

## Sugar Business

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# Management Discussion and Analysis

## SUGAR BUSINESS

### Indian Sugar Industry

#### Indian Sugar Industry: Overview

As the largest consumer and the second-largest producer of sugar in the world, India is a critical player in the global sugar industry. The Indian sugar industry is a key contributor to the country's economy, providing employment and creating significant value for over 50 million farmers as it advanced with the nation on its growth trajectory.

Beyond its economic impact, sugarcane offers immense ecological value. It is an ecologically sustainable crop, generating a variety of by-products, such as bagasse, molasses, filter cake (commonly known as press mud) etc. Besides producing sugar, the sugarcane by-products offer significant economic value, and also have a strong potential as a feedstock for the production of biofuels and bioenergy such as power, bioethanol, biogas, etc.

Over the years, the industry has improved the quality of sugarcane, upgraded its operations, and diversified its products. It has also evolved into a more sustainable and profitable entity by harnessing the potential of by-products for additional revenue. This has led the sugar industry to become more viable and valuable to the country's economic progress.

As an essential commodity under the Essential Commodities Act, the sugar sector is subject to extensive government regulation. The key areas of Government intervention include sugarcane pricing, sugarcane procurement through land demarcation, sale of sugar by mills in the domestic and international markets, diversion of sugarcane and sugar for other uses such as production of alcohol, bioethanol etc.

The sugar sector has also emerged as a major contributor to the alcohol industry in recent years through bioethanol production. This has been catalysed by the Government's support to the Ethanol Blended Petrol (EBP) programme, which includes a stated target of 20% EBP for the year 2025-26. The EBP programme aims to reduce import dependency while minimising the environmental footprint of vehicular emissions, conserving foreign exchange, and further strengthening the agriculture sector.

### Government initiatives have helped eliminate the cyclicity of the Indian sugar industry

The past decade has seen the Indian sugar industry move away from the cyclicity and huge cane arrears that had once burdened it. Supportive Government policy measures have steered this transition. The policy measures, focussed



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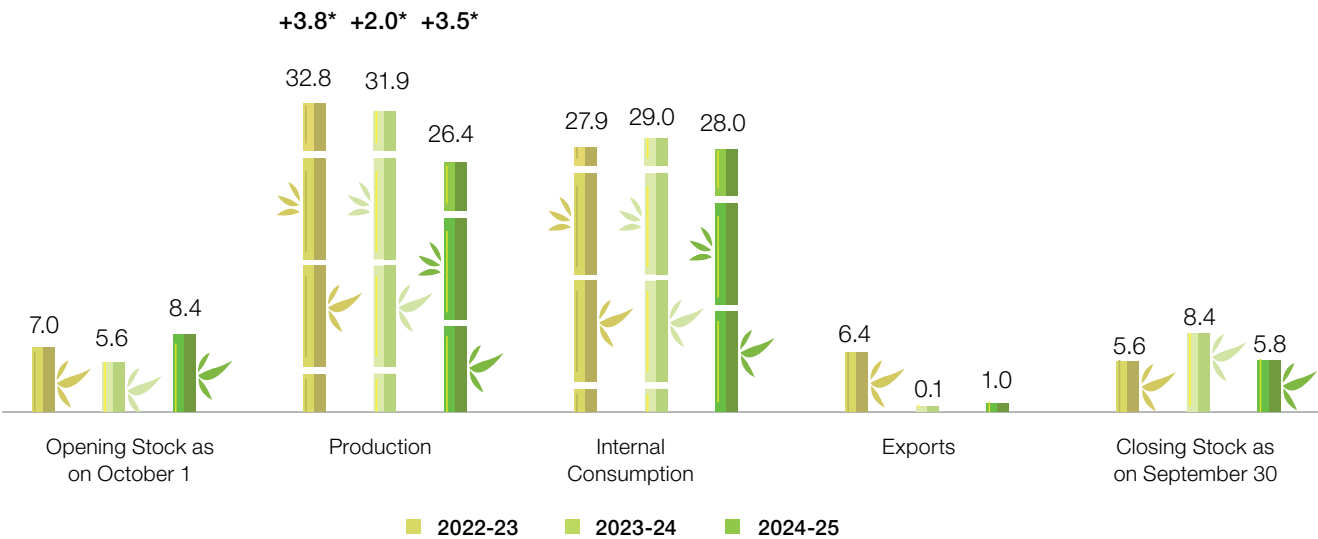
on facilitating timely payments of outstanding dues to the sugarcane farmers, include:

- Realistic fixation of sugarcane prices.
- Fixing Minimum Selling Price (MSP) of sugar to prevent a fall in ex-mill sugar prices and the accumulation of cane arrears.
- Diverting surplus sugar towards ethanol production, improving the financial health of sugar mills.
- Progressive export policies, including export subsidies in the past and timely evacuation of surplus sugar stocks at favourable prices.

Led by such policies, India now holds the unique distinction of being the highest payer of sugarcane price to its farmers, while remaining self-sufficient, profitable, and sustainable in its operations.

### Indian Sugar Industry: Balance Sheet

India's net sugar production initial estimate for SS 2023-24 (after diversion to ethanol) was 31.9 million tonnes. This took into account the diversion of about 2 million tonnes of sugar equivalent to ethanol, implying a gross production estimate of 33.9 million tonnes for the season.



Data in million tonnes

\*sugar diversion to ethanol production in million tonnes

**Note:** Opening stock for SS 2022-23 revised as per GOI numbers

### A healthy monsoon and the crop outlook for SS 2025-26

A favourable southwest monsoon led to significant improvement in sugarcane planting in the southern states, particularly Maharashtra and Karnataka in 2025. Strong sugarcane availability has paved the way for an expected timely start to the crushing season in October 2025.

