

26. The total energy stored in the capacitor bank is

$$U = \frac{1}{2}C_{\text{total}}V^2 = \frac{1}{2}(2000)(5.00 \times 10^{-6} \text{ F})(50000 \text{ V})^2 = 1.3 \times 10^7 \text{ J} .$$

Thus, the cost is

$$\frac{(1.3 \times 10^7 \text{ J})(3.0 \text{ cent/kW} \cdot \text{h})}{3.6 \times 10^6 \text{ J/kW} \cdot \text{h}} = 10 \text{ cents} .$$