3.   Given

Appliances: +9,000 kJ/hr

Building: Loses 75,000 kJ/hr

1st Law: $(Q_{in} - Q_{out}) + (W_{in}^{0} - W_{out}^{0}) = U_2 - U_1$

Q_{in}: 9,000 kJ/hr W_{in}: Generator   Want to Know

Q_{out}: 75,000 kJ/hr W_{out}: None $\Delta U = U_2 - U_1$

$\therefore$ $\boxed{\Delta U = Q_{in} - Q_{out} + W_{in}}$

$1 \frac{kJ}{s} = 1 \, kW$

$\Delta U = 9000 \, kJ/hr - 75,000 \, kJ/hr$

$0 = -66,000 \, kJ/hr + W_{in} \rightarrow W_{in} = 66,000 \, kJ/hr$

$66,000 \frac{kJ}{hr} \times \frac{1 \, hr}{60 \, min} \times \frac{1 \, min}{60 \, sec} \times \frac{1 \, kW}{1 \frac{kJ}{s}} = \boxed{18.33 \, kW}$

Generator technically does work on system to keep it at a net 0 Total Energy. Could be considered heat in (Q_{in}) as well given more information