

McDermott is Ready for the Future of EPCI

Challenges brought on by the oil price crash and the COVID-19 pandemic have put businesses across the world—particularly in the energy industry—to the test. New business models, energy transition and digitalization will play a vital role in bringing about change and recovery. Neeraj Agrawal, Country Manager (India) for global EPCI contractor, McDermott, sat down with Chemical Engineering World to discuss McDermott's future plans, key projects and the role its India and Asia Pacific business plays for the global entity.

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Neeraj Agrawal
Country Manager (India)
McDermott

How has the current pandemic affected the projects of McDermott, how are you managing with project delays?

In 2020, due to the COVID-19 pandemic, the oil and gas industry is experiencing its third price collapse in twelve years. The industry rebounded from the first two shocks, but this year there was a lethal combination of supply shock with an unprecedented demand drop. While this crisis' depth and duration are uncertain, the best solution was to adjust to the situation and get accustomed to new ways of working.

All of our employees in India are equipped with laptops. When the pan-India lockdown was announced, moving our employees from office to home was quite manageable. Our employees quickly adapted to the new processes and procedures of their working-from-home environment, which helped minimize a loss of productivity. We enhanced our IT infrastructure, enabling the project teams and departments to coordinate and communicate with each other regularly and seamlessly. However, given the global pandemic, our physical and mental well-being was affected. Key factors that we adopted to mitigate COVID-19 risks at McDermott's workplaces included several educational campaigns to help enforce best practices while keeping the business

active. To cope with the situation, we leveraged our Employee Well-being and Assistance Program, to offer counseling support to employees and their families. As most of our employees are still working from home, we also organize regular virtual townhalls to encourage joint participation and create an open space for employees to engage in conversations, share important information and promote collaborative teamwork.

We have been very active in reaching out to our customers to communicate the changes we have made and understand the effect of the market on their investment plans. We have experienced some project delays, but there have been no cancellations—and thanks to effective safety measures, many projects have continued progressing well even in the face of this. We feel that we are well positioned for the market post-COVID-19 and I am confident in our ability as a company to operate in diverse geographic

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markets globally, offering a wide range of project services to the upstream and downstream sectors of the industry.

In your view, what are the biggest challenges the EPC players need to address?

The major challenge for the EPC sector is the bidding process. Firstly, the qualification criteria changes frequently. Secondly, the bidding schedule is very stringent and, owing to these time constraints, it can put pressure on a comprehensive bid. Proposal preparation includes—interacting and dealing with internal teams, sub-contractors, local bodies, clients and vendors. Inadequate time can impact the final proposal which is not the best outcome for the customer or the contractor.

Contract terms and conditions can also be challenging for EPC contractors. To reduce risk, risk committees have to analyze the project to understand the prospective challenges associated with the bid or the project to put in a robust process of risk mitigation throughout the project's lifecycle. Many customers want a single-way contract, which leads to shifting the risk paradigm to the EPC contractor.

What are the new models for business and contracting the industry should adopt for risk mitigation and building

resilience? Tell us about the steps taken by McDermott in this direction?

The first model could be a model of risk and reward, where the terms and conditions are a bit more neutral. The volatility in the oil and gas market is significant and could ripple throughout the global economy. These events serve as another reminder of the importance of proactively assessing and managing contractual risk or opportunity in a quickly changing environment.

Another model is FEED competition or late conversion of projects into EPC. These models are not the norm in India because of the public sector's rules and regulations in FEED competition. The industry should ensure they have the right commercial numbers and a solid understanding of the risks associated with the project. This contracting style saves cost and, most importantly, can lead to the omission of the bidding process at the EPC stage—where the selected contractor will be responsible for their design, whilst being fully deployed with little to no cost variations.

The third one could be the Licensing Engineering Procurement and Construction (LEPC) model, which is followed in some process units like hydrogen and sulphur. A similar model



ONGC Offshore Installation by McDermott

can be implemented in some of the petrochemical prospects as most of the multinational companies have a technologically driven EPC approach. This process will help contractors become more competitive in the market and flexible in the project-execution approach.

