



Praj has pioneered the basket of innovative technology solutions in the bio-economy space.

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How is Praj Industries making a mark in the sustainable development of the country?

We at Praj have a strong conviction about the Bio-economy as one of the very effective and efficient drivers of sustainable development in India. Bio-economy is a knowledge economy that uses renewable natural resources to produce food, energy, products, and services. Bio-economy positively impacts social, economy, environment, and energy aspects related to India's growth.

In the bio-economy space, Praj has pioneered the basket of innovative technology solutions in the form of Bio-Mobility™ and Bio-Prism™. Bio-Mobility™, a platform of biofuels facilitates decarbonisation in the transportation sector; whereas Bio-Prism™ portfolio of technology solutions in renewable chemicals and materials enables carbon recycling. Decarbonisation as well as carbon recycling help in minimising the carbon footprint and therefore greenhouse gas emissions that are regarded as a major contributor to climate change. As a nation, India can drive sustainable climate actions by mainstreaming the bio-economy.

Energy is an important driving force for the industrial and economic growth of any nation. Although it's gradually changing fossil resources continue to dominate the global energy landscape. The need of the hour is that more and more nations should embrace the usage of sustainable alternative to fossil fuels – Biofuels and reap its enormous benefits.

India's endeavors in bio-economy auger well in helping fulfill Panchamrit agenda - a roadmap for Race to Zero, announced by Prime Minister during COP26 Summit at Glasgow. India has also announced to achieve the Carbon Neutrality target by the year 2070.

India aims for E20 fuel by 2025 to bring down the emission levels. How is Praj playing a key role in this mission?

The Government of India has released the 'Roadmap for Ethanol Blending in India 2020-25' in June 2021 setting a target to achieve E20 blending by 2025. It is aligned with the mission to reduce the import of fossil fuels, facilitate energy security and as a measure to curb Green House Gas (GHG) emissions.

As a technology leader, Praj has pioneered innovative solutions to produce ethanol from a variety of bio-based feedstock. Praj has built capabilities across the value chain - from concept to commissioning and Care for Life to produce ethanol from sugary, starchy, and lignocellulosic feedstock.

As a flag bearer of the ethanol industry, Praj is helping establish a resilient ecosystem of stakeholders including bio aggregators, ethanol producers and energy off takers.

As a global organisation, Praj brings to the table, industry best practices that have capability to bring a positive change in the ethanol industry.

Praj solutions have helped minimise energy and carbon emissions while optimising utility footprints to ensure the efficient and effective functioning of ethanol plants.

Praj is working closely with key stakeholders such as auto OEMs, testing bodies, and leading educational institutions like IIT and regulators to accelerate country's ethanol blending program.

What are the latest solutions from the company in the industrial wastewater treatment?

Praj has been at the forefront in offering the most techno-commercially viable technologies based on the principle of 3Rs – Reduce, Recycle and Reuse. Water and wastewater treatment are key to the sustainability of life, and we strive to innovate to enhance responsible water usage.

Regulatory norms around effluent treatment are becoming more stringent day by day, making Zero Liquid Discharge (ZLD) solutions an imperative. A ZLD system implies that practically no liquid waste goes outside the boundaries of the process plants.

Evaporation is the process of vaporisation of solvent from solution to increase the concentration of the solute. Evaporation is heavily energy-intensive and with Praj's unique heat integration technologies, the total energy requirements can be reduced drastically to suit the industry norms.

With more than 1,000 customer references all over the world, Praj has a deep understanding of industrial processes and effluents. Depending on customer requirements, Praj offers a range of solutions such as recycle & reuse, evaporation & crystallisation in designing ZLD systems.

Recycling and reusing wastewater in construction brings a lot of sustainability in the water usage. What is your view on this, and do you offer any solutions in this regard?

The sustainability of the world through a circular economy has always been the driving force for Praj to offer complete end-to end water and wastewater treatment solutions to our customers. We strongly believe that the purpose of the business is to contribute beyond financial goals based on technology and innovation, leading to sustainable development and the greater good for mankind.

In line with our visionary leadership, we aspire to be the most preferred organisation for all stakeholders through environment-friendly & sustainable solutions that can make the world a better place and drives us to do better every day.

Through our offerings, Ultra Filtration, Nano Filtration and Reverse Osmosis plants, up to 95% effluent recycling can be achieved. Our ZLD and recovery systems provide an efficient way to treat industrial waste. The unique patented solvent recovery system provides complex effluent treatment solutions. Our rich experience in the operation & maintenance of several complex water & wastewater treatment systems helps us provide total water treatment solutions and be the first choice among our esteemed customers.

What are your expansion plans towards green technologies?

Any nation's growth strategy is built on the strength of the resources it possesses. India is blessed with an abundant bio-based feedstock that it must leverage. Enough availability of sugary and starchy feed stocks along with crop residues and industrial wastes is a distinct



advantage. Deploying bio-based feedstock in the production of biofuels and biochemicals is helping mainstream Bio-economy in India's growth story.

One of the unique aspects of India's growth story in biofuels is its strong capability in developing and deploying home-grown innovative technology solutions. Praj's success in the Bio-economy is based on the bedrock of home-grown expertise in Feedstock - Technology - Product (F-T-P). Leveraging this strong foundation, Praj has pioneered a basket of innovative technology solutions in the form of Bio-Mobility™ and Bio-Prism™. Bio-Mobility™, a platform of biofuels facilitates decarbonisation in the transportation sector, whereas Bio-Prism™ portfolio of technology solutions in renewable chemicals and materials enables carbon recycling.

While biofuels are an already established solution for decarbonisation in surface mobility, we are experiencing strong traction ushering from the air as well as water transportation. Sustainable Aviation Fuel (SAF) and Marine Biofuels along with Bio-Hydrogen and Bio-Methanol comprise the Nex-Gen Fuels.

Today, most of the chemicals and materials are derived from fossil sources which are neither eco-friendly nor biodegradable. Our Bio-Prism™ portfolio comprises a cluster of technologies to produce renewable chemicals and materials that promise sustainability like bio-plastic, bio-bitumen, Hyaluronic acid, natural waxes, and antimicrobial peptides to name some.

A new wave is now ushering in the industrial revolution viz. Industry 5.0 V2. Bio-economy is envisaged as an integral part of industry 5.0 acceding due importance to sustainability in all business endeavours. The emphasis is going to be on deeper penetration of green energy in the overall energy basket and adoption of green products and materials. This clearly demonstrates mainstreaming of the bio-economy as part of the global economy. 