PEOPLE

Nuberg EPC embraces sustainable design across its value chain

In discussion with AK Tyagi, CMD, Nuberg Engineering Limited.

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Nuberg EPC provides turnkey project solutions with basic engineering and process know-how either from its own intellectual property or licensed from global technology suppliers. The company is actively delivering projects globally that expand hydrogen-green, grey, and blue; 2G and 3G ethanol, water electrolysis, water-soluble fertilisers, and next-generation nutrients. It is currently focussing on making fuel cell systems and bioethanol, as cost-competitive solutions. By embracing sustainable design, new technologies, and sustainable practices across their value chain, the company is aiming to reduce its environmental impact and contribute to a more sustainable future.

Can you tell us about Nuberg EPC and its role in the EPC and turnkey project management industry?

Nuberg EPC is a global EPC and turnkey project management company. We offer single-point responsibility solutions and services for the engineering and construction of industrial plants, from concept to commissioning. Our solutions, technology and engineering services are known to deliver projects with best-in-class quality, on-time, and within budget. As one of the fastest-growing EPC companies in chloro- alkali / caustic soda, hydrogen peroxide, sulfuric acid, and calcium chloride, we serve in chemicals, fertilisers, hydrocarbon, steel, nuclear, and defence industries worldwide.

Our successful delivery record has made us the world's number one EPC and LSTK player for hydrogen peroxide and calcium chloride and the number two EPC company for caustic soda / chloro-alkali plants. Overall, Nuberg EPC has delivered over 60 turnkey projects across 32+ countries in the past 25 years to become a leader in the EPC-LSTK industry.

We pride ourselves on our internal team of more than 300 engineers and 300,000 available engineering work hours that provide us with continued global competitiveness. Nuberg EPC also has a specialised heavy fabrication facility located in Gujarat that gives the company a unique quality and time advantage. Nuberg EPC's research and development facility in Sweden developed process technologies that are successful in large-scale industrial plants worldwide.

Nuberg EPC has recently executed India's first commercial-scale hydrogen compressor storage and hydrogen fueling station. Can you describe the project and Nuberg's contribution to it?

The project of India's first commercial scale hydrogen compressor storage and hydrogen fueling station is owned by Indian Oil Corporation Limited. Nuberg contributed to the engineering, procurement and construction services along with providing quality compressors, storage, and dispensers for efficient hydrogen storage at high pressure and extremely low temperatures. This achievement of Nuberg EPC has brought the concept of green energy and green economy to the fore, considering the feasibility of hydrogen-powered vehicles as an alternative to petrol and diesel. The commercial-scale PSA & hydrogen compressor storage and dispensing facility are already being used by hydrogen-fuelled passenger buses.

How does this achievement of Nuberg EPC bring the concept of green energy and green economy to the forefront?

The setting up of hydrogen refuelling stations will play a significant role in bringing the concept of green energy and green economy to the forefront in India. Hydrogen is a clean and renewable energy source that produces only water and heat as by-products when it is burned or used in a fuel cell. This means that hydrogen-based transportation can help reduce greenhouse gas emissions and air pollution, a significant environmental challenge in India.

By investing in hydrogen refuelling stations, India will be able to create a new market for hydrogen fuel cell vehicles and promote the development of a green economy. This would also help in reducing its dependence on imported fossil fuels and promote domestic energy production.

Moreover, developing a hydrogen fuel cell ecosystem can create new job opportunities, promote innovation, and support sustainable economic growth in India. This would also provide opportunities for Indian companies like Nuberg EPC to enter the global hydrogen market, which is expected to grow significantly in the coming years.

How do you see the popularity of hydrogen-powered vehicles as an alternative to petrol and diesel? What impact do you think this will have on the energy industry in the future?

While hydrogen-powered vehicles have the potential to become a popular alternative to petrol and diesel vehicles in India, several challenges need to be addressed.

