

# Heating cost calculation

## Initial data

<b>Heat pump</b>	0.10 EUR per 1 kWh	859 kcal/kWh	3.00 COP
<b>Electric boiler</b>	0.10 EUR per 1 kWh	859 kcal/kWh	100 % Boiler efficiency
<b>Natural gas</b>	0.33 EUR per 1 m3	7000 kcal/m3	90 % Boiler efficiency
<b>Coal</b>	0.23 EUR per 1 kg	5250 kcal/kg	75 % Boiler efficiency
<b>Peat briquettes</b>	0.28 EUR per 1 kg	3800 kcal/kg	75 % Boiler efficiency
<b>Dry firewood</b>	0.14 EUR per 1 kg	3800 kcal/kg	75 % Boiler efficiency
<b>Wood pellets</b>	0.28 EUR per 1 kg	4100 kcal/kg	75 % Boiler efficiency

## Calculation results

<b>Heat pump</b>	1 Gcal = 388 kWh = 39 EUR 388 [kWh] = ( 1000000 / 859 ) / 300 39 EUR = 388 [kWh] * 0.10 EUR	1 MWh = 333 kWh = 33 EUR 333 [kWh] = 388 [kWh] / 1.164 33 EUR = 333 [kWh] * 0.10 EUR	1 GJ = 93 kWh = 9 EUR 93 [kWh] = 388 [kWh] / 4.187 9 EUR = 93 [kWh] * 0.10 EUR
<b>Electric boiler</b>	1 Gcal = 1164 kWh = 116 EUR 1164 [kWh] = ( 1000000 / 859 ) / 100 116 EUR = 1164 [kWh] * 0.10 EUR	1 MWh = 1000 kWh = 100 EUR 1000 [kWh] = 1164 [kWh] / 1.164 100 EUR = 1000 [kWh] * 0.10 EUR	1 GJ = 278 kWh = 28 EUR 278 [kWh] = 1164 [kWh] / 4.187 28 EUR = 278 [kWh] * 0.10 EUR
<b>Natural gas</b>	1 Gcal = 159 m3 = 52 EUR 159 [m3] = ( 1000000 / 7000 ) / 90 52 EUR = 159 [m3] * 0.33 EUR	1 MWh = 137 m3 = 45 EUR 137 [m3] = 159 [m3] / 1.164 45 EUR = 137 [m3] * 0.33 EUR	1 GJ = 38 m3 = 13 EUR 38 [m3] = 159 [m3] / 4.187 13 EUR = 38 [m3] * 0.33 EUR
<b>Coal</b>	1 Gcal = 254 kg = 58 EUR 254 [kg] = ( 1000000 / 5250 ) / 75 58 EUR = 254 [kg] * 0.23 EUR	1 MWh = 218 kg = 50 EUR 218 [kg] = 254 [kg] / 1.164 50 EUR = 218 [kg] * 0.23 EUR	1 GJ = 61 kg = 14 EUR 61 [kg] = 254 [kg] / 4.187 14 EUR = 61 [kg] * 0.23 EUR
<b>Peat briquettes</b>	1 Gcal = 351 kg = 98 EUR 351 [kg] = ( 1000000 / 3800 ) / 75 98 EUR = 351 [kg] * 0.28 EUR	1 MWh = 302 kg = 85 EUR 302 [kg] = 351 [kg] / 1.164 85 EUR = 302 [kg] * 0.28 EUR	1 GJ = 84 kg = 24 EUR 84 [kg] = 351 [kg] / 4.187 24 EUR = 84 [kg] * 0.28 EUR
<b>Dry firewood</b>	1 Gcal = 351 kg = 49 EUR 351 [kg] = ( 1000000 / 3800 ) / 75 49 EUR = 351 [kg] * 0.14 EUR	1 MWh = 302 kg = 42 EUR 302 [kg] = 351 [kg] / 1.164 42 EUR = 302 [kg] * 0.14 EUR	1 GJ = 84 kg = 12 EUR 84 [kg] = 351 [kg] / 4.187 12 EUR = 84 [kg] * 0.14 EUR
<b>Wood pellets</b>	1 Gcal = 325 kg = 91 EUR 325 [kg] = ( 1000000 / 4100 ) / 75 91 EUR = 325 [kg] * 0.28 EUR	1 MWh = 279 kg = 78 EUR 279 [kg] = 325 [kg] / 1.164 78 EUR = 279 [kg] * 0.28 EUR	1 GJ = 78 kg = 22 EUR 78 [kg] = 325 [kg] / 4.187 22 EUR = 78 [kg] * 0.28 EUR

