

62. A metric ton is 1000 kg, so that the heat generated by burning 380 metric tons during one hour is

$$(380000 \text{ kg})(28 \text{ MJ/kg}) = 10.6 \times 10^6 \text{ MJ} .$$

The work done in one hour is

$$W = (750 \text{ MJ/s})(3600 \text{ s}) = 2.7 \times 10^6 \text{ MJ}$$

where we use the fact that a Watt is a Joule-per-second. By Eq. 21-9, the efficiency is

$$\varepsilon = \frac{2.7 \times 10^6 \text{ MJ}}{10.6 \times 10^6 \text{ MJ}} = 0.253 = 25\% .$$