Praj is a provider of sustainable solutions to the process and project engineering industry, worldwide. With the vision of making the world a better place, Praj is in constant pursuit of cleaner, greener and eco-friendly solutions. Sustainability is an integral element in Praj's offerings to the end user industries that it serves viz. Bioenergy, Pharmaceuticals, Food & Beverage, Oil & Gas and Chemicals. The Company's vision is ably supported by the world-class R&D Center Matrix, manufacturing facilities and its talent pool.

Sustainability fosters innovation. It enables us to differentiate our offerings and expand the solutions portfolio, thus adding value to our customer's business. Our ability to integrate different disciplines and global experience enables us to deliver highly optimized solutions, setting new benchmarks. But above all, it is consistently delivering on our promise that distinguishes us. Praj is a vibrant, multi-dimensional, new age Company where you see many new businesses being nurtured. The effort is to INNOVATE, INTEGRATE and DELIVER new ideas that will make a difference to the world we live in.
Ethanol technology is where it all began. Over the years, we have developed a keen understanding of processes for transformation of first generation agri-feedstocks like sugars found in sugarcane juice and molasses, starchy grains and tubers (like cassava) into ethanol.

Be it the introduction of continuous fermentation process, energy efficient distillation systems or multiple feed systems - there have been many firsts by Praj. Our focus on innovation has resulted into several patented technologies and systems. Our proven expertise in the production of different grades of ethanol – beverage, industrial, fuel and end-to-end services make us a one-stop-shop for ethanol plants.

Modernization

With changing feedstock prices, market demands and regulatory norms, it is imperative that existing ethanol manufacturing plants adapt to the latest technologies and hence, the need to modernize. At Praj we categorize modernization in 4 distinguished buckets -

- Product maximization
- Co-Product maximization
- Energy and water footprint reduction
- Meeting environmental norms

For each of the categories, Praj offer advanced technology baskets and tailor-made engineering. Desired results give multiple benefits to our customers. Modernization of an existing ethanol plant goes through a systematic process of technical assessment of current operations to decide the course correction. Praj experts, in consultation with various plant personnel, collect a set of operational parameters to benchmark with the global standards.
Praj offer end to end solutions for 2nd generation ethanol technology which are capable of processing wide range of agri-residue.

Along with providing the green field solutions for setting up 2nd generation bio-refinery, Praj has developed innovative bolt-on offering enabling retro-fitting existing 1st generation plant to enable it to run on 2nd generation feed stocks.

PRAJ has developed innovative “Bolt-ON” Option using the “Enfinity” technology which can be integrated with existing 1st generation distillery plant / Sugar mill and has following unique advantages:

- Additional 150-180 days operation using 2nd generation bolt-on module
- Results in year round operations of bio-ethanol complex
- Higher asset utilization
- Fewer unit operations hence lower CapEx
- Better economic viability

With over 3 decades of experience in 1st generation of ethanol industry, Praj has successfully scaled up it’s 2nd generation technology from lab scale to pilot scale to demonstration level. Praj is working with Indian Oil Marketing Companies and private players to commercialize the technology in India.

Praj’s own and India’s first bio-refinery based on 2nd generation technology deploys Praj’s in-house developed technology for manufacturing ethanol from variety of agri-residue. With production capacity of 1 million litre per annum of ethanol, the bio-refinery is capable of processing a range of agri-residue like rice and wheat straw, bagasse, cane trash, corn cobs and corn stover etc. with superior product yields. It is also integrated with an effluent treatment system and serves as a platform for the research and development of a horde of renewable fuels and chemicals.
HiPurity Business

Praj HiPurity Systems Limited (a wholly owned subsidiary) is engaged in providing value added solutions to the pharmaceuticals, biotechnology and the wellness industry.

These industries are characterized by stringent demands on hygienic design and engineering and are required to meet high quality standards and guidelines set by international authorities like ISPE, cGMP or ASME BPE.

Praj HiPurity Systems offers end-to-end, integrated solutions to optimize the investments by our clients. This includes water treatment solutions, modular process systems, wastewater treatment solutions and process engineering & design capability to ensure superior level of service to clients in these sectors.

