



We Create. We Contribute.

**Business Sustainability Report
2017-2018**



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Chairman's Message

Dear reader,

Changing climatic conditions and increasingly depleting fossil fuels require the economy to be based on renewable resources. For a developing country like India, it is of utmost importance to strike a balance between growth and environment.

At Praj, it is our constant effort to integrate sustainability in the solutions and offerings to the customers as well as our everyday operations. Agri processing, energy and environment form the three pillars of Praj's business philosophy.

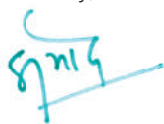
In FY 2017-18, commercialization of the 2nd generation ethanol technology marks the highpoint in our sustainability effort through bioeconomy – for Praj and for India. Followed by due diligence of our demonstration plant, Indian Oil Marketing Companies have given a go ahead for the commercial set-up of their multiple 2nd generation biorefinery projects in India. We are proud to be at the forefront of this energy revolution taking place in India.

The demonstration plant has also attracted global attention and visitors. A delegation of visitors from European Union paid a visit recently after the EU-India Biofuels Conference hosted by New Delhi. India is leading the 2nd generation ethanol movement in collaboration with global counterparts.

Our social responsibility initiatives are focused on water conservation in the affected regions of Maharashtra. Similarly, our Green Supply Chain Management efforts have brought rich dividends to our associates in terms of efficiency, safer and greener operations, also resulting in 4 prestigious awards in the year gone by.

We have the responsibility upon us to conserve the natural resources and contribute to the betterment of the society in which we operate. It is my promise to you that Praj and sustainability are inseparable and will always be.

Yours truly,



Pramod Chaudhari
Executive Chairman
June, 2018
Pune





Clean Fuel, Better World

Praj's own and India's first integrated 2nd generation demonstration biorefinery was inaugurated in May 2017 and has been successfully operating since then. It deploys Praj's indigenous technology capable of processing a variety of agri residue viz. rice and wheat straw, cotton stalk, bagasse, cane trash, corn cobs and stover with the production capacity of 1 Mn liter per annum and serves as technology platform to develop a horde of renewable fuels and chemicals.

India has taken yet another step toward enhanced energy self-sufficiency. After thorough technical due diligence of the demonstration plant, Indian oil marketing companies have chosen Praj as technology partner for their projects. This reaffirms the position of Praj as frontrunner in the 2nd gen ethanol technology.

The techno-socio-economic model of 2nd gen ethanol addresses many pressing issues that India is facing today. It is a definite means to strike a balance between India's growth aspirations and environment conservation, with the potential to boost rural economy and generate employment.

FY 2017-18 also witnessed several forums that facilitated constructive dialogue among various stakeholders viz. technology suppliers, academia, government and other industry participants. These include Bioenergy Urja Utsav organized by Ministry of Petroleum and Natural Gas in association with Mahratta Chamber of Commerce, Industries and Agriculture in Pune, World Biofuels Day celebration in Delhi and over 100 districts across India.



Mr. Pramod Chaudhari with Dr. Kyriakos Maniatis, Principal Administrator – Directorate General for Energy, European Commission



Delegates from Europe and South East Asian countries visited Praj's 2nd generation ethanol demo plant

The much awaited National Biofuel Policy 2018 and approval to its implementation by the Union Cabinet gives an impetus to the Biofuel Industry in India. Progressive in its approach, it is expected to usher in a new age for the Biofuels industry in India, keeping pace with similar developments at the global level. 2nd gen ethanol, an advanced biofuel has been accorded more prominence in the policy.

India has also joined hands with international counterparts. New Delhi hosted the EU-India conference on Advanced Biofuels in March, 2018. This conference aimed at facilitation of the development and deployment of advanced renewable fuels in the two regions and was followed by a technical visit to the demonstration plant of Praj.



Technologies for Sustainable Solutions

Praj is in constant pursuit of eco-friendly solutions that consume lesser amounts of precious resources like water, reduce emission of greenhouse gases and improve profitability for our customers. Matrix – R&D Center is the innovation engine for the organization and is engaged in research in industrial biotechnology with focus on biofuels, renewable chemicals and next gen molecules with varied applications.

During the year, Praj filed 29 number of patents for various technologies and processes. So far, the company has 17 patents to its name.

