

## Energy Units Problem Set

1. You would like to predict how much energy a 45 MW wind farm produces over the course of a year. It has a capacity factor of 48%. How many kilowatt-hours does it produce? How many megawatt-hours does it produce? How many gigawatt-hours does it produce?
2. You would like to determine the annual revenue that you can produce from a 5 MW (ac) solar farm. The solar farm has a capacity factor of 18%. You are confident that you can sell the energy from the solar array for \$150 per MWh. How much revenue do you expect to generate in one year from this solar array?
3. A 1 gigawatt nuclear array has a capacity factor of 90%. How much energy does it generate in a typical day? Please answer in terms of MWh and GWh.
4. Is it fair to compare a 100 MW solar power plant to a 100 MW coal power plant? Why or why not?
5. Assume you have a 10 MW solar farm with a capacity factor of 19%. How many gallon equivalents of energy does the solar farm produce over the course of a year?