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Solar panels in the Sahara could power the whole of Europe



(Solar Systems/AP)

A solar power plant in the Mojave Desert

Lewis Smith, Environment Reporter, in Copenhagen

All of Europe's energy needs could be supplied by building an array of solar panels in the Sahara desert, a climate change conference has been told.

Technological advances combined with falling costs have made it realistic to consider North Africa as Europe's main source of imported energy.

By harnessing the power of the sun, possibly in tandem with wind farms along the North African coastline, Europe could easily meet its 2020 target of getting at least 20 per cent of its energy from renewable sources.

"It could supply Europe all the energy it needs," Dr Anthony Patt, of the International Institute for Applied Systems Analysis, in Austria, told scientists at a climate change conference in Copenhagen. "The sun is very strong there and it's very reliable."

"There is starting to be a growing number of cost estimates of both wind and concentrated solar power for North Africa...that start to compare favourably with alternative technologies. The cost of moving [electricity] long distances has really come down."

He said only a fraction of the Sahara, probably the size of a small country, needed to be covered to extract enough energy to supply the whole of Europe.

Dr Patt told the conference that calculations show a £50 billion investment by governments over the next ten years would be enough to make Saharan solar power an attractive and viable prospect for private investors.

Over the last decade technological advances, especially the development of high voltage direct current cables, has brought down the cost of transmitting electricity by three-quarters.

The sun in the Sahara is twice as strong as it is in Spain and is a constant resource, rarely being blocked by clouds even in the winter.

Because direct sunlight is available almost every day the use of concentrated solar power can be used in the desert.

It operates by using mirrors to focus the sun's rays at a thin pipe containing either water or salt. The rays boil the water or turn the salt molten and the energy is extracted by using the heat to power turbines.

Unlike wind power, which usually has to be used immediately because of the cost of storing the electricity generated, the heated water and salt can be stored for several hours before being used to generate electricity.

Trials of concentrated solar power are being planned for Egypt, Morocco, Algeria and Dubai but Libya and Tunisia could also be considered as sources of European electricity.

Getting energy from North Africa would, the conference heard, have the benefit of reducing dependence fossil fuels which drive climate change by emitting carbon dioxide.

Simultaneously, the renewable source of energy would mean that Europe relied less on Russia and the Middle East for fuel.

Attractive as Saharan solar power is, Dr Patt said, there remains the challenge of overcoming the political hurdles posed to the idea, such as the huge opposition put up by residents across Europe of having transmission cables installed near their homes. Piecemeal transmission networks are a further obstacle.

Dr Patt was enthusiastic about the "fantastic wind resource" and the potential of putting wind farms along the North African coast.

Winds created by the sun heating the air are especially strong during the summer when European wind turbines, including those in Britain, are at their least productive.

The conference is being held to collate the latest scientific findings on climate change. Its conclusions will be passed to diplomats and world leaders who in December will arrive in Copenhagen to try to agree an international deal to limit greenhouse gas emissions to reduce global warming.

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