

Strategic Partnerships and Collaborative Working with Communities, Business and Industry

At SP Energy Networks we have developed a range of strategic partnerships to help us facilitate new ways of connecting to our customers as well as accelerate the transition to Zero Carbon Communities and uptake of low carbon technologies across both our electricity distribution licence areas.

These range from working with community groups, business and academia that equally leverage wider engagement with a consortium of partners that extend to both local and devolved government organisations across the UK. As part of our 2019 activity we launched our Zero Carbon Communities commitment which has created the opportunity to develop both new and existing partnerships and collaborations to support several workstreams focused upon Community Energy and decarbonisation of our energy system.

Existing Partnerships

Uptake of Domestic Low Carbon Technologies Partnership – CALA Homes

This is our third year of working in partnership with CALA Homes to facilitate an improved understanding of the impact on the energy network of an increased penetration of low carbon technologies that now form the basic fabric of all new build homes across the UK. A key aspect of our partnership to date has been the deployment of Low Voltage Network Monitoring across several new developments that are now providing data on energy usage and enabling us to form a better understanding of the future After Diversity Maximum Demand (ADMD) of domestic properties that have had either PV, heat pumps or both coupled with new EV charging infrastructure installed. This insight will support informed design and planning of future energy network infrastructure for new residential developments and as well as working with CALA, we have extended our reach to several other house builders, Independent Distribution Network Operators (IDNOs) and those companies involved in the manufacture and installation of Low Carbon Technologies. Our work will continue across 2020 to further enhance our understanding with increased monitoring across a range of residential developments.

Scottish Association of Young Farmers Scotland (SAYFC)

Having partnered with the SAYFC over the last four years, a key focus of this partnership was to improve the provision of Health and Safety advice for those working across rural and agricultural land near electrical infrastructure. Whilst this remains a strong focus, our partnership has evolved across the year to support a greater knowledge exchange on how farming and rural business can support and benefit from the uptake in low carbon technologies across both the heat and transport sectors. Furthermore, with the transition of Distribution Network Operators to Distribution System Operators (DSO), rural enterprises are well placed to take advantage of these emerging opportunities in providing future demand and generation response services to network operators. To that end we have engaged significantly on these topics over the course of the year. In June 2019 we took a group of young farmers to Standhill Farm in the Scottish Borders to demonstrate how we supported the farm develop a new Anaerobic Digestion plant and gain a viable network connection which has now enabled the business to further invest in new greenhouse growing facilities which are powered and heated by energy generated from natural resources on the farm and which has led to the business becoming the largest commercial grower of tomatoes in Scotland.



Bandeath Community Regeneration Project

This exciting partnership has now been in development over the last two years and is focussed on the construction of a range of new commercial premises, an energy management centre and an innovative horticulture centre of excellence. Located on the outskirts of Stirling, the project has progressed to include sourcing renewable energy from water sourced heat pumps using existing natural resources that in turn will enable the development of a new CHP energy management facility that will provide energy for a proposed 80-acre hydroponic fruit growing enterprise. In addition, working with the local authority there is potential for the project to provide both heat and power to local residential homes and businesses as well as support the development of further affordable housing and local authority owned recreational and leisure facilities for the local community. Our early engagement to date in respect of this project has ensured that our future network investment plans can be robustly informed and taken forward in conjunction with our stakeholders in a coordinated manner supporting the uptake and growth of community energy and heat schemes and which allows us to implement solutions in keeping with our evolution to a Distribution System Operator (DSO).

Transport Scotland

This year we announced our £7.5m strategic partnership with Transport Scotland and Scottish and Southern Energy Networks to deliver more electric vehicle charging points across Scotland. Our role in the strategic partnership is delivery of a revolutionary project to develop the electric vehicle (EV) and electricity network infrastructure across Lanarkshire. The trial known as Project PACE, has been in progress over the course of the year with the aim to determine optimum EV charge point locations and the electricity network infrastructure required to support them across both North and South Lanarkshire Council local authority areas. Project PACE aims to increase the number of EV chargers across Lanarkshire by 500% which will mean the number of EV chargers across Scotland will rise by 25% in one year.

Energy Local Bethesda

Now in its fifth year, this community energy scheme in North-West Wales was originally set up to help the local community take greater control of their energy needs with a focus on reducing bills and managing energy demand in harmony with local hydro power schemes. In 2019, the project received Network Innovation Allowance funding to further support households in the area introduce new home hubs to aid day to day management of energy demand by responding in a way that both promotes economic, in relation to minimising energy costs, and environment betterment by using local generation.

