' (September 2020) aims to better understand the community impact of the pandemic as we currently see it. We will be reviewing the key priorities set out in 'Moving Forward in Carmarthenshire: the next 5 years' (January 2018) to ensure that our short-term focus fully supports recovery from the pandemic and that plans are developed for medium and longer term recovery.

We have developed a draft economic recovery and delivery plan which identifies some 30 actions to support the recovery of the Carmarthenshire economy from the social and economic impacts of the COVID-19 pandemic and Brexit. It sets out our priorities for supporting Business, People and Place. With this support Carmarthenshire's economy can recover as quickly as possible to become one which is more productive than before, more equal, greener, healthier, and with more sustainable communities.

COVID-19 has presented many challenges since March 2020 and many of our staff have been redeployed to help the County response to the pandemic. Notwithstanding this, considerable progress has been made on several initiatives.

COVID-19 has impacted on the delivery of our NZC Plan both directly and indirectly. These impacts include:

Direct: COVID-19 related restrictions delayed on-site commencement of our Re:fit Cymru (Energy Efficiency) Phase 1 project. Thankfully, works were able to commence in September 2020 (Action NZC-01).

Indirect: As referenced in our NZC Plan, Welsh Government have an ambition for a carbon neutral public sector by 2030 and were to establish Wales-wide methodologies for carbon emissions reporting by the end of 2019/20. Unfortunately, this Guidance is not yet available, and the delay has impacted on the following Actions in the NZC Plan which were dependent on it being published in April 2020:

- Action NZC-06: Develop appropriate carbon reduction target for the Council's non-domestic buildings as part of annual review of action plan
- Action NZC-07 Develop appropriate carbon reduction target for the Council's street lighting as part of annual review of action plan
- Action NZC-09 Develop appropriate carbon reduction target for the Council's fleet mileage as part of annual review of action plan
- Action NZC-12 Develop appropriate carbon reduction target for the Council's business mileage as part of annual review of action plan
- Action NZC-16 Develop appropriate target for renewable energy generation as part of annual review of action plan
- Action NZC-27 Review action plan following publication of Welsh Government guidance regarding new national carbon reporting framework

We know that Welsh Government's reporting methodologies will differ from our current approach, and until we have the specific detail there appears to be little merit in setting targets etc. as these will inevitably have to be reviewed / amended when the Guidance is published. Following the publication of the reporting Guidance, we will review our carbon reporting methodologies and will set targets incorporating the new Guidance. This will not prevent us from progressing work outlined in our NZC Plan to reduce our carbon footprint.

Climate Change

"A global crisis has shocked the world. It is causing a tragic number of deaths, making people afraid to leave home, and leading to economic hardship not seen in many generations. Its effects are rippling across the world."

"Obviously, I am talking about COVID-19. But in just a few decades, the same description will fit another global crisis: climate change. As awful as this pandemic is, climate change could be worse." Bill Gates (August 2020).

"Without swift and immediate action, at an unprecedented pace and scale, we will miss the window of opportunity to 'reset' for... a more sustainable and inclusive future."

"[The environmental] crisis has been with us for far too many years - decried, denigrated and denied."

"It is now rapidly becoming a comprehensive catastrophe that will dwarf the impact of the coronavirus pandemic." HRH Prince Charles (September 2020).

"We can treat a crisis like a crisis, as we have seen because of the coronavirus. Treating the climate crisis like a crisis – that could change everything overnight." Greta Thunberg (November 2020).

United Nations Secretary General Antonio Guterres (December 2020) said that climate change has "left our planet broken" and urged nations to make radical changes before it is too late. Mr Guterres also warned that humanity is waging a war on the natural world, describing it as "suicidal". The central objective of the United Nations for 2021 is to build a truly global coalition for carbon neutrality "Every country, city, financial institution and company should adopt plans for transitions to net zero emissions by 2050 and take decisive action now to put themselves on the right path, which means cutting global emissions by 45% by 2030 compared with 2010 levels". (Note: The United Nations Environment Programme (UNEP) Report 'Making Peace With Nature (February 2021) sets out the triple emergency the world is in: the climate crisis; the devastation of wildlife and nature; and, the pollution that causes many millions of early deaths every year).

These words were recently echoed by Ángel Gurría (February 2021), the outgoing head of the Organisation for Economic Co-operation and Development (OECD), who said: "The single most urgent, emergent, immediate risk is to combat COVID-19, and its health, economic and social consequences... But the single most important intergenerational responsibility is to protect the planet. We are on a collision course with nature and we have to change course for future generations."

Public services across Wales have pledged (July 2020) to ensure that decarbonisation action is embedded through:

- Understanding their carbon footprint, in line with guidance for public sector greenhouse

emissions reporting

- Agreeing to a set of net zero commitments / pledges for the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow on 1st – 12th November 2021
- Closely monitoring and reporting their current and future carbon emissions
- Ensuring all Local Authorities have robust, evidence-based net zero action plans in place, as living documents, by March 2021 (Note: We approved a Net Zero Carbon on 12th February 2020)
- Work with the new Local Government Decarbonisation Strategy Panel (Note: Our Chief Executive is a Member of this Panel).

Can we tackle both climate change and COVID-19 recovery?

“...The more fundamental question is whether it will take a major climate calamity to force the type of global reaction we are seeing with COVID-19 and whether lessons will be learned from this current experience.” Mike Hayes, Global Head of Renewables, KPMG (April 2020).

Example of how we are trying to connect the dots...

Egni Sir Gâr Cyfyngedig [Carmarthenshire Energy Ltd] is the community benefit energy society established by the Council in 2015 to tackle climate change by reducing energy costs, generating clean renewable energy, lowering carbon emissions, and keeping the profits local.

Egni Sir Gâr Cyfyngedig has installed 636 kWp of rooftop solar PV systems on 16 Council owned buildings, and at its 2020 AGM members voted for all interest payment for the year (the surplus from the feed-in-tariff after operating costs but prior to financing costs) to be dedicated to local food banks due to the impact of COVID-19 on the local community. This enabled £42,300 to immediately benefit local foodbanks - the highest payment per megawatt of installed solar for any community benefit society or commercial solar farm in the UK.

In recognition of this, Egni Sir Gâr Cyfyngedig won the 'Community' award at the British Renewable Energy Awards 2020 on 26th January 2021.

Outline Approach

Our commitment to become a net zero carbon local authority by 2030 covers the following four key areas: Non-domestic Buildings, Street Lighting Fleet Mileage and Business Mileage

Whilst we are committed to significantly reducing our carbon footprint, we recognise that however energy / carbon efficient our Services become, we will inevitably still have a residual carbon footprint. This situation is acknowledged by the 'Net' in the Net Zero Carbon equation, which enables our residual carbon footprint to be compensated / offset by the generation of renewable electricity and through carbon sequestration (such as through the planting of trees). However, we continue to pursue the carbon mitigation hierarchy approach as we do not consider compensation / offsetting as a 'get out clause' for reducing our carbon footprint.

Section 1: Progress Update

1. Carbon Footprint

1.1 Non-domestic Buildings

Non-Domestic Buildings	2016/17	2017/18	2018/19	(1)2019/20	2019/20 vs 2018/19	
	Result	Progress	% change			
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%

Scope: This indicator covers energy consumption (kWh) in all our non-domestic buildings plus corresponding carbon emissions (tCO₂e).

Note: (1) Whilst consumption (kWh) increased in 2019/20, carbon emissions (tCO₂e) continued to decrease due to a reduction in the emission conversion factor for electricity. The continuing decarbonisation of the electricity distribution network (National Grid) will help to accelerate the reduction of carbon emissions from the Council's consumption of electricity. The performance data quoted in this document uses UK emission conversion factors issued by the Department for Business, Energy, and Industrial Strategy (BEIS) where appropriate. These emission conversion factors are published annually, for example <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019>

Update

Our non-domestic buildings contribute the highest proportion (71.5%) of our 2019/20 carbon footprint, with 14,443 tCO₂e being emitted. This is a decrease of 2.6% compared to 2018/19.

Although carbon emissions from our non-domestic buildings were found to have decreased, this is largely due to the decarbonisation of the electricity grid. Energy consumption was shown to have increased by 2.4% from 2018/19 to 2019/20.

