

Lancashire Renewable Energy Study - the potential for renewable energy in Wyre by 2020

SQW and Maslen Environmental have completed a Renewable Energy Study for Lancashire which has assessed the potential for the deployment of renewable energy providing results for Lancashire as a whole and for each of the local authority districts plus the unitary authorities of Blackburn-with-Darwen and Blackpool. The study identifies the potential amount of onshore renewable energy (from wind, biomass, hydropower and microgeneration) that could be deployed within each of the local authorities (LAs) and also the potential for combined heat and power and district heating systems. Further results from the study can be accessed from www.lancashire.gov.uk. The study was undertaken for Lancashire County Council with funding from the Climate Change Skills Fund.

What is renewable energy? Renewable energy includes energy for heating and cooling as well as generating electricity. It covers those energy flows that occur naturally and repeatedly in the environment - from the wind, the fall of water, the movement of the oceans, from the sun and also from biomass.



Low-carbon technologies are those that can help reduce carbon emissions, but that are not from renewable sources.

Renewable and low-carbon energy resources include: plant biomass (such as energy crops and wood); energy-from-waste; ground source heating and cooling; hydropower; solar thermal and solar photovoltaic generation; wind generation; combined heat and power; and waste heat. Renewable energy capacity is measured in kilowatts/KW (one thousand watts) or megawatts/MW (one million watts). Renewable energy sources range in terms of their scale and therefore their generating capacity from a domestic solar panel at 10KW to a commercial wind turbine at 2.5 MW.



Why do we need to generate more renewable energy? The UK has committed to increasing the proportion of renewable energy meeting our overall energy needs to 15% by 2020 in order to address fuel security and environmental concerns. It is also a growing industry with the potential to create substantial numbers of jobs and contribute to competitive advantage.

How much renewable energy does Wyre have already?

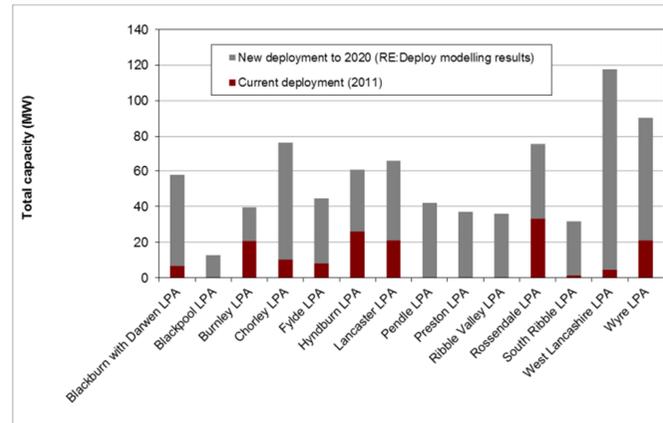
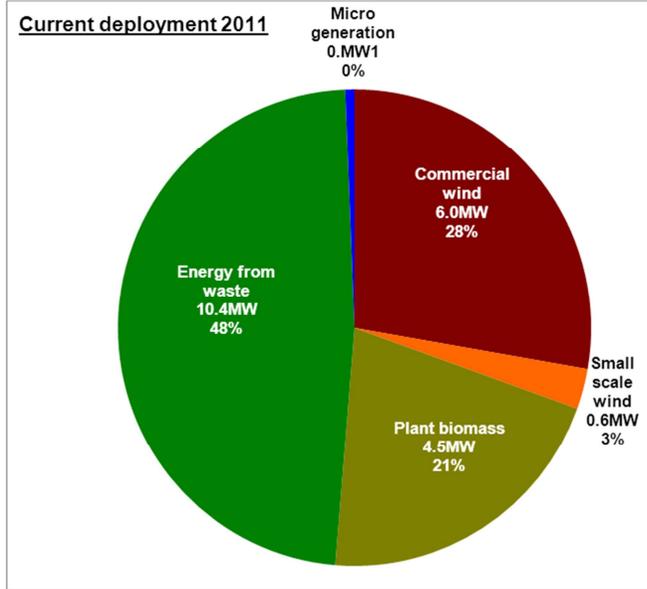
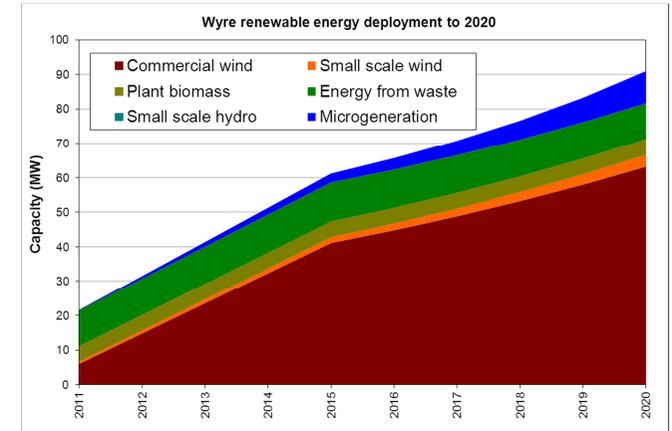
Wyre currently has a total current installed renewable energy capacity of 22MW which is comprised of the following:

Commercial scale wind	6.0 MW
Small scale wind	0.6 MW
Plant biomass	4.5 MW
Energy from waste	10.4 MW
Microgeneration (all solar)	0.1 MW

available resource which had been identified earlier in the study. The forecast involved examining the main constraints on growth including economic viability, supply chain and grid transmission plus planning acceptance rates. The forecast shows the future capacity that is realistically capable of being deployed by 2020.

From this analysis, it was forecast that Wyre's potential deployable capacity at 2020 is 91 MW. The graph below compares this forecast with that of other local authorities in Lancashire.

The "deployment curve" graph below shows how specific technologies are forecast to increase.



What would this mean for Wyre?

The forecast capacity of 91 MW capacity should generate around 257 GWh electricity and 9 GWh heat. This calculation takes into account the nature of different technologies (i.e. load factors which build in down-times).

From the mix of technologies in the forecast, the extra capacity could be comprised of 23 large (2.5 MW) wind turbines, 500 small wind turbines, 3,500 solar PV installations, 900 solar water heaters and 700 heat pumps.

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Wyre's potential deployment at 2020

The future deployment of renewable energy has been forecast using the current installed capacity as a baseline and taking account of the total

The potential for different technologies

It can be seen that commercial scale wind (i.e. installations >100kW) is likely to provide a significant proportion of the renewable energy deployment across Wyre due to the naturally occurring resources available, with energy from waste and then microgeneration likely to be the next most significant renewables deployed.