

SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.

Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A++’ Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

23GET102 – BASIC CIVIL MECHANICAL ENGINEERING

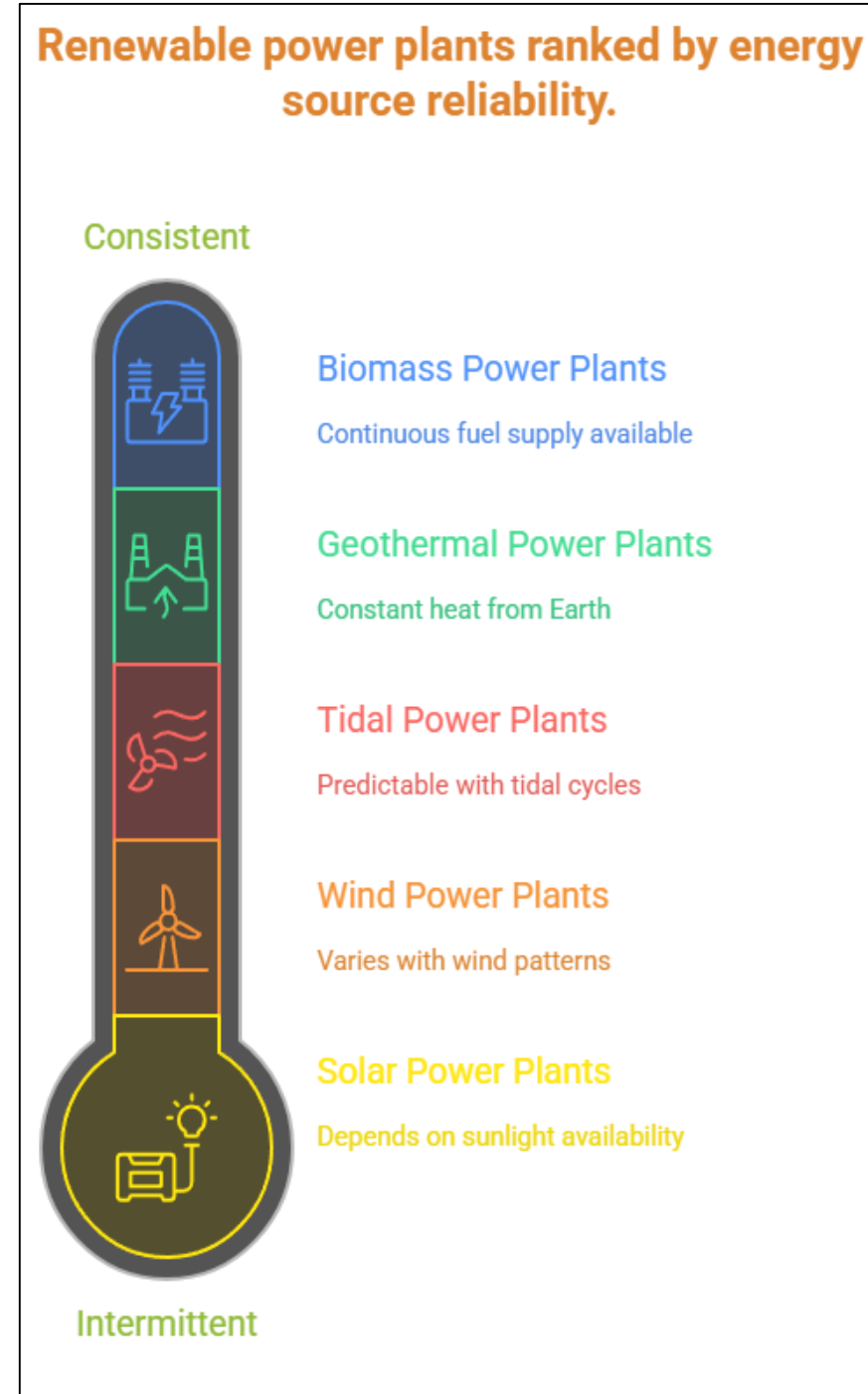
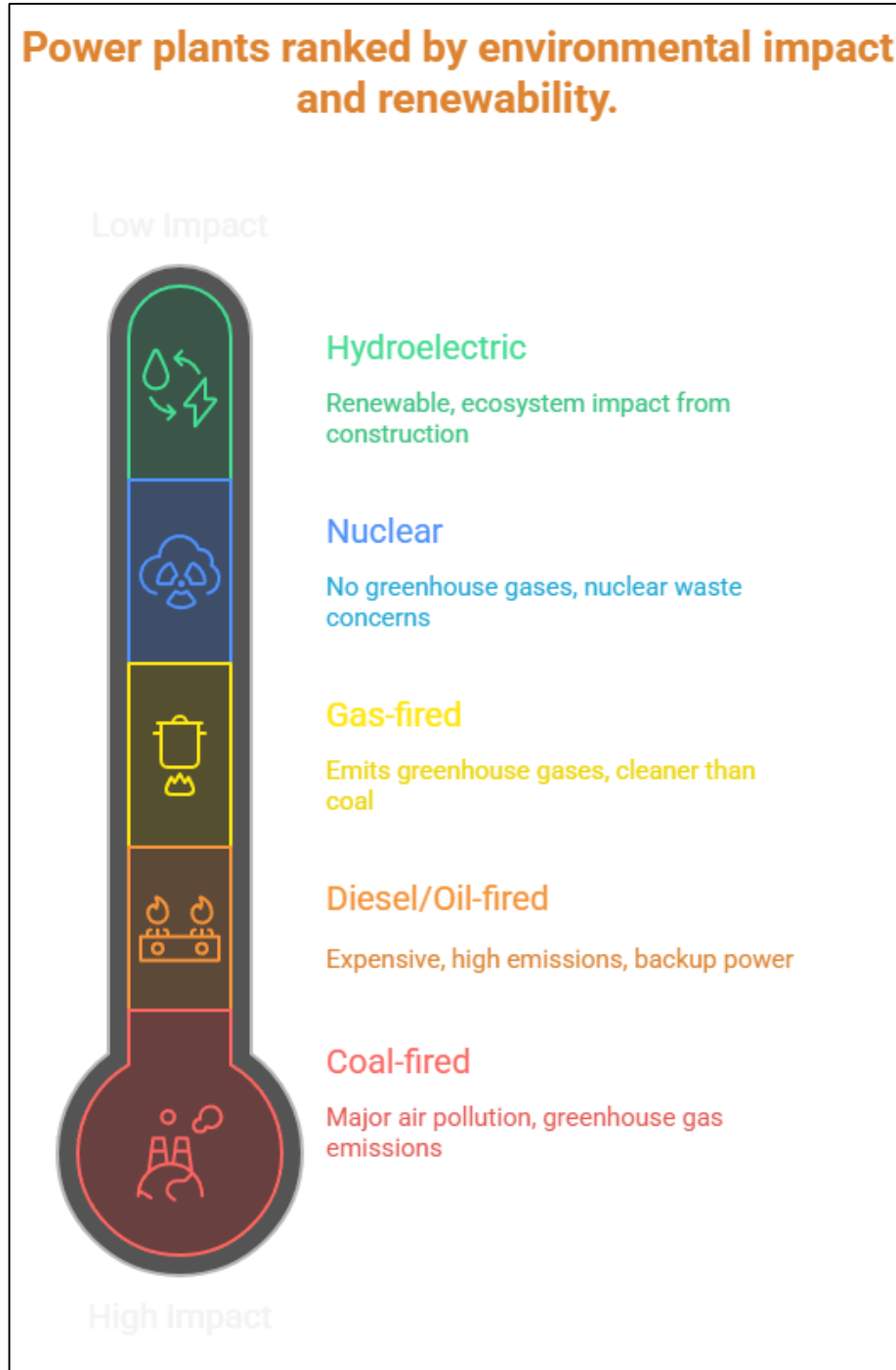
I YEAR / I SEMESTER

