# 2022 preview: High-voltage supergrids could power the world

TECHNOLOGY 29 December 2021

By Adam Vaughan

**Solar reflectors in Australia's Northern Territory generating power**
John Warburton-Lee Photography/Alamy

INDIA gained notoriety when it finished November's COP26 climate summit by weakening a move to end the use of coal. Less widely recognised is that the country also started the Glasgow summit in a more positive fashion, with a plan to massively expand the reach of solar power by joining up the electricity grids of countries and even entire continents.

Indian prime minister Narendra Modi has talked about the idea before, but the One Sun One World One Grid initiative launched in Glasgow now has the backing of more than 80 countries, including Australia, the UK and the US.

The alliance is just one example of a growing movement to create regional and, eventually, global "supergrids": long-distance, high-voltage cables linking each country's growing renewable power output.

The supergrid movement is being driven partly by the need to maintain a smooth flow of power onto electricity grids. Local weather makes the amount of power generated by wind and solar variable, but this becomes less of an issue if the grid is larger and distributed over a wider geographical area.

What's more, supersized green energy projects are often sited far from the cities or industrial areas demanding their energy, be it wind farms in the North Sea or solar farms in the Australian outback. Supergrids offer a solution to this problem by connecting large renewable energy sources with the people who use the power.

"The Indian government is keen on links to the Middle East, to help India decarbonise using imported renewable energy," says Jim Watson at University College London.

The UK, one of India's partners on the One Sun One World One Grid initiative, is also considering new long-distance cables.

Last September, the UK started importing hydropower from Norway via a 724-kilometre subsea cable. In the coming years, the cable is expected to be used mostly to export electricity from the UK's growing number of offshore wind farms so that it can be stored in hydropower facilities in Norway and released onto grids as needed.

In 2022, UK start-up Xlinks will try to persuade the UK government to guarantee a minimum price for electricity generated at a mega wind and solar farm to be built in Morocco that could power UK homes via a 3800-kilometre subsea cable.

"I will very confidently predict that over the next 15 years the world will see a huge number of interconnectors," says Simon Morrish at Xlinks of such cables.

Xlinks is also working with Australian firm Sun Cable on its proposal to build the world's largest solar farm in the north of Australia and connect it, via Darwin, to Singapore through a 4200-kilometre cable, to supply it with low-carbon electricity. In September, Sun Cable gained approval to route the high-voltage cable through Indonesian waters.

2022 may also see progress on efforts to build an "energy island" in the North Sea, which would act as a vast hub for offshore wind farms that can supply several European countries. UK company National Grid recently told *New Scientist* it is in talks about the pioneering project.

**More on these topics:** CLIMATE CHANGE RENEWABLES

Magazine issue 3367 , published 1 January 2022