

# Harmonised global datasets of wind and solar farm locations and power

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Energy systems need decarbonisation in order to limit global warming to within safe limits. While global land planners are promising more of the planet's limited space to wind and solar photovoltaic, there is little information on where current infrastructure is located. The majority of recent studies use land suitability for wind and solar based on earth science data, coupled with technical and socioeconomic constraints, as a proxy for actual location data. Here, we address this shortcoming. Using readily accessible OpenStreetMap data we present, to our knowledge, the first global, open-access, harmonised spatial datasets of wind and solar installations and include first order estimates of power capacities. We anticipate this data will be of widespread interest within global studies of the future potential and trade-offs associated with the global decarbonisation of energy systems, as well as those interested in the relationship between installations and improving earth science data.

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