UNIT 4 – IC ENGINES AND POWER PLANT ENGINEERING

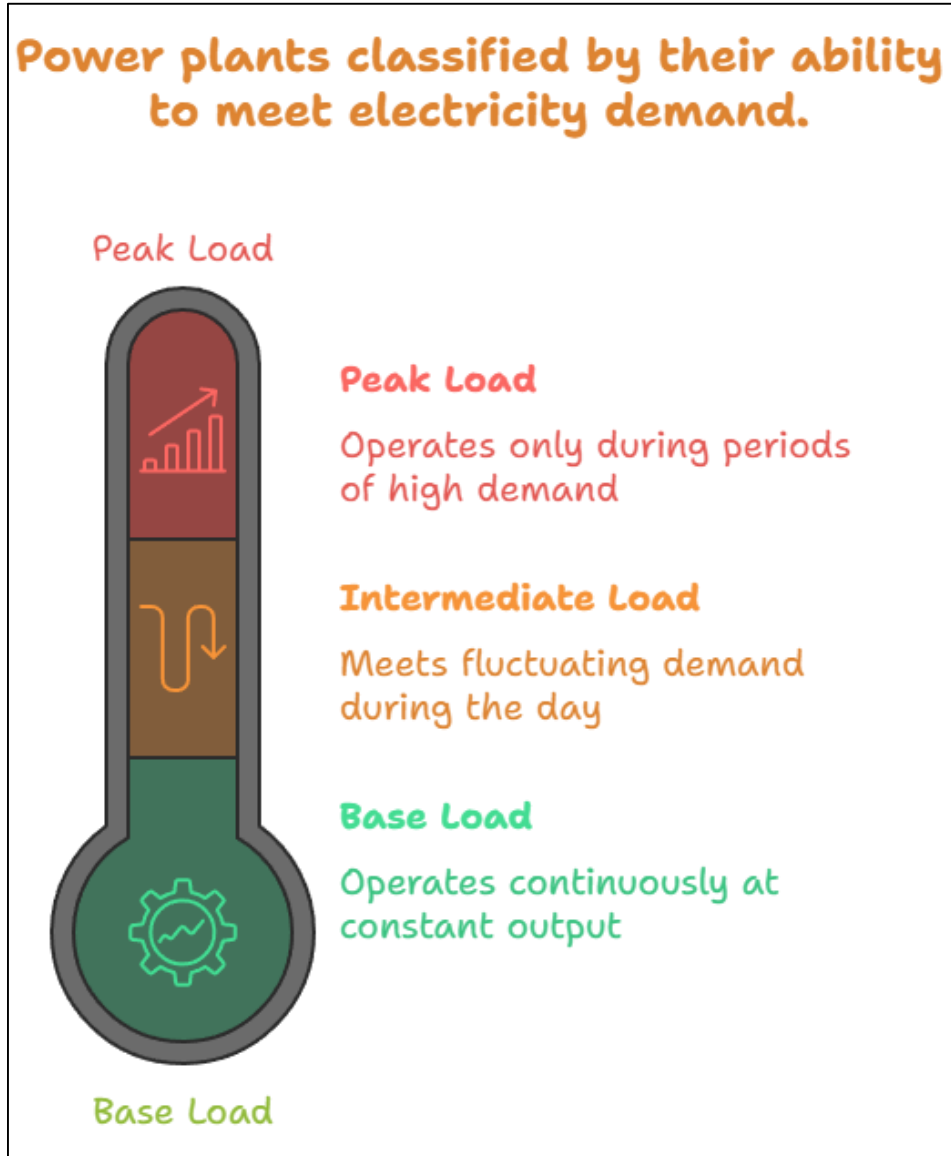
Topic : Thermal Power Plant



Classification



Classification



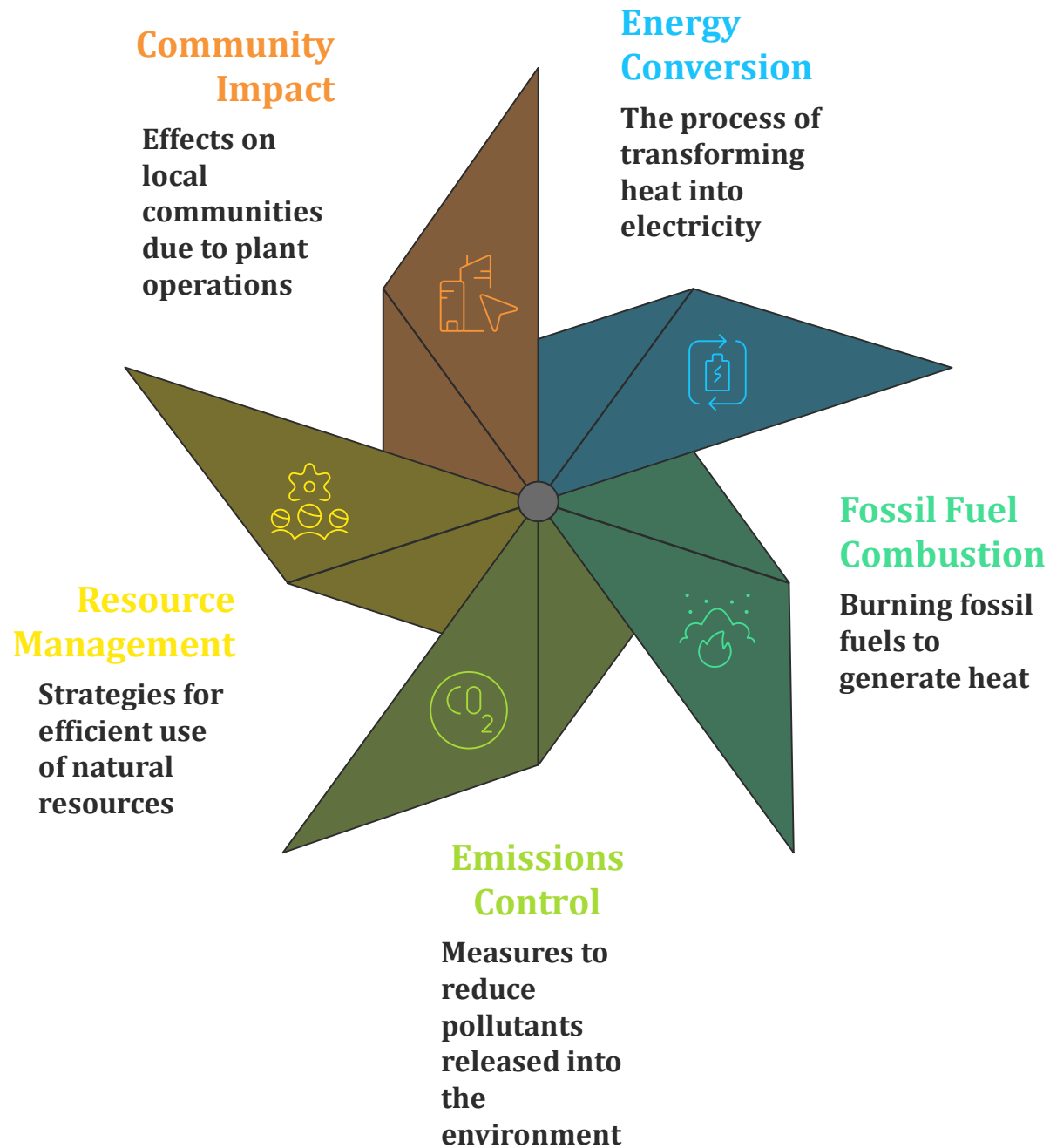
Power Plant Classification by Prime Mover

Characteristic	Prime Mover	Common Use
Steam Turbine	Steam turbine	Coal, gas, nuclear, solar thermal
Gas Turbine	Gas turbine	Gas-fired, peak load
Hydroelectric Turbine	Hydraulic turbine	Hydroelectric
Internal Combustion Engine	Internal combustion engine	Smaller-scale, backup