In the northern belt, including Uttar Pradesh, varietal replacement initiatives are expected to yield tangible benefits, leading to higher sugarcane availability and improved sugar recovery rates.

As of May 15, 2025, India's net sugar production for SS 2024-25 stood at 25.7 million tonnes, with two sugar factories operational in Tamil Nadu. Several factories in South Karnataka and Tamil Nadu are expected to resume operations during the special crushing season, which typically runs from June-July to September. The estimated total sugar production for the season is likely to be close to 26.4 million tonnes. As of April 30, 2025, 2.7 million tonnes of sugar had already been redirected for ethanol production, with another 0.6 to 0.7 million tonnes expected to be diverted by season-end. This translates into gross sugar production of 29.8 million tonnes for SS 2024-25, a decline of approximately 12% over the previous season.

### Comfortable closing stocks of 5.8 million tonnes for SS 2024-25

With an opening balance of around 8.4 million tonnes as on October 1, 2024, net sugar production of around 26.4 million tonnes, domestic sales of around 28 million tonnes, and exports of 1 million tonne, the closing stock is expected at a comfortable 5.8 million tonnes. The net sugar production measure takes into consideration diversion of about 3.5 million tonnes of sugar equivalent for ethanol (as stated above).

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Adding to this positive momentum were the climate forecasts from both the India Meteorological Department (IMD) and Skymet, which predicted a normal southwest monsoon in 2025. This is a positive indicator for crop health and production, augmenting the optimism for a robust and productive sugar season ahead.

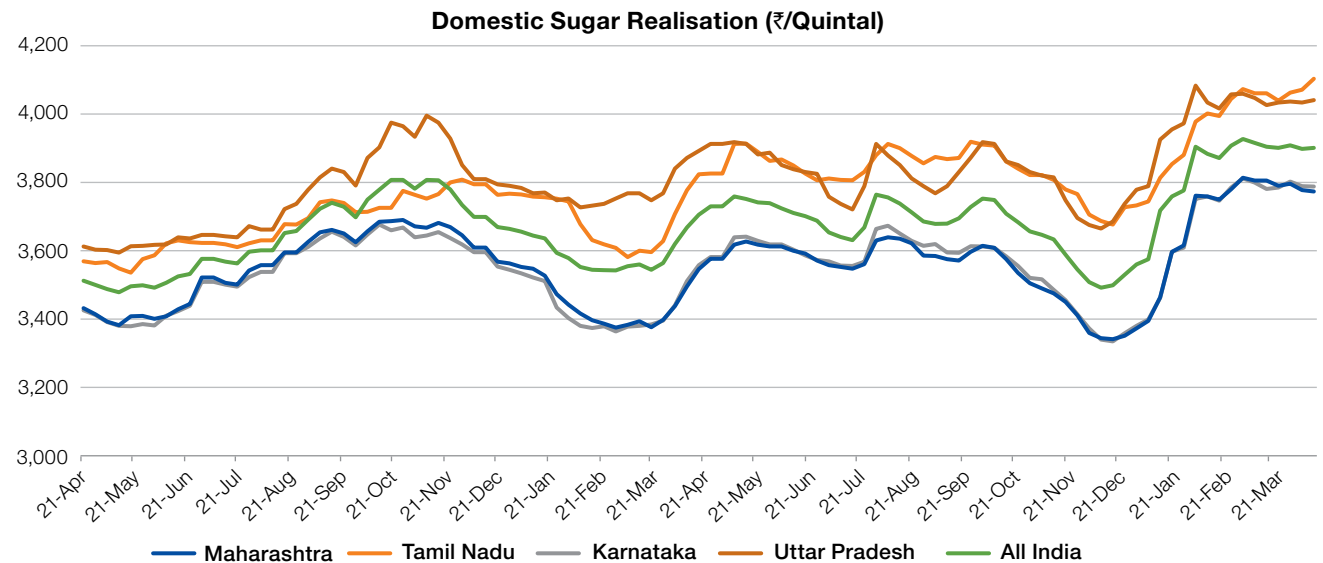
### Indian Sugar Industry: Market Updates

- Hike in Fair and Remunerative Price (FRP):** For SS 2025-26, the Central Government fixed the FRP of sugarcane at ₹ 355 per quintal, linked to a basic recovery of 10.25% and subject to a premium of ₹ 3.46 per quintal for every 0.1% increase of recovery over and above 10.25%. This was also linked to reduction in FRP at the same rate for each 0.1% decline in the recovery rate till 9.5%. With no further deductions for farmers with recovery below 9.5%, such farmers will get ₹ 329.05 per quintal for sugarcane. The FRP for SS 2025-26 was 4% higher than the previous sugar season.

- UP State Advised Price (SAP) has remained unchanged: There was no change in the Uttar Pradesh State Advised Price (SAP) of sugarcane for Sugar Season 2024-25. Rates applicable were as below:

- Sugarcane price for Early Variety at ₹ 370 per quintal.
- Sugarcane price for General Variety at ₹ 360 per quintal.
- Sugarcane price for Rejected Variety at ₹ 355 per quintal.

- Minimum Selling Price (MSP) of sugar has remained unchanged:** Despite increase in sugarcane procurement costs, i.e. SAP in the case of Triveni, the MSP fixed by the Government in February 2019 at ₹ 31/kg has remained unchanged. It is imperative that the MSP of sugar prices is enhanced in a coordinated manner, concurrent with increase in input costs.