Technologies for a greener world

Our Center for Innovation and Applied Technologies is engaged in implementing solutions at commercial scale. During the year, we introduced Biogas to BioCNG technology for ethanol industry. Biogas is a by-product of ethanol industry and industrial effluent treatment process. For compliance with the fuel norms, it needs to be devoid of H_2S and CO_2 . Praj's proprietary technology helps clients meet these norms for BioCNG, which is increasingly finding application as gaseous vehicular fuel.

BioCNG and various other solutions under development emanate from our commitment to contribute to a better world.

They are also aimed at fulfilling India's development goals while protecting and conserving the environment. With agricultural community in focus, our solutions will help generate rural development and employment.

Our team is also constantly engaged in the development of solutions suitable for operating

conditions in various continents. Reduction of water usage, power consumption, yield enhancement are globally resonating themes. Modernization and retrofitting of plants existing in various markets, within and outside India, provides a prime impetus to Praj's 1st generation ethanol business.

Technologies for a healthier world

Praj HiPurity, a wholly owned subsidiary, is engaged in providing solutions for pharmaceuticals and healthcare industry. The systems provided by Praj HiPurity are deployed for the production of process water devoid of virus and bacteria for the production of pharmaceutical preparations. Our integrated solutions are designed to comply with standards like ASME, ASME BPE, PE, cGMP and to satisfy audit needs of regulatory authorities like USFDA, UK, MHRA and WHO. We strive to provide innovative, effective and simple solutions for water for injections, bioreactors and pharma machinery.



Skid mounted pharma system engineered and manufactured by Praj HiPurity Systems

Technologies for water conservation

Water is the driving force of all nature
- **Leonardo da Vinci**

Water is one of the most crucial and the fastest depleting natural resources available to mankind. Industry is chastised and rightly so, for drawing one liter of water from a reserve, throwing back ten liters of effluents and

polluting thousands of liters of the reserve. Our zero liquid discharge solutions are aimed at treating the industrial waste right at the source of generation. Our mix of aerobic, anaerobic and thermal solutions help industries reduce, reuse and recycle water back in the process, thus reducing the consumption of fresh water and also, adding to the sustainability goals of our customers.



New Heights in Operational Sustainability

Being a participant in the global biochemical processing and manufacturing industry, it is our topmost priority to make operations greener and safer. The Green Supply Chain Management Initiative that started in FY 2016-17 has touched greater heights in the year gone by.

With 4 prestigious awards, the efforts have been appreciated by our associates and the industry. This is a pioneering concept in the Indian biochemical processing industry aimed at institutionalizing best global practices in the Indian manufacturing environment and harnessing and building capabilities of MSME sector.

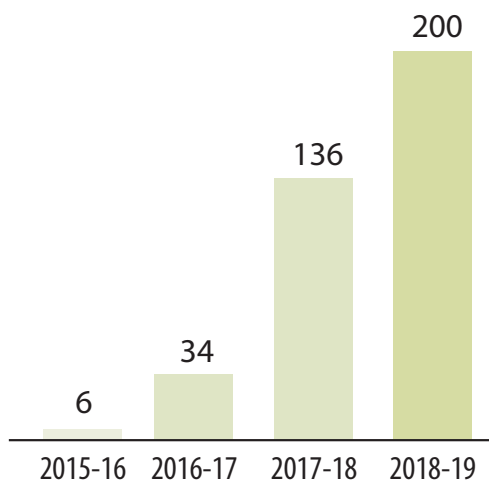


Award for Best Supply Chain Management Practices organized by Indian Institute of Materials Management (IIMM)



5th Procurement Excellence Awards in Best Green Procurement Initiative organized by Kamikaze Media

Supplier participation in the green procurement program in numbers



Procurement from green supply chain partners as (%) of overall procurement (key suppliers)



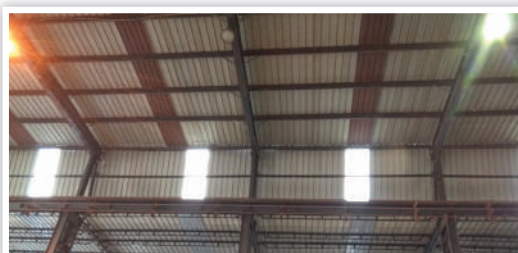


The success stories of our procurement partners are testimony to transformation on many fronts – conservation of natural resources and utilities like water, power,

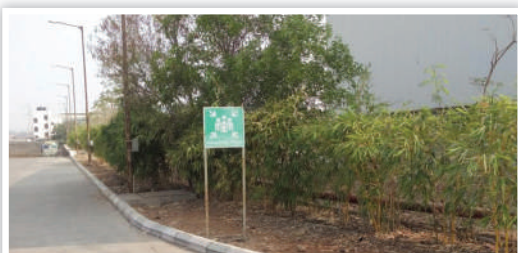
reduce and recycle principles employed in packaging, enhanced safety of operations, skill development of the workers etc.



