

Solar energy cheaper even than existing coal-fired power stations

February 1 2022



Credit: CC0 Public Domain

Solar energy is one of the most cost-effective ways to generate electricity, cheaper even than existing coal-fired power stations, says environmental and technology expert Professor Ravi Silva, director of the Advanced Technology Institute at the University of Surrey.

Increasing the amount of energy derived from [solar power](#) should therefore be a priority for economic reasons, as well as environmental.

In his latest editorial article for the peer-reviewed academic journal *Energy and Environmental Materials*, of which he is editor-in-chief, Professor Silva urges [policy makers](#) and [energy companies](#) to move quickly towards decarbonisation and to maintain the momentum gathered in COP26 last year. He highlights the strong economic case supporting [solar energy](#), which typically has a cost comparative with or lower than other [energy sources](#), including coal, nuclear and offshore wind, even as far north as Britain. In sunnier countries like Spain, the economic case is even stronger.

He cites data published by IRENA, the International Renewable Energy Agency, which estimates that 61 percent of coal capacity in the United States costs more to operate than building new renewable energy plants. Retiring these coal plants and replacing them with renewables would save US\$5.6 billion in costs and 332 million tons of CO₂ per year. In India, 70 percent of coal capacity is more expensive to run than building new renewables; in Germany it is 100 percent.

Prof Silva, who has mapped the University of Surrey's path to carbon neutrality, acknowledges the need to balance solar energy with other energy sources to ensure a consistency of supply to meet demand, both on day-to-day and seasonal levels. He directs people planning future energy supplies to consider wind, nuclear, and storage solutions like pumped hydro, hydrogen and batteries.

Prof Silva said: "COP26 was big news last year but it's meaningless unless we maintain momentum and deliver on our carbon reduction targets. Solar is a crucial part of the solution and one which is more cost-effective than people believe. It's crazy that installing new solar energy plants can cost less than continuing to operate coal-fired [power stations](#),

yet changes aren't being made.

"Retiring all the uneconomic [coal plants](#) around the world and replacing them with renewables would save US\$32 billion and 3 giga tons of CO₂ annually, 9 percent of the mankind's energy-related emissions. Is not this a worthwhile legacy for COP26?"

More information: James Crawshaw et al, EDITORIAL: CO₂ emissions post-COP26: Who's responsible to curb the flow? Does it matter if we can make it a win-win?, *ENERGY & ENVIRONMENTAL MATERIALS* (2021). [DOI: 10.1002/eem2.12343](https://doi.org/10.1002/eem2.12343)

Provided by University of Surrey

Citation: Solar energy cheaper even than existing coal-fired power stations (2022, February 1) retrieved 6 May 2024 from <https://techxplore.com/news/2022-02-solar-energy-cheaper-coal-fired-power.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.