The increase in consumption in 2019/20 was a direct result of the increase in energy used for heating (as the weather colder than in 2018/19). The data we report is not degree day corrected i.e., our energy consumption figures for our heating fuels have not been adjusted to factor in the variations in outside air temperature. When this is considered, our total energy consumption reduced by -3.5% from 2018/19 to 2019/20. Also, whilst our gas consumption is metered, our reporting for oil, liquid petroleum gas (LPG) and kerosene is based on delivery dates which can distort year-on-year comparison should deliveries be near year end. Unlike for electricity, the emission conversion factors for fossil fuels are comparatively static from year to year.

For the first time we have included the use of the biomass boiler in the Tywi Centre, Llandeilo. Although this building is owned by the National Trust, we lease the building and purchase the biomass pellets used in the boiler. This use has not previously been included in our carbon footprint but has been added this year for completeness.

This has added an additional 121,615 kWh to our carbon footprint in 2019/20 compared to 2018/19.

Utility Consumption (kWh) 2018/19 vs 2019/20

	2018/19	2019/20	kWh	%
Electricity	19,984,610	19,668,100	- 296,510	- 1.5 %
Gas	39,176,883	40,025,303	+ 848,420	+ 2.2%
Oil	3,878,728	4,576,446	+ 697,718	+ 18.0%
LPG	1,398,425	1,355,527	- 42,898	- 3.1%
Kerosene	418,716	660,249	+ 241,533	+ 57.7%
Biomass	0	121,615	+ 121,615	+100 %
Total	64,857,362	66,407,242	+ 1,569,879	+ 2.4 %

We continue to procure our energy supplies through the National Procurement Service (NPS), with 100% of this electricity being from renewable energy. In 2019/20, 63% of this 'green' electricity was generated within Wales (compared to 40% in 2018/19).

Sites included in Re:fit Cymru Phase 1:

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
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)

We are currently participating in the Welsh Government supported Re:fit Cymru programme, which aims to carry-out energy efficiency opportunities in non-domestic buildings. Whilst COVID-19 related restrictions delayed on-site commencement of our Phase 1 programme, works were able to commence in September 2020. The majority of Phase 1 will be completed by 31st March 2021.

Phase 1 will result in overall carbon savings of 675 tCO₂e per year.

Following the completion of Re:fit Cymru Phase 1 we will seek to identify sites from our portfolio of non-domestic buildings that are suitable to include in a Re:fit Cymru Phase 2 project

Accurate data is critical to planning, monitoring, and reporting progress towards becoming Net Zero Carbon. Accordingly, we are working on rolling out 'smart' and sub metering technology across our portfolio of non-domestic buildings. A major audit of all our electricity and gas meters has recently been completed which will allow us to work with our energy suppliers to roll-out a comprehensive programme of smart meter installation as soon as possible. We aim to also extend our smart metering programme to our water meters, to enable us to comprehensively monitor consumption in our non-domestic buildings.

Some preliminary work has been done to identify the impact of the first COVID-19 lockdown period on electricity use in our non-domestic buildings. Overall, it was found that electricity consumption was 34% less between April - June 2020 when compared to the same period in 2019, equating to a carbon saving of 738 tCO₂e. However, it should be noted that these emissions have effectively been displaced as most of our staff have worked from home since March 2020.

Rank (1) CIBSE	Buildings	Consumption (kWh)	Carbon Emissions (tCO2e)	Gross Internal Area (m2)						
		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

Note: (1) The fact that a building appears in our Top 25 merely indicates that it is a relatively large consumer of energy and not necessarily because it is energy inefficient. Welsh Government Energy Service have carried-out a benchmarking exercise of each building's 2019/20 electricity and fossil fuel Energy Use Intensity (kWh/m2/yr). The corresponding Chartered Institution of Building Services

Engineers (CIBSE) category has been assigned to each building to reflect its predominant usage. These are based on TM46 values found at CIBSE - Building Services Knowledge. This enables comparison with other buildings of a similar type, for example a secondary school is compared against other secondary schools. An occupancy adjustment has also been applied where annual hours exceed the standard value for each category, which will increase the standard benchmark accordingly.

Good / Typical / High indicators are assigned for electricity and heating fuel, where:

'High' is more than 20% higher than benchmark

'Good' is more than 20% lower than benchmark

'Typical' lies between 'Good' and 'High'

Progress against Actions

NZC-01 Action: Deliver Re:fit Cymru (Energy Efficiency) Phase 1 project to achieve energy / carbon savings

Lead Officer: Head of Property

Timescale: April 2021

Progress

Whilst COVID-19 delayed on-site commencement of our Phase 1 programme, works were able to commence in September 2020. The Phase 1 project is forecasted to be complete by 31st March 2021 and to result in overall carbon savings of 675 tCO₂e per year.

NZC-02 Action: Develop further phases of Re:fit Cymru (Energy Efficiency) project, or similar, to achieve accelerated energy / carbon savings

Lead Officer: Sustainable Development Manager

Timescale: Ongoing

Progress: Currently working with Welsh Government Energy Service (WGES) and Ameresco to develop a Phase 2 of our Re:fit Cymru (Energy Efficiency) project.

NZC-03 Action: Incorporate 'Passivhaus' standard, where appropriate, in new building construction projects

Lead Officer: Property Design Manager

Timescale: Ongoing

Progress: We are developing a 'Fabric First' methodology to new build construction projects to ensure a high level of energy efficiency for new facilities entering our building portfolio. This is underpinned by a commitment to incorporate the quality assured 'Passivhaus' Standard.

Contracts were awarded during 2019/20 for the construction of the following new schools, which have been designed to achieve Passivhaus Standard certification and thus deliver enhanced performance in terms of energy usage and internal environment:

- Gorslas Primary School (currently under construction)
- Ysgol y Castell (currently under construction)
- Pembrey Community Primary School (contract awarded)

Other non-educational buildings also designed and built to achieve the Passivhaus Standard are:

- Carmarthen Archives and Repository (completed)
- Pendine Attractor Project – Eco Hostel building (currently under construction).

NZC-04 Action: Continually review and ammend design specifications and briefs to reflect new technologies and energy efficient equipment

Lead Officer: Property Design Manager

Timescale: Ongoing

Progress: We will continue to explore solutions and methods to maximise renewable energy solutions. A further emphasis will be put on establishing optimised solutions in new buildings with calculated investment against the performance level of the building fabric and aimed to provide best value in terms of capital and operation expenditure. We will continue to explore a flexible model to best suit the needs of the Net Zero Carbon agenda on any given project.

Examples of how renewable and low energy specifications are being continually developed and adapted include:

- All major new build projects incorporate renewable energy technologies where appropriate with solar photovoltaic (PV) installations being incorporated into many recent Modernising Education Provision 21st Century Schools projects (e.g. Ysgol Pum Heol – due for completion during 2020/21) and new housing developments (e.g. Garreglwyd and Dylan sites).
- The new housing development currently under construction at Glanmor Terrace, Burry Port includes battery storage to maximise the use of the electricity generated by the solar PV installed on each dwelling. Electric vehicle charge points are also being provided for each property. Also features Mechanical Ventilation Heat Recovery (MVHR) units in each dwelling.
- Air Source Heat Pumps have been installed to provide heating at each of the flats and communal areas at Llys yr Ysgol Sheltered Housing Complex. These heat pumps replaced inefficient and expensive to run electric storage heaters at the Complex. Air Source is currently being explored on a larger scale in respect of the new development for Ysgol Heol Goffa.
- Specifications for all new school developments now include for the installation of Electric Vehicle Charging Points.
- LED lighting now being specified as standard.
- SolarEdge technology specified for all new solar PV systems which allows web access to generation data that allows more detailed real-time data for the analysis of electricity generation.

NZC-05 Action: Extend 'smart' and sub-metering technology to ensure accurate and timely capture of energy consumption data.

Lead Officer: Various

Timescale: Ongoing

Progress: A major audit of our all our electrity and gas meters has recently been completed, which will allow us to work with our energy suppliers to roll-out a comprehensive programme of smart

meter installation as soon as possible. We will then focus on extending smart meters to our water consumption.

