

Accessing the Viability of Coal as an Alternate Feedstock for Petrochemical Import Substitution

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While India has achieved way more than self sufficiency, and is a leading exporter of refining products, the petrochemical industry is still largely dependent on imports; total petrochemical imports stands more than 30%. Options do exist within the nation to cut down these petrochemical imports and move towards self-reliance. Exploiting the Chemical value of coal, besides thermal, is one such option available which needs to be analysed

Keeping feedstock security in mind, the paper provides a holistic view on Coal as an alternate feedstock options for chemical & petrochemical generation in India. It touches upon the challenges faced by an owner in today's scenario, the options to improve margins, incentives & challenges for gasification. A case study is carried out to access the viability of Petrochemicals/ chemical production using high ash Indian coal. Further a sensitivity analysis is also done to access the competitiveness as various feedstock prices.

Also worth mentioning that for fulfilling India's commitment to UNFCCC via INDCs, to reduce emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level, usage of technologies like gasification cannot be over-looked. A fertilizer complex downstream of a Gasification complex offers perfect synergy for CO₂ sequestration further, the gas, SNG and methanol made from gasification can be used in power plants, and fuelling the automotive and power industry. GOI has been advocating the gas based economy, and is expected to come out with a mandate for methanol usage along with natural gas for transportation as well as for marine fuel also. Further to this, Methanol, as demonstrated above via case studies, can further be value-added and serve as an attractive feedstock to petrochemical industry. The Methane rich gas generated can be hooked to the natural gas pipeline of planned regional grid or routed for CGD for nearby customers.

Results of the study wrt project return, and the cost of production are attractive, and would definitely invite a lot of attention of the policy-makers and investors to opt for coal for petrochemical import substitution

Biography:

Vineet has been working in the downstream oil & gas sector for more than 11 years. Started career in refinery operations at Reliance's Jamnagar Refinery, and then moved into Engineers India as a Process Engineer. Has worked with various clients on entire project value chain of concept to commissioning i.e. carrying out Refinery Configuration & Feasibility studies, Licensor evaluation, performing Basic & Detailed Engineering activities including start up assistance and PGTRs for major process units etc

Currently working as Dy. Process Manager in Corporate Strategy at Engineers India Ltd, where his duties include carrying out Suo-motu conceptual/ prefeasibility studies for existing/ new clients suggesting value add options to increase refining margins & profitability utilising Refinery-petchem Integration, LNG integration, Gasification, Coal to olefins etc routes,

Developing white papers for in house/ MOP&NG/ client circulation, evaluating new technologies in downstream sector & alternative fuels through interaction with licensors across the globe and initiate strategic tie-ups.

Vineet graduated in Chemical Engineering from University School of Chemical Technology, Delhi, and successfully completed one year Executive General Management Program from Indian Institute of Management, Lucknow (Noida campus). He is member of IIChe, and a senior member of AIChE