One of the main challenges is the lack of hydrogen infrastructure in India. Currently, there are only a few hydrogen refuelling stations in the country, which limit the adoption of hydrogen-powered vehicles. In addition, the cost of building and operating hydrogen refuelling stations is relatively high, which makes it difficult for companies to invest in this infrastructure.

Another challenge is the high cost of producing hydrogen fuel cells and hydrogen storage systems. While the cost of these technologies is expected to decrease in the future, it may still be prohibitive for many consumers in India.

Furthermore, the Indian government has been promoting the use of electric vehicles as an alternative to petrol and diesel vehicles, which could reduce the demand for hydrogen-powered vehicles.

Despite these challenges, several factors could drive the popularity of hydrogen-powered vehicles in India. For example, hydrogen fuel cell vehicles have a longer driving range and faster refuelling time compared to electric vehicles, which could make them more attractive to consumers.

In addition, the Indian government has set ambitious targets to reduce greenhouse gas emissions and promote clean energy, which could create a favourable policy environment for hydrogen-powered vehicles.

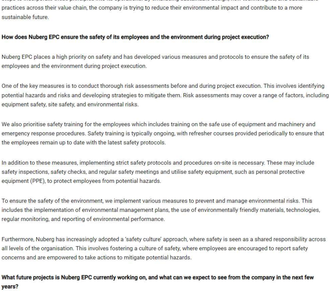
Nuberg EPC has executed India's first commercial-scale PSA & hydrogen compressor storage and dispensing facility for IOCL as an alternative to conventional petrol and diesel vehicles. Can you tell us more about this project and its significance?

The widespread adoption of hydrogen as a clean and renewable energy source could have a significant impact on the energy industry in the future.

One potential impact we see is a shift away from fossil fuels, such as coal and oil, towards hydrogen-based energy systems. This could help reduce greenhouse gas emissions and mitigate the impact of climate change. The transition to hydrogen-based energy systems could also create new business opportunities for companies in the energy sector, including the production and distribution of hydrogen, as well as the development of new technologies to support a hydrogen-based economy.

Another potential impact is the decentralisation of energy production. Hydrogen fuel cells can be used to generate electricity on site, which could reduce the need for large, centralised power plants. This could enable greater energy independence and resilience for communities and businesses, as well as reduce transmission losses and improve energy efficiency.

Furthermore, the development of a hydrogen economy could stimulate innovation in the energy industry, leading to new technological advancements and business models. For example, the development of low-cost and efficient hydrogen production methods could lead to greater use of hydrogen as an energy source, while the integration of hydrogen energy systems with renewable energy sources such as wind and solar could lead to more reliable and efficient energy systems.



What other major projects have Nuberg EPC completed in the past?

Talking about Nuberg's recent project in the country, the company has recently bagged a 400 TPD sulphur recovery unit (SRU) in Vadodara and a 10 TPD, bioethanol plant project in Panipat for IOCL. Also, previously, Nuberg has already executed a heat steam generator project for the Gas Authority of India Ltd (GAIL), a technological and equipment project for Hindustan Petroleum Corporation Ltd (HPCL), in addition to that, a benzol distillation plant for Steel Authority of India Ltd (SAIL) followed by an 1650 TPD NPK fertiliser plant for The Fertilisers and Chemicals Travancore Ltd (FACT) in Kochi were also added in the portfolio of Nuberg EPC.

We have quite a few global clients in diverse sectors. We have been working with some of the leading customers which even include Al Ghaith Industries (Abu Dhabi), Inovyn (Sweden), FLUODER (Paraguay), ADDAR (Saudi Arabia), Gulf Chlorine (Qatar), Union Chlorine (Abu Dhabi), DOSTEL (Turkey), Samuda Chemical Complex (Bangladesh), AGROCHEM (Egypt), SARL SASKO (Algeria), AMASSAS Co. (Ethiopia), Aditya Birla Chemicals (India), SCE Chemicals (Morocco), NCIC(Egypt), TCI Sanmar (Egypt), and Oman Chlorine (Oman).