NZC-06 Action: Develop appropriate carbon reduction target for the Council’s non-domestic buildings as part of annual review of action plan

Lead Officer: Sustainable Development Manager

Timescale: March 2021

Progress: Welsh Government were to establish Wales-wide methodologies for carbon emissions reporting by the end of 2019/20. Unfortunately, this has not yet been published. The delay has impacted on this Action, and others, as it was dependent on the Guidance being published in April 2020. We are aware that Welsh Government’s reporting methodologies will differ from our current approach, and until we have the specific detail there appears to be little merit in setting targets etc as these will inevitably have to be reviewed / amended when the Guidance is published. Following the publication of the reporting Guidance, we will review our carbon reporting methodologies and will develop an appropriate carbon reduction target for the Council’s non-domestic buildings.

1.2 Street Lighting

Street Lighting	2016/17	2017/18	2018/19	2019/20	2019/20 vs 2018/19	
	Result	Progress	% change			
Consumption (kWh)	5,718,531	4,873,979	4,202,381	3,925,149	Improved	-6.6%
Carbon Emissions (tCO2e)	2,569	1,874	1,291	1,088	Improved	-15.7%

Scope: This indicator covers energy consumption (kWh) in all our Street Lighting plus corresponding carbon emissions (tCO2e).

Update

Street Lighting makes up 6% of our carbon footprint, with 1,088 tCO2e emitted in 2019/20. This is a decrease of 16% compared to 2018/19.

We have completed the conversion of almost 100% of our 20,000 streetlights to low energy light-emitting diode (LED) lighting, funded by the Welsh Government’s interest-free Wales Funding Programme. This has resulted in a 33% decrease in electricity consumption from street lighting over the past five years.

In 2020/21, we also completed a project to upgrade 5,000 community lighting units to incorporate LED lighting. The initiative which included securing ‘invest to save’ funding under the Wales Funding Programme for Community Councils, reduced energy consumption and improved lighting quality in local communities.

Progress against actions

NZC-07 Action: Develop appropriate carbon reduction target for the Council’s street lighting as part of annual review of action plan

Lead Officer: Public Lighting Engineer

Timescale: March 2021

Progress: Similar to Action NZC-06 - Following the publication of the Wales reporting Guidance, we will review our carbon reporting methodologies and will develop an appropriate carbon reduction target for the Council's street lighting that incorporates the new Guidance. However, as we have completed a comprehensive upgrade of street lighting to LED technology, and reviewed operational hours, little more can currently be done to further reduce annual emissions.

1.3 Fleet Mileage

Fleet Mileage	2016/17	2017/18	2018/19	2019/20	2019/20 vs 2018/19	
	Result	Progress	% change			
Mileage (Miles)	5,127,150	5,121,289	(1)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%

Scope: This indicator covers vehicles in the Council's fleet that obtain fuel from bunkered diesel stores in Council depots and pool vehicles.

Note: (1) This figure has been updated since last year to correct for incorrect mileage entries (previously reported as 4,982,428 miles).

Update

Fleet Mileage makes up 19% of our carbon footprint, resulting in 3,814 tCO₂e emitted in 2019/20. This is a decrease of 1.1% compared to 2018/19.

We have invested modern fleet vehicles, using low emission vehicles that are suitable for use across the large geographical area (over 2,300 km²) of our County. Our heavy commercial specialist fleet of refuse and highways vehicles were replaced in 2016 and were the most advanced in terms of reduced vehicle emissions at the time.

Our specialist refuse and highways vehicles will be due for replacement within the next two years and we will continue to look at all options available to reduce the carbon emissions of our fleet vehicles. This is in line with our Fleet Strategy, which will be updated to fully align with our net zero carbon ambitions.

We currently have eight electric vehicles (EVs) in our fleet, comprising two new Renault Zoe and six older fleet pool cars i.e., Peugeot iOn (four) and Mitsubishi i-MiEV (two). We have also submitted grant bids to replace a further five diesel vehicles with EVs.

Breakdown of Council fleet size and associated annual mileage:

Fleet	2018/19	2019/20		
	Fleet size	Annual mileage	Fleet size	Annual mileage
Heavy Commercials – Refuse Collection Vehicles (RCVs) and Resource Recovery Vehicles (RRVs)	43	378,482	38	378,482
Heavy Commercials – Other (everything else over 3.5 tonnes)	73	516,705	64	518,481

Welfare Minibuses (Wheelchair Adapted)	33	567,724	36	516,742
Minibuses (Standard)	22	128,111	26	167,237
Light Commercials (Vans – all sizes up to 3.5 tonnes)	321	2,847,111	325	2,787,839
Fleet Cars (including pool cars and people carriers)	92	855,116	72	785,887
Total	(1)584	5,293,249	(1)561	5,154,668

Note: (1) Our Fleet changes during the year. The Total is for ALL vehicles that were on fleet that year and includes swap-out vehicles and short term hired vehicles. On 31st March 2020 the number of vehicles in the fleet was 510.

Progress against Actions

NZC-08 Action: Review the most appropriate fuel powered vehicles for each of the Council's services.

Lead Officer: Fleet Manager

Timescale: Ongoing

Progress: We are working closely with WGES on a review of our vehicle fleet, with the aim of planning for a transition to an Ultra-Low Emission Vehicle (ULEV) fleet. The review will cover all aspects of our road transport operations, as well as the supporting Electric Vehicle Charging Infrastructure required to support a ULEV fleet. This review is due to be complete by 31st March 2021.

NZC-09 Action: Develop appropriate carbon reduction target for the Council's fleet mileage as part of annual review of action plan

Lead Officer: Fleet Manager

Timescale: March 2021

Progress: Guidance from Welsh Government on carbon reporting was due to be published in April 2020, however this has been delayed. Once the Guidance is published we will work closely with Welsh Government to adopt the new reporting methodologies. WGES are also currently undertaking a ULEV fleet review to help reduce the carbon footprint of our fleet and business mileage. Following the outcomes of this work, a carbon reduction target for our fleet mileage will be established.

1.4 Business Mileage

Business Mileage	2016/17	2017/18	2018/19	2019/20	2019/20 vs 2018/19	
	Result	Progress	% change			
Staff Cars (Grey fleet – mileage reimbursed)						
Mileage (miles)	4,186,640	3,948,586	3,846,615	(1)3,971,513	Declined	+3.2%
Carbon Emissions (tCO2e)	1,260	1,159	1,118	1,132	Declined	+1.2%

Scope: This indicator covers work-related mileage undertaken by Council staff in their own cars.

Note: (1) The increase in mileage (miles) in 2019/20 is due to the inclusion of travel undertaken for Domiciliary Care due to staff transferring over from care provider Allied.

Update

As part of the ULEV fleet review, WGES are looking at both our pool car provision and at staff-owned vehicles ('grey fleet') that are reimbursed by a mileage payment scheme. The outcomes will include a Fleet profile, which will outline recommendations for dealing with grey fleet mileage and transitioning it to ULEV vehicles.

New EV charging sites have been installed for public use across the County, including 26 Fast Charging sites (7-22kW), 3 Rapid Charging sites (50kW) and one Ultra Rapid (150kW) site. A further 10 Fast Charging sites and 2 Rapid charging sites are also planned. This expansion of our EV charging infrastructure should encourage greater use of electric pool cars which are currently underused due to the lack of charging facilities for longer journeys. A map of EV charging sites can be viewed online at Zap Map.

As part of a staff travel project, two new electric pool cars have been added at Ty Elwyn, primarily for the use of Children's Services, but available to all staff in the building. Fast charging points have also been installed at the site to support their use.

Due to the COVID-19 pandemic, many of our staff are now working from home resulting in a significant decrease in work-related travel. This has resulted in a reduction in business mileage during April-June 2020, with a decrease of 45% compared to the same period in 2019. This equates to a carbon saving of 139 tCO₂e. It is likely that a continuation of staff home working, as well as changes in working practices such as an increase in video meetings and online communication, will see a reduction in business mileage in the longer term.

Progress against Actions

NZC-10 Action: Undertake a review of the Council's pool cars to identify opportunities for carbon reduction

Lead Officer: Head of Transportation and Highways

Timescale: TBC

Progress: WGES are currently undertaking a fleet review with a view of reducing the carbon footprint of our fleet and business mileage. Part of this work will involve an assessment of our pool cars and opportunities for the decarbonisation of our fleet.