E-Port Energy at Ellesmere Port

During 2019, working with the E-Port Energy consortium, we supported the development of the E-Port Smart Energy Master Plan that reviewed existing energy use and generation across Ellesmere Port. This has led to the development of an Energy Management concept design that will be implemented with an associated ten-year investment plan for the industrial heartland around Ellesmere Port, identifying opportunities for private sector investment for the delivery of multi-vector, low-cost and low-carbon energy management schemes. A demonstrator model will be developed as part of the next phase of the project and we will support this by deploying a range of energy monitoring devices across our network to gather data that will be used for the development of detailed designs for EV infrastructure, distributed energy connections and an overall energy management control system.

Flintshire Local Virtual Private Network (LVPN) Demonstrator

Flintshire County Council are in the process of reviewing and developing their own energy management master plan taking account of the many public buildings that rely upon a demand for energy and seeking to understand how they can manage their own energy needs using both existing and future renewable generation facilities which they own and operate. To enable an innovative LVPN solution, we have partnered with Flintshire County Council to review existing market arrangement and cost structures that will inform our proposed imitative to develop a long-term LVPN solution that will link overall demand with on-site and local generation. This pilot project is expected to inform future develop of local energy schemes not only across Flintshire but other Local Authority areas across the UK.

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Strategic Partnerships extended for Zero Carbon Communities

Transport Scotland/Energy Savings Trust – Switched on Towns and Cities Challenge Fund

The challenge fund supports the Scottish Government's ambition to create 20 electric towns by 2025 and aims to support a steep increase in uptake of plug-in vehicles and other low carbon transport options. Funded by Transport Scotland and delivered by the Energy Savings Trust, the Switched-on Town and Cities programme will provide local authorities with tailored feasibility studies, exploring local measures for low carbon transport. Our role in the programme will be to provide technical and network planning advice and support the delivery and identification of economic and deliverable programmes of work through electrical feasibility studies working with local authorities throughout our electricity distribution franchise area.

Forth Valley College

Over recent years we have worked collaboratively with Forth Valley College who support the development and education of our craft trainees. This partnership has been enhanced over the year to explore further opportunities in developing a centre of excellence and education facility that will bring together a range of low carbon technologies to understand their operating characteristics, interoperability that will inform and enable greater understanding of their impact across our electrical network.

Liverpool City Region Combined Authority (LCRCA)

During 2019, we strengthened our partnership with Liverpool City Region Combined Authority by seconding a dedicated design engineering resource to work with the Authority within the energy and transport department tasked with developing the strategy to achieve Net Zero and understand how this will impact the future electricity distribution network. This has seen us working on projects ranging from new local and regional heat schemes, hydrogen technologies and future renewable energy generation projects. We have also been working to understand the impacts of and investment in, our network for the future uptake of Zero Emission Refueling of transport.

Cheshire & Warrington Local Energy Partnership

To gain greater visibility of the future network investment that will be required to accommodate the update of low carbon technologies, we have been working in partnership with the Cheshire & Warrington LEP in developing detailed regional energy plans. This early engagement has ensured that our future network reinforcements will be taken forward in a coordinated manner to minimise the impact on our network of an increase in the uptake of low carbon technologies and equally enable us to implement and prepare for a DSO approach. Our activity will also support plans being managed by local developers and investors as the regional energy plan considers the local a range of local developments in retail, manufacturing and leisure. An early network intervention delivered as part of this engagement includes the introduction of an active fault level management scheme across South Warrington, enabling a greater penetration of renewable generation to access the existing network through improved network power flow management. In addition, as part of Project Charge, work has commenced to implement EV smart charging trials across 3 locations. This will enable greater knowledge to be gained in managing charge points within existing network capacities.

Welsh Government

Our longstanding partnership with the Welsh Assembly Government has enabled us through the course of 2019 to improve our understanding of how best to support rural and coastal communities in both the transition to being Net-Zero and improving the use of natural resources to promote both environmental and economic benefits. Through our continued engagement with Anglesey Energy Island, we have supported the community's wider strategic economic aspiration for increasing the penetration of renewable generation and low carbon demand connections on the Isle of Anglesey. We are also working with Isle of Anglesey County Council to identify optimum locations for EV charging points that will support continued economic prosperity through remaining an attractive destination for holidaymakers as the growth of low carbon transport increases.

Building upon our relationship with the Welsh Government Energy Service, we have commenced working both the North Wales Economic Ambitions Board and Growing Mid-Wales Partnership to facilitate the development of plans across North and Mid Wales for EV Charging infrastructure and further renewable connections in the drive to create a well-balanced, flexible network that helps contribute to the Welsh Government's Local Energy targets and aspirations.



