

PRAJ INDUSTRIES LEADING THE WAY TO MITIGATING CLIMATE CHANGE



PRAJ INDUSTRIES IS A WORLD-LEADING INDUSTRIAL BIOTECH COMPANY HEADQUARTERED IN INDIA, WHICH PROVIDES INNOVATIVE SOLUTIONS FOR THE ENERGY TRANSITION AND FOR SUSTAINABLE CLIMATE ACTION.

LEADING THE WAY TO MITIGATING CLIMATE CHANGE

PROJECT MANAGED BY: ALICE YOUNG

Praj is a technology and EPC company providing technology embedded solutions in bioenergy, critical process equipment and skids, brewery and beverages, zero-liquid discharge systems and high-purity water systems.

From humble beginnings forty years ago, the company has become a leader in the bioeconomy sector employing around 1,800 people with over 1,000 reference projects for customers in over 100 countries on all continents.

Praj, quoted on the Indian stock exchange since 1994, is recording a CAGR of 20% over the last five years (including the two pandemic years). “We are a very healthy, zero-debt company,” affirmed Shishir Joshipura, the company CEO and Managing Director.

SUSTAINABILITY AT ITS CORE

He explained that Praj’s business is essentially structured around two pillars in bioeconomy namely Bio-Mobility™ and Bio-Prism™. “The Bio-Mobility” platform offers technology solutions globally to produce low carbon renewable transportation fuel using biobased feedstock, to ensure sustainable decarbonisation for

all modes of mobility i.e., road, air and marine. Our Bio-Prism™ portfolio comprises technologies for production of renewable chemicals and materials from agribased feedstock that facilitates carbon recycling.”

The company also has a strong position in the water management sector, supplying solutions for the ultra-high purity treatment required by the pharmaceutical and semiconductor industries, and systems for zero-liquid discharge from the plant. Praj also has a 70% Indian brewery market share, a minor but successful business line.

“Sustainability is our core business philosophy and we strive to strike a fine balance between ‘People, Planet and Profit’ in all our endeavours. The very nature of the bioeconomy is circular, facilitating carbon recycling. All our technology solutions are aimed at minimizing energy, water and carbon footprints to promote sustainable development.”

Mr Joshipura explained that the company follows a unique business philosophy i.e., R&D (research and development) to D&D (design and deployment) using TEMPO model – Technology, Engineering, Manufacturing, Product Management and Operations.

“Our distinctive business offering comprises of modularization of process plants; we build the whole plant first inside our factory, and ship it in form of modules which are put back together at site. This significantly reduces construction risks, cycle time and thus adds significant value for customers.”

PEOPLE’S BUSINESS

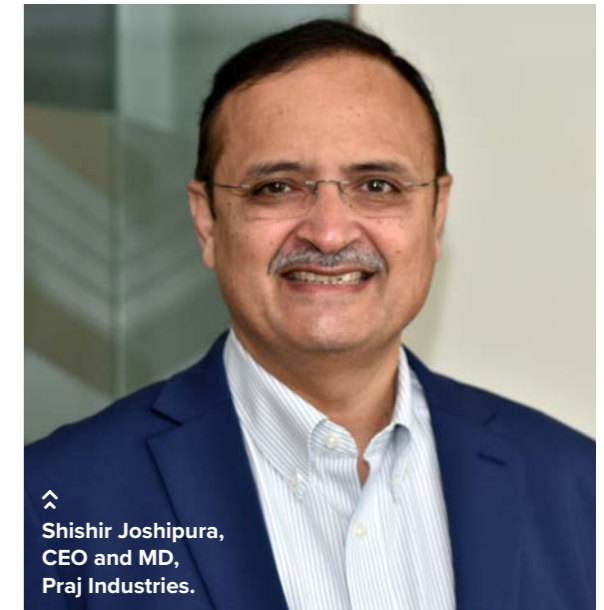
The backbone of the business is the Praj Matrix R&D centre, employing 90 scientists, responsible for cutting-edge research and development for innovative technology and its commercialisation. Around 300+ national and international technology patents are the basis for Praj’s global technology leadership. >>



"Still, the major differentiator and the most prized asset are our people. Our people really make the company. We have a large pool of well-qualified and experienced professionals who are committed to delivering a superior customer experience, and at the same time committed to the company's vision of making the world a better place."

"Some of our people have been with us for 30 years, and they've grown with the company. They all understand that in one way or other, they are contributing to protecting the future generations. They believe in the bigger cause and that makes a huge difference."

The human aspect has a wider reach in Praj. The company has over a period of time invested back into society via its Corporate



Shishir Joshipura,
CEO and MD,
Praj Industries.

