

# Personal Energy Calculator

Developed by Dr. Walter Ernst in 2002 for the Youth Encounter on Sustainability (YES), Edited by Dr. Jeffrey Steinfeld and Beth Conlin.  
Please enter consumption estimates for the following tasks. Use the provided conversion units to convert to kWh.

Task	Consumption (Metric conversions below)	Conversion Factor	Demand per person and year [kWh/y]
<b>Household:</b>			
<i>Direct energy:</i>			
residence - area heated	m <sup>2</sup>	x 25-170 kWh/m <sup>2</sup> y =	kWh/y
residence - area air conditioned	m <sup>2</sup>	x 5-15 kWh/m <sup>2</sup> y =	
<i>residence - electricity</i>	m <sup>2</sup>	x 18-28 kWh/m <sup>2</sup> y =	
<i>Indirect energy:</i>			
residence - total used area	m <sup>2</sup>	x 55-67 kWh/m <sup>2</sup> y =	
<b>Total Household</b>			kWh/y
<b>Mobility</b>			
<b>Car</b>			
<i>Direct energy:</i>			
fuel [Liter gasoline per year]	L/y	x 12 kWh/L =	
<i>Indirect energy:</i>			
km driven per year	km/y	x 1.2-1.4 kWh/km =	
car weight	kg	x 5.3 kWh/kgy =	
<b>Public Transport</b>			
Train	km/y	x .5-.9 kWh/km =	
Bus/Boat	km/y	x .15-.8 kWh/km =	
Aircraft [hours per year]	h/y	x 500-1000 kWh/h =	
<b>Total Mobility</b>			kWh/y
<b>Nutrition (consumed per year)</b>			
Select one of the following:			
Non-Vegetarian		14850 kWh/y =	
Vegetarian		10600 kWh/y =	
Vegan		7600 kWh/y =	
<b>Total Nutrition</b>			kWh/y
<b>Private Consumption</b>			
Higher Education and Employment	(see guidance)		
Furniture and Appliances (total value)	US\$	x .14 kWh/US\$y =	
Clothes, shoes purchased per year	US\$/y	x .1 kWh/US\$ =	
Computer and Internet Use	hrs/y	x .2 kW =	
<b>Total Private Consumption</b>			kWh/y
<b>Public Consumption</b>	(see guidance)	1,000-10,000 kWh/y =	kWh/y
<b>Grand Total</b>			kWh/y
<b>CO<sub>2</sub> Emissions Estimate</b>	(Grand Total)	x 0.22 kg CO <sub>2</sub> /kWh ≈	CO <sub>2</sub> /y

1 ft<sup>2</sup> ≈ 0.1m<sup>2</sup>; 1 US gallon = 3.8 Liters; 1 mile = 1.6km; 1 US pound = 0.453kg