

A little more Energy and Power Practice

Physics and Mathematics of Sustainable Energy

College of the Atlantic. September 27, 2024

The average Maine home uses 583 kWh of electrical energy in a month. **Estimate** the following quantities.

1. The monthly cost of this energy. (Currently electricity in our part of Maine is \$0.248 per kWh.)
2. The average power drawn by the house. Express your answer in Watts and kW.
3. The average amount of residential electrical energy used per person per day by a Maine resident.
4. There are roughly 10,000 year-round residents on MDI. What amount of electrical power is needed for all year-round MDI residents? (Why might this estimate not be reasonable or meaningful?)

Emissions per Capita: Gigatons and Gigapeople

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2022 total GHG emissions, not including LUCF, measured in Gt of CO₂e.

- World: 53.85
- China: 13.94
- USA: 6.0
- India: 4.05
- France: 0.42
- Nigeria: 0.425
- Peru: 0.137
- Ecuador: 0.08

1. What is the per-capita emissions of the US?
2. What is the per-capita emissions of the World?
3. Choose at least one other country and calculate its per-capita emissions.