



POWYS PUBLIC SERVICE BOARD

DECARBONISATION OF POWYS FOR APPROVAL 25/09/2020

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 decarbonise through to 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.
1.3	Given the proportion of emissions from agriculture, and it is envisaged mitigating solutions will emanate from a national land use decarbonisation strategy, this strategy is branded as a 'decarbonisation' rather than a 'zero carbon' strategy.
1.4	A description and visual representation of the scale of the changes required in Powys is presented in section 3 along with some examples of the proposed sector specific actions. The graphic illustrates where Powys is now and where it needs to get to (what Powys looks like in 2040 for each sector under the proposed core pathway). The work reveals that the emissions reductions required to decarbonise are very significant.
1.5	Section 4 includes details of the next steps in the process, including the resources being sought from the PSB. The final section contains recommendations.
1.6	The working group requests details of the review and sign off process for the final report.

2. BACKGROUND

2.1	<p>Vision</p> <p>The Powys PSB is developing a strategy up to 2040 for the decarbonisation of the county. The proposed vision is 'a decarbonised County with innovative solutions rooted in the local economy and community'.</p> <p>The sectors covered by the Strategy are Commercial & Industrial buildings, Dwellings, Transport, Renewable Electricity, Land Use and Agriculture.</p>
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POWYS PUBLIC SERVICE BOARD

2.2	Baseline																																																			
2.3		<p>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, for example, woodland.</p> <p>Electricity use emissions are allocated to the end users e.g. to individual buildings rather than to the generation source. 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.</p>																																																		
2.4		<p>Only scope 1 and 2 emissions are addressed and therefore the consumption of goods is not considered. Emissions from waste are generated according to the method of treatment: waste generated in Powys is disposed of outside of the County and is therefore excluded from the analysis.</p> <p><i>Table 1: Emissions for Baseline and Vision for Powys by Sector (2017 baseline year)</i></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #e1f5fe;"> <th colspan="2"></th> <th style="text-align: center;">2017</th> <th style="text-align: center;">2020</th> <th style="text-align: center;">2030</th> <th style="text-align: center;">2040</th> </tr> </thead> <tbody> <tr> <td rowspan="5" style="text-align: center; vertical-align: middle;">ktCO2 emissions</td> <td>Domestic Buildings</td> <td style="text-align: center;">268</td> <td style="text-align: center;">208</td> <td style="text-align: center;">44</td> <td style="text-align: center;">15</td> </tr> <tr> <td>Transport</td> <td style="text-align: center;">336</td> <td style="text-align: center;">325</td> <td style="text-align: center;">211.9</td> <td style="text-align: center;">90</td> </tr> <tr> <td>I&C</td> <td style="text-align: center;">229</td> <td style="text-align: center;">166</td> <td style="text-align: center;">59</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Land Use</td> <td style="text-align: center;">-71</td> <td style="text-align: center;">-62</td> <td style="text-align: center;">-31</td> <td style="text-align: center;">-49</td> </tr> <tr> <td>Agriculture (ktCO2e)</td> <td style="text-align: center;">1277</td> <td style="text-align: center;">1176</td> <td style="text-align: center;">1020</td> <td style="text-align: center;">907</td> </tr> <tr> <td></td> <td>Renewable Electricity</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">-89</td> <td style="text-align: center;">-60</td> </tr> <tr> <td></td> <td>Total(inc agri)</td> <td style="text-align: center;">2039</td> <td style="text-align: center;">1813</td> <td style="text-align: center;">1215</td> <td style="text-align: center;">907</td> </tr> <tr> <td></td> <td>Total(exc agri)</td> <td style="text-align: center;">761</td> <td style="text-align: center;">637</td> <td style="text-align: center;">194</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>			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
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3. PROPOSAL

3.1	Priority Areas for Action	<p>A number of pathways to 2040 have been developed to show the impact on decarbonisation of different combinations of measures. Below we have provided what we believe to be the most likely proposition in Powys 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:</p> <ol style="list-style-type: none"> 1. Significantly increased tree planting; 2. Generate significantly more renewable electricity with sufficient infrastructure in place for grid export, hydrogen generation, other storage and/or private wire;
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POWYS PUBLIC SERVICE BOARD

<p>3.2</p>	<p>3. All new buildings to be zero carbon, with gas or other fossil fuels no longer used for heating or industrial processes;</p> <p>4. Energy consumption to be reduced in absolute terms by 20% against 2017 levels in all buildings;</p> <p>5. Vehicles to be run on decarbonised fuels, predominantly electric but also biodiesel and hydrogen, supported by the associated refuelling/charging infrastructure;</p> <p>6. Development of the local bioenergy market for heating, hot water, electricity generation, industrial process and transportation fuel.</p> <p>Scale of Change</p> <p>Figure 1 shows the scale of the changes needed across all sectors. Emissions from the agriculture sector are omitted from the chart due to scale. If included, CO₂e emissions in excess of 900,000 tonnes per annum would remain in 2040 (post changes to the other sectors).</p> <p><i>Figure 1: Graphic Showing the Scale of Necessary Change by Sector to 2040</i></p> <table border="1"> <caption>Estimated Data for Figure 1: Vision Scenario - Emissions - All Sectors Excluding Agriculture</caption> <thead> <tr> <th>Year</th> <th>Domestic Buildings (ktCO₂)</th> <th>Transport (ktCO₂)</th> <th>C&I (ktCO₂)</th> <th>Renewable Electricity (ktCO₂)</th> <th>Total (ktCO₂)</th> </tr> </thead> <tbody> <tr> <td>2017</td> <td>250</td> <td>300</td> <td>250</td> <td>0</td> <td>800</td> </tr> <tr> <td>2020</td> <td>200</td> <td>300</td> <td>150</td> <td>0</td> <td>650</td> </tr> <tr> <td>2030</td> <td>-50</td> <td>150</td> <td>50</td> <td>-50</td> <td>50</td> </tr> <tr> <td>2040</td> <td>-50</td> <td>50</td> <td>0</td> <td>-50</td> <td>0</td> </tr> </tbody> </table>	Year	Domestic Buildings (ktCO ₂)	Transport (ktCO ₂)	C&I (ktCO ₂)	Renewable Electricity (ktCO ₂)	Total (ktCO ₂)	2017	250	300	250	0	800	2020	200	300	150	0	650	2030	-50	150	50	-50	50	2040	-50	50	0	-50	0
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4. RESOURCING

4.1	This section includes details of the next steps in the process.
4.2	The final draft strategy has been provided to the PSB to accompany this paper. The full and final report (with technical appendix) will be provided shortly after this PSB meeting. PSB review and sign off is required, subject to confirmation by the PSB of the process.
4.3	On adoption of the report, a communications exercise will be required to launch the strategy.
4.4	A number of further studies and activities (including the communications exercise) are proposed in the report to move the strategy forward. Undertaking further activities will require resourcing.



POWYS PUBLIC SERVICE BOARD

5. RECOMMENDATIONS

5.1	That the PSB consider and comment upon the strategy, with a view to adopting;
5.2	On adoption, develop a communications plan to launch the strategy;
5.3	PSB to consider further activities detailed in the report and the associated resources needed to implement.

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