

Magazine, Volume 2, 2025

# FUTURE PERFECT

Leading towards a  
sustainable journey  
of energy self-reliance



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# BEING SELF-RELIANT AND SUSTAINABLE



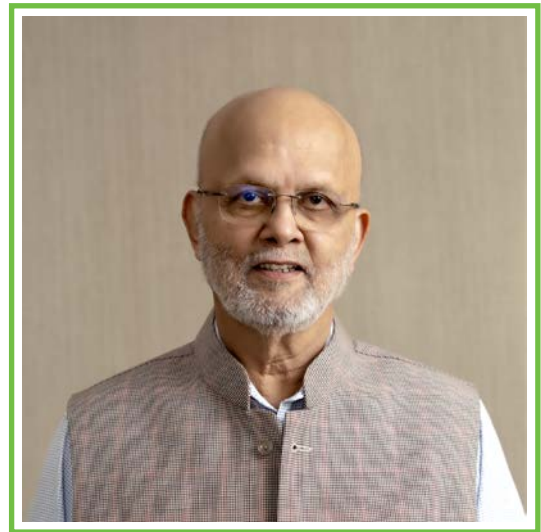
## Message from the Chairman

At Praj Industries, our journey is defined by innovation, collaboration, and a steadfast commitment to a self-reliant and sustainable India. Over the years, we have expanded our capabilities across bioenergy, renewable fuels, and advanced technology solutions, creating tangible impact for communities, industries, and the environment.

This year, we achieved several important milestones: *41 projects commissioned across India, the inauguration of the VS Bio Energy ethanol plant in Andhra Pradesh*, and significant technological upgrades, including our *low-carbon MVR installation at Aemetis, California*. Each initiative reflects our mission to deliver scalable, sustainable solutions that strengthen energy security, empower farmers, and foster economic growth.

Equally important is our work through Praj Foundation, where we focus on skill development, youth empowerment, and rural engagement, ensuring that innovation is inclusive and benefits all sections of society. These efforts highlight that technological progress and social responsibility go hand in hand.

Looking ahead, Praj remains committed to advancing the bioeconomy, enabling clean energy transitions, and supporting Atmanirbhar Bharat. I extend my sincere gratitude to our customers, partners, employees, and stakeholders whose trust and collaboration continue to drive our shared vision forward. Together, we are shaping a future where sustainable growth and energy self-reliance become a reality.



**Dr. Pramod Chaudhari**





# INDUSTRY HIGHLIGHTS

## Carving a Greener Tomorrow - The Continuing Relevance of *Dr. Pramod Chaudhari's Vision*

Five years ago, Dr. Pramod Chaudhari, Chairman of Praj Industries, became the **first Indian to receive the George Washington Carver Award for Innovation in Industrial Biotechnology and Agriculture**—a recognition that celebrated his pioneering role in advancing sustainable industrial biotechnology.

Today, the ideas that this award represents—innovation, bio-based growth, and sustainable industrialization—are more urgent and relevant than ever. The world is entering a decisive decade where clean energy, climate action, and circular economy models are shaping national priorities and corporate strategies alike. In this context, Dr. Chaudhari's long-term vision for a bio-based economy continues to guide Praj's purpose and progress.

At the heart of this transformation are Praj's globally recognized platforms—BioMobility®, enabling renewable transportation through biofuels like ethanol, compressed biogas, and sustainable aviation fuel; and BioPrism®, which extends biotechnology into renewable chemicals and materials. These innovations embody the practical realization of energy transition: they decarbonize industry, generate rural income, and strengthen India's journey toward energy self-reliance (Atmanirbhar Bharat).





The year 2020 marked a milestone, but it was also a beginning. Since then, the bioeconomy has gained global momentum, and India has emerged as one of its key growth engines. Praj continues to be at the forefront—converting agricultural residues and waste into valuable products, bridging the gap between industry and agriculture, and proving that sustainability and profitability can go hand in hand.

As the world looks ahead to achieving net-zero targets, the principles embodied by the Carver Award—and by Dr. Chaudhari's work—define the path forward. The recognition received five years ago has evolved into a continuing mission: to carve a greener, cleaner, and more self-reliant future for generations to come.

# BUSINESS FOCUS

**SUCCESSFULLY  
COMMISSIONED**



**PROJECTS IN INDIA  
(FY 24-25)**

**DRIVING ATMANIRBHAR BHARAT**

Praj Industries is proud to announce the successful commissioning of 41 projects across India, reflecting the company's continued leadership in sustainable bioeconomy solutions. Spread across multiple states, these projects span a wide range of feedstocks and capacities, demonstrating India's vast potential in renewable energy and bio-based innovation.

