

More wind, less hot air

March 5 2020, by David Bradley



It is the first time that data has been used at a national scale to judge how the beauty of the environment impacts onshore windfarm development. Credit: CC0 Public Domain

Predictions about how much wind power will be in place by the year 2040 have been too conservative according to research published in the *International Journal of Energy Technology and Policy*.

Yu Sang Chang, Hann Earl Kim, and Seongmin Jeon of Gachon University, South Korea and Yoo-Taek Lee of Boston University, in Massachusetts, U.S., have looked at the forecasts for [electricity generation](#) using [wind turbines](#) for the dates 2020, 2030, and 2040 for Canada, China, India, Japan, South Korea, and the U.S. from the Energy Information Administration (EIA). They have compared those figures with their own alternative projections and those of other organizations and suggest that, with the exception of Japan, more electricity will be generated using this sustainable power source than had been thought.

The researchers point out that in 2015 there were well over 300,000 wind turbines around the world generating, nominally at least, well over 400 gigawatts of power. Capacity quadrupled between 2007 and 2015 and has continued to grow. There are around 85 countries using windpower on the commercial scale. China has one of the biggest on-shore installations with several thousand turbines having a combined power output of 6 gigawatts in the Gansu Wind Farm. One of the largest off-shore facilities is the London Array in the UK with a capacity of 630 MW and there are plans for one of double that capacity to be sited at Dogger Bank in the North Sea off the Yorkshire coast of England. This facility is expected to [power](#) 4.5 million homes.

These kinds of details can feed predictive models but the team suggests that earlier efforts have been hampered in their forecasts by data inconsistencies. They hope that their new approach provides a better perspective. Fundamentally, their analysis coincides with predictions for Canada, India, and Japan, but they have more optimistic outcomes for China, South Korea, and the U.S.. In sum, global capacity, they suggest will be much greater by 2040. They believe that technological breakthroughs in turbine design and [power transmission](#) have been ignored in conservative estimates of future output and it is these that give them hope for a more sustainable and [wind](#)-powered future.

More information: Yu Sang Chang et al. How much wind-powered electricity may be generated in 2040 by China, USA and four other countries, *International Journal of Energy Technology and Policy* (2020). [DOI: 10.1504/IJETP.2020.105509](https://doi.org/10.1504/IJETP.2020.105509)

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