



India's First Pilot Project for Underground Coal Gasification

Why in News?

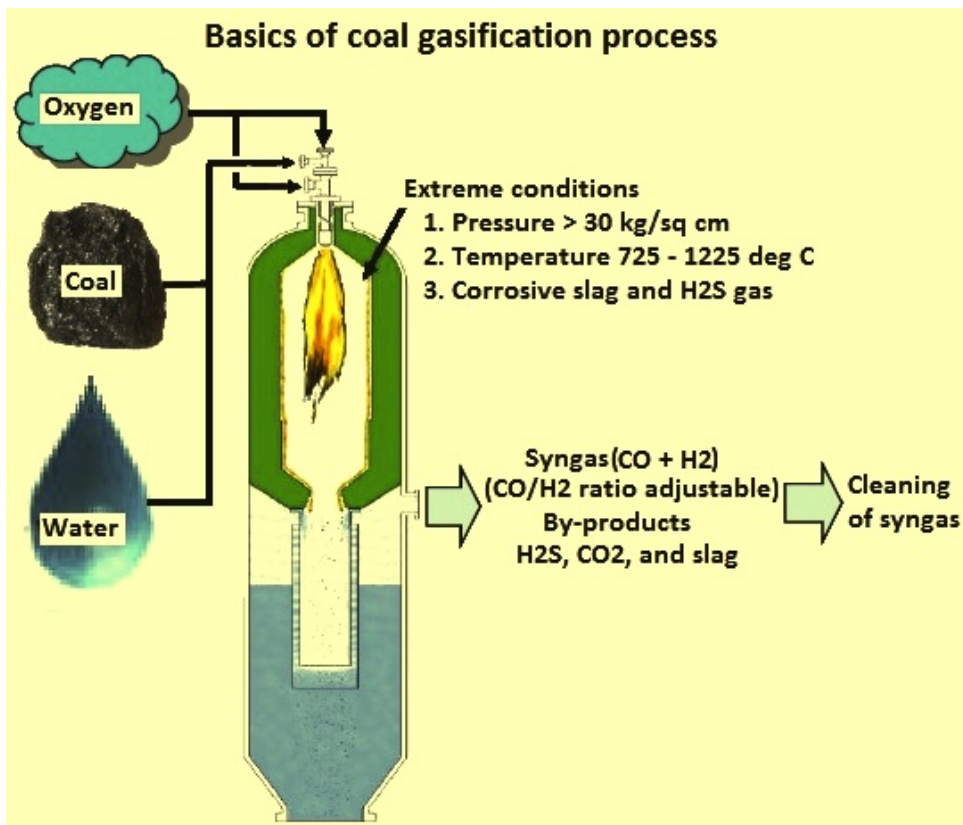
The Ministry of Coal, [Eastern Coalfields Limited \(ECL\)](#) is conducting a pilot project for [Underground Coal Gasification \(UCG\)](#) at the **Kasta coal block in Jamtara District**, Jharkhand.

Key Points

- It aims to revolutionise the coal industry by using **in-situ coal gasification** to **convert it into valuable gases such as methane, hydrogen, carbon monoxide, and carbon dioxide.**
 - These gases can be utilised to produce **synthetic natural gas, chemical feedstocks for fuels, fertilizers, explosives,** and other industrial applications.
- The Ministry of Coal is fully committed to promoting coal gasification projects, recognizing their potential to transform coal into various **high-value chemical products.**
 - The **first phase** involves creating a **Technical Feasibility Report** through borehole drilling and core testing. The **next phase** will **focus on coal gasification** at a pilot scale.
- The successful execution of this pilot project is expected to **create transformative opportunities for India's energy sector,** highlighting the sustainable and efficient use of the country's coal resources.

Coal Gasification

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- **Process:** Coal gasification is a process in which coal is **partially oxidised with air, oxygen, steam or carbon dioxide to form a fuel gas.**
 - This gas is then used instead of piped natural gas, methane and others for deriving energy.
 - In-situ gasification of coal – or **Underground Coal Gasification (UCG)** – is the technique of converting coal into gas while it is still in the seam and then extracting it through wells.
- **Production of Syngas:** It produces Syngas which is a **mixture consisting primarily of methane (CH₄), carbon monoxide (CO), hydrogen (H₂), carbon dioxide (CO₂) and water vapour (H₂O).**
 - **Syngas** can be used to produce a wide range of **fertilizers, fuels, solvent and synthetic materials.**

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