Each project embodies Praj's commitment to Atmanirbhar Bharat — creating a self-reliant, energy-secure nation through the deployment of cutting-edge technology, advanced engineering, and collaborative execution. These projects are delivering tangible benefits for communities, industries, and the environment.

## Among the highlights:

- *Adoption of state-of-the-art technologies that optimize feedstock utilization and energy efficiency.*
- *Enhancement of local employment opportunities and skill development, contributing to the socio-economic development of project regions.*
- *Implementation of eco-friendly practices, energy integration, and optimized water and energy usage.*

These achievements are not just numbers — they represent innovation in action, aligning with India's energy transition goals while supporting farmers, local industries, and national energy security. Each project reflects careful planning, precise execution, and the combined efforts of Praj's engineering teams, partners, and stakeholders.

Praj's journey in building a self-reliant bioenergy ecosystem continues to expand, setting benchmarks for reliability, sustainability, and innovation. By bridging advanced technology with local capabilities, the company is enabling a future where renewable energy and resource efficiency drive both economic growth and environmental stewardship.

These milestones would not have been possible without the trust and collaboration of partners, customers, and the dedicated Praj teams, whose collective commitment illuminates the path toward a greener, stronger, and more self-reliant India.

## VS Bio Energy Ethanol Plant Inaugurated in Andhra Pradesh: Boosting Bioenergy and Rural Economy





Praj Industries is proud to announce the inauguration of VS Bio Energy Pvt. Ltd.'s 200 KLPD ethanol plant at Survepalli, SPSR Nellore, Andhra Pradesh, by Hon. Shri N. Chandrababu Naidu, Chief Minister of Andhra Pradesh.

Developed using Praj's advanced technology, this world-class facility spans 24 acres and is designed to produce fuel ethanol, CO<sub>2</sub>, and DDGS. The plant will annually procure nearly 15,000 tonnes of broken rice and damaged grains from within a 250 km radius, engaging approximately 300 rice mills. This initiative is a major step in enhancing farmers' income while strengthening the rural circular economy.

Beyond economic impact, the plant contributes to India's goal of energy self-reliance and supports Andhra Pradesh's journey toward sustainable growth. By combining cutting-edge technology with local resource utilization, the project exemplifies how bioenergy solutions can simultaneously drive rural development, environmental sustainability, and energy security.

This milestone reinforces Praj Industries' commitment to creating scalable, sustainable solutions that empower communities, support agriculture, and advance India's renewable energy ecosystem.

## DCM Shriram CBG Plant: Driving Atmanirbhar Bharat with Praj's RenGas® Technology

Praj Industries recently showcased Compressed Biogas (CBG) as a key enabler of Atmanirbhar Bharat during the "CBG: A Game Changer for Energy & Agriculture" business meet organized by Cogen India in Lucknow. The event brought together sugar mill leaders, policymakers, and industry experts to explore sustainable energy solutions and innovative technologies for India's bioenergy future.

A flagship example of Praj's expertise is the DCM Shriram CBG Plant, an integrated 12 TPD facility powered by Praj's RenGas® technology. This plant exemplifies cutting-edge engineering, operational efficiency, and sustainability. From press mud to pure energy, Praj's advanced PMStab® pretreatment optimizes biogas yield by stabilizing feedstock, preserving volatile solids, and ensuring consistent year-round performance.

At the heart of the plant is Praj's Mixed Dual Plug Flow Reactor (by DVO), which maximizes biogas production through a biphasic reaction. The four biological stages—hydrolysis, acidogenesis, acetogenesis, and methanogenesis—ensure peak CBG yield while reducing power consumption by 20–25% via uniform mixing without agitators. With no moving parts and minimal maintenance requirements, the plant guarantees zero downtime and long-term reliability.

The DCM Shriram CBG Plant was commissioned in just 60 days, achieving 100% capacity within two months without any drop in Biochemical Methane Potential (BMP), generating additional revenue for the business. Praj's purification technology produces 100% pure CBG that meets OMC specifications, efficiently removing H<sub>2</sub>S, CO<sub>2</sub>, and moisture. The plant operates on Zero Liquid Discharge (ZLD) principles, with minimal gas slip, and compresses the purified CBG to 200–250 bar for safe storage and transport.

Beyond clean energy, the process generates digestate, transformed into pathogen-free manure that enriches soil and supports sustainable agriculture. With Praj's Remote Bridge Service, plant performance is monitored in real time, enabling proactive maintenance, reliability, and efficiency.

The DCM Shriram CBG Plant demonstrates how Praj Industries' RenGas® technology, combined with engineering excellence and ecosystem expertise, empowers India to achieve energy self-reliance, reduce emissions, and create sustainable value for communities.



