

- 28** Transmission cables of total resistance R are used to transfer electrical energy from an a.c. generator in a power station to a factory located several kilometers away.

The power and voltage outputs of the generator are P and V respectively. The potential difference across the transmission cables is V_c .

What is the power input to the factory?

A $P + \left(\frac{P}{V}\right)^2 R$

B $P + \left(\frac{P}{V_c}\right)^2 R$

C $P - \left(\frac{P}{V}\right)^2 R$

D $P - \left(\frac{P}{V_c}\right)^2 R$