

## Capacity Factor (16:07)

Define capacity factor and illustrate how to calculate capacity factor.

Calculate the capacity factor of a power generation facility that runs at full capacity for 24 hours a day.

Calculate the capacity factor of a power generation facility that runs at full capacity for 1 hour a day.

Calculate the capacity factor and energy output of a 2MW wind turbine that runs at full capacity for 6 hours a day.

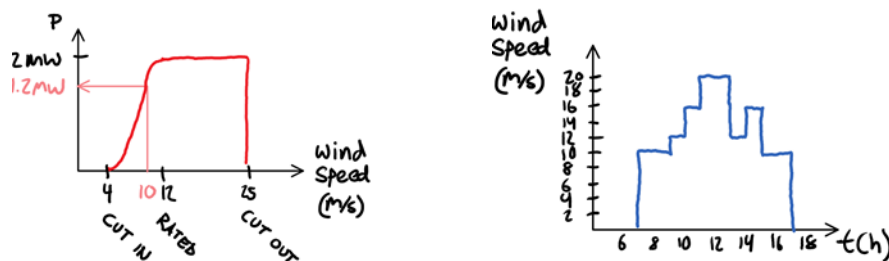
Calculate energy output and the amount of time per day 2MW wind turbine operates at full capacity given a 35% capacity factor.

Compare and contrast the energy output and economic benefit of two similarly rated power generation facilities operating at different capacity factors.

Describe a wind turbine power curve.

Define the following points on a wind turbine power curve: cut in speed, the rated speed, cut out speed

Given this power curve and plot of wind speed as a function of time determine the energy output and capacity factor.



In addition to the availability of a generation resource describe other factors that influence capacity factor.

Given a hydroelectric dam consisting of 16 50MW turbines operating at a 50% CF calculate the annual energy output.

Determine the capacity factor of a 3kW PV system known to produce 5,037kWh of energy annually.

Describe the utility of the term “peak sun hours”. Calculate peak sun hours for the above example.