# AROUND THE WORLD

## **Praj Powers Decarbonization Upgrade at Aemetis Ethanol Plant, California**

Praj Industries is supporting Aemetis' California ethanol facility with a significant decarbonization and energy efficiency upgrade. Using advanced low-carbon technology, Praj is facilitating the installation of a Mechanical Vapor Recompression (MVR) system, designed to lower carbon intensity and enhance energy efficiency at the plant.

For more than a decade, Praj has collaborated with Aemetis, delivering innovative solutions that advance sustainability across the U.S. biofuels sector. This upgrade highlights Praj's expertise in optimizing operations and driving cleaner energy solutions worldwide.

By combining proven engineering with advanced bioenergy technologies, Praj continues to enable sustainable growth and a global low-carbon transition.





# PRAJ'S POWER MOVES

## Building a Diversified Green Fuel Portfolio

In an interview with ChiniMandi.com, Atul Mulay, President – Bio Energy at Praj, emphasized that for India, developing a diversified green fuel portfolio is not just an option but a strategic imperative. Praj continues to champion sustainable solutions that advance India's renewable energy goals.



## Advancing Bio-Based Solutions in Cosmetics

Pramod Kumbhar, President & CTO at Praj, represented the company at the Renewable Materials Conference, Germany on 22<sup>nd</sup> September. Speaking on "Technology for Bio-based Cosmetic Ingredients – Bio-IDD and Bio-IHD", he showcased Praj's innovations in sustainable bio-based alternatives, reinforcing the company's leadership in the global bioeconomy.



## Pioneering SAF Development in India

During The India Sugar & Bio-Energy Conference 2025, Yash Mankame, EVP – Business Development, highlighted Praj's work in Sustainable Aviation Fuel (SAF). With the first-of-its-kind demonstration pilot at Praj Matrix, the company is producing SAF from ethanol and other alcohols, integrating all three unit operations on a single site. This technology can reduce carbon emissions by up to 80% compared to fossil fuels, positioning India for a low-carbon aviation future.



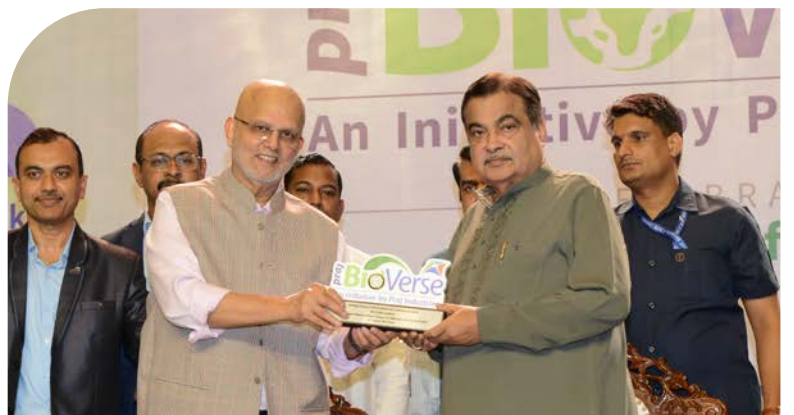
## Launch of Praj BioVerse



On August 11, 2025, Praj Industries unveiled Praj BioVerse™ in Pune—a movement celebrating India's growing bioeconomy. Policymakers, industry leaders, researchers, farmers, and citizens experienced the entire value chain, from feedstock cultivation to biofuel-powered engines, seeing firsthand how technology, policy, and public participation come together to drive India's green energy future.

Hon'ble Union Minister of Road Transport and Highways, Shri Nitin Gadkari, inaugurated the Experience Gallery, highlighting the role of biofuels in strengthening energy self-reliance, boosting rural prosperity, and reducing emissions. His presence underscored the event's central message: scaling bioenergy is both a national priority and a technological challenge.

The occasion also marked the launch of the English edition of Dr. Pramod Chaudhari's inspiring book "Horizons Beyond Dreams... As Is What Is."





## Consecutive Recognition for Excellence

For the second consecutive year, Praj Industries has won the Best Supplier Award in the "LEAD" category at the India Supplier Conference 2025, hosted by Baker Hughes. This recognition reflects Praj's unwavering focus on excellence, collaboration, and customer value creation, reinforcing the company's role as a trusted partner in driving innovation.



## Strengthening India–U.S. Collaboration in Biofuels

On 10<sup>th</sup> September 2025, Governor Kim Reynolds, USA, visited Praj Industries to discuss biofuels, ethanol blending, and Sustainable Aviation Fuel development. The visit underscored Praj's role as a global technology and research center, advancing clean energy adoption and supporting energy security, climate action, and rural development.



## Recognition for **praj** GenX by NAMC

We are pleased to share that GenX has been honoured and recognised by the National Awards for Manufacturing Competitiveness (NAMC) with a Silver award 2024-25.

