MIDLANDS ENGINE

The Midlands: powering the UK's clean energy revolution

Photo: Alex Wilkinson Media

East Midlands Hydrogen

CASE STUDY

East Midlands Hydrogen is the UK's largest inland hydrogen cluster, with ambitions to accelerate the decarbonisation of industry, mobility and power generation in the region.

Plans for regional hydrogen production, distribution and industrial use are gathering momentum, and East Midlands Hydrogen will support and accelerate these plans by attracting investment, creating highly skilled jobs, and developing the training facilities that this growing sector will require.

Previously known as 'Megawatt Valley', its high-voltage electrical transmission power lines were originally constructed to enable power export from the string of coal-fired power stations along the River Trent. Water from the river, coupled with imported renewable energy, could enable 'Megawatt Valley' to transform into a hydrogen production heartland at GW scale, with multiple forecasts predicting a total production capacity of 500MW across the region.

Furthermore, Cadent is planning to develop a 100% hydrogen pipeline to transport low-carbon hydrogen from the Humber for industrial use throughout the East Midlands, creating a real opportunity for substantial fuel switching.

Hydrogen demand has been increasing rapidly, with forecasts predicting demand for more than 10TWh of hydrogen from 70 sites across the East Midlands.

These sites account for 61% of all CO2 emissions for industrial, commercial and power generation gas demand across Nottinghamshire, Derbyshire and northern Leicestershire, so switching over to hydrogen could save up to 1.9 million tonnes of CO2 emissions each year. This is equivalent to the annual natural gas consumption of 860,000 homes.

Local hydrogen production plans have been expanding in step with rising demand, with forecasts suggesting a potential 650MW production capacity that could increase to gigawatt-scale by 2050.

This scale of hydrogen transformation in the East Midlands, leading to a full hydrogen supply chain, has the potential to boost gross value added by £10 billion, while creating and safeguarding 110,000 jobs.

Hydrogen has been earmarked as key to helping decarbonise hard-to-abate sectors where electrification is not possible. Therefore, projects like this one have a significant role to play in enabling the UK to reach net zero. East Midlands Hydrogen also highlights the clear economic benefits of transitioning to hydrogen.

Credit: https://eastmidlandshydrogen.co.uk/