### International Sugar Industry

#### International Sugar Industry: Balance Sheet

**Global sugar balance sheet pointing to deficit:** As per recent estimates from Datagro, the global sugar balance is estimated to be in surplus of around 1.53 million tonnes in 2025-26 after a global deficit of approx. 4.67 million tonnes in 2024-25. Improved supplies from key producing nations, such as Brazil and Thailand, along with sufficient production in India, will contribute to the growth in the sugar balance.

Datagro forecasts Brazil's Central South (CS) sugar production in 2025-26 to reach 42.04 million tonnes, up from 40.17 million tonnes in the previous season. India's output is projected to grow to 31.6 million tonnes from 26 million tonnes, while Thailand's production is expected to rise to 11.18 million tonnes from 10.05 million tonnes in this period.

#### International Sugar: Prices

On an average, the international sugar prices declined by 20% during FY 25. Prices have trended downwards due to expectations of a global sugar surplus, apart from varying regional trends. As on May 15, 2025, the NY #11 front month contract was trading at US 17.9 cents/lb - the lowest in sixteen quarters, while London #5 was trading at USD 499.5 per tonne.



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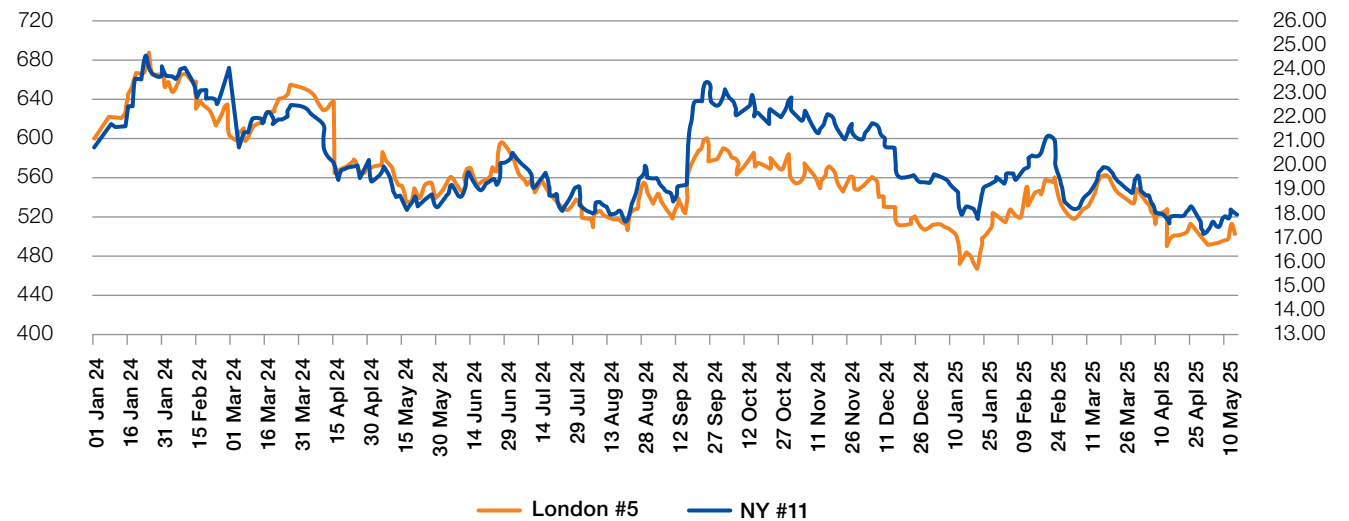
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**NY#11 & London#5 Price Trend From January 1, 2024 - May 15, 2025**



**Note:** London #5 on left hand side (LHS) in USD/tonne; NY #11 on right hand side (RHS) in US cents/lb

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- 8 sugar mills in UP's sugarcane rich belt of which 7 are FSSC certified.
- Acquired 61.77% stake in Sir Shadi Lal Enterprises Ltd. (SSEL), whose sugar unit in Shamli is amongst the highest sugar-yielding areas in the state of UP.
- Best-in-class manufacturing processes, with robust compliances and quality benchmarks.
- Strong farmer relations and timely sugarcane payment.
- Extensive sugarcane development programme with farmers.
- Co-generation 104.5 MW generation capacity from co-product bagasse across six plants, with three using highly efficient 87 at a/515° C steam cycle, meeting captive needs, and selling surplus power to Uttar Pradesh Power Corporation Limited (UPPCL).
- Products: Multi-grade – large, medium and small White Crystal Sugar, Refined Sugar (for high-grade end users), Raw Sugar (for export, based on market dynamics), Pharmaceutical-grade Sugar.
- Customers: Multinational beverage companies, breweries, pharmaceutical companies, confectionery manufacturers, dairy and ice cream producers.

### Key Consolidated highlights FY 25

- Sugarcane crushed (SS): 9.05 million tonnes.
- Sugar produced (SS): 0.92 million tonnes.
- Gross sugar recovery (SS): 10.80%.
- Net sugar recovery (SS): 10.13%.
- Average blended realisation (FY): ₹ 39,192/MT.
- Revenue: ₹ 3,967.0 crore.
- PBIT ₹ 266.5 crore.



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## Triveni Sugar Business: Performance

### Key financial highlights of sugar business performance:

- In FY 25, the turnover in sugar business increased by 3% over the previous year, mainly due to higher realisation prices. Further, the Company generated income from sale of sugar export quota of 31,833 MT for ₹ 15.4 crore at TEIL and ₹1.5 crore at SSEL in the same period.
- Sugarcane crush increased by 10% during SS 2024-25, aided by inclusion of Sir Shadi Lal Enterprises Limited (SSEL). The Company (on a standalone basis) achieved sugarcane crush almost at the same level as the previous season. This was despite the decline in crush in four of its sugar units - Rani Nangal, Milak Narayanpur and Chandanpur in Central UP and Ramkola in Eastern UP. The key reasons were lower yields due to climatic factors, resulting in spread of pests and red rot disease and diminishing productivity of a major sugarcane variety Co0238, especially in low lying areas. The decline in crush in the four mills was negated by the strong performance by the Khatauli and Deoband units.

