

E|P|C World

Engineering Projects Construction

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THE BIG INTERVIEW

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2021 Looks to be the landmark year for EPC Sector

Covid-19 pandemic has brought in unprecedented challenge to the EPC industry. Undoubtedly it has changed the way we think, live, and do business. It has negatively affected both the demand and supply side of Industrial projects. All hopes of the EPC and Infrastructure sector now rest on making the best of FY21. Yet, there are fundamental shifts that the EPC sector will need to navigate for a successful year. Some of these shifts were already underway in the sector; now, there are added changes emerging out of the pandemic year, and then there is the China factor.

The main pandemic-based shifts for the sector include:

Rethink in consumption patterns

India's huge chemicals import bill will surely be under the government's scanner with the economic impact of the pandemic. There is a requirement for EPC in all dimensions of chemical industry in the country as our usage to chemicals

derived end-products is rising rapidly. Gujarat has significant share of Indian chemical manufacturing capacity and the South has manufacturing capacity for bulk drugs and pharma. There is scope for chemical infrastructure in many other states of India. 'Make in India' across sectors, and India's increased defence self-sufficiency needs, will create urgency for corresponding chemicals infrastructure. Manufacturing of polyethylene and PVC products too will require raw materials. Hence, enormous potential exists in India to develop the chloro-chemicals industry with a focus on inorganic chemicals like trichloroethylene, poly aluminium chloride and other chlorine based water treatment chemicals.

Rethink in global supply chains

EPC sector depends on global supply chain of manufacturers and suppliers to execute turnkey projects worldwide. We also need to send our engineers and management people to plant locations. During the pandemic

we had to hire a chartered plane to ferry our engineers to Egypt for timely project completion. The pandemic has forced a rethink in the entire value chain to better manage project execution and costs. An EPC company cannot evolve without having good relationships with their vendors who deliver quality products and give value for money. We treat them not as our contractors or suppliers but as valuable partners. The gloomy business sentiment that had put breaks on new plant investments and expansions should hopefully begin to turn positive for the EPC sector and our supply partners as 2021 progresses.

Longer-term safe working procedures

Both the EPC organizations and the client organizations will need to incorporate higher levels of safety and sanitation protocols in their operations and will also need to plan the space and movement requirement around the same. While easy enough to incorporate in new projects, the existing projects underway will require some relook.

Remote operation and management:

Infrastructure projects will look at increased operational automation, and will require extensive embedding of digital technology along with digital safeguard technologies. This will increase the EPC project costs as well as technological sophistication asked from the EPC sector. The EPC organizations will need to rapidly upskill or hire newer talent which is likely to increase the wage bill due to the short supply of such talents.



Long-term EPC sector shifts already underway include:

Increasing world population and development

The global population growth trend, especially in developing countries along with the aging of the population in developed countries, continues to be a driver for many infrastructure projects globally. The slowdown of last year

should allow for a construction boost in 2021. Chemical consumption in developing countries will expand in traditional businesses while the western world will look at specialty chemicals to cater to newer consumer demands.

Some key chemicals that will be in demand and need EPC support are

- Sulphuric Acid market is projected to reach US\$11.10 billion by 2021. Growing agriculture sector and increasing metal processing activities, along with a rising consciousness about wastewater treatment drive the sulfuric acid market in India
- Fertilizer consumption is highest in China and India, followed by the US and with the global population touching 8 billion the caloric requirement is expected to double
- Sulfur production is expected to increase by approximately 27% between 2016 – 2021
- The global lime market is expected to reach US\$50bn by the end of 2026, expanding at a CAGR of 2.5%, according to Persistence market research
- Chlor-alkali market will reach an estimated valuation of USD 141.74 billion by 2027 from USD 92.36 billion in 2019 at a growth rate of 5.50% for the forecast period of 2020 to 2027 according to Data Bridge

Stagnancy of the oil economy

Oil prices have been under pressure for a long time, and 2020 even saw the unprecedented phenomena of negative oil prices. There is strong realisation and focus across the GCC countries to transform their economies from oil dependent industries to non-oil dependent industries. Countries are now building their own capacities instead of importing and diversifying into various industries including manufacturing of specialty chemicals. The trend is accompanied with organic surge in demand for chemicals. This has resulted in spree of new projects across the entire region. Another important change comes from resultants lower Petro prices in downstream industries. With improved cost economics, they are likely to see higher demand, and thus a bigger opportunity for the EPC sector. Also, clients are evaluating and exploring usage of Hydrogen as a clean fuel in existing and new projects, especially as it is also the feedstock for green chemicals.

