

ENVIRONMENT AND ECONOMY OVERVIEW AND SCRUTINY COMMITTEE

Date of Meeting	Tuesday 14th November 2023
Report Subject	Progress update on Local Area Energy Planning in Flintshire
Cabinet Member	Collective Responsibility
Report Author	Chief Officer (Planning, Environment & Economy)
Type of Report	Operational

EXECUTIVE SUMMARY

Following the endorsement of the North Wales Energy Strategy and Action Plan and commencement of the Local Area Energy Planning in early 2023, this report provides an update on the development of Flintshire's Local Area Energy Plan (LAEP).

RECOMMENDATIONS

1	To note the contents of the report and support the progress made in the development of the Local Area Energy Plan for Flintshire.
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REPORT DETAILS

1.00	EXPLAINING THE REPORT
1.01	<p>Local Area Energy Planning</p> <p>Local Area Energy Planning (LAEP) is a data driven and whole energy system, evidence-based approach that sets out to identify the most effective route for the local area to contribute towards meeting the national net-zero target, as well as meeting its local net zero target.</p>

1.02	LAEP development is being funded by WG and involves dedicated plans being prepared within each local authority area in Wales. These plans are being co-developed by the local authority and local stakeholders with support from partners including (Ambition North Wales), (Welsh Government) and external support.
1.03	The work on LAEP commenced in early 2023. The timeline is to be confirmed but it is likely that the Flintshire LAEP should be completed in Spring 2024.
1.04	The local energy system includes: whole-building retrofit, local onshore renewables, decarbonisation of transport, deployment of heat pumps (where appropriate), reinforced electricity distribution network, decarbonisation of industry and hydrogen networks.
1.05	<p>Baseline carbon emissions:</p> <p>Flintshire accounts for 7% of Wales' carbon emissions in 2019, with 10.6tCO₂e per capita. These emissions are reducing over time. The largest carbon emission sectors in 2019 were:</p> <ul style="list-style-type: none"> • Industry 56% • Transport 23% • Domestic 15% <p>In addition, some key statistics of the energy system in 2019:</p> <ul style="list-style-type: none"> • Proportion of domestic properties with EPC D and below: 58% • High residential energy demand: 72,000 domestic addresses; 6,000 non-domestic • Onshore wind generated 1.8MW • Solar PV generated 53.1MW • Fossil fuel capacity 14MW • Domestic proportion of total gas consumption 45% • Domestic proportion of total electricity consumption 21% • Proportion of properties off the gas grid 18% • Proportion of off-gas properties that use oil or LPG for heat 62%
1.06	<p>In terms of housing infrastructure:</p> <ul style="list-style-type: none"> - 72,000 domestic addresses - Relatively new housing stock with 72% built after 1930 - Low proportion of flats 9% - Low proportion of social housing 16% - Flintshire has similar connectivity to the gas grid (82%) as the Wales average(79%) - West of region is less connected to the gas grid than the East - Large gas:electricity demand ratio for domestic sector, suggests poor levels of insulation
1.07	In terms of demand for heat, there is higher heat demand in the east of the area with multiple points of significant industrial loads – mainly centred around the Deeside Industrial Park. There is significant demand for other fuels, notably biomass, oil and coal. These fuels form a