Made with Napkin

Design Challenges in Thermal Power Plants

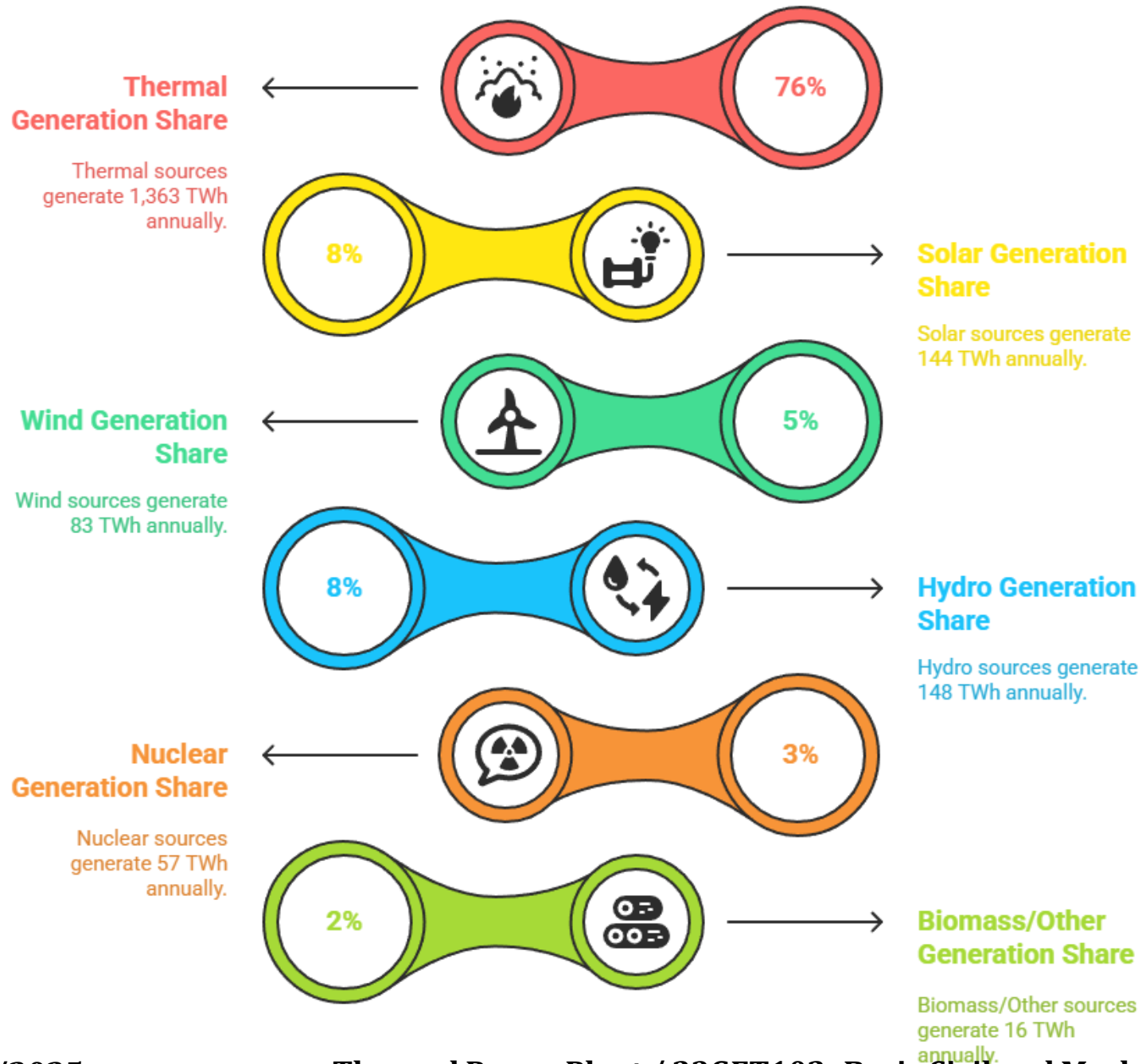
DT-Empathy



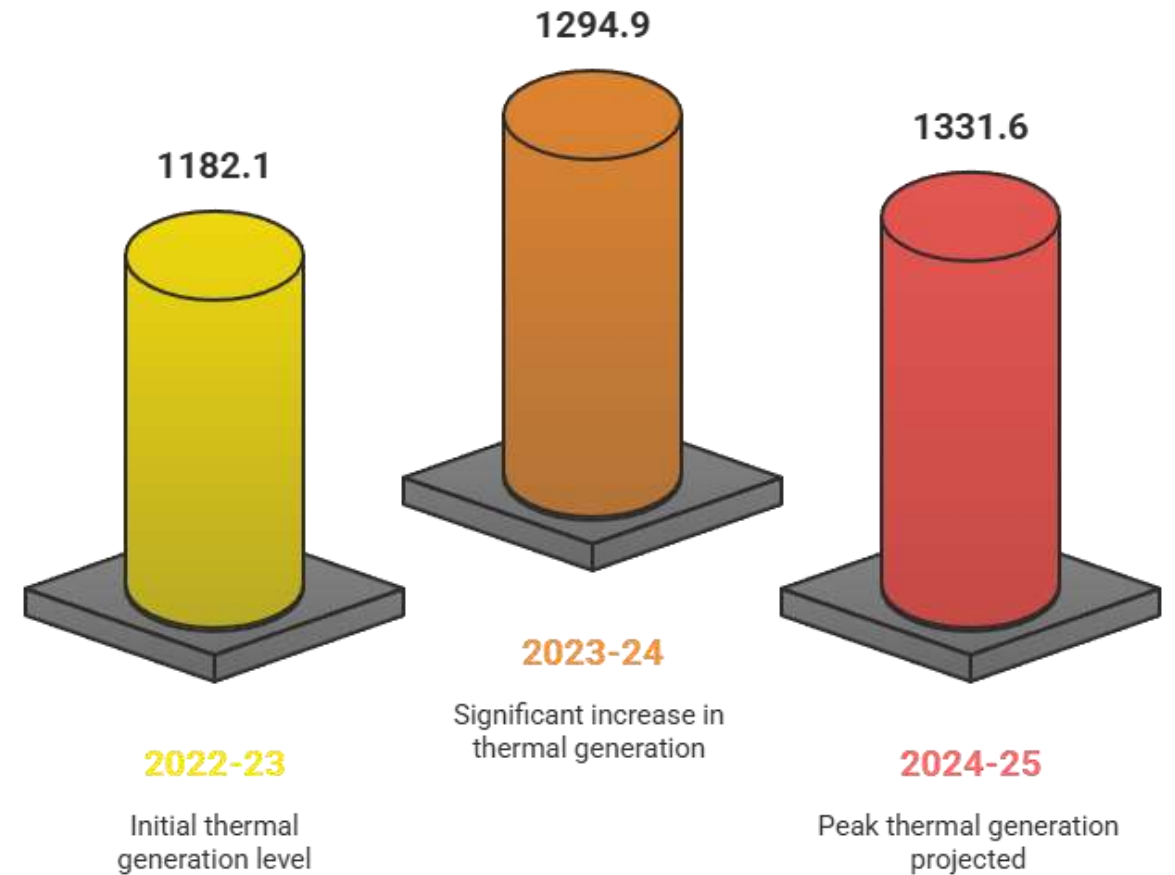
Amount of Energy Produced through Power plants in India