### Key operational highlights of sugar business performance in SS 2024-25:

- Sugar unit at Khatauli achieved the highest sugarcane crushing in India in SS 2024-25.
- Deoband sugar unit achieved its second-highest historical crush.

- Successfully installed and operated the biggest cane crushing mill of UP - of size 50"x100", at Sabitgarh unit.
- Successfully replaced extraction condensing type turbine at co-gen plant at Khatauli with a backpressure turbine for enhanced bagasse savings.
- Significantly reduced process steam consumption at Deoband through effective utilisation of third body vapours.
- Portfolio of refined sugar and pharmaceutical-grade sugar production now stands at 73% of overall sugar production, one of the highest in the industry.
- Enhanced production of premium grade smaller grains of pharma-sugar at Sabitgarh.
- Undertook aggressive varietal replacement across all sugar units especially in low-lying and water-logging prone areas for enhanced sugarcane availability, as the dominant cane variety Co0238 is becoming infested with red rot and deteriorating.
- Chandanpur and Khatauli units received Bon Sucro certification (Sustainability).
- Acquired and refurbished the Shamli sugar unit, a 7,500 TCD plant, in record time and the unit operated well in SS 2024-25.

### Summarised Sugar Operations

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Area under sugarcane (Ha)	167068	156671	166675	183423	194159	191840	195537	198376	204092	206170	214300
Sugarcane crushed (LQ)	512.72	452.07	640.03	836.7	797.58	874.25	853.97	840.91	932.54	825.72	904.78
Sugar produced (LQ)	49.1	48.8	70.8	95.2	94	100.9	93.8	88.8	95.4	89.0	91.6
Net Recovery (%)	9.57	10.8	11.06	11.38	11.79	11.54	10.98	10.55	10.23	10.78	10.13
Gross Recovery %	9.57	10.8	11.06	11.38	11.79	11.97	11.86	11.7	11.47	11.49	10.80

### Sugar Mill Wise Operational Details

Units	Sugar Recovery (%)*		Sugarcane Crushed		Sugar Production	
			(Million Tonnes)		(Million Tonnes)	
	SS 2023-24	SS 2024-25	SS 2023-24	SS 2024-25	SS 2023-24	SS 2024-25
Khatauli	10.86	10.11	2.40	2.51	0.26	0.25
Deoband	10.29	9.87	1.55	1.80	0.16	0.18
Ramkola	11.07	10.54	0.87	0.71	0.10	0.07
Sabitgarh	11.10	10.53	1.17	1.17	0.13	0.12
Chandanpur	10.98	10.01	0.91	0.85	0.10	0.08
Rani Nangal	10.67	10.25	0.71	0.61	0.08	0.06
Milak Narayanpur	10.53	9.73	0.65	0.55	0.07	0.05
Shamli*		10.12		0.86		0.09
<b>Group</b>	<b>10.78</b>	<b>10.13</b>	<b>8.26</b>	<b>9.05</b>	<b>0.89</b>	<b>0.92</b>

\*Post takeover of Shamli Unit

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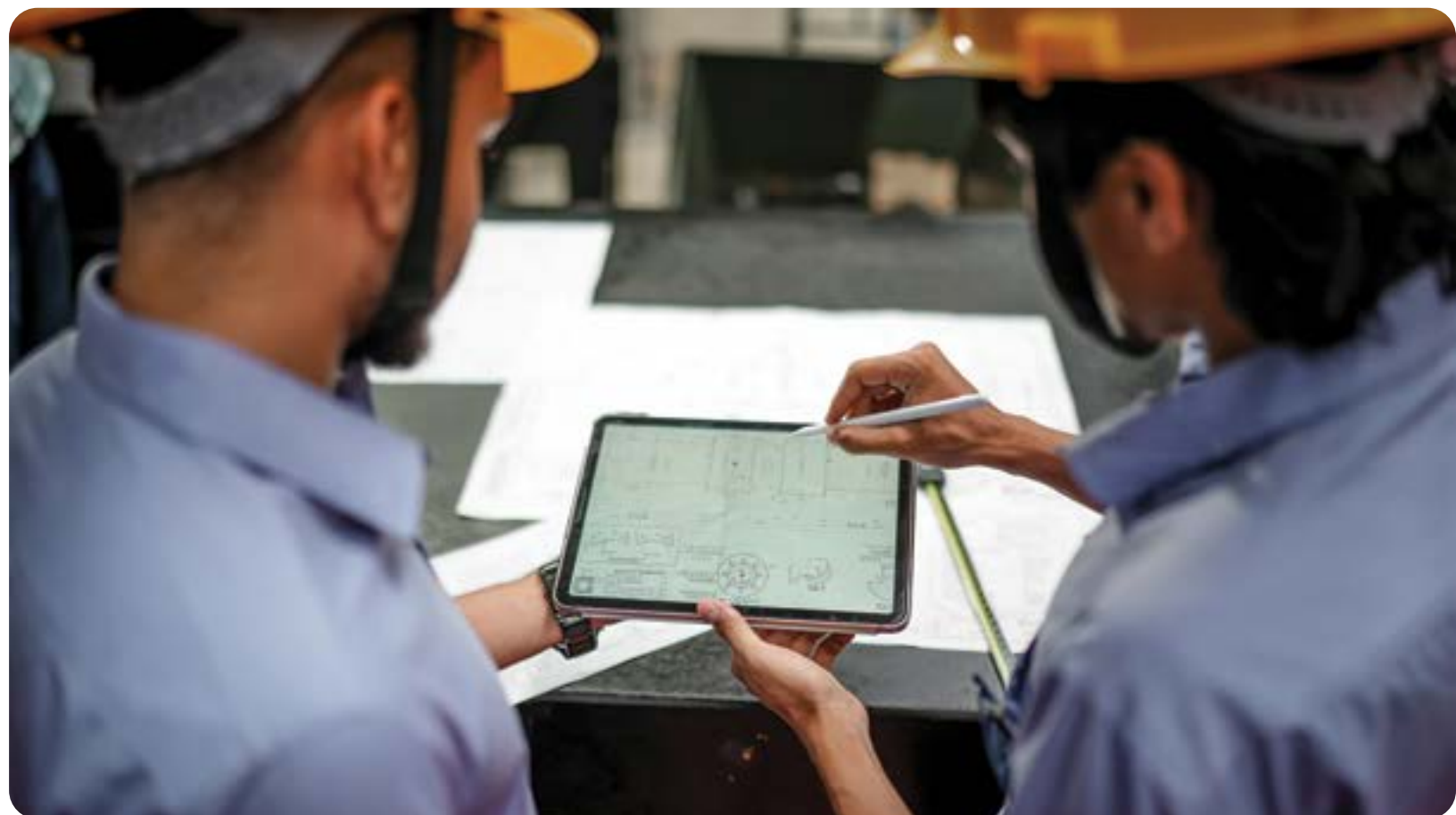
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### Business challenges during the year

