

How profitable is an electricity generator ?

Fill in the following table with values to calculate how much time (how many years) is necessary to make human energy profitable.

Piece of data	Symbol	Unit	Formula	Value
Peak power of the generator	P1	Watt (W)	Define !	
Average power of the generator produced by a human	P2	Watt (W)	Evaluate !	
Average duration of use per day	t1	hours (h)	Evaluate !	
Number of opening days a year	D1	days	Guess !	
Duration of use per year	t2	hours (h)	$t2 = t1 \times D1$	
Energy produced per year by one person	E1	Watt.hour (Wh)	$E1 = P2 \times t2$	
Average number of customers in the fitness club	n1	Watt.hour (Wh)	Define !	
Energy produced per year by all customers	E2	Watt.hour (Wh)	$E2 = E1 \times n1$	
Energy produced per year in billing units	E3	kiloWatt.hour (kWh)	
Price of a unit of electrical energy	m1	euros per kWh (€ / kWh)	€ 0.15	
Amount of money saved in a year	m2	euros (€)	$m2 = E3 \times m1$	
Price of the generator	m3	euros (€)	€ 15,000.00	
Number of years to make the investment profitable	y	years	$y = m3 / m2$	

Present this table to explain your results.