NZC-11 Action: Finalise electric vehicle strategy for the County

Lead Officer: Transport Strategy and Infrastructure Manager

Timescale: TBC

Progress: An electric vehicle strategy for the County is yet to be finalised. Despite this, progress continues to be made with the majority of short term objectives completed including the installation of 26 new electric vehicle charging points around the County and particularly at destination points to enable journeys by electric vehicles. Further we have been awarded funding by Welsh Government to install a super-fast charging hub - believed to be the first of its kind in Wales - at Cross Hands to be completed by 31st March 2021.

NZC-12 Action: Develop appropriate carbon reduction target for the Council's business mileage as part of annual review of action plan

Lead Officer: Head of Transportation and Highways

Timescale: March 2021

Progress: Guidance from Welsh Government on carbon reporting was due to be published in April 2020, however this has been delayed. Once the Guidance is published we will work closely with Welsh Government to adopt the new reporting methodologies. WGES are also currently undertaking a fleet review with a view of reducing the carbon footprint of our fleet and business mileage. The outcomes of this work will allow us to set meaningful targets for carbon reduction for business mileage.

2. Carbon Offsetting / Renewable Energy

2.1 Overview

Carbon offsetting involves compensating for carbon emissions arising from industrial or other human activity, by participating in schemes designed to make equivalent reductions of CO₂ in the atmosphere. Because one unit of CO₂ has the same climate impact wherever it is emitted, the benefit is the same wherever it is reduced or avoided. Achieving verified carbon reductions could include protecting rainforests in Sierra Leone or potentially local tree planting and renewable energy generation. This can be a complex issue and represents the option of last resort unless tree-planting / peatland enhancement on Council controlled land is deemed to qualify for carbon offsetting (Note: This to be confirmed when Welsh Government publishes its Land Use guidance as part of the net zero carbon public services reporting framework).

An example of what would be required to compensate / offset the entirety of our 2019/20 carbon footprint with renewable energy is shown here:

Carbon Footprint 2019/20	-	Renewable Energy Generation	=	Net Zero Carbon		
Non-Domestic Buildings	Wind Turbines	or				
Carbon emissions (tCO ₂ e)	14,443	44		or	189,398	= 0 tCO ₂ e
Street Lighting						
Carbon emissions (tCO ₂ e)	1,088	3		or	14,267	= 0 tCO ₂ e
Fleet Mileage						
Carbon emissions (tCO ₂ e)	3,814	11		or	50,015	= 0 tCO ₂ e
Business Mileage						
Carbon emissions (tCO ₂ e)	1,132	3		or	14,844	= 0 tCO ₂ e
TOTAL						
Carbon emissions (tCO ₂ e)	20,477	62				
31.0 MW		or	268,524			
67.1 MW		= 0 tCO ₂ e				

Comparators:

- Equivalent number of 500 kWp wind turbines (~327 tCO₂e/year | ~1,180 MWh/year) (capacity of wind turbine at Nant y Caws)
- Equivalent number of individual 250 W solar PV panels (~0.07626 tCO₂e/year | ~275 kWh/year)

2.2 Renewable Energy

Renewable Energy Generation	2016/17	2017/18	2018/19	2019/20	2019/20 vs 2018/19	
	Result	Progress	% change			
Solar PV						
Installed Capacity (kWp)	1,153	1,153	1,193	1,193	No Change	0%
Electricity generation (kWh)	670,401	937,330	979,071	997,480	Improved	+1.9%
Equivalent Carbon Savings (tCO ₂ e)	301	360	301	277	Declined	-8.0%

Note: Whilst electricity generation increased in 2019/20, carbon savings (tCO₂e) decreased due to the reduction in the emissions conversion factor for electricity.

Update

In 2019/20 we spent in-excess of £4m on electricity for our non-domestic buildings and Street Lighting. This electricity is procured using Crown Commercial Services Framework Agreements, via the National Procurement Service (NPS). All this electricity is from renewable energy sources, with 63% being sourced from within Wales in 2019/20. The consumption of this 'green' electricity is reflected in the (decreasing) UK emission conversion factor for electricity, consequently we are unable to directly benefit from carbon savings resulting from our procurement of 'green' electricity as this would effectively be double counting the carbon savings.

Over recent years, we have sought to significantly increase the amount of renewable electricity we generate but continue to be frustrated by the limited capacity of the local electricity distribution network (National Grid). Recent discussions with Western Power Distribution have established that there is little additional capacity available on the local electricity distribution network in Carmarthenshire for large-scale renewable energy installations, without the requirement for significant reinforcement work. Unfortunately, this is beyond our direct control as requires a combination of major infrastructure works plus balancing local consumption, generation, and storage. The cost for reinforcement work would have to be met by prospective developers and could take several years to complete. Realistically, therefore, to achieve our net zero carbon commitment by 2030, we are currently focussing on comparatively small-scale renewable energy schemes and 'export-limited schemes' where all generated electricity is consumed on-site without export to the local distribution network.

We have solar PV installed on 35 of our non-domestic buildings, with an overall installed capacity of over 1.15 megawatts (MW). Solar PV is being installed at a further ten sites as part of our Re:fit Cymru Phase 1 project, increasing our total installed capacity by 460 kWp to 1.65 MW. Solar PV also features wherever possible in our new build programmes (151 kWp installed since 2019) and is actively being incorporated into our Housing schemes (466 kWp installed since 2019).

Sites identified for solar PV installation under our Re:fit Cymru Phase 1 project:

Site	kWp
Carmarthen Leisure Centre	123
Coedcae Comprehensive School	40
Johnstown Primary School	12
Llandoverly Swimming Pool	50
Maes Llewellyn Care Home	51
Model Church in Wales School	14
Parc Dewi Sant Offices	134
Ysgol Gymraeg Llangennech	12
Ysgol Gynradd Gymunedol Nantgaredig	12
Ysgol Gynradd Llannon	12
Total	460

In addition, we are discussing a possible power purchase arrangement with Hywel Dda University Health Board linked to a proposed 500 kWp solar farm at their Hafan Derwen site – some 50% of the generated electricity would be available to supply our adjoining Parc Dewi Sant offices (we were unable to construct a similar facility on land at our Parc Dewi Sant site due to Planning restrictions).

We are currently actively exploring the following options:

In Carmarthenshire

1. Installation of small-scale renewable energy schemes where possible, including 'export-limited schemes' where generated electricity is consumed on-site without export to the local distribution network.
2. Investment in suitable, existing renewable energy sites when opportunities arise.
3. Investment in suitable new sites with other developers where the scale of the project makes reinforcement costs viable.

Outside Carmarthenshire

4. Investment in suitable existing renewable energy sites when opportunities arise.
5. Investment in suitable new sites with other developers.

Progress against Actions

NZC-13 Action: Work with Welsh Government Energy Service to explore and deliver opportunities for large scale renewables

Lead Officer: Sustainable Development Manager

Timescale: Ongoing

Progress: We continue to work with WGES to explore and deliver large-scale renewable energy projects. WGES are currently reviewing our land holdings to determine feasibility for renewable energy. We are also actively pursuing other opportunities, including a possible power purchase arrangement with Hywel Dda UHB linked for a proposed 500 kWp solar farm at their Hafan Derwen site – some 50% of the generated electricity would be available to supply our adjoining Parc Dewi Sant offices.

NZC-14 Action: Work with National Procurement Service (NPS) to support greater procurement of energy from locally generated renewable energy projects

Lead Officer: Sustainable Development Manager

Timescale: Ongoing

Progress: 100% of the electricity we procure from NPS is from renewable energy. In 2019/20, 63% of this 'green' electricity was generated within Wales (compare to 40% in 2018/19).

NZC-16 Action: Develop appropriate target for renewable energy generation as part of annual review of action plan

Lead Officer: Strategic Asset Manager

Timescale: March 2021

Progress: Similar to Action NZC-06 - Following publication of the Wales reporting Guidance, we will review our carbon reporting methodologies and will develop an appropriate target for renewable energy generation. This will also be informed by discussions with Welsh Government and Western Power Distribution regarding the capacity of the local electricity distribution network.

2.3 Green Infrastructure

Update

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services has shown the strong interrelationship between climate change, the loss of biodiversity and human wellbeing. In developing our Net Zero Carbon Plan, we will consider the impact on Carmarthenshire's biodiversity and consider how the natural environment on our Estate can help with mitigation and adaptation to climate change. We cannot solve the threats of human-induced climate change and loss of biodiversity in isolation. We either solve both or we solve neither.