- Prominent sugarcane variety Co0238 is becoming vulnerable to red rot, which is impacting sugarcane productivity and availability for crushing.
- Some units, especially bordering Uttarakhand, witnessed impact of flooding or release of water from the dams, further aggravating the spread of red rot infestation.
- Severity of climate change and aberrations in typical rainfall patterns.
- Fluctuations in sugar prices, as a result of failure to cover the high input costs, notably the sugarcane cost.
- Continued non-remunerative prices of cogeneration-based power from the UPPCL.

### Mitigation Measures

- Strongly pursuing increase in sugar MSP through industry association.
- Rapid varietal replacement, especially in low-lying or water-logging prone areas.
- Strong focus on crop protection and preventive measures.
- Working closely with farmers on large number of demo plots for enhancing yields and adopting best agricultural practices.
- Utilising Artificial Intelligence, satellite mapping and drones for crop protection, area estimation, and data-based cane availability forecasting.
- Sugar being sold to large institutions, pharmaceutical companies to get better realisations.



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## Triveni Sugar Business: Sugarcane Development Programme

Triveni's extensive sugarcane development programme is a key facet of its business strategy. The Company's sugarcane development team works closely with farmers to enhance sugarcane productivity. The engagement involves disseminating knowledge on new technologies and innovations in sugar, as well as agriculture as a whole. The Company follows a six-pronged strategy, focussed on improved planting, cultivation, crop protection and harvesting techniques. The approach is further aimed at enhancing crop quality and land productivity, boosting the farmers' income.

### Key elements of the strategy

- 1. Diversification through varietal substitution:** A prominent sugarcane variety is getting prone to pests and diseases at many sugar mills in the state of UP, including Triveni, over the past few years. This is due to climatic factors, especially in low-lying and water-logging prone areas. It has led to a decline in yields and the eventual sugar production. As part of its action programme, the Company has undertaken diversification of crop varieties in the command area of its sugar factories, besides adopting meticulous crop management practices. Triveni is also pursuing an aggressive varietal substitution programme, aimed at identification, faster multiplication, and commercial use of desired high sugar and disease resistant varieties for the mutual benefit of the Company and the farmers. It has also adopted several digitalisation measures to promote real-time information sharing and initiatives, along with faster dissemination of best practices across units and among the farmer community.
- 2. Sustained focus on yield improvement:** The Company has launched several agronomic interventions (e.g. wide spacing, trench planting, etc.), with focus on spring planting (before wheat) and ratoon management. This provides spring planted before wheat sugarcane with more time in the field, resulting in enhanced yield.
- 3. Robust farmer engagement:** Triveni has developed a large number of model demonstration (demo) plots, which deliver yields 25-30% higher than normally secured by sugarcane farmers. The plots are used to showcase advanced practices and help educate the farmers on ways to increase yield.
- 4. Soil health improvement:** The Company advises farmers to apply balanced dosage of fertilisers and nutrients, in accordance with soil analysis reports and recommendations.
- 5. Protection of crop from various pests and diseases:** Triveni has deployed a scientific surveillance programme and supports farmers in implementing all recommended

agronomic practices to reduce the severity of disease. It promotes use of healthy planting materials and certified seeds, ensuring field sanitation, practising crop rotation, enabling proper drainage facilities, and implementing bunding in infected fields.

- 6. Better farm tools and mechanisation:** This helps make farm activities less labour intensive and promotes economic improvements.

Triveni has undertaken various digitalisation measures to facilitate the implementation of the above-mentioned programmes. These initiatives help promote real-time information sharing and interventions, while also enabling faster dissemination of best practices across units and within the farmer community.

### Key digital initiatives are:

- AI enabled bot for agriculture:** Leveraging an AI-enabled bot, the farmers will be able to take pictures of the plots, plants or leaves affected with pests, disease or any other stress, and post these photos for assistance or advisories from their respective units. They will accordingly receive plot specific solutions to their problems or issues, with a personal visit arranged for unresolved or serious concerns.
- Data from satellite:** This further enhances analytics regarding disease or pest forecasts, facilitating early identification of plots and patches under stress (biotic or abiotic) and taking prompt action for protection.
- Call centre support:** Call centres, which are already active across all units, will be more effectively used to issue general and farmer specific advisories and solutions.
- Triveni App:** An information highway for the Triveni farmers, this application helps provide information with regard to best practices for growing sugarcane, along with identification of pests and diseases, and their control thereof.

