Giv:

$$E_{need} = 4 \cdot 10^8 J$$
$$E_{1g} = 3,204 \cdot 10^{11} J$$

Wan:

$$m_{plas}$$

Cal:

$$m_{plas} = 10^{-3} kg \cdot \frac{E_{need}}{E_{1g}}$$
$$= \frac{4}{3,2} \cdot \frac{\cancel{10^8}}{10^{\cancel{11}^3}} \cdot 10^{-3} \cdot kg \cdot \frac{\cancel{J}}{\cancel{J}}$$
$$= 1,25 \cdot 10^{-6} kg = 1,25 mg$$

Ans:
1,25 milligrams of plasma need to be used, to produce enough energy to create a positive Energy-Balance.

Giv:

$$E_{ges} = 3,15 \cdot 10^6 J$$
$$E_{1g} = 3,204 \cdot 10^{11} J$$

Wan:

$$m_{plas}$$

Cal:

$$m_{plas} = 10^{-3} kg \cdot \frac{E_{need}}{E_{1g}}$$
$$= \frac{3,15}{3,2} \cdot \frac{\cancel{10^6}}{10^{\cancel{11}^{5}}} \cdot 10^{-3} \cdot kg \cdot \frac{\cancel{J}}{\cancel{J}}$$
$$= 9,8 \cdot 10^{-9} kg = 9,8 ng$$

Ans:
9,8 nanograms of plasma were used to create the Energy-Output.