The technical efficiency of combustion, other than the efficiency of the stove itself, does not take into account the radiated heat of the stove surface.

For the calculation of efficiency, the fuels are rated with the lowest calorific value; it is assumed that no water condenses inside the exhaust funnel.

If condensation takes place, additional heat is emitted as latent heat and accounted usable. In that case, efficiency may even top 100%.

Efficiency of Wood Burning Devices

Energy Losses

- Total energy of the wood
- 100%
- 86.4% Technical efficiency of combustion
- 0.1% Incomplete combustion
- 12% Heat of the exhaust gas
- 1.5% Combustibles of the ash
- ca. 3% Emitted heat at the surface of the oven
- 83.4% Usable heat = Stove efficiency

Efficiency of Stoves

Energy Efficiency

Examples of Heating Devices

Efficiency of Central Heating Boilers

Source: Hartmann H., Handbuch Bioenergie-Kleinanlagen, 2013
Technologie- und Förderzentrum (TFZ)
www.tfz.bayern.de