The Carmarthenshire Nature Recovery Plan which we facilitate identifies climate change as a major risk to our biodiversity but also as a way of mitigating the impacts from its effects.

Several projects already help with our Net Zero Carbon targets including the Caeau Mynydd Mawr project and the Carmarthenshire Bogs project. Future work will look at how we manage our land within our Estate as Country Parks, Local Nature Reserves plus amenity grasslands, land around housing, coastal saltmarshes etc. could all contribute to achieving our Net Zero Carbon targets and contribute to a more resilient natural environment.

We have secured funding from the Welsh Government Enabling Natural Resources and Wellbeing (ENRaW) scheme to plant 70 mixed species trees to enhance the treescape on our Parc Dewi Sant site. The planting of the trees has been delayed due to restrictions caused by COVID-19 however it is envisaged that this will be undertaken by 31st March 2021.

We have also received funding from the Welsh Government Targeted Regeneration Investment (TRI) programme to deliver Green Infrastructure (GI) projects in two TRI focus areas - Llanelli and Ammanford. These projects are currently being delivered, with a 'green wall' to be installed at Llanelli Library, and a 'rain garden' at Carregaman Car Park in Ammanford.

As part of the Revised Local Development Plan, a Green Infrastructure Assessment has been undertaken which has identified and mapped green assets across the County. To build on this work, we are now looking to commission consultants to produce a Green Infrastructure Strategy, which will build on the mapping work by identifying priority areas and specific interventions. The revised Local Development Plan deposit plan also includes a new Green Infrastructure Networks policy, which seeks to ensure developers protect and enhance assets on development sites.

The equivalent area of forested land required to offset our carbon footprint has been estimated using Welsh Government’s draft carbon reporting guidance. This presumes that the forested land planted is in place of grass land. For context, we own ~6,500 hectares (ha) of land not including Housing. This analysis will be refined when the Wales reporting guidance is published.

Carbon Footprint 2019/20 (tCO2e)		Equivalent Offsetting Requirement		
		Forested Land (ha)		
	2018/19	2019/20	% change	
Non-domestic Buildings	14,443	24,099	23,482	-2.6%
Street Lighting	1,088	2,099	1,769	-15.7%
Fleet Mileage	3,814	6,269	6,201	-1.1%
Business Mileage	1,132	1,818	1,840	+1.3%
TOTAL	20,477	34,285	33,293	-2.9%

Progress against Actions

NZC-15 Action: Explore the feasibility of tree-planting and other such measures, on Council controlled land to contribute towards carbon offsetting

Lead Officer: Strategic Asset Manager

Timescale: Ongoing

Progress: Planting of 70 mixed species trees to be implemented at Parc Dewi Sant. Projects funded by Welsh Government to increase urban green infrastructure are also being implemented in Llanelli and Ammanford, with further funding having been awarded for feasibility studies in Newcastle Emlyn and Carmarthen.

3. Collaboration

3.1 Working with Welsh Government

Progress against Actions

NZC-17 Action: Collaborate with Welsh Government and other ‘early adopter’ Public Bodies to introduce carbon reporting as part of the ambition to achieve a carbon neutral Welsh public sector by 2030.

Lead Officer: Sustainable Development Manager

Timescale: June 2020

Progress: We collaborated with Welsh Government and other 'early adopter' Public Bodies and had anticipated that reporting guidance would be published in April 2020; however, the Guidance has not yet been published. Once the Guidance is published we will review our reporting methodologies.

3.2 Working with Carmarthenshire Public Services Board / Swansea Bay City Deal partners

We provide the Secretariat for the Carmarthenshire Public Services Board and the Swansea Bay City Deal.

Progress against Actions

NZC-18 Action: Work with the Carmarthenshire Public Services Board (PSB) Healthy Environment Delivery Group to undertake a Climate Change and Environmental Risk Assessment for the County.

Lead Officer: Corporate Policy and Partnership Manager

Timescale: Ongoing

Progress: In July 2019, Natural Resources Wales (NRW) commissioned Aecom to carry-out a severe weather assessment to gather information of people's experiences of local severe weather events and to identify future priorities for addressing the impacts. This assessment focussed on Carmarthenshire, Pembrokeshire and Ceredigion. The report identified a number of communities most at risk from severe weather events, including Llanelli, Kidwelly, Pibwrlwyd and Newcastle Emlyn in Carmarthenshire.

Subsequently, in February 2020, NRW commissioned Netherwood Sustainable Futures to deliver this project within two at-risk pilot communities - Newcastle Emlyn and Fishguard (Pembrokeshire) - with the specific brief to:

- Identify and engage with key stakeholders to develop a plan for building climate resilience
- Document the process and findings in a report by April 2021, specifying recommendations by focusing specifically on outcomes and solutions, as well as identifying a path for progression.

The project was paused before any community engagement due to COVID-19 and restarted in July 2020. An online approach to engage with people was agreed and during August, people's views started to be gathered. The research has collated information on people's past experiences - changes to the seasons, warmer and wetter winters, changes in the natural world and some specific impacts in the area – and also their concerns about what's happening now to the physical environment because of climate change, the town's collective response to severe weather and practical steps to cope.

An online public meeting was held on 29th September 2020 for residents, groups, businesses and local agencies in Newcastle Emlyn to find out more about risks such as impacts on the local economy, risks to the townscape and its infrastructure or recognising the risk to particular groups or neighbourhoods. The research has shown that people feel the town needs to plan forward for a changing climate. There will be further consideration of the report's recommendations by the PSB's Healthy Environment Delivery Group.

NZC-19 Action: Work with PSB partners to identify and develop opportunities for collaboration regarding carbon reduction

Lead Officer: Sustainable Development Manager

Timescale: Ongoing

Progress: A planned workshop to further develop joint working amongst PSB partners was cancelled due to COVID-19. This will now be progressed with our PSB partners and an invitation to participate extended to other PSBs in the Region.

We are in discussion with PSB partners Hywel Dda UHB about a possible power purchase arrangement linked to a proposed 500 kWp solar farm at their Hafan Derwen site – some 50% of the generated electricity would be available to supply our adjoining Parc Dewi Sant offices.

NZC-20 Action: Work with Welsh Government and Swansea Bay City Region partners to establish a Regional Energy Plan for South West Wales

Lead Officer: Head of Regeneration

Timescale: Ongoing

Progress: The existing South West Regional Directors Group is providing the lead for the Regional Energy Strategy. An energy sub group has recently been established, chaired by Pembrokeshire County Council's Director of Development. The next steps are to carry-out stakeholder mapping and engagement. This will be followed by energy vision setting, updating energy vision scenario modelling and economic analysis, and finally strategy development.

3.3 Working with experts from the private and 3rd sectors

Progress against Actions

NZC-21 Action: Work with the Council's contractors to explore innovative approaches to carbon reduction

Lead Officer: Various

Timescale: Ongoing

Progress: We are currently working to explore innovative approaches to carbon reduction with a range of organisations, including:

- the Active Building Centre regarding extending the Cross Hands Industrial Estate
- the Welsh School of Architecture, Cardiff University to understand and model our retrofit programme to inform our housing decarbonisation strategy and future investment programmes across our entire housing stock.

NZC-22 Action: Participate in the Carmarthenshire 3rd Sector Environment Network established by Carmarthenshire Association of Voluntary Services (CAVS)

Lead Officer: Various

Timescale: Ongoing

Progress: The Carmarthenshire 3rd Sector Environment Network was formed in September 2019.

During 2020/21, three meetings were held. The Network is open to any 3rd sector organisations or community groups involved with, or concerned by, environmental issues to share information and to collaborate to achieve common goals. The meetings also allow groups to follow the progress made by the Healthy Environment PSB delivery Group in the implementation of the Carmarthenshire Well-being Plan.

One of the main points of discussion in 2020/21 was the future focus, aims and potential of the network. The two main areas highlighted were to raise awareness and to support 3rd sector groups and their service users to act around the following environmental messages:

- Climate Change threat - the need to change behaviour and benefits of doing so
- Climate Change effects - the need to prepare
- Safeguarding the Environment - the need and benefits
- Health and Well-being - the benefits of being outdoors in nature

In February 2021 the Green Stories Campaign was started as a first step in raising awareness of good practice happening - sharing good examples of what is already being achieved by groups locally and hence also highlighting the environmental issues.

