INDIA'S FIRST INDIGENOUSLY DESIGNED HIGH ASH COAL GASIFICATION BASED METHANOL PRODUCTION PLANT AT BHEL R&D CENTRE, HYDERABAD

Relevant for: Economy | Topic: Infrastructure: Energy incl. Renewable & Non-renewable

Methanol is utilized as a motor fuel, to power ship engines, and to generate clean power all over the world. Methanol is also used to generate di-methyl ether (DME), a liquid fuel that is very similar to diesel — existing diesel engines simply need to be minimally changed to use DME instead of diesel.

The majority of worldwide methanol production is derived from natural gas, which is a relatively easy process. Since India doesn't have much of the natural gas reserves, producing methanol from imported natural gas lead to outflow of foreign exchange and sometimes uneconomical due to excessive prices of natural gas.

The next best option is to utilise India's abundant coal. However, due to the high ash percentage of Indian coal, most internationally accessible technology will not be adequate for our demands.

To address this issue, BHEL R&D centre at Hydrabad began working on Indian high ash coal gasification in 2016 with support from the NITI Aayog to produce 0.25 ton per day methanol. The project was supported by the Department of Science and Technology with a Rs 10 crore grant. With four years of hard work BHEL successfully demonstrated a facility to create 0.25 TPD Methanol from high ash Indian coal using a 1.2 TPD Fluidized bed gasifier. The methanol purity of the crude methanol produced is between 98 and 99.5 percent.

During this inaugural run which took place yesterday the Hon'ble Member of NITI Aayog Dr V K Saraswat, Chairman BHEL Sh. Nalin Shinghal along with BHEL's Coal Gasification team were present to witness India's first demonstration plant of its kind, designed entirely in-house to work on high-ash Indian coal.

Dr V K Saraswat said, "This endeavor led to the formation of in-house design expertise in BHEL for designing greater capacity coal gasification facilities, which will provide necessary impetus to our Hon'ble Prime Minister's vision of 'Atam Nirbhar Bharat.' This in-house capability will assist India's Coal Gasification Mission and Coal to Hydrogen Production for Hydrogen Mission."

After achieving this feat BHEL is further developing in house some critical processes such as catalytic conversion of syngas to methanol.

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