ENERGY NEWS

The newsletter of the Midlands Energy Hub

Winter 2020

‘Decarbonisation in 2020’

Michael Gallagher, Regional Energy Projects Manager

Welcome to the winter edition of the Midlands Energy Hub newsletter. The latest IPCC report The Ocean and Cryosphere in a Changing Climate states with high to very high confidence that over the last decades, global warming has led to widespread shrinking of the cryosphere, with mass loss from ice sheets and glaciers, reductions in snow cover and Arctic sea ice extent and thickness, and increased permafrost temperature. Since the publication of this report in September 2019, there has been a huge focus on climate change and sustainability. This has been driven, in part, by significant events including the UK General Election and the devastating fires in Australia and the Amazon.

“What good is all the extra wealth in the world gained from business as usual if you can do nothing with it except watch it burn in catastrophic conditions?”

Prince Charles; Davos 2020

The need to act has never been more urgent and we need to harness the current momentum to enable us all to continue developing and delivering low-carbon energy projects. With this in mind, the Winter Edition aptly includes a look at the Decarbonisation of Heat, with the Midlands Energy Hub currently providing support to twelve District Heating schemes across the Midlands. An update on the Rural Community Energy Fund is provided; it is continuing to attract exciting community projects. We hear from Cheryl Hiles and Kate Ashworth who have recently joined Energy Capital. We have also invested in the Midlands Energy Hub Regional Energy Team, who attended an intensive three day course on Renewable Energy Management and Finance.

The Midlands Energy Hub is funded by the Department for Business, Energy and Industrial Strategy (BEIS) as part of the Clean Growth Strategy, and is supported by Nottingham City Council who are the accountable body.

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Carbon Neutral Nottingham by 2028

Nottingham has made the commitment to become the UK’s first carbon neutral city by 2028. The City has already reduced its carbon dioxide emissions by 41% since 2005, but this commitment means reducing these emissions within the city boundaries to zero by 2028. In November 2019, One Nottingham’s Green Partnership with the support of stakeholders across the city launched the 2028 Carbon Neutral Charter. The charter outlines the city’s ambition, the requirements to meet its commitment and the approach Nottingham will take to achieve it.

Additionally, the start of 2020 commences a year of carbon neutral thinking in Nottingham, with planned events to engage people across the city to support Nottingham’s carbon neutral ambition. NCC has developed a draft city-wide Carbon Neutral Action Plan that highlights actions needed across key areas, such as Transport and the Built Environment, to help Nottingham towards its carbon neutral ambition. NCC are asking for views on becoming the UK’s first carbon neutral city

and the actions and aims proposed. The feedback will be used to ensure that the Carbon Neutral Action Plan supports the actions people and organisations are already taking, identify other opportunities for action, select priorities as well as enable and empower more action to take place. The action plan consultation is open now until 15th March 2020.

Bringing Extra Energy to the West Midlands

Energy Capital is pleased to welcome two new members to their team in the West Midlands Combined Authority offices in Birmingham. Cheryl Hiles became the new Executive Director of Energy Capital at the end of 2019, enabling Matthew Rhodes to maintain a strategic focus as non-executive chair of the partnership. Cheryl joined Energy Capital from a commercial engineering consultancy, however, the majority of her 18 years-experience in the clean energy sector was spent as a Director of Regen, a not for profit centre of clean energy expertise in the South West of England. Cheryl is joined by Energy Infrastructure Lead, Kate Ashworth. Kate is a technical energy specialist with a focus on energy infrastructure. With the new executive team in place, the partnership is pushing forward with the delivery of the Regional Energy Strategy, to bring about the transition to a net zero carbon region by 2041 and positioning for increased regional energy capacity through the next devolution deal with Government. There is a huge job to do to ensure our future energy system is fit for the West Midlands. The new Energy Capital team have already engaged with many partners and stakeholders to realise the opportunity and tackle the challenges that lie ahead, but please do feel free to get in touch with the team here.

Renewable Energy Management and Finance

In light of the recent World Economic Forum's report, which states that the five biggest risks for humanity are climate-related, and the concerns raised at the 2020 Summit in Davos regarding the failure of the current financial systems to respond to the Climate Emergency, it is vital that sustainable economic practices are implemented at every level of the economy.

The Midlands Energy Hub is keenly aware that local actors play a vital role in the shift towards a low carbon economy, and our role is to support them in this transition.

In January 2020, the team undertook in-depth training in Renewable Energy Management and Finance. The bespoke training was delivered by the European Energy Centre and was designed to enhance the team's skills in order to add value to the support that we are already offering to our local partners.

The topics covered in the course included methods of financing renewable energy schemes, incentives and barriers to investment, financial modelling and project structuring.

The Midlands Energy Hub Team

Wolverhampton undertake climate consultation

Many councils across the Midlands have declared Climate Emergencies. Consulting the public is a hugely important part of the decarbonisation process. The City of Wolverhampton Council is currently undertaking a public consultation concerning its work tackling the Climate Emergency. The council has committed to be net carbon zero in its emissions by 2028 and aims to support the city in working towards a carbon zero future

The RCEF goes from strength to strength

The first three projects of the Rural Community Energy Fund are up and running with consultants contracted and feasibility studies commencing imminently. In round two, the RCEF board considered nine projects, five of which were successful resulting in over £130,000 of feasibility study funding. Two further projects will be resubmitting in April following feedback from the board.

If you are based in a rural area and have a scheme that could benefit from RCEF support, contact the team here.

