

NITI Aayog Organizes Workshop on “Coal Gasification Technology for Indian High Ash Content Coal”

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NITI Aayog organized a workshop titled **“Coal Gasification Technology for Indian High Ash Content Coal”** at NITI Bhawan, New Delhi, on 2nd September, 2025 under the chairmanship of Dr. V K Saraswat, Member NITI Aayog. The workshop saw participation from the Ministry of Coal, IIT Delhi, Professor Fraunhofer IKTS, Germany and active participation from government organizations and industry partners such as BHEL, IIT Roorkee, GAIL, CIMFR, IOCL, CIL, TFL, NLCIL, EIL, L&T Group, JSPL, DVC, CCL, PDIL, CSIR-IMMT and Dastur Energy.

The workshop is aligned with the National Coal Gasification Mission, “Make in India” and “*Atmanirbhar Bharat*” initiatives, promoting domestic manufacturing and reducing import dependency.

India holds the world’s fourth-largest coal reserves—378 billion tonnes, with 199 billion tonnes proven reserves. To harness these resources sustainably and reduce import dependence, the government is promoting coal gasification. Ministry of coal notified scheme on coal gasification with ₹8,500 crore Viability Gap Funding (VGF) to support public and private commercial and R&D gasification projects. Letters of Award (LOAs) have been issued to those selected applicants under various categories of the scheme.

Indian coal has typically high ash content, ranging from 25% to 45%, in contrast to coals in other countries that are low in ash content. Therefore, it is very important to align coal gasification technology choice with coal characteristics to ensure sustained, high-availability operations at the lowest possible cost structure. Therefore, this workshop specifically called for discussing the Indian and global coal gasification technologies that are suitable for India’s high ash content coal.

Dr. V K Saraswat, Member, NITI Aayog, commended the initiatives taken by the Ministry of Coal for faster implementation of coal gasification in India. He further highlighted India’s early engagement with coal gasification, dating back to pre-2018 efforts at the Talcher fertilizer plant, when feasibility was still under active debate. He noted that initial industry feedback consistently questioned the viability of gasifying Indian coal due to its high ash content. Today, India has demonstrated the potential to gasify coal with high ash content through proven indigenous technology trials.

Sh. Vikram Dev Dutt, Secretary, Ministry of Coal, underscored the national objective of accelerating the utilization of India’s vast coal reserves through cleaner and more efficient technologies. He emphasized the government’s commitment to sustainability, including the allocation of dedicated funds to support environmentally responsible initiatives. He stated that the workshop serves as a valuable platform to observe, learn, and gain practical insights from ongoing developments in the sector.

Prof. Martin Grabner from Fraunhofer IKTS, Germany, shared international insights into coal gasification technologies, drawing from his extensive industrial background and affiliations. His presentation offered valuable guidance for adapting global best practices to India’s unique coal profile and industrial landscape.

After their remarks, pilot-scale initiatives led by IIT Delhi and Thermax, BHEL and CIMFR also shared insights into their indigenously developed coal gasification technologies with the industry. Collectively, these projects debunk the long-standing myth that Indian coal is non-gasifiable and mark a decisive step toward cleaner, scalable, and domestically anchored coal utilization.

The workshop provided a comprehensive platform to evaluate coal gasification technologies suited for Indian coal with high of ash content, emphasizing the importance of aligning technology selection with coal characteristics. Experts from IIT Delhi, Thermax, BHEL, CIMFR, and Fraunhofer IKTS shared insights into fluidized bed, circulating bed, and entrained flow systems, highlighting both indigenous innovations and global experiences. Participants stressed the need for scaling pilot projects to commercial levels, integrating CCUS, and ensuring industry involvement in core technology development. With policy support through Viability Gap Funding, assured coal supply, and dedicated auction mechanisms, India is well-positioned to advance its coal gasification roadmap from an energy security perspective and take up large-scale coal gasification projects.

Most of the experts recommended circulating fluidized based bed gasification technology for Indian High Ash Content Coal, specifically due to the fact that chemistry of Indian coal ash does not support other gasification technologies viz entrained low ash fixed bed.





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