



Tata Consulting Engineers' decarbonization efforts and impact

On this day, 15th September, which is celebrated as the Engineers Days in India, as a respect to Sir Mokshagundam Visvesvaraya's birthday, it is my pleasure to share with you Tata Consulting Engineers' commitment towards "Engineering a better and sustainable tomorrow". It is pertinent to note that UNESCO has declared, WORLD ENGINEERING DAY as 4th March and has acknowledged the role of engineering in achieving the UN Sustainable Development Goals (SDGs) as it utilizes the principles of science and mathematics to develop practical applications in food, water, energy, environment, sustainable cities, natural disaster resilience and other areas which are crucial to all mankind. It is also crucial to the development of new technologies enabling the 4th Industrial Revolution such as artificial intelligence, Internet of Things, AI and quantum computing, etc. Engineering is at the heart of our modern world and will shape the future, as has been the case for millennia.

Tata Consulting Engineers (TCE) has been at the forefront in understanding, adopting and implementing state of the art technologies that include the efforts to decarbonize the operations across various sectors in power, process industries and infrastructure.

TCE has already gained considerable experience in design engineering, construction and commissioning of non-coal-based power plants, and renewable generation through hydel power, nuclear power, natural gas, and using solar PV plants, and wind turbines. It has also developed in-house capability for deployment of microgrids for sustainable campus operation using renewable generation and battery storage. TCE is also promoting research efforts with various academic institutions such as IISc, Bangalore and IIT Bombay. TCE engineers are working on the prestigious ITER (International Thermonuclear Experimental Reactor) project as part of the Indian contingent along with 35 other nations in the making of the largest nuclear fusion device for a carbon-free energy source.

In the industrial sector, TCE has started pursuing technologies related to development of LNG terminals and distribution system, use of natural gas in iron-making through blast furnace route, use of hydrogen for energy storage and clean fuel, green hydrogen, and green ammonia generation

In the infrastructure sector, TCE has carried out studies related to technology and deployment of electric vehicles (EV), demand and availability of the raw materials required by the EV industry and use of hydrogen fuel cells for transport. TCE is also actively involved in electrified mass transit systems including high speed rail and metro rail projects that would help reduce vehicle related road pollution in a large measure. TCE is part of design of various smart city projects in India which utilises principal of reuse-recycle- conserve processes. The smart city design emphasis on sustainable and renewable energy usage technologies.

Ecofirst, a subsidiary of TCE, specializes in sustainable design for buildings and infrastructure in retail sector, high rise, IT parks and warehousing sector covering the aspects of planning, design, execution and operation through seamlessly integrating architecture, engineering and environment technology.

TCE also incorporates decarbonization principles in the operation of its design and site offices through maximizing paperless operation and records, maximizing daylight use in offices, use of energy efficient lighting and ventilation systems, use of solar panels for internal power consumption, and use of efficient fixtures to reduce consumption of utilities and associated power. Employees are encouraged to adopt use of public transport, carpooling, substitute travels related to business meetings with online meetings as far as practicable, recycling of electronic waste, and other such sustainable practices that can reduce carbon footprint of the office operations.