DT-Define

Share of Generation by Source



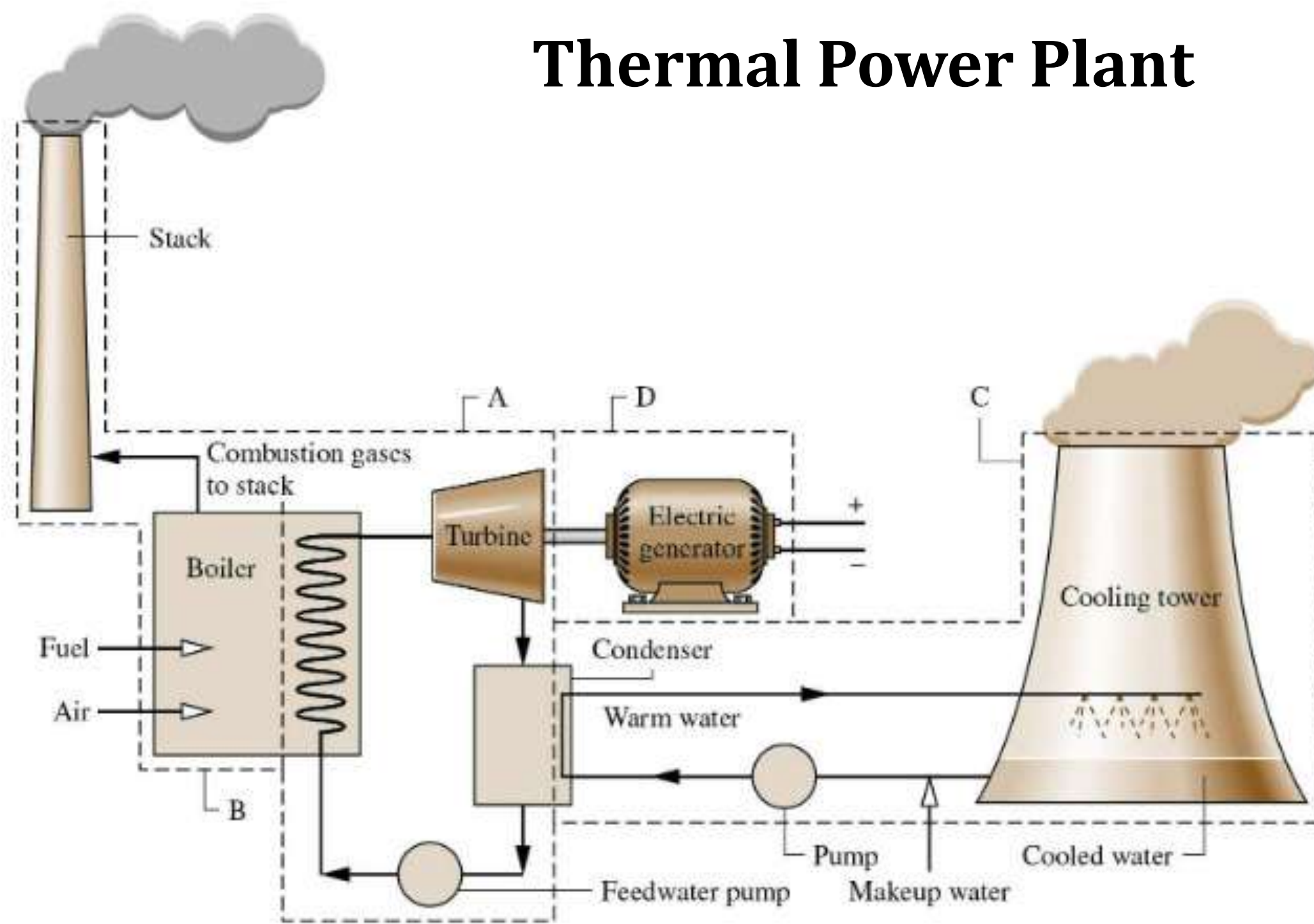
Thermal Power Generation Trends (2022-2025)