**Triveni has undertaken various digitalisation measures to facilitate the implementation of the above-mentioned programmes. These initiatives help promote real-time information sharing and interventions, while also enabling faster dissemination of best practices across units and within the farmer community.**

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### Triveni Sugar Business: Outlook

Triveni is engaged in robust and well-structured sugarcane development programmes, involving substitution of the 0238 variety. The substitution is focussed particularly in low-lying and water-logging prone areas. The Company is working to boost crush and enhance recoveries further in the upcoming sugar season over SS 2024-25. It is making targeted investments in improving efficiencies and minimising energy consumption, with the aim to reduce the overall cost of production.

As part of its varietal replacement programme, Triveni is supporting the plantation of promising, well-proven and high yielding or high sucrose varieties in the sugarcane command areas of its sugar units. The move, along with various yield enhancement measures such as spaced row, trench and autumn planting, will help assure sugarcane availability to meet higher sugarcane requirements at the sugar units.

- SS 2025-26 expected to commence earlier with favourable monsoon forecasts.
- Improvement in area under sugarcane expected in SS 2025-26 driven by higher spring planting.
- Focus on yield enhancement and crop management through a structured sugarcane development.
- Continued push for varietal substitution reduce the proportion of vulnerable variety Co0238.
- Plant improvements over the last few years leading to higher crush rates, higher percentage of refined sugar production and lower steam consumption in most units. These include conversion of existing extraction cum condensing turbines to backpressure turbines to further enhance bagasse savings.
- That said, these expectations are contingent on external factors such as moderate progress of the monsoon, minimal waterlogging, and low incidence of disease and pest outbreaks over next few months.

## ALCOHOL BUSINESS

### Indian Alcohol Industry

The Indian alcohol industry is largely driven by ethanol production, which is used for blending with petrol. The industry also produces industrial alcohols, such as Extra Neutral Alcohol (ENA), Rectified Spirit (RS), and Denatured Spirit (SDS). These industrial alcohols are essential for use in several sectors, including the production of potable spirits, chemicals, and solvents.



### Indian Ethanol Industry: Overview

The Central Government has been striving to reduce the country's dependence on imported crude oil. It is also concurrently working on reducing the environmental impacts of pollution and emissions.

In line with this focus, the Government is promoting the production and blending of ethanol with petrol. It has set a target of achieving 20% blending by 2025 under the Ethanol Blended Petrol (EBP) Programme or EBP20. The Government had advanced the target, which was originally set for 2030, in December 2020, reinforcing its commitment to biofuels as an important sustainability initiative.

Led by the Government's initiatives, and backed by farmers' and industry's efforts, blending of ethanol with petrol increased from 1.53% in 2013-14 to 14.6% in ESY 2023-24 (18.36% for ESY 2024-25 as of March 31, 2025). In the same period, the supply of ethanol to Oil Marketing Companies (OMCs) went up from 38 crore litres to 673 crore litres.



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### Indian Ethanol Industry: Market Updates

#### • Ethanol feedstock related updates

- On January 17, 2025, the Department of Food and Public Distribution (DFPD) lifted the restrictions imposed in July 2023, and issued directions for sale of rice in the open market, through the Open Market Sale Scheme (Domestic) (OMSS (D)) for 2024-25. As part of this, the reserve price of rice sold to distilleries for ethanol production was fixed at ₹ 2,250 per quintal, helping to improve the availability of feedstocks at reasonable prices.
- On January 29, 2025, under the Ethanol Blended Petrol (EBP) programme of the Government of India, the Cabinet Committee on Economic Affairs (CCEA) approved revision of ethanol procurement price for Public Sector Oil Marketing Companies (OMCs) for ESY 2024-25.
- Accordingly, the administered ex-mill price of ethanol for the EBP programme derived from C Heavy Molasses

