



Linde: Innovation, Key For Success



Introduction - The rapidly changing business atmosphere across the globe for Oil and Gas industry, has lead the self-motivated industrialists to draft industrious and dynamic solutions to overcome the inevitable challenges faced by the oil and gas industry. In the due roller coaster ride, many organisations implemented and adapted innovative technologies to sail smoothly in the current upheaval, Matthias Bertsch, Managing Director, Linde Engineering India shares their journey in the current business shift, focuses on innovation in the age of fierce competition and the future of digitisation.

By – Namrata Nikale Tanna, Editorial Manager, Oil Asia Journal

**May we request you to share your opinion on Innovative technology in Indian oil and gas industry and how has it benefitted Linde Engineering?**

**Bertsch:** Innovation is the key for success and sustainability in today's competitive environment. This is in "DNA" of Linde Engineering as a company. Linde has been offering innovative solutions to Indian oil & gas industries for Refineries and Petrochemical for Hydrogen, Sulphur and Steam cracker plants. This is a win-win situation for clients as well as Linde. Innovate, Collaborate and Deliver is the core focus at Linde which drives Safety, Sustainability and Reliability.

**We would request you to address the current challenges for Innovation in the Indian oil and gas industry?**

**Bertsch:** Acceptance of innovative solutions by the industry is challenging at times since majority of clients want proven solutions. Linde fully understands the right balance between proven design and innovative solution to substantiate optimisation of processes. However, clients need to be receptive to such new ideas and there must be provisions in the procedures which gives leverage to companies like Linde to offer the innovative technological solutions. However, we strongly feel that with close collaboration between industry and technology suppliers, the goal of leveraging innovation can be achieved.

**With the rapidly changing environment, the oil and gas industry has entered uncertain range of challenges; could you please brief us about it and also explain how Linde Engineering is overcoming such environmental challenges affecting the technology?**

**Bertsch:** Linde is leading clean fuel movement. As you might be aware, Linde has developed cars and buses in collaboration with automobile industry which are fuelled by Hydrogen. Hydrogen is considered as cleanest fuel because it produces only water vapour when it is burned as fuel. Linde has opened hydrogen fuel stations in Germany and other neighbouring European countries and is spearheading this movement.

Carbon dioxide is a perpetual issue in the Oil and Gas Industry as it is a by-product when fossil fuels are processed. The capture and effective utilization of Carbon Dioxide is another area in which Linde is innovating a lot. Linde has developed carbon capture technologies which can support industry.

Linde's adsorption technology has provided numerous innovative solutions to Indian refiners. Linde is moving ahead with their membrane technology with same zeal.

**Linde engineering showcases a strong portfolio of 1,000 process engineering patents and the operational excellence of Linde Gas, and thus request you to shed some light on the utilisation of advanced technologies in India's major projects?**

**Bertsch:** Linde Engineering has developed unique solutions for various sectors of process industries; Iso-thermal Shift Reactor (ISR) is one such innovation that replaces different equipment in ammonia and hydrogen plants. Linde's Coil Wound Heat Exchangers (CWHE) replaces several standard shell and tube heat exchangers. Linde is one of the unique hydrogen technology suppliers in the world who offer "End-to-End" solutions for customers (from Reformer to PSA). Linde has developed cryogenic Air Separation technology to a level where we can offer plant sizes which were never thought of few years ago. All these developments are helping our customers to build mega scale plants with high efficiency and reliability.

Innovating for customers is one of the key focus areas for Linde since long time.

**Accelerated with the spirits of developing India as a manufacturing hub, in your opinion, will India become technology driven nation in the future?**

**Bertsch:** India is in the mode of becoming a technology driven nation. The latest plants in oil and gas sector has established that Indian industry is not lagging in any way than their peers across the globe. Large refineries and petrochemical complexes, gasification complexes, fertilizer complexes are examples of niche technology driven projects. Linde is proud to be associated with their leading technologies in these modern and prestigious projects in India like OPAL Dahej Cracker complex and Reliance Jamnagar Gasification complex.

**As the government is pushing more towards sustainability and reducing carbon emission, could you share with us some of Linde India Engineering's highly advanced technologies that are efficiently contribution towards sustainability?**

**Bertsch:** Linde is active in carbon capture since many years. Linde has complete portfolio of carbon dioxide recovery plants and carbon dioxide purification technologies. Carbon dioxide is also used in Enhanced Oil Recovery (EOR) which positively impacts environment in reducing greenhouse emission. Linde has developed a unique technology of carbon dioxide reforming (also known as dry reforming) which will help to utilize the otherwise waste gases which can be utilized for manufacturing high value added products (like acetic acid etc.).

**Could you share your opinion on Digital Transformation initiative in Indian oil and gas industry, also do you think digitalisation will change the future of Indian industrial sector?**

**Bertsch:** Digitalization is talk of today. When the whole world is talking about it and marching ahead, oil and gas industry will be a part of it by default. Digitalization is going to help industry in multiple ways. Large amount of data is going to be available at click of a button helping the experts to take cognizance of available data and quick decisions. Linde has already implemented concept of “Remote Operation Centre” some time back, which helps to operate and control multiple plants at diverse locations from one location. Digitalization is also helping supply chain management in a big way. Linde has developed an information technology based solution for virtual tour of plant which helps clients to imagine about operations live and plan maintenance of their plants while they are being built.

**According to you, what is the future gateway for growth and innovation in the Indian oil and gas industry?**

**Bertsch:** Indian oil & gas industry will grow at healthier and sustainable rate due to the demand and supply gap and with India being a refinery hub. We feel that leading Indian oil and gas industries will invest more and more on innovation and technology which makes a company like Linde excited about the Indian market. Additional benefits will be visible in terms of plant efficiency, sustainability and improved safety.