Editorial

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The United Nations' 2016 climate change summit, COP22 held in Marrakesh, made some progress to pave the way for implementation of the Paris Agreement which came into force in early November. Although the first offshore wind farm in the USA has just started to generate electricity (Shuman, 2016), the election of Donald Trump as president-elect of the USA puts a question mark over implementation of agreements from COP21 as he had previously said he would take the US out of the Paris Agreement. Talks at COP22 reflect the determination of other nations to continue with climate action with or without the US if necessary.

UK policy endeavours to provide sufficient electrical power and reduce emissions. In September 2016, the UK government gave the go-ahead for the construction of a 3.2 GW nuclear power station at Hinkley Point C. Earlier, the UK Committee on Climate Change (2016) stated that exploiting shale gas by hydraulic fracturing (fracking) on a significant scale is not compatible with UK climate targets unless three tests are met: well development, production and decommissioning emissions must be strictly limited; gas consumption must remain within carbon budgets requirements; and emissions from shale gas production must be accommodated within carbon budgets. Separately, a prominent UK politician (Lilley, 2016) has expressed concern about the costs of renewable energy. Journals such as this must continue to seek out and document ways to make renewable energy schemes as cost-effective as possible.

This issue of *Energy* has four papers on different aspects of the implementation of international agreements on climate change and the economic development of renewable energy.

The first paper in this issue is a global policy for the supply and use of energy, proposed by Banovac *et al.* (2016) to reduce emissions of greenhouse gases. They review the sources and use of energy and advocate integral energy planning; management of future energy consumption; energy saving; intensive use of renewable energy; application of new technologies in transport; restricted use of fossil fuels; the use of green energy; deployment of high-tech environmentally friendly technologies; continuous energy saving; and substantial environmental protection.

The second paper describes an analytical model for the power available to tidal turbines on open channel flow (Houlsby and

Vogel, 2016). The model quantifies how peak power depends on the proportion of the channel that is blocked off by turbines, and on the speed of flow in the channel. Also, the paper notes that power is dissipated in turbulent flow downstream of the turbines, which may disturb sediments in the downstream channel and potentially have environmental implications.

The third paper presents an analytical model for the transport of heavy wind turbine generators up steep roads to hilly sites (Yang *et al.*, 2016). The maximum combinations of gradients and lengths at those gradients are assessed, with particular reference to a nacelle of weight 80 t transported by a truck with 12 gears and a weight/power ratio of 120 kg/kW.

The fourth paper reviews the use of foam sticks to deal with liquids in gas wells (Wang *et al.*, 2016). The authors describe how foam sticks are lowered into a gas well to be dissolved in liquid and converted to foam which is driven out of the well by the gas flow. They have developed automated equipment to launch foam sticks, using power from solar panels and batteries.

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