AC Generation

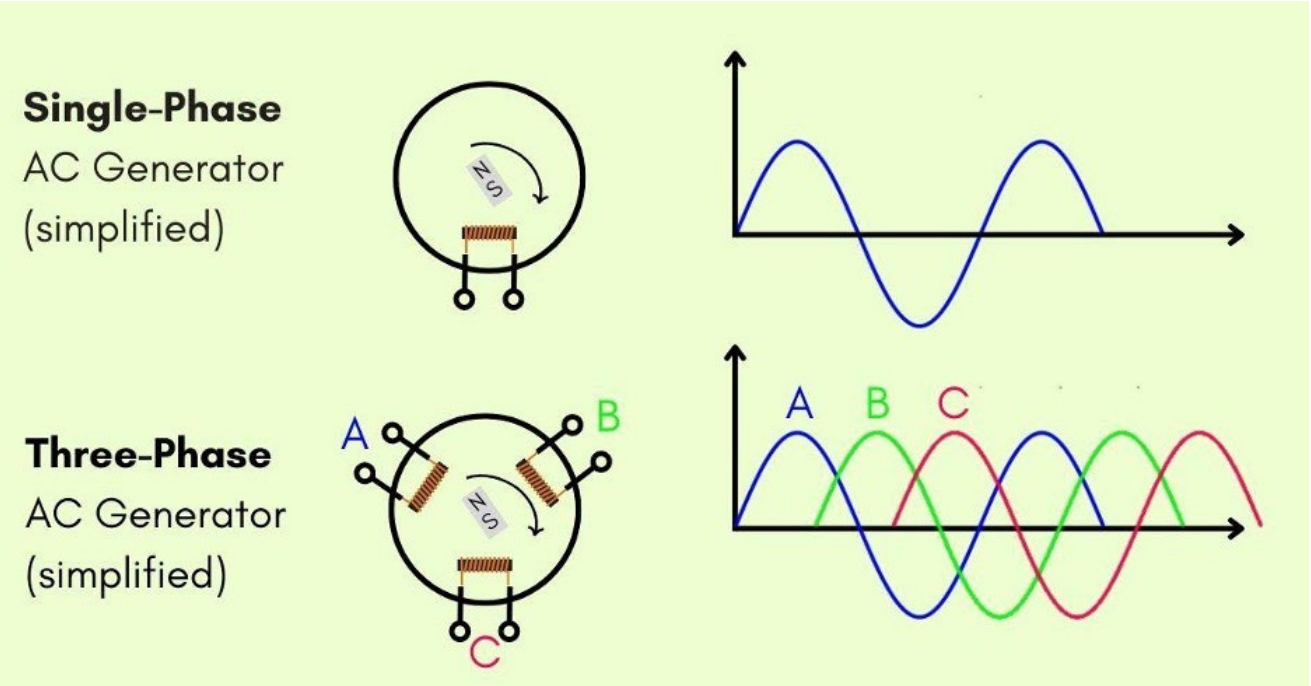
Core Principles

- AC generation relies on Faraday's law of induction
- They do this by rotating a magnet with coils of wires around it
- As the magnet rotates fluctuating currents are formed in the coils

- $\varepsilon = -N\frac{\Delta\phi}{\Delta t}$
- Where:
  - ε -> induced voltage
  - $-N$ -> number of loops
  - $\Delta\phi$ -> change in magnetic flux
  - Δt -> change in time

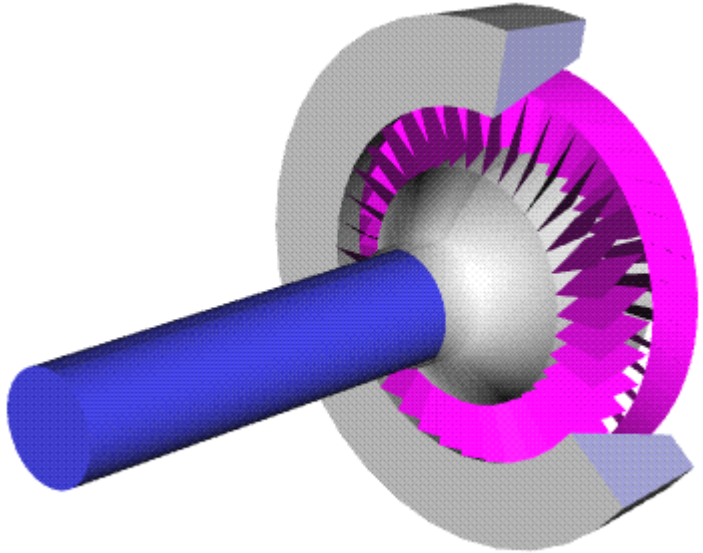
Single vs Poly Phase AC Generation

- The number of phases you get from an AC generator is dependant on the number of coils the generator uses
- They most commonly are single or three phase



Rotational to Electricity

- AC power is generated when the magnet in the system is rotated
- Often this rotation happens due to a turbine spinning
- The turbine will be turned by many different sources including wind, water, gas and steam
- Steam is the most used as it’s easy to generate by boiling water



AC generator