

### Energy and Power Examples (16:50)

Determine how much energy in units of Joules is expended by a 2.4kW conventional oven used for 4 hours.

Determine how much energy in units of Joules is expended by a 1.7kW microwave oven used for 6 minutes.

Determine the amount of Joules in 1kWh of energy.

Determine how much energy in units of kWh is expended by a 2.4kW conventional oven used for 4 hours.

Determine how much energy in units of kWh is expended by a 1.7kW microwave oven used for 6 minutes.

Determine how long it takes for a 1.4kW charger to charge a 7.6kWh battery.

Determine how long it takes for a 3.3kW charger to charge a 7.6kWh battery.

Determine how long it takes for a 6.4kW charger to charge a 7.6kWh battery.

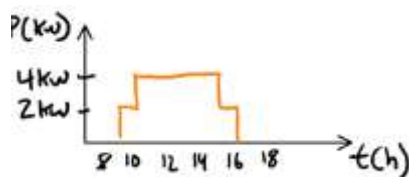
Determine the energy output of a 6hp generator used for 8 hours in units of kWh.

Determine the size of the PV array necessary to produce 24kWh of energy given a fixed tilt roof mounted array experiences 6 hours of peak sun.

Determine the size of the PV array necessary to produce 24kWh of energy given a single axis tracker that experiences 8 hours of peak sun.

Determine the size of the PV array necessary to produce 24kWh of energy given dual axis tracker that experiences 8.5 hours of peak sun.

Determine the energy output for a PV system that experiences the following power output as a function of time.



Describe the purpose of “peak sun hours” in PV system calculations.

Determine the daily energy output of a 5kW array known to regularly experience 3.5 hours of peak sun each day.

Determine the peak sun hours regularly experienced by a 4.5kW array that annually produces 6,570kWh of energy.

Describe a wind turbine power curve. Draw an example of a 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.