In India, especially in the onshore segment, we are bidding for major projects based on our competencies. We are also empaneled with Indian Oil Corporation Research and Development. We have robust systems and processes in place for selecting the bids in which we will

participate with competitive rates.

To be successful, we have built a team of pioneers who have implemented smart solutions for our customers. McDermott has more than 2,000 employees across India—a highly experienced team covering all disciplines with in-house capability to implement concept studies, FEED, PMC, EPCM, EPC and EPCI projects. Our offices in Gurgaon and Chennai are two of McDermott's largest project execution centers supporting local and global projects. Gurgaon's expertise is primarily onshore projects such as refinery, petrochemical and gas processing. Chennai specializes in engineering and EPCI for offshore facilities. We are uniquely positioned to address the significant opportunities we see in India due to our technology-driven, vertically integrated offering in both onshore and offshore.

In recognition of McDermott's commitment in India with a strong Make in India focus, McDermott's President and CEO, David Dickson, participated in Prime Minister Modi's roundtable discussion with U.S. energy companies in Houston in September 2019, where they discussed the company's future growth prospects in India.

This year McDermott joined the Hydrogen Council which has the

mission of scaling up hydrogen solutions. Tell us about McDermott's plans, work carried out so far and how much time may it take for making these solutions commercially viable?

50 McDermott sees hydrogen as a key enabler of the energy transition. We are leveraging our experience in designing and building hydrogen production facilities and our leadership in hydrogen storage solutions to support our customers across the hydrogen value chain. We believe hydrogen, both blue and green, will increasingly play a vital role over the next ten years as technology and carbon pricing potentially scale up and will be key to net zero ambitions. McDermott offers engineering and construction solutions for green and blue hydrogen, combining carbon capture, gas processing, storage and power expertise. Our hydrogen production (steam methane reforming technology), liquid hydrogen storage and liquefaction experience, combined with large-scale EPC capabilities, has made McDermott appealing to customers and partners specializing in hydrogen production and distribution. McDermott's CB&I Storage Solutions has already established itself as a leading provider of hydrogen storage. It specializes in field erected spherical cryogenic hydrogen storage with capacity ranging from 10,000

gallons to 1.25mm gallons and is currently building the largest hydrogen sphere in the world for NASA.

McDermott is continuing to work with new and established technology companies to scale up the solutions, a key factor to bring down the cost of clean energy alternatives and new technology. iO Consulting, a JV between Baker Hughes and McDermott, is a strategic consultancy focused on the early front end of projects, bringing specific expertise integrated with access to technology and execution expertise from its parent companies to enable projects with a higher certainty that the outcomes identified can be delivered. iO Consulting has recently completed a feasibility study for NewGen Energy green hydrogen production facility in Trinidad and Tobago and is also engaged in carbon capture, utilization and storage (CCUS) projects to support power decarbonization and other industries.

To date, we have provided EPC services to more than 200 hydrogen and syngas plants globally.

What are the key projects you are currently working on across Asia Pacific?

McDermott has three geographic areas and a corporate headquarters in Houston.

In Asia Pacific, we work on projects for our counterparts in the other areas, including North, Central and South America (NCSA) and Europe, Middle East and Africa (EMEA). In addition, we undertake major EPCI projects for our customers in Asia Pacific (APAC). Our current projects include the largest subsea project ever awarded in India, ONGC's 98/2 project, Inpex's Ichthys project, Posco's Shwe Phase 2, Reliance's KG-D6 project, Gorgon Stage 2 fabrication, Scarborough FEED and Ichthys 2B feed.

Anyone trying to construct, fabricate and move materials during COVID-19 has had to be flexible and adaptable. We have adjusted to the needs of our customers and the requirements of the projects including completing three offshore campaigns in the middle of COVID-19 in the Bay of Bengal.

Walk us through the digital roadmap of McDermott. How does the company plan to implement this across the organization, partners and for customer interface to improve project management efficiency?

