

Do base stations need to replace wind power sources





Overview

Very simply, supply must be continuously matched to demand. There is no large-scale storage of electricity on the grid.

Load is the amount of power in the electrical grid. Base load is the level that it typically does not go below, that is, the basic amount of electricity that is always.

Base load is typically provided by large coal-fired and nuclear power stations. They may take days to fire up, and their output does not vary. Peak load, the variable.

Wind power has no effect on base load. However, since base load providers can not be ramped down, if wind turbines produce power when there is no or little.

Unlike conventional power plants, wind turbines cannot be “dispatched” in response to fluctuating demand needs. Wind turbines respond only to the wind, so.

What can renewable baseload power sources replace?

There are renewable baseload power sources with generation profiles that can economically replace other retiring electricity sources megawatt for megawatt, thereby avoiding incurring additional costs from purchasing and then balancing renewable intermittent power sources with storage or new transmission.

Do generating systems need base-load power stations?

Our latest research, available [here](#) and reported [here](#), finds that generating systems comprising a mix of different commercially available renewable energy technologies, located on geographically dispersed sites, do not need base-load power stations to achieve the same reliability as fossil-fuelled systems.

Where can baseload power be provided by wind?



One place where baseload power can be provided by wind is a chain of wind turbines running along the Atlantic coast of the northern U.S. The Atlantic Wind Connection project will take advantage of wind patterns that blow sufficiently at least somewhere along that chain at all times.

Can balancing authorities and Energy Commissions fit renewables to the grid?

Instead of trying to fit the grid to renewables' variability, balancing authorities and energy commissions can also fit renewables into the grid. They can build baseload geothermal, biomass, or hydro power in conjunction with other power sources to meet their power needs through a more diverse supply.

Can a power station supply base-load demand?

The old myth was based on the incorrect assumption that base-load demand can only be supplied by base-load power stations; for example, coal in Australia and nuclear in France. However, the mix of renewable energy technologies in our computer model, which has no base-load power stations, easily supplies base-load demand.

Do intermittent power sources need a baseload resource?

Intermittent power sources will need to be structured to create a baseload resource in some places to ensure grid stability. Given the nature of demand, an electricity grid cannot function without substantial baseload power on the system.



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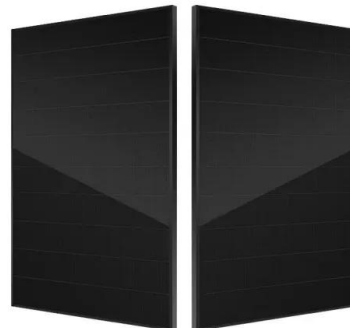
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The preferred source that wind power may replace on the grid is hydro power, which is already carbon dioxide free. If a conventional source is replaced, it may simply be ramped down or ...

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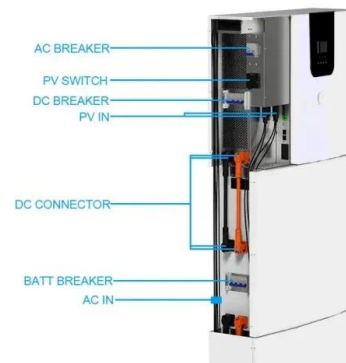
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Baseload power plants are not necessary to maintain supply in an energy system dominated by wind and solar power, and only have a place in future systems if they help cut ...

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