	<p>significant proportion of industrial and commercial heating demand (approx 74%).</p> <p>In terms of demand for electricity, the demand is fairly evenly spread, however there is greater demand again in the industrial areas (Deeside), as well as some areas that are less connected to the gas grid.</p> <p>In terms of transport demand, there is a high road transport demand across the whole area. 0.24% of registered vehicles are electric/hybrid compared to a Wales-wide value of 1%. Electric charge points for vehicles are few and mostly near towns. Although difficult to disaggregate, higher demand for transport is focussed on areas with the A55 and A494 running through it.</p>
1.08	<p>The LAEP development has so far seen a number of local and regional workshops. These workshops have been attended by Council officers across portfolios, Members, Town & Community Councils, and external stakeholders. External stakeholders have included large local employers, large local energy providers, large local energy users, the Deeside Decarbonisation Forum, transport providers, Distribution Network Operators, housing providers, and any community groups who are focussing on energy.</p>
1.09	<p>The workshops have focussed on specific themes in order to capture stakeholders' thoughts and knowledge of the future energy system, and this has helped to determine baseline energy demands, supply and infrastructure from across the county sectors.</p> <p>The stakeholder group also determined the most effective scenario modelling to be used for the LAEP. This scenario modelling looks at a possible future energy system – its supply and its demand needs in 2050 – and how this could be facilitated. The stakeholder group identified that a high hydrogen scenario would best suit Flintshire due to its high industry and transport demands and the knowledge that there is high potential for hydrogen supply in short – medium term. This scenario model, coupled with a low energy demand model and a high energy demand model allows us to see the extremes of the possible energy system too. The modelling will allow us to develop robust plans that take into account the uncertainty that we know exists.</p> <p>In the most recent workshop the stakeholders identified enablers and barriers of the different energy components, eg. Solar PV, anaerobic digestion, wind, hydro.</p>
1.10	<p>The next and final County workshop in the series will build on what has been learnt so far, present the LAEP priorities as indicated through the scenario modelling, and collectively agree what necessary action is needed in the next 3-5 years to achieve the council's vision for the future local energy system. This will highlight key milestones, responsible stakeholders, and funding and resource requirements.</p>

	Draft report feedback is scheduled for February 2024 to review the draft report and support the shaping of the route map and recommendations.
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2.00	RESOURCE IMPLICATIONS
2.01	The development of the Local Area Energy Planning is being funded by WG. Consultants ARUP have been appointed by ANW to deliver the LAEP development for Flintshire. Three roles have been recruited to by ANW to support the delivery of these plans working with the Local Authorities in North Wales and ARUP.
2.02	There will be the requirement for both capital and revenue resource in order to deliver on the final LAEP. The purpose of the LAEP development process is to highlight to WG what the needs and requirements of the LAs are, in order to facilitate and support the decarbonisation of the energy system in line with their commitment targets.

3.00	IMPACT ASSESSMENT AND RISK MANAGEMENT	
3.01	The likely impact of the LAEP on service areas in the Council are as follows: <ul style="list-style-type: none"> • <u>Climate Change Team</u>- lead contact for this piece of work for ANW and ARUP, coordinating internal effort and delivering set tasks. • <u>Planning, Housing, Assets, Energy Management, Schools, Fleet</u> – input to the data collection and development of the LAEP. 	
3.02	Ways of Working (Sustainable Development) Principles Impact	
	Long-term	Positive: Decarbonisation of the Council’s activities and services will require long term planning and a long term vision to ensure systems and services are fit for purpose as the climate changes as well as reducing the impact of harmful climate change through mitigation. Decarbonisation activities such as planting trees and developing renewable energy will have long lasting impacts over tens to hundreds of years. These activities also contribute to the climate change targets set by Welsh Government particularly Wales generating 70% of its electricity demand from renewable energy by 2030 and becoming a net zero carbon nation by 2050.
	Prevention	Positive: In order to avoid the harmful effects of climate change it is necessary for the Council to reduce its carbon emissions and increase the amount of carbon sequestered in its land assets.

	<p>Carbon emissions caused by human activities are the main cause of climate change.</p> <p>Mitigating climate change will help to reduce impacts such as extreme weather causing flooding / extreme heat, loss of wildlife and habitats, increased pests and diseases, etc.</p> <p>Adapting to the impacts of climate change now will improve sustainability of our communities as the climate changes.</p>
Integration	<p>Positive: Becoming net zero carbon integrates with the following priorities under the Council Plan; Green Council, Ambitious Council and Supportive Council. It integrates with the public service board objectives in the Environment priority of the Wellbeing Plan as well as the Smart Access to Energy project in the North Wales Growth Deal. It also integrates with the Environment (Wales) Act 2016 and Welsh Government's decarbonisation of the public sector agenda.</p>
Collaboration	<p>Positive: The climate change programme offers multiple opportunities to work collaboratively both internally and externally – and this collaboration will determine the success of the programme. Collaboration with the following groups is needed to ensure decarbonisation is integrated into everything that the Council and the wider region does and plans for:</p> <ul style="list-style-type: none"> - Welsh Government - Other public sector organisations such as local authorities, NRW, health boards, universities. - Private sector - Regional groups such as the North Wales Economic Ambition Board - Local Town and County Councillors - the local communities
Involvement	<p>Positive: If decarbonisation is to succeed and harmful climate change is to be avoided then everyone at a professional and personal level will need to be involved</p>
<p>Well-being Goals Impact</p>	
Prosperous Wales	<p>Positive: Reducing the Council's carbon emissions should enable strategic</p>

