

**Company Name: Praj Industries Limited****Operational Highlights:**

- Praj Industries Ltd. incorporated in 1983 under the visionary leadership of technocrat Dr. Pramod Chaudhari. has grown to become one of the most reputed and technologically advanced biotechnology and engineering companies in the world.
- Globally the governments have started looking at energy security as a big issue as they do not want to depend on imported energy and there is a big push in Ethanol space due to that. Ethanol provides a part of the solution to meet the dimension of energy security for agrarian economies and forest based economies.
- In India, under National biofuels policy the government has announced blending of 20% Ethanol with petrol by 2025. The government has also liberalized the feedstocks that are used to manufacture Ethanol to include food grains.
- To blend 20% Ethanol with petrol, the country needs to manufacture another 1000 cr litres of Ethanol while current capacity is 400 cr litres.
- The company is setting up 3 plants that will use Cellulosic feedstock which utilizes Rice straw. It is a 2<sup>nd</sup> Generation Technology and globally, no other company has succeeded in setting up a commercial plant for their customers. Praj is just 6 months away from commissioning a plant for IOCL, Panipat.
- There is a big opportunity emerging in Europe to manufacture Ethanol from forest residues and agriculture residues and Praj is one the few companies in the world that have demonstrated the technology. It has tied up with a company in Sweden for treating forest waste and soft wood and the mandate in Europe to make Ethanol out of 2<sup>nd</sup> Generation Ethanol, which will boost the demand for company's technology.
- The company is also working with the ARAI on a diesel blending program, it has successfully blended diesel with Ethanol. It takes over 12 months of testing cycle which is being tested now.
- On the surface transportation side, going ahead the company envisages growth from increase in blending of Ethanol in petrol, introduction of flex fuel engine vehicles and blending of Ethanol in diesel. On the air transportation side, SAF will be the next growth driver as it is biologically produced fuel which every aircraft will be able to use and it is a direct replacement of jet fuel.
- The raw material stocking and procurement policies have changed since past 1 year due to abnormality in the prices. It is now stocked for around 5-6 months from the previous 1 month cycle, the purpose is to hedge the risk prevailing from increasing trend of commodity prices.
- Also, higher advances are being collected from customers which can be used to book the raw materials in advance and hedge the risk. Efforts are being made to include a price variation clause in the domestic contracts which are generally fixed priced contracts.
- A lot of momentum is being recorded in the CPES business on the back of announcements relating to Green Hydrogen and Blue Hydrogen plants and overall traction in the clean tech and green tech space.

- Hi Purity business is doing well due to the increased focus on providing vaccine based solutions, reduced dependence on China and customer interest to create own facilities for essential drugs.

#### Key Questions & Answers discussed during the Concall:

- **Is the revenue sustainable after 2025 once the ethanol facilities are setup and the traction on it reduces?** Company has made its first contract in Brazil and they are the 2<sup>nd</sup> largest producer of Ethanol. Brazil has decided to put starchy based feedstock plants and lignocellulosic based plants. The Brazil opportunity is for creation of 700 cr litres over the next 5 years. In India, the growth drivers will be through flex fuel program and the 1,400 cr litres requirement could jump to 4,000 cr litres over the next 5-10 years beyond 2025. Also, work is in progress with ARAI to blend 7% Ethanol with diesel which will get completed in the next one year.
- **Government is promoting every type of alternate fuel, Ethanol and EV's etc. Do you think these will co-exist?** We believe that different technologies will co-exist and it is important to understand that the base power generation will be coal based and It does not help climate goals. Secondly, EV's in India are net employment destroyer and not employment generator. There are over a 100 Mn vehicles on road in India and we are adding 20 Mn every year and all of these vehicles are IC engines. The technology will evolve and the plan is to become carbon free which will require Hydrogen as a fuel and Toyota is planning to launch a Hydrogen vehicle with Ethanol as a base which gets converted to fuel cell. Sustainable aviation fuel will be another growth driver.
- **What will be the typical IRR for the customers? Why does the company not enter manufacturing of Ethanol?** For the customers putting up Ethanol plants, their IRR is above 18-20% and payback ranges in between 3-4 years. We are not a capital goods company but a technology company and it is evident from our 2G and CBG technologies which can be deployed across the globe. Also, there is no novelty in Ethanol as it is being manufactured since decades, plus the company does not have access to supply chain for procurement of raw materials and access to feedstock.
- **There are concerns of excessive water usage to manufacture Ethanol, how do you see this issue from an environment and viability perspective?** It is a misnomer that Ethanol uses a lot of water. Plus our plants are zero liquid discharge so every ounce of water is brought back for reuse and our focus is on technologies that reduce the usage of water. For example, Brazil produces 12 litres of effluent per litre of Ethanol and the BioSyrup technology will drop it down to 2.5 litres.
- **What is the USP of Praj and how do we position ourselves ahead of the peers?** The company has a vision on Bio Mobility which provides a set of solutions which range from surface transportation to air and marine transportation. Also, we are collaborating with various institutions around the world to enhance our offerings like for SAF the company has tied up with Gevo.
- **Despite growth in topline, the margins have remained in the range of 7-9%; any scope of improvement in the margins to double digits?** The high commodity prices is not a problem but the continuous commodity price increase impacts us. Previously, we had fixed priced contracts and now