Better execution of capital projects

According to McKinsey, “capital projects are completed with an average of 37% cost overspend and 53% schedule overrun. The magnitude varies from sector to sector, but the oil and gas downstream business seems to hold the record with an average of 53% cost overspend.” The improvement factors for the EPC sector according to Boston Consulting Group include tighter and stronger rigor and consistency in process



execution, enhanced knowledge transfer from project-to-project, Stronger project monitoring, better cross-functional cooperation, enhanced collaboration with suppliers, proactive company culture and training of young talent and people development. The talent pool that enables FEED, basic engineering, detailed engineering and turnkey project management services, including procurement and construction for the establishment of the plant hold the key to on time every time standards.

Improve overall productivity:

Overall productivity enhancement in the EPC sector in the last 2 decades has been minor compared to between 50 and 70% productivity growth for the overall economy as per McKinsey. Therefore, a need for better R&D and backend integration in EPC organizations that can result in significant margin enhancement and also higher demand. Emerging solutions include modularization and prefabrication design which shorten timelines, while ensuring better design and quality control. There is also a big requirement of R&D in India as we hardly have any proprietary technologies here.

Our own experience with world-class R&D setup in Sweden in conjunction with a manufacturing facility in Gujarat has resulted in global leadership in EPC for Hydrogen Peroxide and Calcium Chloride and the second position for Caustic Soda / Chloro-Alkali plants. We will also be able to do R&D of many other different kind of chemicals at Sweden facility. As a company undertaking international projects that are very R&D conscious, we have been gearing up for different project requirements.

In India, we need a more methodical approach, necessary skilled manpower, government support for the growth of this industry. Most countries with extensive EPC capabilities, get facilities such as softer loans, support bank guarantees, etc. that enable the management to focus on delivery and productivity. In India we are hoping that the government will realize that this is a very big industry which can bring major revenues.

Increased digitization

The entire EPC sector was already embracing increased digitization, and now the pandemic has lent the process a huge urgency. To build a world class plant, the industry needs to work on 3D software to deliver the necessary accuracy. 3D platforms ensure better final delivery quality, costs, and timelines - with lesser or no mistakes in the later phase of projects.

According to consulting firm Deloitte, more investments will be made in digital technology for better collaboration and more data-driven decision-making. Automated parametric design and object libraries are improving the design process. While machine learning and cognitive computing will help streamline the procurement process with better matching of demand and supply of construction material and plant equipment. To streamline construction, technologies like digital twins, autonomous rovers, and drones will have even wider adoption.

Sustainability and environment

The world has a definite momentum towards a cleaner and sustainable living and business. EPC projects need to ensure technology implementation that delivers the latest developments to new projects irrespective of the higher licensing cost. "Green" chemicals infrastructure was expected to reach \$100 billion globally in 2020 and this growth trend will continue in 2021.

We will also need to get existing plants upgraded to the environment friendly standards. This will open up a lot of requirements and potential for EPC companies to make the plants compliant to the future environmental laws. This modernization and upgradation of existing plants will also enable better use of raw materials, increase productivity and improve energy efficiency. These additional benefit factors for plant upgradations will give huge opportunities for EPC market.

While the changes underfoot may look daunting, we believe that the opportunities in the EPC sector are huge and the challenges surmountable for players who commit to global leadership. The world will be a better place with the foundation laid by the EPC sector, and 2021 looks to be the landmark year for the sector.

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