NZC-23 Action: Work with Ynni Sir Gâr, and others, to deliver and support local renewable energy projects

Lead Officer: Sustainable Development Manager

Timescale: Ongoing

Progress: Ynni Sir Gâr have been funded under the Welsh Government Rural Development Fund LEADER programme to identify and explore the feasibility of small-scale community energy projects in the County. The project will work collaboratively with our Ten Towns initiative. We are also supporting Ynni Sir Gâr to deliver a project at Ysgol Bro Dinefwr to install additional solar PV plus EV charging points.

4. Integration and Communication

Update

As requested by our Environmental and Public Protection Scrutiny Committee, we produced a Young Person's version of the NZC Plan. This was presented at the Walk the Global Walk virtual model UN climate change conference for schools in June 2020 and has been circulated to the schools involved.

We have also added a Net Zero Carbon page on our website to help improve communication and to update on progress.

We are integrating the aims of the Net Zero Carbon Plan and the wider climate emergency into a new Integrated Impact Assessment Tool. This tool will be used to assess the impact of our plans, policies, and programmes against a range of legislative requirements.

Progress against Actions

NZC-24 Action: Undertake a staff survey to identify how individuals can contribute to the Council's commitment to become a net carbon zero local authority

Lead Officer: Media and Marketing Manager

Timescale: May 2020

Progress: This was put on hold as an action due to communications around COVID-19 taking priority. We will revisit the staff survey in 2021.

NZC-25 Action: Incorporate climate change / carbon reduction into Integrated Impact Assessment process to be introduced by the Council

Lead Officer: Corporate Policy and Partnership Manager

Timescale: TBC

Progress: The integrated impact assessments are to be completed and will include a section in which climate change and carbon reduction impacts can be identified.

NZC-26 Action: Support the 'Walk the Global Walk' project in the County's schools to promote awareness of climate change

Lead Officer: Officer for International School Linking

Timescale: March 2021

Progress: Despite restrictions due to COVID-19, we continued to support the 'Walk the Global Walk' project including participating in a virtual model UN climate change conference for schools. 28 pupils across six different countries participated, and lively debate was had around the topics of climate change, plastic waste, and our Net Zero Carbon Plan. The event was also attended by both Members and Officers. Following this event, the students agreed the 'Carmarthenshire Global Goalkeepers Climate Action Manifesto' which was launched at the Wales Youth Climate Summit 2020 held on 8th December 2020 - <https://www.youtube.com/watch?v=rtigy5zyMn8>

NZC-27 Action: Review action plan following the publication of Welsh Government guidance regarding new carbon reporting framework

Lead Officer: Sustainable Development Manager

Timescale: March 2021

Progress: Guidance from Welsh Government on carbon reporting was due to be published in April 2020, however this has been delayed. Once the Guidance is published we will work closely with Welsh Government to adopt the new reporting methodologies.

NZC-28 Action Publish performance reports on progress towards becoming a net zero carbon local authority by 2030

Lead Officer: Sustainable Development Manager

Timescale: Annual

Progress: This report is the first annual update on progress towards become a net zero carbon local authority by 2030.

Many of our current Actions are ongoing and will continue throughout the lifetime of the NZC Plan. We will continue to review and report progress against the following ongoing Actions in each annual review of the NZC Plan:

Ref	Action	Lead Officer
Carbon Footprint – Non-domestic buildings		
NZC-03	Incorporate the 'Fabric First' design criteria, where appropriate, in new building construction projects	Property Design Manager
NZC-04	Continually review and amend design specifications and briefs to reflect new technologies and energy efficient equipment	Property Design Manager
Renewable Energy Generation / Carbon Offsetting		
NZC-13	Work with Welsh Government Energy Service to explore and deliver opportunities for large scale renewable energy projects	Sustainable Development Manager
NZC-14	Work with National Procurement Service (NPS) to support greater procurement of energy from locally generated renewable energy projects	Sustainable Development Manager
Working with Carmarthenshire Public Services Board / Swansea Bay City Deal Partners		
NZC-19	Work with Carmarthenshire PSB partners to identify and develop opportunities for collaboration regarding carbon reduction	Corporate Policy and Partnership Manager
NZC-20	Work with Welsh Government and Swansea Bay City Region partners to establish a Regional Energy Plan for South West Wales	Head of Regeneration
Collaboration with experts from the private and 3rd sectors		
NZC-21	Work with the Council's contractors to explore innovative approaches to carbon reduction	Various
NZC-22	Participate in the Carmarthenshire 3rd Sector Environment Network established by Carmarthenshire Association of Voluntary Services (CAVS)	Various
NZC-23	Work with Ynni Sir Gâr, and others, to deliver and support local renewable energy projects	Sustainable Development Manager
Integration and Communication		
NZC-28	Publish performance reports on progress towards becoming a net zero carbon local authority by 2030	Sustainable Development Manager

Achieving NZC by 2030 will require a range of ambitious actions and targets. A 'Public Sector Net Zero Carbon Route Map' is currently being developed by the Local Government Decarbonisation Strategy Panel as a high-level thematic framework to guide its approach. Where possible, we also propose to use this Route Map to help guide our approach. It should be noted that some of the Targets in the Route Map are particularly challenging, and appropriate Actions are currently being discussed with the relevant Lead Officers for incorporation into our NZC Plan.

Appendix 1

Wider Response to Climate Emergency

Whilst the initial focus of this Action Plan is a route towards becoming a net zero carbon local authority, it is important to recognise the wider actions that are taking place across the Council that contribute towards addressing the climate emergency.

COVID-19 has presented many challenges since March 2020 and many of our staff have been redeployed to help the County response to the pandemic. Notwithstanding this, considerable progress has been made on several initiatives.

Some of these actions and updates on progress are shown below (this is not an exhaustive list):

Housing

New Build Developments – We currently have five new build developments on site, which will provide 114 homes, with a further 21 developments in the pipeline. Glanmor Terrace, Burry Port; Dylan, Llanelli; Maespiode, Llandybie; and Gwynfryn, Ammanford are all back on site after COVID-19 delays and progressing well, whilst Garreglwyd, Pembrey will be re-commencing work on site as soon as possible. Estimated handover dates for the Council's first new build homes are scheduled for April 2021 at both Dylan and Garreglwyd. These developments will provide homes that have high levels of insulation by using 'Passivhaus' principles and will also include modern technologies such as Mechanical Ventilation with Heat Recovery (MVHR), electric vehicle charging points, plus solar PV, and battery storage. We call this new standard, Building Regulations PLUS.

Overall, our new build programmes achieve an EPC 'A' rating and a minimum SAP level of 95. Our new build development in Glanmor Terrace, however, achieves SAP level 105 as the homes can produce and store their own electricity. To monitor the improved standard that we have implemented into our new build developments, we are looking to work with Cardiff University who will be able to provide us with data on the home's energy efficiency, carbon footprint and how the tenants are operating within the home.

Optimised Retrofit Programme (ORP) – We have successfully been awarded Welsh Government grant funding for seven void properties that equate to 26% of the Council housing stock archetype. The purpose of this programme is to identify and install a range of energy measures that will reduce carbon emissions within the home and improve energy efficiency. The measures within this programme include high levels of thermal insulation, triple glazed windows, solar PV with battery storage, MVHR, and LED lighting. One of the properties will also offer an 'off-grid' solution, where Air Source Heat Pumps will be installed as the primary heating system. All seven properties are aiming to achieve a minimum SAP / EIR rating of 92 in line with Welsh Government's targets for the ORP.

The ORP has provided us with an opportunity to identify solutions for our most prominent housing stock, which has the further potential to be rolled-out as a wider programme once the impact of the void retrofit project has been measured. Work on the homes has begun, with homes situated within Llanelli being the first to begin the retrofit. The current works programme anticipates that all homes to be completed and ready for handover towards the end of April 2021.

Approach to Flats – We have adopted a similar approach to the ORP by looking for an innovative solution for our flats that follows a 'fabric first' approach. The proposed specification for our

innovative solution includes high levels of fabric insulation, triple glazed windows, hybrid or air source heat pumps, solar PV and lithium batteries, LED lighting. We are in the final design stages of a pilot to test this scheme. Work on has already begun and is in the early stages of soft stripping.