Visual displays



Use of sunlight



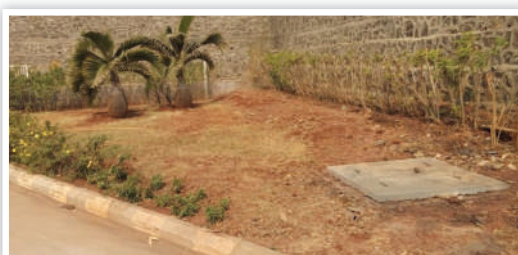
Assembly point



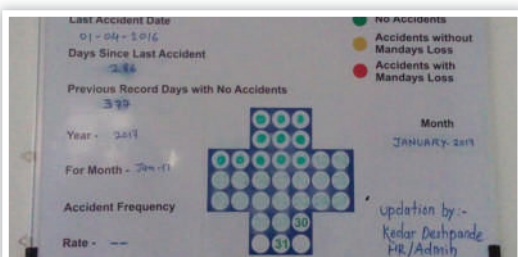
Waste segregation



Skill development



Rainwater harvesting



Enhanced safety



Clearly marked gangways



Safety at Work

Safety is the topmost concern at all our locations including work premises, factories and customer sites. We follow stringent practices for safety and well-being of everyone working and visiting various locations. A well-documented HSE policy and adoption of ISO 9001:2008, ISO 14000 and OHSAS certification helps us fulfill the goal.

Periodically conducted trainings on firefighting, emergency response, first aid, road safety helps us keep constantly in touch with the importance of safety and alertness. During the FY 2017-18, we conducted trainings at various locations. The Safety Week observed during 4th-11th March, 2018 saw activities like poster and slogan competitions, trainings and expert sessions on active lifestyle.



Fire safety training at manufacturing unit



Safety week celebration at 2nd Generation Demo Plant



Sustainable Community

"Sustainability is the foundation of everything that Praj does, including the corporate social responsibility activities it is engaged in. While the business solutions focus on sustainable operations, CSR efforts are aimed at an equitable world where communities have access to education, clean water and such basic necessities of life. It is our constant effort to give back to the society in which we operate."

- Mrs. Parimal Chaudhari
Director, Praj Industries Ltd.
& Managing Trustee - Praj Foundation



Praj Foundation, the CSR arm of the Company is deeply engaged in the social causes and reiterates the Company's vision to make the world a better place. Environment, Education and Health are the themes that will always be relevant for the society. As an organization backed by technology and engineering, they are also complementary to our business model.

Environment

The Earth does not belong to us, but we belong to the Earth. While our business efforts are centered on energy and water conservation, our CSR efforts are harmonious with this vision. Continuing with our efforts on water conservation in the drought affected areas of

Maharashtra, during the year we added 7 villages in Ahmednagar & Jalana Districts. In the year 2017-18, close to 800,000 m³ silt was removed, resulting in enhanced storage capacity for about 800 million liter of ground water storage.

Water scarcity affects mankind on various fronts – agriculture, industry and day to day livelihood. Praj Foundation's consistent work in Maharashtra has improved the socio-economic status of the communities. Round the year availability of water has changed the cropping patterns and increased the income levels of the families dependent on agriculture and animal husbandry. These villages have become tanker free with the recharging of borewells.

Water Resource Development Project at Koradgaon village, Dist. Ahmednagar.



Before rainy season



After rainy season



This has a positive impact especially on the women folk. Women in these areas need not travel long distance to get water for their families, but instead can participate in a more meaningful way in the economic activities.

