

6. ENERGY

$$P = \frac{W}{t} ; t = 4'6 \text{ s} ; m = 1350 \text{ kg}$$

Calculamos el trabajo realizado en ese tiempo:

$$W = F \cdot d = \Delta E_c = E_{c, \text{final}} - E_{c, \text{inicial}}$$

$$v_i = 0 \text{ km/h} \Rightarrow E_{c, i} = 0$$

$$v_f = 100 \frac{\text{km}}{\text{h}} \cdot \frac{1000 \text{ m}}{1 \text{ km}} \cdot \frac{1 \text{ h}}{3600 \text{ s}} = 27'77 \text{ m/s} \approx 28 \text{ m/s}$$

$$v_f = 28 \text{ m/s} \Rightarrow E_{c, f} = \frac{1}{2} (1350 \text{ kg}) (28 \text{ m/s})^2 = 529.200 \text{ J}$$

Ahora calculamos la potencia:

$$P = \frac{W}{t} = \frac{529.200 \text{ J}}{4'6 \text{ s}} = 115.043'5 \text{ J/s}$$

$$P = 115043'5 \text{ W} \cdot \frac{1 \text{ C.V.}}{735 \text{ W}} = 156'5 \text{ C.V.}$$



$$P = 157 \text{ C.V.}$$