Made with Napkin

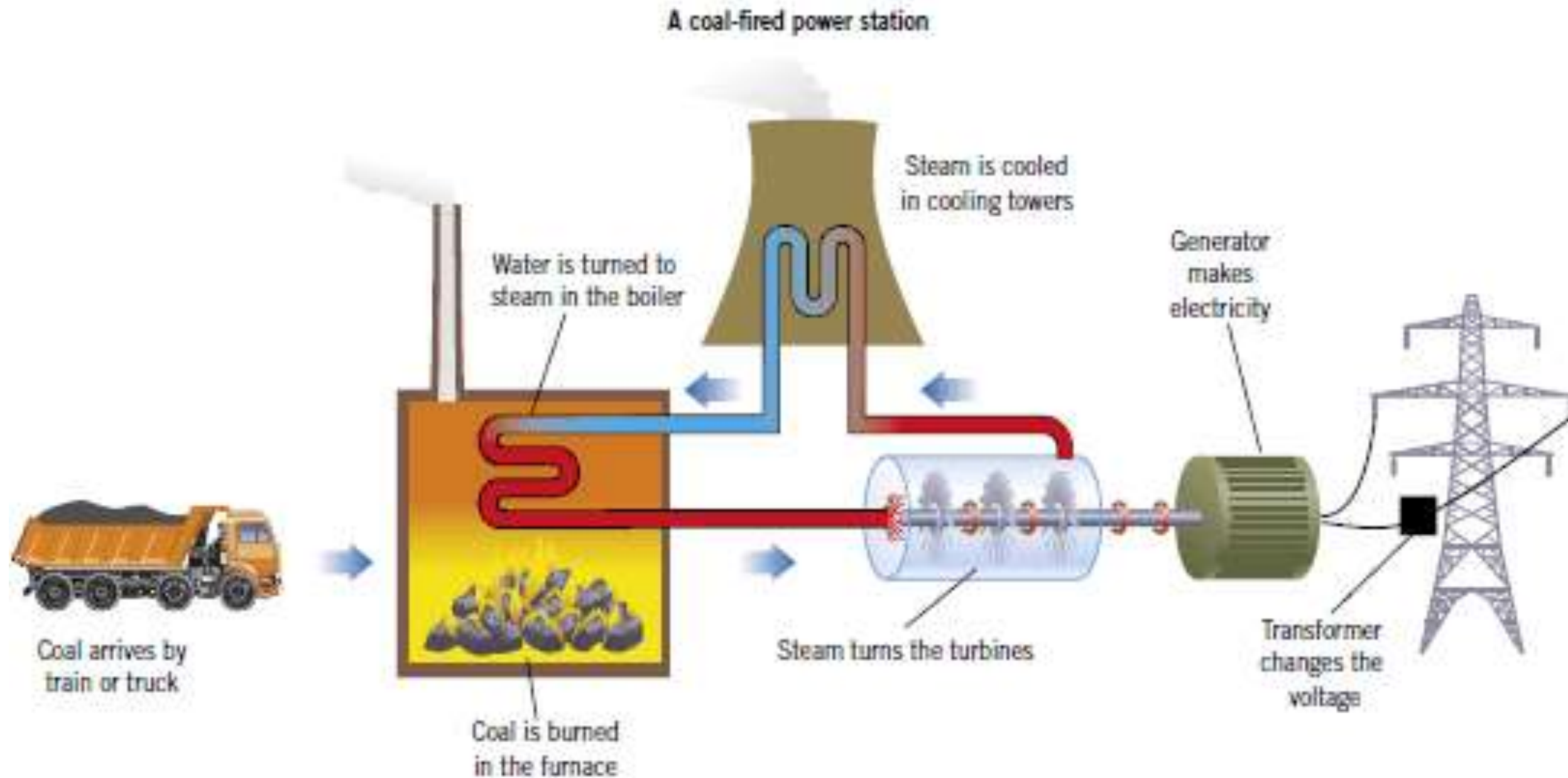
Thermal Power Plant

DT-Define



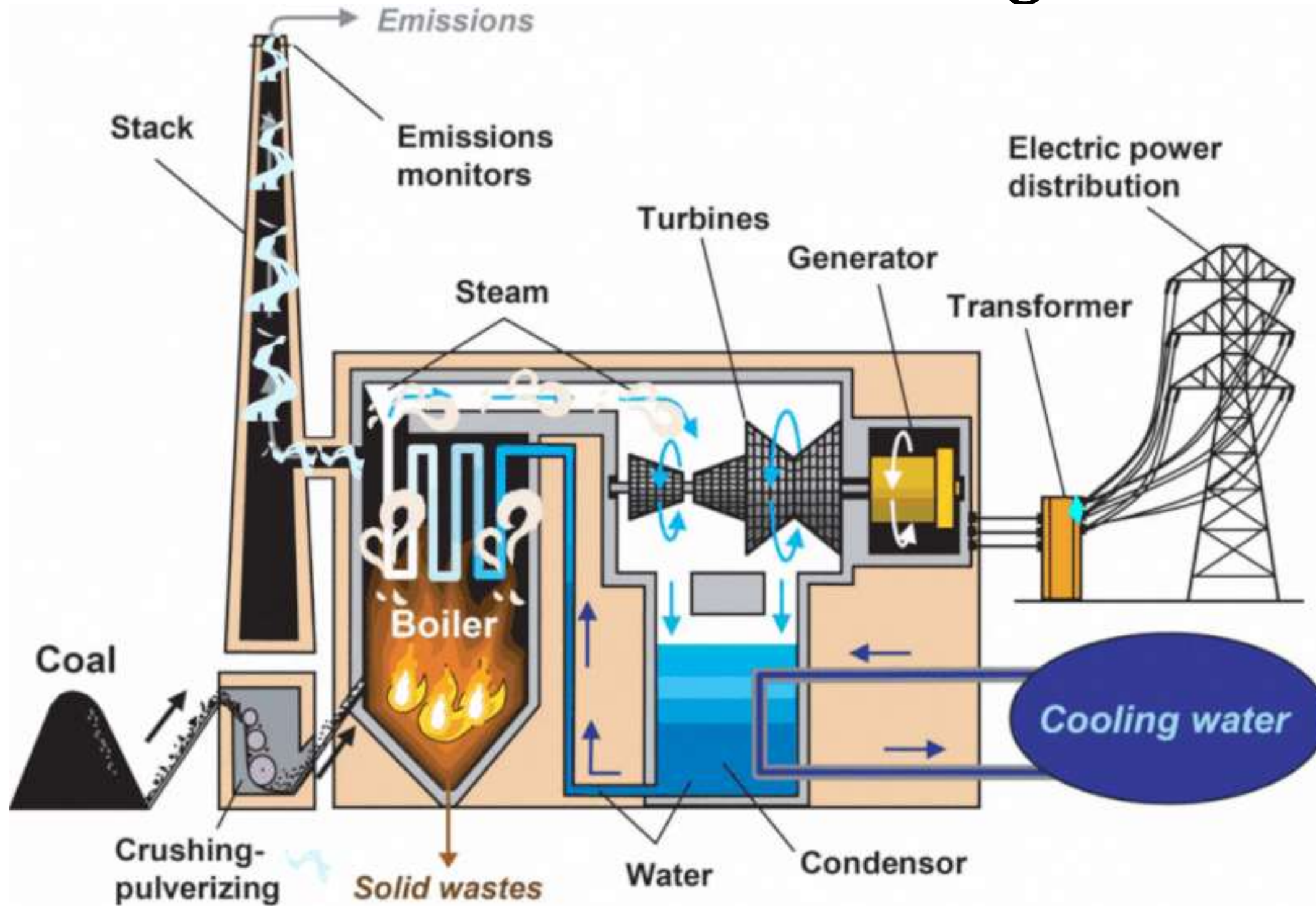
Working

DT-Define



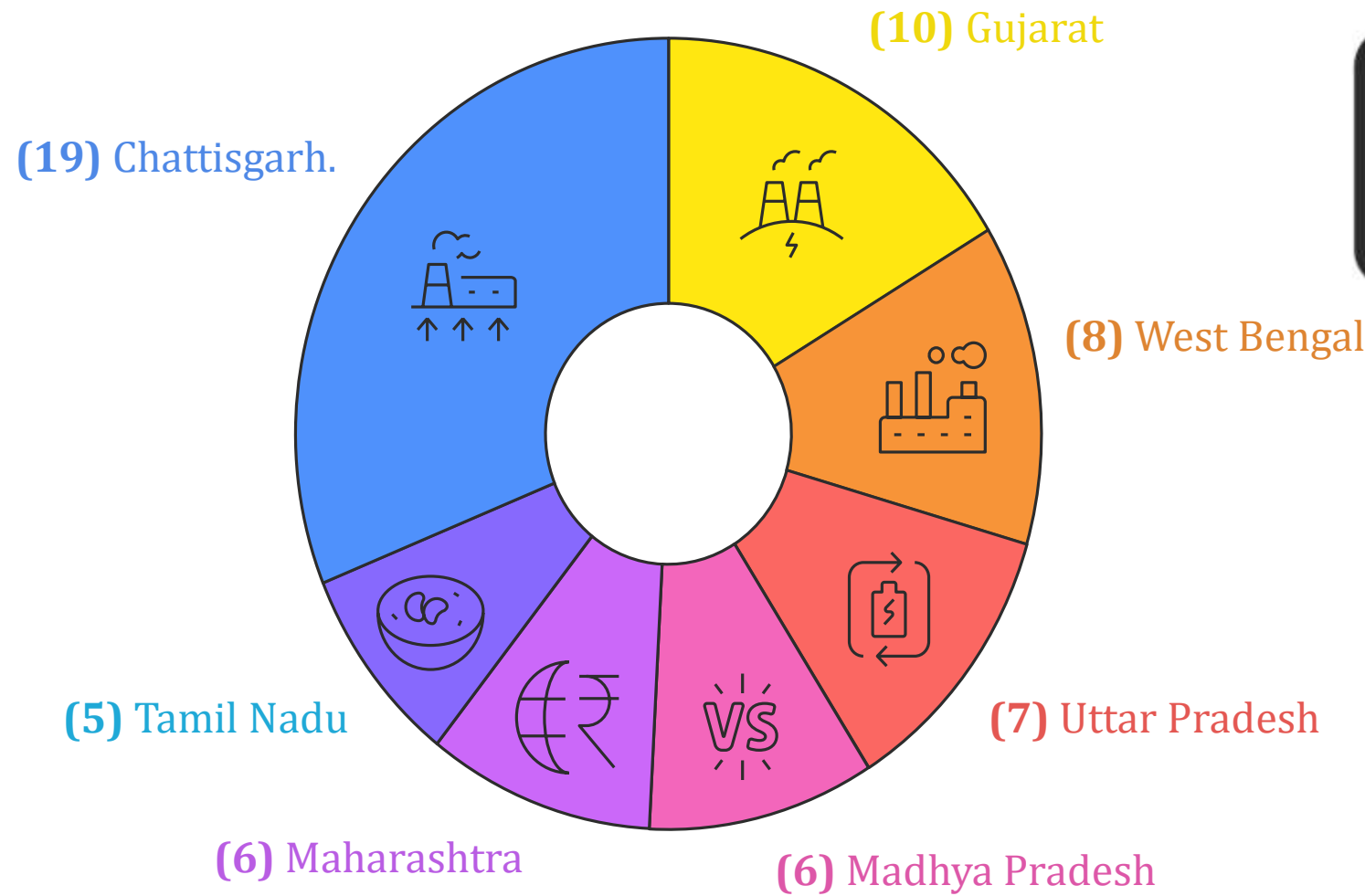
Working

DT-Define

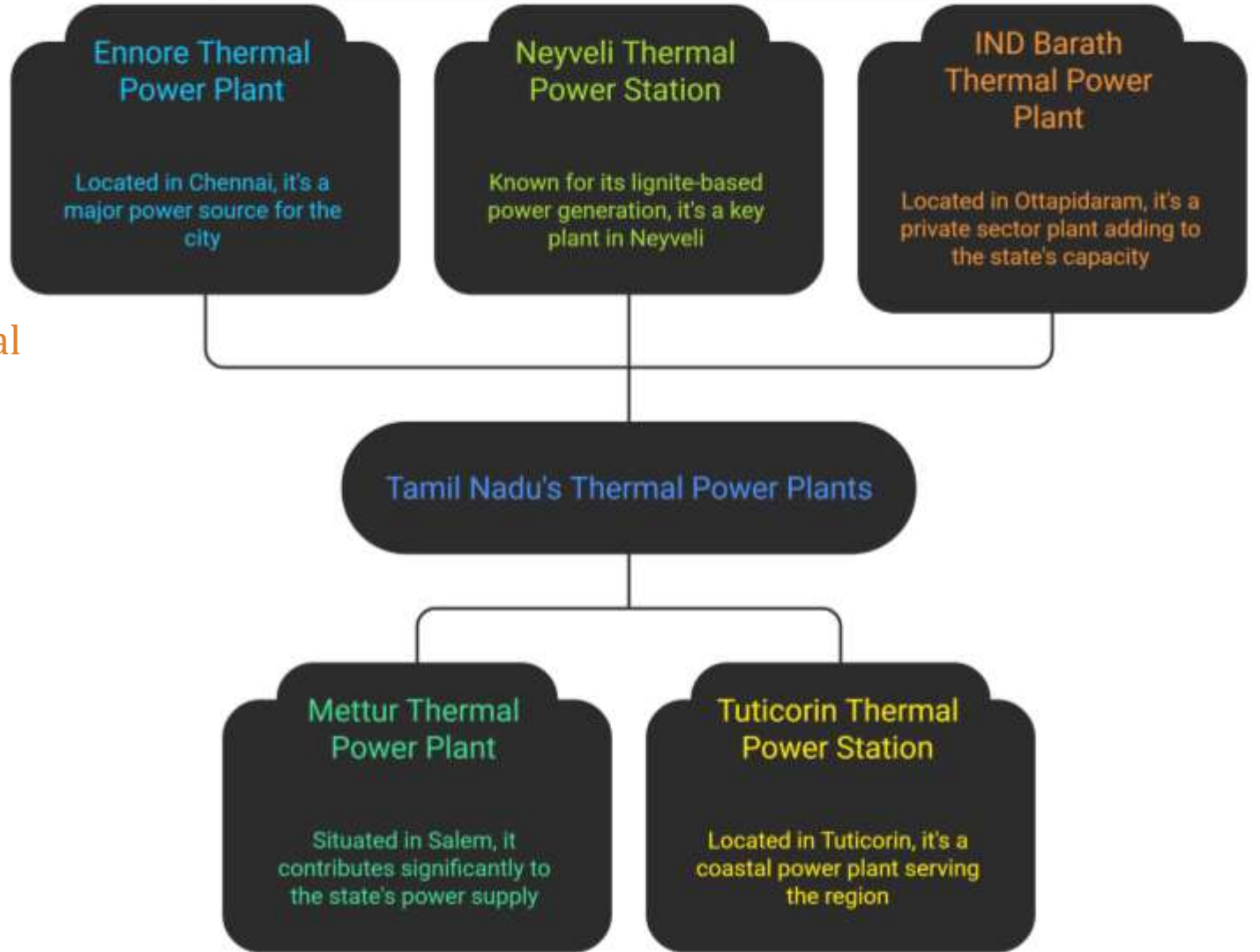


Distribution of Thermal Power Plants in India by State (plants)

DT-Empathy



Overview of Tamil Nadu's Thermal Power Plants



Merits

1

Reliable Energy Source

Constant and reliable supply of electricity, essential for base load demands.

2

Ability to Scale

Thermal power plants can be constructed to meet varying levels of energy demand.

3

Job Creation

Creation of jobs in engineering, construction, and maintenance, boosting local economies.

Demerits

1

Environmental Impact

Thermal power plants contribute to air pollution through the emission of greenhouse gases and other harmful pollutants, leading to health issues and climate change.

2

Resource Depletion

The continual extraction and burning of fossil fuels can lead to resource depletion and increased electricity prices over time.

3

Water Use

Thermal power plants require large quantities of water for cooling purposes, straining local water resources, especially in arid regions.