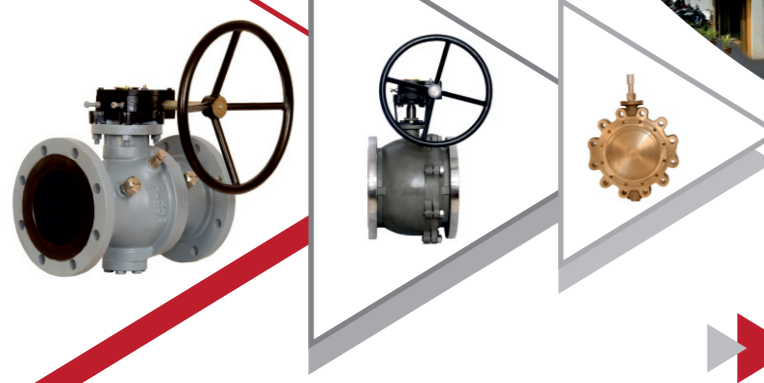
as one of the most promising pathways to help nations achieve net zero emission targets. Robust development of biomass supply chain management of sustained feedstock for the biorefinery is still a work-in-progress.

"Although more than 65 countries worldwide have some form of mandate to harness biofuels in the energy mix, a long-term robust policy framework is the need of the hour. The rapid commercialization of innovative technology and the capacity building to achieve economies of scale, continue to be a challenge."

PROUD ACHIEVEMENTS

Over the years, the company has demonstrated that it is a strong force to be reckoned with. For example, Praj ranked 2nd 'Hottest Company in Advanced Bioeconomy' at the Advanced Bioeconomy Leadership Conference (ABLC) 2023 in Washington DC, and recently secured 43rd position in the Fortune India's list of THE NEXT 500 companies in the engineering sector.

The company's achievements are impressive. Today, around 10% of global ethanol production capacity excluding China has >>




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Social Responsibility programmes, focusing on the bottom of the pyramid, with a number of initiatives in water conservation, education, and healthcare to help people in India's rural areas lead a better, healthier life.

AHEAD OF ITS TIME

Praj's journey to its leading position has not been all plain sailing, admitted Mr Joshipura, noting that for most of the company's existence, market conditions were not favourable to its business. "We started in an area where there was no ready-made market; we had to build the market, help develop a whole new ecosystem for scaling up, and also prove our technology. This has been quite a challenge."

"We have become successful because we always understood that we need to stay very strongly committed to our cause and vision, while staying customer centric. That has been the driving force for the development of our technology, always aiming for the lowest possible environmental footprint while creating value for our customers."

He remarked that unlike century-old industries like automobiles and aviation, there is an acute need to increase awareness about the positive socio-economic and environmental impacts of the bioeconomy. Bioeconomy encompasses 11 of 17 sustainable development goals (SDGs) of UNFCC. It has also emerged



been built by deploying Praj's technology. In India, the company has a 70% market share in operational fuel ethanol plants.

Praj has helped Colombia, one of the world's most efficient sugar producers, implement its ethanol blending programme by setting up all of the seven plants in the country. Early in the millennium the company also established the largest grain-based 1200 KLPD operational ethanol plant in the UK.

"Right now, we are setting up Asia's first-of-its-kind second generation biomass to ethanol plant based on Praj's indigenous infinity™ technology for Indian Oil Corporation, at their Panipat complex in Haryana, India. Two more plants for Fortune 500 companies in India are under construction," noted Mr Joshipura.

Praj's contributions to a greener world have also been recognised on a more personal level – the company Founder and Chairman, Dr Pramod Chaudhari, was bestowed with George Washington Carver Award 2020, considered as top global honour in industrial biotechnology for his exemplary contribution to technology, innovation, entrepreneurship, and agriculture. He is the first Indian and second Asian recipient of this global honour. In 2022, Dr Pramod Chaudhari received the prestigious William C Holmberg Award, for Lifetime Achievement in the Bioeconomy.



COMMITTED TO THE CAUSE

"These physical milestones are important, but the biggest achievement is that we, as a company out of India, which did not have an ecosystem for the first 30 years of its existence, were able to build a global position for ourselves. We are now able to help customers create a more sustainable future."

"We have accumulated vast expertise and experience over nearly four decades, with a focus on the environment, energy, and agri-process industries."

To this end, the company continues to invest further in R&D as well as in increased capacity. - To accelerate commercialization of bioplastics, Praj is setting up a first-of-its-kind demo plant for polylactic acid (PLA) at Jejuri in Pune, India.

Controlling GHG emissions in the hard to abate aviation sector is important in fight against climate change. Praj has developed technology for production of sustainable aviation fuels using biobased feedstock, which works as drop in fuel with conventional jet fuels and is now in talks with leading oil and aviation sector companies to commercialize this technology. The company is also setting up new future-ready manufacturing facility worth INR 1 billion (\$12 million), ready to embrace the growing opportunities from the Energy Transition and Climate Actions (ETCA) agenda.

"For the future, we want to grow both of our platforms to meet the needs of different markets, be it in Europe, North America or Asia. Fundamentally, we want to ensure sustainable development by deploying innovative environment friendly technology solutions for better world." ☺



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