- efforts are being made to convince customers for a variable price contract. As the company moves in to higher tech play areas, it will benefit us.
- **Can you please explain if there is cannibalization between Ethanol and Compressed Bio-Gas?** Ethanol does not compete with Gas. At most, it might compete for the feedstock like agriculture residues. Europe has a mandate that going forward all blending of Ethanol will only be through 2G Ethanol so these mandates create an opportunity. There are even more lucrative by-products and co-products through the 2G system and CBG, like Bio Bitumen. Both are different markets and different dynamics.
- **Has the order booking started for the BioSyrup technology?** BioSyrup technology gives a high potency feedstock for use throughout the year and our technology drops the effluent generation volumes by a factor of 4-5 which provides customers substantial cost reduction benefits. It is still early days as the technology was launched recently and potential customers are still evaluating how they'll run their plant and systems that need to be created but traction is coming from South American geography as well. The orders will start flowing in once the sugar season is about to begin in India.
- **Since the demand of Ethanol is on the rise, are we seeing the competitive intensity increasing and new players entering the market to supply equipment?** The competitive intensity has gone up but a new player has not stepped in because this is not a one time opportunity and it is spread over the years. Secondly, foreign companies do not have the setup, relationship and understanding of Indian feedstock. There are no common competitions across the globe as each market has a different set of companies that we compete. Praj has a strong R&D team to differentiate itself from the rest, for example, the water and energy consumption per litre of ethanol is the lowest and the yield from using Praj's technology is the highest compared to its competitors.
- **Why has the Zero liquid discharge remained a slow growth business in India, since the opportunity is huge in this market?** In India, water is typically free of cost and the government does not charge enough for water. People were not aware about the need to conserve water. However, water stress is becoming more evident. There are many companies recognising that without water they won't be able to function and the need to preserve water is becoming more important.
- **What is the operating leverage that we expect to generate once our revenue increases? Also if you can elaborate on the 2G benefits that we offer and competitive advantage?** As our operating leverage kicks in, it could see 175 to 200 bps improvement in the margins. India order book does not have any 2G plants, although we are building 3 plants which will get reflected over time. In Europe, there are 2 feedstock that can be used viz. agriculture residues and forest residues which have different characteristic. We are one of the few companies that have the potential to execute a plant based of both variety of feedstock.

- **How are we managing our margins since steel prices have increased and there was an impact in the last quarter as well?** The company is impacted by 200 bps because of price movement and the current scenario has increased the challenges since many measures were taken to reduce the impact of price increases that happened last year like advance booking of commodities, changing the payment terms, stocking up of inventories etc. The recent prices have constantly increased and hence the company have slowed down and advance bookings are not being made, a wait and watch approach is being followed.
- **Please explain more regarding Hi-Purity solutions business?** Hi Purity has a few elements, Ultra high purity water generation, storage and distribution for Pharma applications. Also, it creates process systems in the plants so basic molecule comes through the fermenter route and there is a system that creates the drug. Since the parent company has a strong knowledge of fermentation and Indian pharmaceutical market is moving towards large scale fermentation for Pharma applications which will allow us to bring parent company's knowledge and combine it with the hygiene understanding to create a unique offering in the market place. In terms of competition, in India it is fairly localised, in fermentation there is Sartorius etc. and in International markets it is generally Korean, Chinese or a European player.

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