



**The Telegraph**

by Matt Ridley

**T**he actress and environmentalist Tracy Ward [objects to plans to build a 2,000-acre solar farm](#), part of which would lie on the estate of her ex-husband the Duke of Beaufort in Gloucestershire: "Solar panels should be on roofs, along motorways, or industrial sites," she says. "Be careful what the climate change fearmongering will lull us into accepting."



Spot on. While solar panels on roofs can (almost) make sense, [huge solar farms are an environmental as well as economic mistake](#). The whole point of farmland is that it is already a solar farm, and a green one at that. It turns sunlight into food energy for people, insects, voles and birds. "The fact that some green campaigners would rather have low grade electricity than high quality British farm produce shows how bizarrely irrational environmentalism has become," says Dr John Constable of the Renewable Energy Foundation.

Ah, say solar-energy fans, but you can have both: you can graze sheep under the solar panels or allow weeds to flourish. This is nonsense: the whole point

of solar panels is that they catch the sunlight – the clue is in the name – which plants would otherwise use to grow. On a normal summer's day, perhaps 10 per cent of the sunlight might get missed by the solar panels and caught by the plants' solar panels (leaves) instead. It's a zero-sum game.



### [Solar Panel Concept Could Help Drive the Transition to Renewable Energy](#)

It is debatable whether we need home-grown electricity more desperately than we need home-grown food these days: reliance on imports of both are increasing sharply. But you cannot currently make bread or lambs any other way than by using land; the same is not true of electricity.

According to an estimate by the writer Robert Bryce, solar power needs around 200 times as much land as gas per unit of energy. Reducing the land we need for human civilisation is surely a vital ecological imperative. The more concentrated the production, the more land you spare for nature. Going back to using the landscape to provide energy, as they did in the Middle Ages (through wind, water and hay for horses), would be a disaster for nature.

Britain currently vies with New Zealand each year to break the record for wheat yield: our combination of soil moisture and summer day length is ideal. But it's right at the bottom of the heap for solar-power potential. Around 1-2 kilowatt-hours a day of "direct normal irradiation" falls on the average square metre in Britain. Most of Australia experiences 5-8 times as much. According to one study, it is not even clear that the energy generated by a typical solar farm in Europe north of the Alps is greater than what went into building it, let alone replacing it every 15 years.

To match UK electricity demand from solar on a June afternoon could mean covering 5-10 per cent of the entire country with solar farms, but they would be useless at night and in winter. British solar output peaks at precisely the times we least need it: in the middle of the day in the middle of summer. It contributes the square root of sod all in December, and in spring and autumn it stops generating just when demand starts to peak in the evening.

The more solar power we add to the grid, the bigger the evening ramp-up demand for gas. [It is expensive to keep so much back-up ready](#). Batteries are unlikely to help much. If we relied on solar power, it would take many billions of pounds to install enough batteries to tide us over a single night, let alone a winter.

Then there is the demand for materials. There is probably not enough silicon, silver or copper being mined and smelted in the world to build a solar farm big enough to supply Britain. The material demands of solar power are about six times greater than for gas, per megawatt of capacity (though half those of offshore wind).

Much of this material comes from China, a significant vulnerability in terms of economic security and environmental damage. Solar's fans are fond of saying that the cost of solar panels is falling fast, but solar panels account for just a quarter of the costs of a solar farm: the cost of the rest of the infrastructure, and the land, is rising.

Planning guidance on solar farms needs to change fast to stop these duke-lucrative, subsidised eyesores gobbling up more of our green and pleasant land.