This marks a milestone in our journey towards excellence, recognising our state-of-the-art manufacturing processes, infrastructure and operational efficiency and that we strive for world-class standards.

We will continue to work together to further achieve greater heights in our pursuit of becoming a World-Class Manufacturing facility.

Congratulations, Team Praj GenX!





## Showcasing Innovation at TECO 2025, São Paulo



At TECO 2025, Latin America's premier event for corn and grain ethanol, Praj Industries' booth became a hub for insightful discussions, meaningful connections, and exchange of ideas. The event highlighted Praj's commitment to clean energy transformation and low-carbon innovation on a global stage.



## Praj at India BioEnergy & Tech Expo 2025 (IBET)

### Driving Energy Self-Reliance for India

Praj Industries recently participated in India BioEnergy & Tech Expo 2025 (IBET), organized by the India Federation of Green Energy (IFGE), marking one of the most significant gatherings in the bioenergy sector. The three-day event was a dynamic platform for knowledge exchange, policy discussions, and technology demonstrations, reflecting the collective efforts toward Atmanirbhar Bharat and India's journey toward energy self-reliance.





## Presidential Address by Dr. Pramod Chaudhari

The event commenced with the Presidential Address by Dr. Pramod Chaudhari, Chairman of Praj Industries and President of IFGE. Dr. Chaudhari highlighted India's remarkable achievements in biofuel deployment, including early attainment of E20 blending, and stressed the critical role of indigenous technologies in shaping the country's sustainable energy future. His address underscored the importance of collaborative efforts across the entire ecosystem, from farmers and research institutes to technology providers and the automobile industry. He also emphasized key developments such as the export of 2G ethanol and strengthened CAFE norms, which are poised to create new opportunities and accelerate India's energy transition.



## Leadership in Panel Discussions

Praj's leadership was visible across multiple sessions:



- Mr. Atul Mulay, President – Bioenergy, Praj Industries, shared insights on International Perspectives on Bioenergy, Ethanol Blending Programme (EBP) beyond 20%, Advanced Biofuels and By-Product Valorization, and Biomobility Policy Frameworks. His sessions highlighted the strategic role of advanced biofuels, including Bio-IBA for diesel blending, SAF (Alcohol-to-Jet), and the importance of creating premium demand streams to absorb surplus ethanol, while ensuring sustainable and inclusive growth.

- Dr. Tushar Patil, AVP – Corporate Strategy, led discussions on 2G ethanol technologies, technical and commercial performance expectations, and grain-to-ethanol pathways. Dr. Patil emphasized technology innovation, feedstock diversification, and capacity creation as key drivers to support India's biofuel ecosystem.



- Mr. Gaurav Goyal, AVP & Business Unit Head - Sustainable Aviation Fuel (SAF) production technologies, highlighting India's potential to achieve scalable SAF blending by leveraging both 1G ethanol capacity and alternative feedstocks.

## Creating a Collaborative Ecosystem

Praj's BioVerse™ Pavilion emerged as a centerpiece of the event, bringing together the entire bioeconomy ecosystem under one roof. Alongside Praj, eight ecosystem partners showcased cutting-edge technologies and products, enabling live interactions between stakeholders, policymakers, and industry participants. The pavilion highlighted the importance of collaboration, innovation, and integration across the bioenergy value chain, supporting India's Atmanirbhar Bharat vision.





## Key Highlights and Takeaways

- The event reinforced India's energy self-reliance journey, showcasing practical strategies for scaling ethanol capacity, leveraging advanced biofuels, and creating new market opportunities.
- Discussions emphasized consumer awareness, OEM engagement, and quality assurance as critical factors for adoption of higher ethanol blends.
- Focused deliberations on SAF, Bio-IBA, and CBG (Compressed Biogas) highlighted the need for clear policy frameworks, enabling investment and adoption across the country.
- The export of 2G ethanol emerged as a transformative opportunity, opening global markets and signaling the competitiveness of India's indigenous biofuel technologies.
- The strengthened CAFE norms were acknowledged as a positive step for the automotive sector, driving demand for flexible and sustainable fuel solutions.

## A Vision for the Future

IBET 2025 demonstrated that the bioenergy sector in India is at a pivotal juncture. With technology, policy, and ecosystem alignment, India is poised to achieve meaningful progress in energy self-reliance, sustainable development, and climate action. Praj remains committed to driving this transformation through innovation, partnerships, and advocacy, continuing to support Bharat's vision of a Swadeshi, self-reliant energy future.

The event was a testament to Praj's leadership and commitment to the bioeconomy, showcasing its ability to bring together stakeholders, enable meaningful dialogue, and drive actionable outcomes for the industry.



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