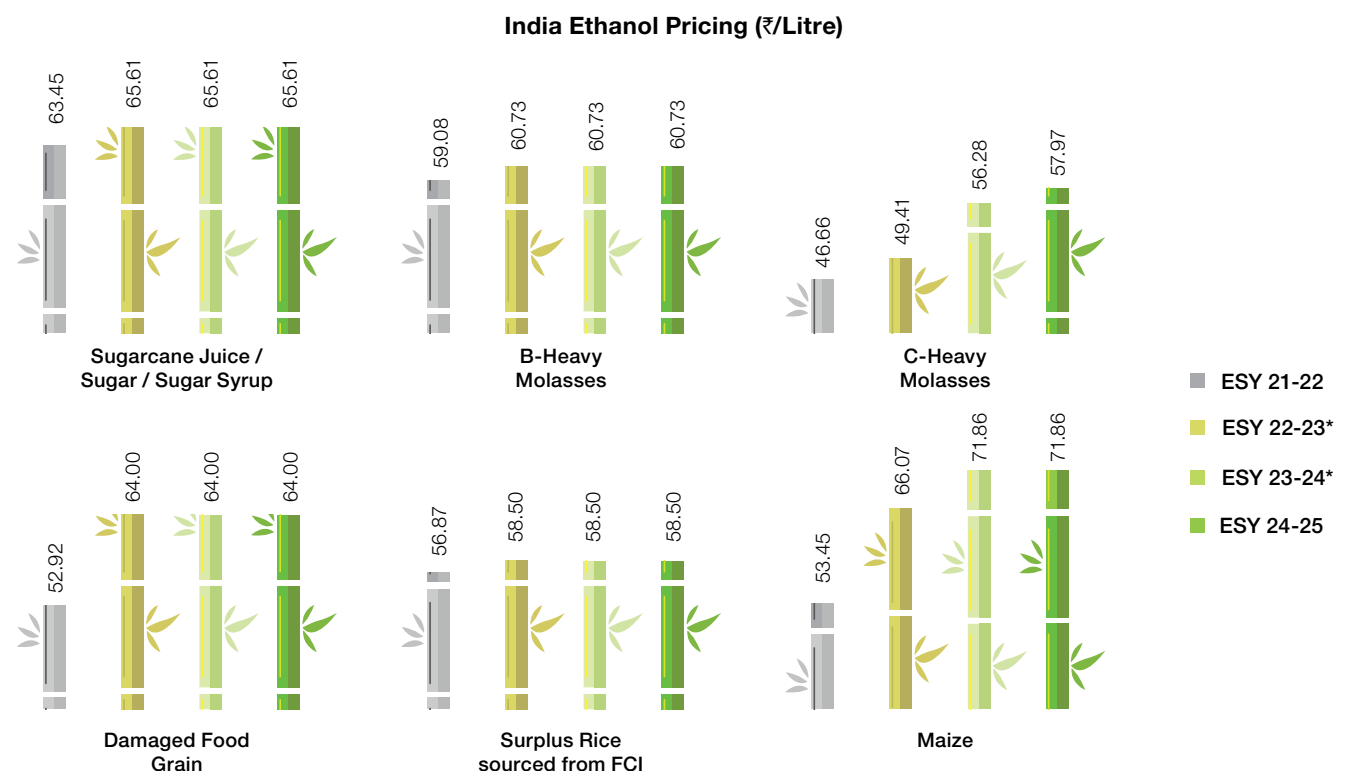
(CHM) for ESY 2024-25 has been fixed at ₹ 57.97 per litre, up from ₹ 56.28 per litre in the previous season, but there have been no changes in the price of ethanol derived from B-heavy molasses and sugarcane juice.

#### • Ethanol requirements and supplies

- For ESY 2024-25 (Nov-Oct), Oil Marketing Companies (OMCs) have executed contracts to the tune of 997 crore litres, as compared to supplied quantities of 673 crore litres in ESY 2023-24, representing an approximately 48% y-o-y increase.
- The proportion of ethanol from grain-based feedstocks contracted in the current ESY tender is 66%, of which maize itself is 49% - this is higher than ethanol from all sugarcane-based feedstocks put together.
- The achieved blending percentage in ESY 2024-25, as of March 31, 2025, stood at 18.36%, while blending percentage for the month of March 2025 was 19.8%.

### Indian Ethanol Industry: Prices

The Government has been incentivising the industry through supportive ethanol prices under the EBP programme. In ESY 2024-25, prices were revised for ethanol produced from C-heavy molasses. In ESY 2023-24, prices had been revised for ethanol produced from Maize and C-heavy molasses. The prevailing ethanol prices, along with recent changes, are summarised as under:



\* Above ethanol prices for ESY refer to the last revised prices in that year

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Triveni Alcohol Business: Performance

Triveni Alcohol Business: Outlook

## Power Transmission Business

Global Industrial Gears Industry<sup>1</sup> Overview

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### Triveni Alcohol Business

#### Triveni Alcohol Business: Overview

- Five state-of-the-art distilleries spread across Muzaffarnagar (MZN) – two facilities with an aggregate of 260 KLPD capacity, a 200 KLPD facility at Sabitgarh (SBT), a 200 KLPD facility at Milak Narayanpur (MNP), and a recently commissioned 200 KLPD facility at Rani Nangal (RNG). Both MNP and RNG facilities are multi-feed facilities, thereby providing the Company with feedstock flexibility.
- Integrated operations providing assurance of feedstocks (molasses, syrup) and fuel (bagasse).
- Efficient operations, with focus on improving recoveries and reducing supplementary fuel.
- Adherence to Environment, Health, Safety (EHS) and Sustainability standards.

#### Feedstock and product mix

- Flexibility of feedstocks - grain/sugarcane based.
- Flexibility of products - Fuel-grade Ethanol, Extra Neutral Alcohol, and Rectified Spirit.

- High-quality by-products - Distillers Dried Grain Solubles (DDGS), Potash-rich ash and CO<sub>2</sub> capturing.
- Forward integration of distillery operations to Indian Made Indian Liquor (IMIL) and Indian Made Foreign Liquor (IMFL).

#### Customers

- Oil Marketing Companies (OMCs), Fertiliser Companies, Institutional and Retail Customers etc.

#### Key highlights FY 25 (Consolidated)

- **Alcohol produced:** 2,00,083 KL
- **Alcohol sales:** 2,01,568 KL
- **IMIL sales:** 55.7 lakh cases
- **Alcohol sales from sugarcane: grain-based feedstocks 49%:** 51%
- **Average realisation:** ₹ 62.6/litre
- **Revenue (net of excise duty):** ₹1,473.5 Crore
- **PBIT:** ₹ 39.7 Crore

## Sugar Business

### Indian Sugar Industry

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### Triveni Alcohol Business: Performance

#### Key financial highlights of alcohol business performance FY 25:

- The net turnover in the Distillery business was higher by 16% than the previous year, on account of commissioning of a multi-feed distillery at Rani Nangal distillery and improved average realisations in view of the large proportion of maize as feedstock in the product-mix.
- The profitability was significantly lower, by 78.1%.
- IMIL business also contributed to the turnover, driven by 24.5% higher despatches (55.7 lakh cases in FY 25 as compared to 44.7 lakh cases in FY 24).