Collaborative Research and Innovation Support Programme (CRISP) – We have recently been successful in securing additional funding from Welsh Government for further research to better understand our housing stock, and to provide appropriate tools to enable us to bring forward our housing decarbonisation agenda. The CRISP allows us to explore the effect of Affordable Warmth on our tenants - ensuring that the running costs of our homes are affordable and not to the tenants' detriment. This research will shape the roll-out of the ORP across our wider housing stock and provide a model of best practice for other social landlords. This will then feed into the sustainability of our future works and maintenance programmes and local economy. To date, we are working with Cardiff University to create a tool that will allow us to model our housing stock based on the SAP 2012 methodology. This research project ends in March 2021.

See Carmarthenshire Homes Standard Plus (CHS+): Business Plan 2021-24 (March 2021) for further information.

Public Protection and Air Quality

Routine monitoring and inspection – We regularly monitor and inspect various Carmarthenshire businesses to ensure that they are operating to environmental standards. We also engage with various sectors to ensure the best available techniques are used to protect public health and the environment, for example those environmental polluters that produce black / dark smoke. Also, businesses with certain types of combustion processes such as crematoria are required to monitor their own carbon footprint from gas usage which can also help identify cost savings if alternative methods can be used.

Air Quality - Air Quality Management Areas (AQMAs) have been declared in the towns of Llandeilo, Llanelli, and Carmarthen. We work in collaboration with external partners to deliver actions to improve air quality in these areas. This work primarily aims to reduce traffic congestion and build-up of pollutants, and support projects that promote and encourage the use sustainable modes of transport and active travel. We also actively promote national active travel campaigns such as Clean Air day, World Car Free day, Walk to School and Bike to School weeks to encourage residents to get involved by choosing sustainable modes of travel.

The 'Impact of COVID-19 lockdown on Air Quality in Carmarthenshire' report (July 2020) shows that significantly lower levels of nitrogen dioxide (NO₂) were recorded during April 2020 across Carmarthenshire's AQMAs and for the first time in over seven years all monitoring sites measured a monthly reading below 40µg/m³.

Procurement

In early 2020 we engaged with WRAP Cymru to investigate opportunities to consider and increase post-consumer recycled (PCR) content re-use, recovery, and recycling of materials to be built into procurements, such that a new sustainable approach becomes mainstream. A draft report was completed in April 2020 but due to COVID-19 full consideration of its implications has yet to be agreed and set into practice. However, some elements have been included in our standard procurement templates (e.g. expanded our questions in our Sustainable Risk Assessment template that's carried-out for all exercises valued over £25k) for consideration at the start of a tender exercise.

Our Foundational Economy project regarding Public Sector Food Procurement aims to introduce the community-wealth building concept, ensure strategic buy-in from senior leaders, and understand how this approach can shape and support Carmarthenshire's COVID-19 Recovery Plan to help local

businesses which are at risk or vulnerable due to the pandemic and supporting the growth of local employment opportunities.

The Centre for Local Economic Strategies (CLES) have been appointed to look at our procurement practice and arrangements and has also focused on food spend within Hywel Dda University Health Board, Coleg Sir Gâr, and University of Wales Trinity Saint David. A draft report has been produced with an action plan to apply the recommendations to be considered further.

Highways and Transportation

Promoting Active Travel - We have worked throughout the year to encourage the adoption of sustainable travel options and taken a lead role in developing the necessary infrastructure which facilitates walking and cycling journeys instead of short trips by car.

Sustainable Travel Networks - Throughout 2020 we have continued to develop the strategic network of walking and cycling routes at many locations but particularly within the wider Llanelli area.

Electric Vehicle Charging Points - We have installed 26 new electric vehicle charging points around Carmarthenshire and particularly at destination points to enable journeys by electric vehicles. Further we have been awarded funding by Welsh Government to install a super-fast charging hub at Cross Hands to be completed by 31st March 2021 - believed to be the first of its kind in Wales.

Lobbying for Rail Improvements - We have continued to work with Welsh Government and Network Rail to promote the case for rail improvements within Carmarthenshire. This includes regional improvements through the Metro initiative and more localised improvements at railway stations within the County.

LED Street Lighting - In 2020/21 we completed a project to upgrade 5,000 community lighting units to incorporate LED lighting. We project managed the initiative which included 'invest to save' funding for Community Councils, reduced energy consumption and improved lighting quality in local communities.

Public Realm Changes - In response to the COVID-19 pandemic we have implemented infrastructure changes within our key town centres to help combat the risk of infection and allow visitors to safely return to our towns. This also aimed to 'lock-in' and encourage sustainable modes of travel into our towns and included pedestrianising streets in Carmarthen and Llanelli town centres.

Reducing Traffic Congestion – We have promoted and managed a portfolio of engineering schemes which are targeted towards reducing longstanding traffic congestion hotspots on our highway network. This includes major highway improvements at Ammanford and Cross Hands, Junction 48 of the M4, Sandy Road in Llanelli and other key locations.

Electric Vehicles - We have submitted a bid to Welsh Government to replace five diesel fleet vehicles with electric vehicles.

Reduced Travel – Our office-based staff have moved very successfully to home working with significant use being made of ICT to hold virtual meetings and exchange to share and exchange documents. Video surveys have also been undertaken of almost all the highway network using a Vaisala system which incorporates artificial intelligence to determine road surface conditions, map and analyse road markings and traffic signs. This builds our asset database and has made a considerable saving on staff site visits.

Real Time Passenger Information - To encourage greater use of public transport investment has been made in installing Real Time Passenger Information facilities with 30 display screens at key locations such as Carmarthen Bus Station and Glangwili Hospital to enable customers to track services.

Safe Routes in the Community - We are continuing our high-quality programme of infrastructure and supporting behavioural change initiatives that encourage safe sustainable travel within communities (with a specific emphasis on travel to and from school). Utilising funding from Welsh Government we are currently introducing programmes in Ammanford and Llanelli West, building on programmes previously undertaken in numerous locations across the County.

Leisure

The Amman Valley Leisure Centre, Carmarthen Leisure Centre, Llandovery Swimming Pool and Newcastle Emlyn Swimming Pool are included in our Re:fit Cymru Phase 1 project. We also plan to install, where possible, EV charging points at our facilities for both car and bicycles.

We are reducing the amount of plastic packaging being used in our catering outlets in favour of recyclable/biodegradable materials. Where we lease catering concessions on our sites, we ask that all food cartons/cups etc. are recyclable. There is also a big push to recycle more waste at facilities, with separate bins for general rubbish and recyclable materials more available throughout.

When undertaking procurement exercises, we endeavour to ensure that we incorporate as much recycling of materials of possible into capital projects. For example, on the current Carmarthen Athletics Track refurbishment project, rather than taking excavated materials off site they are being used to form functional features on site such a viewing mounds for spectators. Also, almost all the refurbished all-weather pitch old surface was recycled and used at Pembrey Country Park for creating pedestrian pathways on site.

We are creating and delivering more activities / services online (these partially COVID-19 enforced but have longer term benefits) increasing access to our services and reducing the need to travel for our end users.

Waste and Environmental Services

We are exploring opportunities to deliver carbon reduction in our new waste collection methodology, including reviewing the potential for ULEV fleet replacement when next replacing our waste kerbside collection fleet and ancillary service vehicles in line with fleet strategy and associated infrastructure.

We are endeavouring to maximise, and where possible exceed, statutory waste recycling targets.

With CWM Environmental Ltd we are reviewing the potential to use UK markets for recycling materials to reduce the carbon footprint of our recycling.

As part of corporate ambitions to incorporate the Circular Economy, we aim to move waste higher up the waste hierarchy by promoting reuse and repair in addition to specifying and using products created with low carbon impact.

We are scoping the potential of adopting a grass-cutting regime incorporating a biodiversity action plan for grounds maintenance activities and are also reviewing the potential of battery powered plant and machinery for ground maintenance services.

Planning

Carmarthenshire's Local Development Plan (LDP) is currently being revised and will run until 2033. The LDP will outline where and how development will take place within the County, through a number of planning policies. There is an overarching climate change policy in the LDP, which is supplemented by specific policies outlining how new development must consider topics such as

renewable energy, sustainable design, flooding, active travel, public transport, green infrastructure, and air quality.

Wind and Solar Energy Supplementary Planning Guidance was adopted in June 2019. A Renewable Energy Assessment has been commissioned with a view to identifying areas across the County with the suitable conditions for various renewable energy schemes.

