Coal

Types of coals

Type	Carbon content
Anthracite	> 90 %
Bituminous	40 - 80 %
Lignite	40 - 55 %
Peat	< 40 %

Peat is precursor to coal
↳ under high pressure & heat it undergoes physical & chemical changes to become coal.

factors determining coal quality

① Carbon concentration
↳ function of time, heat & pressure
e.g. Indian coal of recent origin (Gondwana) ... thereby less carbon %.
↳ depth of coal formation
deeper formation → more carbon %.

② moisture in coal
↳ high moisture → inferior quality
→ high pollution on burning
→ difficulties in transportation

③ volatile matter e.g. Ash, Sulpher
< 10 % Ash ⇒ steel grade coal
> 10 % Ash ⇒ thermal coal

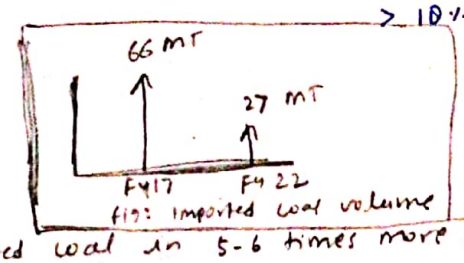


fig: imported coal volume

Price of imported coal in 5-6 times more → Shortage of domestic coal → Govt mandated min 10 % of imported coal by Gencos in power prodn
than domestic supply ⇐ higher demand → heatwaves
supply bottlenecks → Russia-Ukraine
stagnant domestic supply.
↓
raise the cost of power prodn by Gencos
↓
higher price of power to Discoms
but their supply tariff not revised by SERCs
due to electoral sensitivities
↓
↳ Discoms reluctant to purchase @ higher prices
↳ Gencos have less incentive to produce power from imported coal
↓
Power crisis

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Problems of coal mining

① **Productivity**

method	India	Australia
OCM	16	76
Underground mining	0.73	40

figures in tonn / man shift

② Why → obsolete mining methods

Sol^{n} → replace **Pillar & Board method** with **long wall mining method** for underground mining.

② **Illegal mining**

Parliamentary Standing Committee on Coal & Steel → prod^{n} more 20% than repo

③ **coal quality**

Gondwana → high ash, low CV

④ **Coal Bed methane** – absorbed in coal seam during coalification → High C.V.

↳ If not explored → causes mine fires
→ GHG released in atmosphere
→ useful natural resource wasted

⑤ **mine closure**

Std ~~prob~~ procedure → OCM – land filling
→ underground – Sand filling
⇒ if not followed land degradation & subsidence occur

⑥ **Environmental prob**

6.1 OCM → coal dust → air pollution

6.2 Underground m. → coal sludge → sub surface water pollution

⑦ **Labour safety**

7.1 coal dust → respiratory disease-Black lung

7.2 CMS report → only 0.1% mines give regular checkup

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