Decarbonising Heat

Pat Fleming & Alex Pearson, Regional Senior Energy Project Officers

Decarbonising heat provides the toughest challenge in achieving net zero by 2050. Heating and hot water for UK buildings make up 40% of our energy consumption and 20% of our greenhouse gas emissions. This means we need to make existing and new properties more energy efficient, and develop low-carbon heating for 85% of UK households that currently use natural gas.

Heat Networks, or district heating, as they are sometimes known, link together a group of buildings from a central heat source via insulated pipes. Heat networks provide the most effective alternative to gas in urban areas where the 'heat source' and 'heat loads' are in close proximity meaning the length of expensive pipe runs are minimised.

First, identify a heat source.

A good network is compact and centred around large 'anchor loads' such as commercial and public buildings or residential flats where the network can be connected to a building's existing energy centre. Connecting individual homes to a network is relatively expensive but it should always be considered for new housing developments.

The second crucial element of a heat network is the 'heat source'. This should be a low carbon source, local to the heat loads and inexpensive. Waste Heat at a high temperature (80°C or above) from power stations, industrial processes or energy from waste plants (EfW) is ideal. Alternatively, heat can be drawn from the air, aquifers, lakes, rivers, old mine workings or other sources using a heat pump. When these heat sources are not available, heat can be produced on demand using a Combined Heat and Power (CHP) gas engine. CHP is a well-developed technology and can offer a financially viable heat source, however such systems provide limited carbon savings. Combining a heat pump with CHP where the electricity generated by the CHP is used to drive the heat pump is the preferred option when waste heat is not readily available.

Heat networks present a long term investment project and finance is usually arranged over 20 years or more. Initial costs can be partially met through grants from HNIP in order for investors, to achieve their required returns. A well designed heat network can offer lower cost heat and help alleviate fuel poverty.

Making Battery Storage Pay

Jack Hayhoe, Regional Senior Energy Project Officer, Lincolnshire

Battery storage has made large strides over the last 3-4 years as the systems have become smaller and more affordable; Bloomberg reported at the end of 2019 that battery prices have fallen 87% in real terms to $156/kWh.

One of the greatest benefits batteries can provide is as part of an uninterrupted power supply system, enabling end users to ride out fluctuations in frequency, brown outs and even black outs. This is down to the speed in which a battery can deploy its stored energy. This application is particularly useful in industrial and commercial sectors where such outages can result in significant financial loss, for example server farms and automated warehouses.

Battery storage can also be utilised by taking part in Demand Side Response. Western Power Distribution currently have over 30 areas considered Constraint Management Zones (CMZs) in the Midlands. Battery Storage can enable a user to take part in these programmes to help balance the market, whilst generating an income. Battery storage is often combined with existing renewable technologies such as Solar PV, for where energy generated during the high generation's periods is

stored; the battery is then discharged during the peak periods. This peak shifting can help reduce electricity bills through avoiding the "red" periods and triad management.

A battery storage system will rarely pay for itself if used for peak shifting alone. Building a business case for batteries must incorporate their multiple benefits, as the cost of these systems is still high and the lifespan of lithium ion is not as long as some renewable technologies, such as solar PV and wind.

Recently, the five Local Energy Hubs participated in battery storage training at Powerstar where they learned about the technical setup, uses and applications of battery systems in the UK. For more information on battery storage, please speak to your local area's Regional Senior Energy Project Officer.

A utility scale battery

Funding News

Severn Trent Community Fund

Severn Trent is giving away £10million over the next five years to support local projects, charities and community groups in the Severn Trent region helping to make a real and tangible difference in our communities. Applications can be made by organisations including but not exclusive to: charities, organisations with a charitable purpose (not for profit status), publically funded schools, Local Authorities, Parish Councils and sports clubs. The Community Fund is a rolling programme, you can apply at any time and there are no closing dates for applications.

Industrial Energy Transformation Fund

The £315 million Industrial Energy Transformation Fund (IETF) will support businesses with high-energy use to transition to a low carbon future. The government response and application guidance will be in spring 2020, in advance of launching the first phase of the Fund in summer 2020.

Sustainable Urban Development (Low Carbon and Environment)

There is a call in Greater Birmingham and Solihull to run a project to support the shift towards a low carbon economy and preserving and protecting the environment and promoting resource efficiency in Greater Birmingham and Solihull. Closing date: 31 March 2020.

Partners

SWM Sustainability Roadmap to 2030 launched

Sustainability West Midlands launched the Sustainability Roadmap to 2030 in December. Evidence based and shaped by extensive stakeholder consultation, the Roadmap sets out eight priority areas of focus and targets for the West Midlands including 'Sustainable Energy Use'. SWM will continue to monitor progress against the Roadmap and use this information to support leadership, innovation, collaboration as well as celebrating success.

Hub Partners

Department for Business, Energy & Industrial Strategy
D2N2 Derby Derbyshire Nottingham Nottinghamshire
The Marches Local Enterprise Partnership Herefordshire - Shropshire -Telford & Wrekin
Greater Birmingham & Solihull Local Enterprise Partnership
Greater Lincolnshire Local Enterprise Partnership
llep creating economic prosperity Leicester & Leicestershire Enterprise Partnership
Stoke-on-Trent & Staffordshire Enterprise Partnership
West Midlands Combined Authority
Black Country LEP
sustainability west midlands
Worcestershire Local Enterprise Partnership
CWLEP Coventry & Warwickshire Local Enterprise Partnership
Nottingham City Council Energy Services