New Partnerships

Our Zero Carbon communities work has also seen SP Energy Networks collaborate on several projects that seek to develop and promote community owned and managed local energy systems, collaborating with several parties across all energy disciplines, local government, academia and private sector organisations.

Homes for Scotland

As part of our wider engagement and partnership with CALA Homes, over the course of 2019 we have engaged positively with Homes for Scotland to extend our engagement and reach a wider audience of house builders from across Scotland. With an expectation that a significant program of house building will be delivered in the coming years, and with new building regulations requiring an increase in the range of low carbon technologies being installed into the fabric of these buildings to achieve our net zero carbon goals, working collaboratively with Homes for Scotland and their members, we have established a stakeholder Group, that includes all infrastructure providers, whose primary function will be to identify the short, medium and long-term challenges to the delivery of utility infrastructure for new sites in the context of housing aspirations and the climate emergency and in addition, identify opportunities and barriers, producing solutions to overcome critical barrier to delivery.

Edinburgh University Low Carbon Technologies Partnership

This year saw us engage with Edinburgh University to support their development their existing estate to incorporate a wider range of low carbon technologies that covers a range of facilities and buildings throughout Edinburgh. This partnership will seek to understand how existing infrastructure will be able to benefit from the development of additional renewable energy installations that will seek to incorporate wider domestic and business premises that co-exist around the Edinburgh University Campus. Output from the project will be the development of an energy master plan that will incorporate Solar; CHP, Waste from Heat and how this can not only support the University reduce its carbon footprint but equally support local communities currently categorised as fuel poor.

Project Rewire-NW (Warrington)

Project Rewire-NW, which is being led by community energy and sustainability charity Pure Leapfrog, will design a smart local energy system for Warrington. Having been successful in obtaining funding from UK Research and Innovation to develop one of ten ground-breaking smart UK energy projects, we will be one of eleven partners from across industry, energy markets, local government and academia, that over the next two-years, will assess ways of optimising the current energy infrastructure across Warrington. The key output will be the development of low carbon solutions able to deliver Carbon Budget 5, identifying a pathway to net zero, alongside a 25% reduction in consumer costs. Our role as part of this project will be to investigate and make recommendations to address and enable a whole energy system approach, that will include decarbonisation of energy, heat and transport across the entire Warrington Borough.

Liverpool Multi-Vector Energy Exchange (LMEX)

Building on the projects which have been successful in gaining funding from UK Research and Innovation, LMEX is the second project where we have partnered to support the development of a Local Smart Energy Design. The LMEX project will develop a process for interaction within the energy system to enable and create a more flexible and dynamic energy system within the commercial district of Liverpool City Centre. It is hoped that this project and techniques examined will can be used as an enabler to replicate across commercial centers across the UK.

YnNi Llyn

Located within the coastal community of the Llyn Peninsula, YnNi Llyn's is a community organisation whose vision is to provide clean, renewable, reliable and predictable energy from local and natural resources directly to its communities responding to energy issues specific to the Llyn Peninsula which has a high-proportion of both fuel poor and off gas customers.

Working in partnership with the community group we are actively engaged in supporting their ambition to install renewable energy schemes and have taken the first steps in deploying our innovative active network management scheme across the area that will contribute to mitigating future energy costs and environmental impacts by minimising the need for additional network infrastructure. Through early engagement with and supporting the community in delivering their vision and ambition, we seek to derive further benefits through installation of EV charging points and infrastructure to aid continuation of tourism and enable residents and businesses to increase their uptake of low carbon technologies supporting future growth and prosperity across the area.

Hydrogen Cymru

We are proud to be one of the founder members of the newly formed Hydrogen Cymru Trade Association which has been created to inform on the long-term requirements for the rollout of hydrogen use across Wales. Working in partnership with Wales & West Utilities in addition to organisations from across the hydrogen industry, this will enable a greater understanding of the potential future impact upon the electrical network to facilitate new hydrogen production, storage and transport facilities that will then be used to inform our future network investment plans and longer-term strategy in incorporating Hydrogen facilities across our network.

Decarbonisation of Heat

Aside from all the work we are doing to connect renewable generation and facilitate the electrification of transport, at SP Energy Networks we recognise our enabling role in supporting communities and our customers in the electrification of heat and the critical role distribution networks have in supporting this transition.

We have already started to look for partners on heat related projects, and have recently just made a call for retail and service partners to collaborate with us as part of our development work which is completed through Network Innovation Competition funding.

Please contact us for more information:

www.spenergynetworks.co.uk/news/pages/are_you_interested_in_partnering_on_our_heat_innovation_project.aspx