HW#1

Locate the corresponding fraction of land area required to provide for the energy needs in the USA using different energy options.

The USA existing power flux is 0.4 W/m².

fraction of power = $\frac{\text{USA power flux}}{\text{energy power flux}}$

Energy option	Power flux [W/m²]	Fraction of land used
Energy Crops, Biomass, Plants	0.5	.8 80%
wind power	2.5	.16 16%
Solar Photovoltaics Panels (PV)	5.0 - 20.0	.008 - 0.02 8 - 2%
concentrated Thermal solar Power, deserts	15.0 - 20.0	.026̄ - 0.02 2.6̄% - 2%
nuclear Electricity	1000.0	0.0004 0.04%