Given:

$N = 3t^2$ power

$t_0 = 2s$

$t_1 = 4s$

Find:

ΔE

Solution:

$N = \frac{A}{t} \qquad A = \Delta E \qquad \Rightarrow \qquad \Delta E = Nt = 3t^2 \cdot t = 3t^3$

from t_0 to t_1:

$\Delta E = 3t_1^3 - 3t_0^3 = 3(64 - 8)J = 168J$

Answer: $\Delta E = 168J$