Can you discuss Nuberg EPC's commitment to innovation and sustainability in its projects?

Nuberg EPC is increasingly committed to innovation and sustainability in our projects. We are aware of the need to reduce the environmental impact of their operations.

One way that we are demonstrating this commitment is by incorporating sustainable design principles into our projects. This can include the use of energy-efficient materials and technologies, such as renewable energy sources like solar and wind power, and the implementation of water conservation measures. EPC organisations are also exploring new materials and technologies to reduce the environmental impact of construction, such as low-carbon concrete and sustainable building materials.

In addition, Nuberg EPC is adopting new technologies and processes to increase efficiency and reduce waste. For example, digital technologies such as Building Information Modelling (BIM) can help optimise project design and reduce waste during the construction process. EPC organisations are also exploring the use of 3D printing and modular construction techniques to reduce waste and improve efficiency.

Furthermore, Nuberg is increasingly focusing on sustainability across its entire value chain, from the sourcing of materials to the disposal of waste. This includes implementing sustainable supply chain practices, such as using recycled materials and sourcing from suppliers that prioritise sustainability.

Overall, Nuberg has recognised the importance of innovation and sustainability in their projects and has taken the necessary steps to incorporate these principles into its operations. By embracing sustainable design, new technologies, and sustainable practices across their value chain, the company is trying to reduce their environmental impact and contribute to a more sustainable future.

How does Nuberg EPC ensure the safety of its employees and the environment during project execution?

Nuberg EPC places a high priority on safety and has developed various measures and protocols to ensure the safety of its employees and the environment during project execution.

One of the key measures is to conduct thorough risk assessments before and during project execution. This involves identifying potential hazards and risks and developing strategies to mitigate them. Risk assessments may cover a range of factors, including equipment safety, site safety, and environmental risks.

We also prioritise safety training for the employees which includes training on the safe use of equipment and machinery and emergency response procedures. Safety training is typically ongoing, with refresher courses provided periodically to ensure that the employees remain up to date with the latest safety protocols.

In addition to these measures, implementing strict safety protocols and procedures on-site is necessary. These may include safety inspections, safety checks, and regular safety meetings and utilise safety equipment, such as personal protective equipment (PPE), to protect employees from potential hazards.

To ensure the safety of the environment, we implement various measures to prevent and manage environmental risks. This includes the implementation of environmental management plans, the use of environmentally friendly materials, technologies, regular monitoring, and reporting of environmental performance.

Furthermore, Nuberg has increasingly adopted a 'safety culture' approach, where safety is seen as a shared responsibility across all levels of the organisation. This involves fostering a culture of safety, where employees are encouraged to report safety concerns and are empowered to take actions to mitigate potential hazards.

What future projects is Nuberg EPC currently working on, and what can we expect to see from the company in the next few years?

Nuberg is currently focussing on making fuel cell systems and bioethanol, as cost-competitive solutions. Through innovation, technical optimisation, and scaling, the cost of fuel cell systems will continue to drop dramatically. We are also working on our industrialisation capacity which is another key challenge.

By leveraging its Indian strengths, the company is actively delivering projects globally that expand hydrogen-green, grey, and blue; 2G and 3G ethanol, water electrolysis, water-soluble fertilisers, and next-generation nutrients.

We aim to expand the storage capacity exponentially. Facing an increasingly unpredictable environment, we must move forward step by step. We must work across the whole supply chain to ensure coherent development and the maturity of different links of the chain.

CAUSTIC SODA AND CHLORALKALI PLANTS | ENGINEERING-PROCUREMENT-CONSTRUCTION | GLOBAL HYDROGEN MARKET | GREEN ECONOMY | HYDROGEN ECONOMY | HYDROGEN-BASED TRANSPORTATION | HYDROGEN-POWERED VEHICLES | NUBERG EPC | PSA AND HYDROGEN COMPRESSOR STORAGE