

7. GENERATOR EFFECT

If 100% efficient, input power = output power

Process

Current flows, creating a magnetic field

This interacts with a permanent field, producing a force which vibrates the cone

Loudspeakers

Efficiency

Generates alternating current

Alternator

Converts vibrations in the microphone coil into current in a circuit

Microphones

Generates direct current

Dynamo

Induced Potential

If a conductor or field move relative to each other, a potential is induced across the conductor

Transformers

Consists of...

A metal core with a primary coil of wire on one side and a secondary coil of wire on other side

Step-Up

Step-Down

National Grid

Power lines carry current at a very high voltage, to reduce the current, which improves efficiency by reducing the energy loss through heating

$n_1 > n_2$
 $V_1 > V_2$

$n_1 < n_2$
 $V_1 < V_2$

Leading to:

$V_1 \times I_1 = V_2 \times I_2$