

Connected Future: Scotland

Scotland can lead the world on energy storage

Scotland is one of the world's most ambitious countries when it comes to decarbonisation, with a target of achieving net-zero emissions of all greenhouse gases by 2045.

Energy storage – capturing energy produced at a certain time for later use - has a vital role to play in meeting this deadline, and trying to effectively tackle climate change across the board. That's why energy storage will be one of the key areas of discussion at the 'Connected Future' event being held in Glasgow next month by international law firm CMS in partnership with The Times and Sunday Times.

As the country moves towards decarbonisation, there will be challenges to address, such as the issue of more intermittent generation of energy. For a connected city of the future to be confident of receiving a steady supply of electricity, money will need to be invested in capacity and back-up systems that can store energy to draw on as required.

As Chris McGarvey, partner in the energy and climate change team at CMS, explains: "To accommodate more renewable electricity on the system you can increase total capacity of the system or put other solutions in place, such as energy storage. From a financial perspective you could invest millions into

upgrading the system to cope with peak supply and demand which might only happen on a handful of occasions each year. Storage could be a much more more cost-effective approach and help manage the journey towards decarbonisation."

Scotland is relatively well-placed in this area, according to McGarvey, who points to a more favourable planning regime than in other parts of the UK for both on-shore renewable generation and battery storage.

While battery storage has a significant role to play, other methods can be adopted to provide flexibility in the electricity system, such as pumped hydro, including compressed air energy storage (CAES) and hydrogen. "Battery storage has limitations in terms of the total volume of energy it can store and the period of time it can discharge that electricity into the system," says McGarvey. "Things like hydrogen can store energy to be discharged over a period of days rather than half an hour, for example."

There are also opportunities for Scotland's distribution network operators to be global innovators in this field, and for smaller businesses to benefit from grant funding available for technology demonstration projects.

McGarvey explains: "The distribution network operators are well-placed to promote flexible and dynamic grids, known as smart grids. It would be fantastic for this technology and know-how to be developed and commercialised."

To hear more about the challenges and opportunities for Scotland in energy storage, attend 'Connected Future' at The University of Strathclyde Innovation and Technology Centre, Glasgow in October 2020.

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