Market dynamics and an accelerating pace of innovation within our industry create a challenging environment for companies to navigate. Our most senior executives recognize that, to excel, we must be innovation leaders—not followers.

That's why our Digital and Analytics group was tasked with developing strategies and initiatives that harness the immense potential of our collective creativity. Digital and Analytics' primary focus areas are: delivering value; embedding a digital-ready culture; and driving digital project delivery. McDermott fosters a culture of innovation and has an idea-sharing platform that allows employees to submit their ideas and be a part of ideation and implementation. We also digitalize processes to develop solutions that improve project safety, certainty and profitability.

McDermott is currently exploring digital opportunities across our entire value chain. One of our flagship initiatives

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is our GeminiXD digital collaboration platform. This platform allows our project teams to make quicker, well-informed decisions using data and analytics instead of documents. We are creating pilot programs where we use Artificial Intelligence (AI) to develop engineering material estimates. In addition, QR-code-based material tracking has been implemented to improve supplier-to-shop delivery and logistical performance. McDermott is a leader in this space and we continue to demonstrate this commitment through our innovations and digital solutions.

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In 2018, we launched our first Digital Innovation Center in Pune, India, to develop and utilize innovative digital solutions to lead the transformation in offshore oil and gas projects. It serves as a technology epicenter to support McDermott's growth plans in India, as well as support McDermott's global digital initiatives.

How is McDermott aligning its future growth with the energy transition across the portfolio of services offered across the oil, gas and power industries?

As demand fluctuates, the energy industry works to meet consumption needs. McDermott combines innovation with more than a century of engineering

and construction experience to deliver the building blocks of the energy transition. We are actively developing sustainable solutions that support the energy transition, including: sustainable engineering to design and build lower carbon facilities; green and blue hydrogen; liquefaction and storage; carbon capture utilization and storage (CCUS); and offshore wind.

McDermott also has a partnership with 8 Rivers Capital, Exelon and Occidental, known as NET Power, which works toward the development of a novel power system that produces low-cost, reliable and flexible electricity from natural gas—while generating no atmospheric emissions, including CO₂ capture and no NO_x production.

Recently, McDermott was awarded a pre-FEED contract from Tata Steel for Project EVEREST (Enhancing Value by Emissions Reuse and Emission Storage) in IJmuiden, the Netherlands.

Through eliminating waste and the continual use of resources, we are also focusing on the circular economy, which creates a closed-loop system by minimizing the use of resource inputs, waste, pollution and carbon emissions. Our solution includes waste to chemicals, petrochemical innovation, waste management studies and lifecycle impact assessments.

We understand the challenges our customers and communities face as they navigate the energy transition and strive to meet demand shifts while reducing emissions. Hence, we provide solutions for our customers to build a more sustainable future together.

Tell us about the future plans of McDermott over the next 4-5 years, key projects and the role of India as Centre of Excellence in the global growth strategy?

Asia Pacific is known as the engine room of the organization because of how we support the work for the other areas to deliver multiple office project execution for our customers. The Gurgaon and Chennai offices, as Centers of Engineering Excellence, support major projects for Asia Pacific (APAC), Middle East, Europe and Africa (EMEA) and North, Central and South Americas (NCSA).

McDermott is already executing two major projects in India in the Krishna Godavari Basin; ONGC's 98/2 project and Reliance's KG-D6 project. These projects demonstrate our EPCI project delivery capabilities in India. We also want to establish ourselves as a key EPC player onshore by replicating our offshore success in the onshore sector, something we already do all over the rest of the world.

Prime Minister Narendra Modi, in an address at the India Energy Forum by CERA in October 2020, announced that India might see \$206 billion investment in oil and gas in the next eight to ten years—with \$80 billion of investments in the downstream segment, including marketing, refinery expansions and new refinery plans, like Vizag, Barmer, Paradip and Ratnagiri. This move will give considerable impetus to the sector.

With our existing offshore experience in India, an excellent team and the drive to succeed with our technology-driven approach onshore we are looking forward to helping our customers solve the energy challenges they have today and the in the future too. ■