A green infrastructure assessment has been undertaken, in which all green infrastructure assets across the County have been mapped. This will help identify areas where tree planting schemes could be implemented and quantify in area (for monitoring and reporting purposes) green infrastructure across the County.

There is an intention to introduce a new policy into the revised LDP regarding electric charging points for new developments to increase this provision in both residential and non-residential development.

Peatlands are among the most valuable ecosystems on Earth. They are critical for preserving global biodiversity, provide safe drinking water, minimise flood risk and help address climate change. Peatlands are the largest natural terrestrial carbon store – storing more carbon than all other vegetation types in the world combined. Conversely, damaged peatlands are a major source of greenhouse gas emissions. Peatland restoration can, therefore, bring significant emissions reductions. The Council has been running the Carmarthenshire Bogs Project with funding from Natural Resources Wales, Welsh Government and Heritage Lottery Fund (a national peatland project has taken on some of this work during 2018/19). This project aims to conserve five sites in the County where peat is, or should be, forming.

Consistent with national policy, we advise on the need to conserve peat sites when these form a part of a development proposal. We also advise on the retention and management of semi-natural habitats – many of which have the capacity to store carbon if appropriately managed - in line with the LDP policies and national policy.

The Council facilitates the Carmarthenshire Nature Partnership (formerly Carmarthenshire Biodiversity Partnership) which comprises over 15 organisations including the Council, government, and non-government wildlife bodies, wildlife charities and voluntary groups - all working together to conserve and enhance Carmarthenshire's biodiversity.

Education

The Eco-Schools programme is an international initiative that enables sustainable development to be a major part of the life and ethos of schools. The Programme gets everyone in the school community involved in improving the school environment and encouraging good citizenship. Pupils study topics including waste, litter, energy, water, transport, healthy living, and global citizenship. All schools in Carmarthenshire are registered on the Eco Schools programme. At October 2020, 58 schools were on Platinum Award (the highest level awarded to schools active over 8 years); 10 schools on Green Flag x3; 15 schools on Green Flag x2; 12 schools on Green Flag x1, 12 schools on Silver Level; 2 schools on Bronze Level; and 1 school registered only.

Regeneration

Carbon reduction is at the heart of the Swansea Bay City Deal – an investment of up to £1.3 billion which is being delivered by the four Swansea Bay City Region local authorities, including Carmarthenshire, with the two regional health boards and two regional universities.

Among the projects and programmes forming part of the City Deal portfolio is a pan-region Homes as Power Stations initiative, which has been submitted to the UK Government and Welsh

Government for final approval. This will include the retrofitting of 7,500 homes with state-of-the-art energy-efficiency technology to complement the construction of 3,500 new, highly energy efficient homes over a five-year period. As well as helping the region cut its carbon emissions, Homes as Power Stations will also tackle fuel poverty and meet the need for more housing, while benefitting supply chain businesses throughout Carmarthenshire and South West Wales as a whole.

Also being part-funded by the City Deal is the Pembroke Dock Marine project – now approved by the UK Government and Welsh Government - that will considerably boost the region's 'blue economy' through major investment in the advancement of marine energy. Made up of elements including a Marine Energy Test Area and a Pembrokeshire Demonstration for marine energy developers to trial, de-risk and commercialise their devices, Pembroke Dock Marine will also include infrastructure upgrades at Pembroke Port and a Marine Energy Engineering Centre of Excellence where industry and academia can co-locate. This will place South West Wales at the forefront of a growing global industry that's projected to be worth £76 million by 2050.

The Supporting Innovation and Low Carbon Growth programme of projects in Neath Port Talbot will also be part-funded by the City Deal. Construction work has now started on a self-powering Technology Centre feature of the programme, with excess energy from solar and other renewable technologies to be converted into hydrogen at the nearby Hydrogen Centre for use in fuelling hydrogen vehicles. Other programme features include a specialist facility which will support the steel and metals industry in Port Talbot, Wales, and the UK, while reducing its carbon footprint. Further decarbonisation projects include a low emission vehicle charging network, as well as air quality monitoring and a hydrogen stimulus project.

Sustainability will also be a core principle of all other City Deal projects and programmes, including the Pentre Awel project in Llanelli – which has been submitted to both governments for approval – as well as future phases of Yr Egin creative and digital hub at the University of Wales Trinity Saint David in Carmarthen.

The 'Moving Rural Carmarthenshire Forward' plan (June 2019) is a comprehensive look at the issues facing the County's rural communities, and a focus on what is needed to ensure support for these towns and villages to sustain and thrive. Initiatives being looked at include making innovative use of vacant or unused agricultural buildings to create hubs for entrepreneurs and improving broadband provision so that digital connectivity isn't a barrier to rural development. A Carmarthenshire 'brand' could also be developed to support and grow the County's diverse agriculture and food production sector, encouraging communities to buy local to create a re-circulating 'Carmarthenshire Pound', and boosting the County's growing tourism sector. The Council's commitment to reduce carbon emissions and use of plastics also feature as part of the Plan, with proposals to work with partners and agencies to create a more sustainable environment, with new infrastructure including an investment in rapid charging points for electric vehicles. The Plan also details a 'Ten Rural Towns' initiative to ensure market towns, from Llandovery to St Clears, are more economically, socially, environmentally and culturally sustainable for the future.

The Council will continue to explore opportunities to minimise carbon as part of future direct builds of both premises and infrastructure, alongside opportunities that may be presented by hydrogen energy.

Finance

The Council is the administering authority for the £3 billion Dyfed Pension Fund.

The Fund is a long-term investor responsible for looking after the interests of beneficiaries over many decades into the future and recognises climate change and investment in fossil fuels as a significant risk factor for pension fund investments.

The Fund takes the approach to engage actively and productively with companies in the sector through its participation in the Local Authority Pension Fund Forum. Also, via the Fund's investment managers, the Fund votes on resolutions at global AGMs seeking transparency and disclosure of climate risks and setting emission reduction targets. In this manner the Fund's view is directly communicated to individual boards.

The Dyfed Pension Fund has an increasing level of investment in renewable and low carbon energy production via pooled funds and will continue to make such investments where the risk/return profile fits the pension fund's investment strategy. The Fund also has investments in the BlackRock UK Strategic Alternative Income Fund where some of the core strategies are in the renewable energy sector and a number of different sectors that have a direct impact on local communities including healthcare and social housing. The Pension Committee has recently approved an investment in the BlackRock Low Carbon Fund and the Baillie Gifford Paris Aligned Fund.

The Fund has a comprehensive Investment Strategy Statement which is currently being reviewed.

Information and Communications Technology (ICT)

We continue to introduce ICT good practice to actively help reduce carbon emissions, including:

- o Reducing energy consumption at our Data Centres and across our Network through the virtualisation and rationalisation of hardware and the adoption of energy efficient servers and ICT infrastructure;
- o Facilitating a reduction in staff travel through the implementation of agile working practices across the Authority including the use of laptops and online video conference meetings and calls;
- o Reducing printing across the Authority by facilitating the adoption of paperless working through better use of technology; and,
- o Applying centrally administered powered management systems to ensure all devices such as laptops and PCs are powered down over night and when not in use during the day.

Civil Contingencies

Our civil contingency role aims to help mitigate the effects of climate change by writing and testing contingency plans for the various risks involved. These risks include:

- o More extreme weather events causing severe fluvial flooding;
- o Raising sea levels causing an increase in coastal flooding; and,
- o Hotter, dryer summers causing water shortages; an increase in 'wildfires'; and, effects on the health of the population (especially the elderly).

Further information on the risks within Carmarthenshire can be found in the 'Dyfed-Powys Community Risk Register' (Note: 'UK Climate Change Risk Assessment 2017 Evidence Report – Summary for Wales' summarises the Wales-specific evidence included in the 'UK Climate Change Risk Assessment Evidence Report').

We are a member of the Dyfed-Powys Local Resilience Forum (LRF) whose members include the Emergency Services, Health Bodies, other Local Authorities, Government Agencies and Utility Companies. The Dyfed-Powys LRF members work together to ensure arrangements are in place to help mitigate the effects of any emergencies including those caused by climate change. Our role during emergencies includes providing support for the emergency services, support and care for the local and wider community and co-ordination of the response by organisations other than the emergency services. As time goes on, and the emphasis switches to recovery, we take a leading role in rehabilitating the community and restoring the environment.