Over 300 references and a close association with the industry over the past two decades helps Praj HiPurity team understand the specific requirements of these industries particularly from the regulatory perspective, adding value to our solutions.
A key aspect of sustainability is reliability. We combine India’s strength as an efficient sourcing hub for engineered products with our own multi-disciplinary engineering and manufacturing capabilities. Praj’s Critical Process Equipment & Skids business vertical serves vital sectors like Oil & Gas, Refineries, Petrochemicals, Fertilizer etc.

We offer a range of static equipment like pressure vessels, reactors, shell and tube heat exchangers, columns and other proprietary equipment built as per the client design. We also undertake end-to-end projects for modular process skids and packages.

Criticality of the metallurgy and complexity of process skids demand higher engineering input. We support our clients with FEA (Finite Element Analysis), Process & Thermal Design and Piping Design & Stress Analysis. We also have developed and fine-tuned in-house capability of designing skids using 3D design softwares like Plant 4D and PDMS. Our stress on quality and response time has qualified us as a trusted and reliable partners for EPC and MNCs involved in global sourcing.

Praj has built a world class manufacturing infrastructure to deliver reliable, safe equipment to our client base with strategically located facilities with all the major global accreditations.
Another manifestation of our pursuit of sustainability is our solution suite for the complex industrial water & wastewater treatment.

Water scarcity and environmental norms are creating new challenges not only in industrial processes, but also in our daily lives. The solution lies in being able to reduce the use of water, recover and recycle water & solutes wherever possible and reuse it for conserving the most important resource on earth. Praj offers integrated, energy-efficient solutions for effluent recycling and zero liquid discharge for various industrial applications. Our strong experience of treating the most challenging wastewater enables us to offer highly optimized systems with lower footprints and optimized operating costs.

Brewery Business

Brewing beer is as much a science as it is an art. The Brewery Group integrates hygienic engineering with consistency in plant performance and cost effectiveness for a perfect beer.

From pre-feasibility to complete plant, technical audits to balancing equipment, Praj measures up to the exacting demands of breweries in various regions. The Brewery business vertical of Praj has references with the top global brewers. And follows stringent international design standards like DIN 8777, MEBAK and EBC amongst others. Again the innovative spirit is at play here. Right from heat recovery system to ecomBoiler, an energy efficient wort boiler, Praj has introduced many innovative solutions in the industry.

Wastewater Treatment Plants

Another manifestation of our pursuit of sustainability is our solution suite for the complex industrial water & wastewater treatment.

Zero Liquid Discharge Solutions for the Process Industry

Total Brewery Expertise
Praj Matrix -
The R&D Center

Based in Pune India, Matrix – the R&D center spearheads breakthrough innovation in the area of Industrial Biotechnology. The world class facility houses 14 laboratories including a Class 10000 Clean Room Facility and Pilot Plants for cellulosic and conventional ethanol. Praj Matrix operates through Center of Excellence model which includes Molecular and Microbiology, Bio-Process Technology, Scale-up and process engineering, Analytical Sciences and Chemical Sciences.

Continued efforts and innovation has resulted into 17 patents.

Focused on biotech related R&D, Praj Matrix is working on exciting and challenging programs in industrial biotech including Biofuels, Biochemicals, and Health & wellness products and Advanced Strains development. Praj’s second generation ethanol technology took shape in Praj Matrix and has reached commercialization stage after a decade long efforts of R&D.

Leveraging the ability of Praj to scale up and commercialize different technologies, Praj Matrix is poised to play a key role in sustainable and profitable growth of Praj.
Resources

Praj has created an infrastructure to address requirements for clients from various sectors. Engineering and fabrication is undertaken in accordance with international standards. Advanced software tools including process simulation software, PDS package for piping and plant layout are employed to build in accuracy and design integrity.

At the multi-locational fabrication facilities static equipment, skid mounted units and modular systems are manufactured in various grades of stainless steel, alloy steel and exotic metals like nickel and hastelloy.

Our facilities have accredited with ASME stamp and possess capability to manufacture equipment in compliance with CE Standards.

High standard of safety is maintained in line with the requirement of the requirement and the health, safety and environment policy.

Quality is built into every equipment, right from concept to installation and commissioning.

Building Blocks

Praj Worldwide

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