Education

The Introduction to Basic Technology (IBT) Program focuses on basic skill development of students of secondary school and help them explore career prospects in industrial sector. Vigyan Ashram, a center of Indian Institute of Education, Pune has been running this program since 2014 in 13 model schools across the state with support of Praj Foundation. More than 4,000 students have been the beneficiaries of this program.

With the philosophy of learning by doing, new pedagogical methods have been developed to impart education. The IBT program focuses on – a. Engineering, b. Energy & Environment, c. Agriculture & Animal Husbandry and d. Food Processing & Health.

Students are encouraged to generate revenue through community service and the profit earned is invested for upgrading the infrastructure for IBT program.

In the year 2017-18 students of Nagaj school, located in Sangli district of Maharashtra, successfully designed hydroponic units meant for growing plants in a water based, nutrient rich solution. In the era of urbanization, hydroponic units will help save the space, land and efforts to grow food.

A new virtual learning platform was introduced in the year gone by and experts were invited to conduct sessions on various IBT subjects. 'Shikshan Wari' an event organized by the School Education Department, Government of Maharashtra awarded the IBT program as the Most Effective Educational Practice. During this event, students displayed their projects on Hydroponics, clap switch, biodiversity register and solar vegetable dryer at four different locations in Maharashtra. More than 20,000 visitors witnessed the innovative projects.



Student learning welding work under IBT program



Preventive Healthcare for Women

We strongly believe that a healthy woman makes a healthy family. In Velhe and Wada Talukas of Maharashtra, we held focused group discussions followed by preventive healthcare sessions for the women. Along with diet and lifestyle changes, the discussion revolved around growing local and seasonal vegetables and fruits. Periodic health checkups have proven that women have overcome anemia and various conditions arising out of nutritional deficiencies, with simple and regular adaptation of remedial changes.

A training session was conducted for the beneficiaries for conserving seeds of a variety

of native vegetables, climbers and tubers as these vegetables have more nutritional value than hybrid varieties. The training program was proved highly effective as the communities conserved 38 kg seeds of about 12 native vegetables.

Over 700 women participated in the *Mahila Melava* organized at Velhe and Wada. Along with experience sharing, they were also presented *Arogya Kirtan*.

Praj Hipurity (a wholly owned subsidiary) has a manufacturing facility that serves our clients in the pharmaceutical and related sectors located in Wada, Thane district of Maharashtra



Mahila Melawa at Karanjavane village, Velhe



Kitchen garden at Nigade village, Velhe



Mr. Jadhav, Block Development Officer and Mr. Malajure, Taluka Health Officer visited Wild Vegetables exhibition organized by Praj Foundation



Mahila Arogya Melawa at Wada, Dist. Thane



Personal Social Responsibility

With a pool of highly educated human resources, we also seek out ways and means to give back to the society by encouraging our employees and their families to contribute to social causes of their interest, in their free time. We are proud that our employees resonate the organizational values with equal alacrity.

work participative and sustainable. More than 100 volunteers come to the conservation sites to plant, water and protect the trees. The trees need special care in the summer season. Praj employees and their families participate in the conservation work every weekend.

Ganesh Festival is a major social and public event in Maharashtra. Our employees are



Tree plantation at Baner Hill



Collection of Nirmalya at Ganesh Visarjan



Tree plantation at Sasewadi



Collection of Nirmalya at Ganesh Visarjan, Rajaram Bridge, Pune

Vasundhara Swchata Abhiyan (VSA) is a volunteer led group involved in the conservation of environment for over a decade. With over 20000 trees planted with a success rate of 95%, the group is dedicated to the conservation of local species of trees and hills in Pune city. Involvement of citizens makes the

involved in creating awareness about the ecofriendly Ganesha idols made of clay and ecofriendly immersion. Last year, our employees also volunteered with the collection of Nirmalya and its management.



Sustainability Highlights FY 2017-18

Revenue

₹ 9,406 Mn

PBT

₹ 530 Mn

Consistent dividend
paying company for

28 years

Total number of
employees

1,170

Number of days
training

1,450

Number of women
employees

107

Use of renewable
energy at various
work premises

250,645 kWh

Use of recycled
water at various
work premises

2300 m³

Potential to save
CO₂ emission
through generation
of ethanol capacity

2.1 mn MT

Potential to save CO₂
emission through
generation of biogas
capacity

0.36 mn MT

Number of
patents filed

29

Kitchen Garden

A Praj Foundation initiative



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