		investment in projects and ways of working that could deliver savings or generate new income streams, therefore supporting delivery of local services. It should also facilitate the development of the low carbon economy through infrastructure projects, sustained tree planting, land management etc which can support local businesses and communities.
	Resilient Wales	Positive: Decarbonisation of the Council's activities and services will promote resilience through actions such as: investment in renewable energy infrastructure which helps to reduce reliance on imports from across Europe and the World and the associated price fluctuations, and increasing ecological resilience through enhancing biodiversity particularly on land with low ecological value. By planning for climate change adaptation the Council's services and its communities will also be resilient.
	Healthier Wales	Positive: Decarbonisation requires a shift to active travel, investment in green infrastructure, support for local and sustainable food sources, and development of renewable energy which are likely to promote healthier lifestyles, improved wellbeing and reduced health impacts from poor air quality.
	More equal Wales	Neutral; No impact identified
	Cohesive Wales	Neutral; No impact identified
	Vibrant Wales	Neutral; No impact identified
	Globally responsible Wales	Positive: Reducing the Council's carbon emissions to net zero helps to mitigate climate change and therefore contributes to the achievement of Welsh Government, UK Government and international climate goals.
3.03	Not anticipated to be any negative anti-poverty, equalities or environmental impacts of the scheme.	
3.04	The Council's Well-being Objectives Decarbonisation of the Council's activities will support the Green Council objective with a key impact of reducing carbon emissions mitigating climate change, for example, through the development of alternative and renewable energy production, promoting active travel, shifting to electric	

	<p>fleet vehicles, engaging with the supply chain and promoting a low carbon economy through the goods and services purchased.</p> <p>It can also contribute towards the success of other Council Wellbeing objectives such as 'An Ambitious Council' and 'A Caring Council' through providing local job creation and apprenticeships and therefore potentially reducing poverty through maximising residents' income and employability.</p>
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4.00	CONSULTATIONS REQUIRED/CARRIED OUT
4.01	ANW has shared the draft Action Plan with each proposed lead and enabling organisation identified in the Plan, ANW Energy Programme Board, North Wales Planning Officers Group, North Wales Decarbonisation Group, Welsh Local Government Association, and all workshop attendees (circa 100 individuals representing 60 organisations).

5.00	APPENDICES
5.01	

6.00	LIST OF ACCESSIBLE BACKGROUND DOCUMENTS
6.01	1. North Wales Energy Strategy (https://www.gov.wales/regional-energy-strategy-north-wales)

7.00	CONTACT OFFICER DETAILS
7.01	<p>Contact Officer: Alex Ellis – Programme Manager Telephone: 01352 703110 E-mail: alex.ellis@flintshire.gov.uk</p>

8.00

GLOSSARY OF TERMS

Anaerobic digestion – Processes biomass (plant material) into biogas (methane) that can be used for heating and/or generating electricity.

ANW – Ambition North Wales (formerly North Wales Economic Ambition Board).

Biomass boiler – Generates heat by burning wood-based fuel (eg. Logs, chippings) in a boiler.

Energy Component - This is a technology or component of the energy system – such as onshore wind, solar PV

Ground PV – Converts solar radiation into electricity using photo-voltaic cells mounted on the ground.

Heat pump – Uses a heat exchange system to take heat from air/ground and increases the temperature to heat buildings.

Hydro – Uses water falling between two reservoirs to turn turbines to generate electricity.

LAEP – Local Area Energy Plan

Onshore wind – Harnesses wind to turn a turbine to generate electricity on land.

Pathway - A pathway is how we get from the current energy system, to the most likely net zero end point. The pathway will consider what is needed from across the scenarios, the supply chain, number of installers etc. The propositions will make up the more certain part of the pathway, whereas the longer-term energy components will need further definition in the future.

Retrofit – Upgrading the performance of an existing building, such as installing more insulation or double glazing.

Scenario - A scenario is a set of assumptions for a particular end point (usually 2050) which are modelled in our optimisation model. We will model 5 different scenarios to see what is common across the scenarios and therefore “no regrets”, and what changes between the modelled scenarios.

WG – Welsh Government.