



POWYS PUBLIC SERVICE BOARD

CARBON POSITIVE POWYS FOR APPROVAL 15/06/2020

1. SUMMARY

1.1	This paper comprises details of the work being undertaken for Step 7 of the Powys Wellbeing plan, which is to develop a Strategy for the County of Powys to become Carbon Positive (save more carbon than it emits) by 2040. The Strategy is for the County as a whole and not limited to the public sector.
1.2	Section 2 contains the proposed vision and baseline information. The baseline shows that emissions from agriculture (mostly methane from livestock and Nitrogen oxide from fertiliser) represents two thirds of CO ₂ equivalent Greenhouse Gas emissions in Powys, prompting the development of a Strategy that excludes these emissions.
1.3	A description / visual representation of the scale of the changes required is presented in section 3 along with some examples of the sector specific actions proposed (including those for the Public Service Board (PSB) and their services). A graphic is included to illustrate where we are now and where we need to get to (what this looks like in 2040 for each sector under our proposed core scenario). The work reveals that the carbon reductions required to achieve carbon positive are very significant.
1.4	Section 4 includes details of the next steps in the process, including a proposed consultation exercise and the resources being sought from the PSB.
1.5	The final section contains recommendations.
1.6	The working group would welcome views from the PSB on works completed to-date and confirmation that direction is as expected. Also a steer from the PSB on whether or not to include the general public in the consultation process as well as confirming the process for reviewing the draft strategy and signing-off the final strategy.

2. BACKGROUND

2.1	Vision The Powys PSB is developing a strategy for the county to be ' <i>carbon positive</i> ' by 2040. The proposed vision is 'to create a well-connected county with positive carbon equivalent emissions across the sectors and that contributes to wider Wales
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POWYS PUBLIC SERVICE BOARD

2.2

and UK decarbonisation, delivers community and economic benefits, and eliminates fuel poverty’.

The sectors covered by the Strategy are Commercial & Industrial, Dwellings, Transport, Renewable Electric, Land Use and Agriculture.

Baseline

The table below details the emissions from each of the sectors, with agriculture contributing almost two thirds of emissions (mostly linked with methane emissions from livestock). Land Use is showing a negative figure as emissions are locked in by woodland.

The renewable electric sector is not included since electricity use is allocated to the end users e.g. to individual buildings rather than to the generation source.

However, the amount of renewable electricity generation is accounted for in the analysis and “virtual” credit is given to the excess annual generation over and above that needed to meet the County’s own electricity needs in any given year.

Waste is also excluded as the waste generated in Powys is disposed of outside of the County. Given that emissions from the agricultural sector form two thirds of Powys’ emissions, it is proposed that the proposed strategy considers the emissions from this sector but excludes them for the purposes of calculating carbon positive.

Table 1: Emissions for Baseline and Vision for Powys by Sector (2017 baseline year)

		2017	2020	2030	2040
ktCO2 emissions	Domestic Buildings	268	208	44	15
	Transport	336	325	211.9	90
	I&C	229	166	59	4
	Land Use	-71	-62	-31	-49
	Agriculture (ktCO2e)	1277	1176	1020	907
	Renewable Electricity	0	0	-89	-60
	Total(inc agri)	2039	1813	1215	907
	Total(exc agri)	761	637	194	0

Greenhouse Gas Equivalent Emissions for the Public Sector in Powys are presented in Table2 below.

Table 2: Powys Public Sector Greenhouse Gas Equivalent Emissions

Emission from	Unit	2017	Share of total in 2017	2018	2019
Buildings	ktCO2	16	7% of I&C emissions	15	14
Transport	ktCO2	6	2%	7	6



POWYS PUBLIC SERVICE BOARD

3. PROPOSAL

3.1 Priority Areas for Action

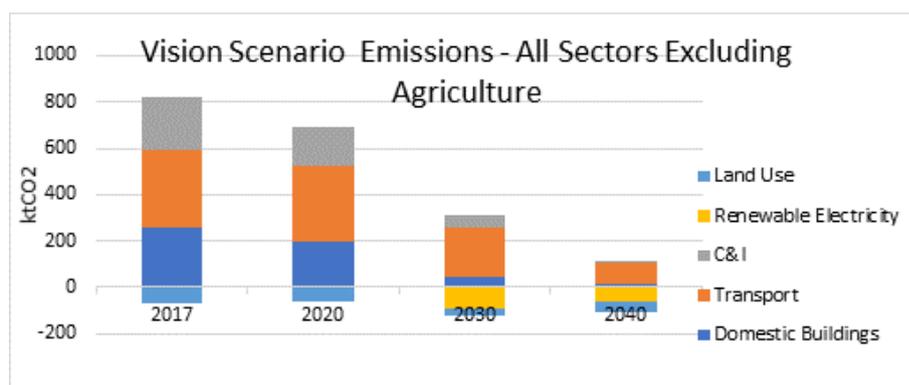
A number of trajectories to 2040 have been developed to show different combinations of measures needed to achieve target. Below we provide what we believe to be the central proposition in support of the vision. This trajectory is broken down by sector and associated priority areas for action identified. A high level summary of the key activities are:

1. Significantly increased reforestation and planting of energy crops with associated development of the bioenergy market for heating, hot water and electricity generation;
2. Generate significantly more renewable energy (equivalent to ten to fifteen times more than is currently being generated) with sufficient infrastructure in place for grid export, hydrogen generation, other storage and/or private wire;
3. Make all buildings zero carbon (except grid electric), with industry fully geared up for no natural gas;
4. Use various levers to reduce energy consumption by 20% in all buildings;
5. Predominantly vehicles will be electric (with diesel and petrol vehicles not yet completely off the roads and some hydrogen vehicles also), supported by the associated refuelling/charging infrastructure;

3.2 Scale of Change

Table 1 shows in numbers the scale of the changes needed to meet target across all sectors. There would need to be considerable emission reductions in buildings, industrial processes and transport sectors, with renewable electricity generation and sequestration significantly increased. If emissions from agriculture were to be included, even with all of these changes, in excess of 900,000 tonnes per annum of carbon dioxide equivalent emissions in Powys would remain.

Figure 1: Graphic Showing the Scale of Necessary Change by Sector to 2040





POWYS PUBLIC SERVICE BOARD

4. RESOURCING

4.1	This section includes details of the next steps in the process, including a proposed consultation exercise and the resources being sought from the PSB.
4.2	An online consultation exercise is currently being prepared. This will comprise of information of the nature presented in this paper with more detail and a series of questions. The consultation will be hosted and promoted by Powys County Council. The consultation will be aimed at town and community councils, businesses and other organisations, including the third and voluntary sectors with which we will seek the support of PAVO. We are considering whether to open to the general public or not but this may generate work beyond the scope of this project: the Board's view on this matter would be welcomed.
4.3	Following consultation, we will further develop the Strategy with the Working Group with a view to presenting a draft to PSB. We would welcome a steer from the PSB on the process for reviewing the draft strategy and signing-off the final strategy.

5. RECOMMENDATIONS

5.1	That the PSB confirm that they are content with the direction of travel of the works completed to-date. We would be interested to receive any major questions, concerns or issues;
5.2	To confirm whether the consultation be targeted at organisations or involve the general public;
5.3	That the PSB detail the process for reviewing the draft strategy and signing-off the final strategy.

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