Apart from segment loss of ₹ 6.5 crore pertaining to the distillery of the Sir Shadi Lal Enterprises Limited ("SSEL") subsidiary, which did not operate during the Sugar Season 2024-25, there were several other factors that contributed to the decline in the profitability of the Company's distillery segment:

- Grain operations were carried out majorly with maize feedstock during the year, whereas the operations in the previous year were partially operated till July 2023 with rice procured through FCI (FCI-Rice), having much higher margins. Further, ethanol sales volume, based on maize operations, increased by 216% in the current year, leading to lower profitability due to the low margins associated with maize operations.
- Further, due to low crush in Sugar Season 2023-24 (SS 2023-24) and restrictions imposed on the use of B-heavy Molasses (BHM) and sugarcane juice, captive molasses generation was much lower which led to lower availability of captive molasses. Accordingly, sales volume of high margin ethanol produced from molasses were lower by 25%, leading to lower profitability.
- Finally, shortage of molasses due to aforesaid reasons as well as unremunerative prices of grains led to closure of the distillery operations for some periods which led to non-recovery of fixed overheads.

#### Key operational highlights of alcohol business performance FY 25:

- Achieved production of 20.01 crore litres and sales of 20.16 crore litres during FY 25.
- Lower molasses feedstock due to lower crush in SS 2023-24 led to constrained production in FY 25 vs FY 24 at Muzaffarnagar and Sabitgarh.

- Ethanol constituted 92% of alcohol sales during FY 25, as compared to 93% last year.
- Sale of ethanol and ENA produced from grain-based feedstocks contributed 51% to the total alcohol sales (33% for FY 24), surpassing sale of ethanol and ENA from sugarcane-based feedstocks (majorly B-heavy), which constituted 49% of the total alcohol sales for FY 25 (67% for FY 24).
- Position in country liquor business (IMIL) consolidated in a short span of time, enabling the Company to become the fifth largest player in the state of UP.
- Successfully ventured into IMFL sector and launched two premium grades of whiskies.
- Started operation of a new dual feed distillery adjacent to the existing sugar unit at Rani Nangal towards the end of April 2024, enhancing the Company's total distillation capacity to 860 KLPD.

### Triveni Alcohol Business: Outlook

Triveni has adopted a long-term strategy for expanding the alcohol business and contributing to India's Ethanol Blended Petrol (EBP) programme and self-reliance efforts. The strategy is powered by the Company's commitment to producing premium-quality products across all its manufacturing facilities. With blending percentages inching closer to around 20% in ESY 2024-25, NITI Aayog is coordinating an inter-ministerial group and working on a roadmap beyond EBP20, further reinforcing the Government's commitment.

The Company's distillation facilities have the flexibility to operate with a range of feedstocks, which also mitigates the risk of overdependency on a particular feedstock. However, it is equally important for the Government to set viable prices for Ethanol produced from each feedstock to facilitate continuous and uninterrupted capacity additions and sustained supplies to meet the overall evolving ethanol blending targets.

Focus on profitability enhancement in Alcohol segment driven by optimising costs through a robust grain feedstock procurement and warehousing programme.

In IMIL, continue to enhance market position and focus on improving profitability through combination of topline growth and enhancing contribution margins.

In IMFL, focus is to strengthen distribution channels to enhance market presence and accessibility.



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## POWER TRANSMISSION BUSINESS

### Market: Overview

#### Global Industrial Gears Industry Overview<sup>1</sup>

The global industrial gearbox market, which was estimated to be around USD 30.6 billion in 2024, is set to soar to USD 47.5 billion by 2034, growing at a 4.6% CAGR. The demand for gears is driven by infrastructure investments and increasing efficiency requirements, resulting in the demand for more energy-efficient gearboxes.

### Triveni Power Transmission Business: Overview

#### Key highlights FY 25

**₹ 475.4 Crore**

Order booking

**₹ 126.8 Crore**

PBIT

Since 1976, Triveni Power Transmission Business (PTB), a division of Triveni Engineering and Industries Limited, has been redefining excellence in high-speed gear solutions. PTB serves over 90 countries from its cutting-edge Mysuru facility, delivering API and AGMA-compliant gearboxes for oil and gas, petrochemicals, steel, cement, sugar, fertilisers, thermal, hydro, paper, and chemicals. With 12,500+ high-speed gearbox installations and a world-class fully integrated facility with advanced multi-axis CNC machinery, Triveni PTB has successfully made a place for itself among the high speed gear manufacturers globally. It is now poised to expand its international footprint.

#### PTB's core segments include:

- **OEM:** Supplies global OEMs with high-speed gearboxes for turbines, compressors, pumps, and fans, designed for extreme conditions (hazardous/sub-zero temperatures and marine environment).
- **Aftermarket:** Has replaced 1,400+ gearboxes from 90+ global brands, offering diagnostics, overhauls, upgrades, and eco-friendly refurbishments for maximum uptime.
- **Built-to-Print:** Designs high-precision gears for select global clients, ensuring recurring revenues.
- **Defence:** Stands out as a trusted OEM for naval propulsion systems, shafting, fin stabilisers, winches, gas turbine generators, and special application pumps.

<sup>1</sup> (Source: Global Market Insights, <https://www.gminsights.com/industry-analysis/industrial-gearbox-market>)

<sup>2</sup> (Source: IMARC Group, <https://www.imarcgroup.com/india-industrial-gearboxes-market>).

### Indian Industrial Gears Industry Overview<sup>2</sup>

India's industrial gearbox market, valued at USD 1.02 billion in FY 25, is projected to grow at a 6.24% CAGR, reaching USD 1.09 billion by FY 26.

#### Key growth drivers include:

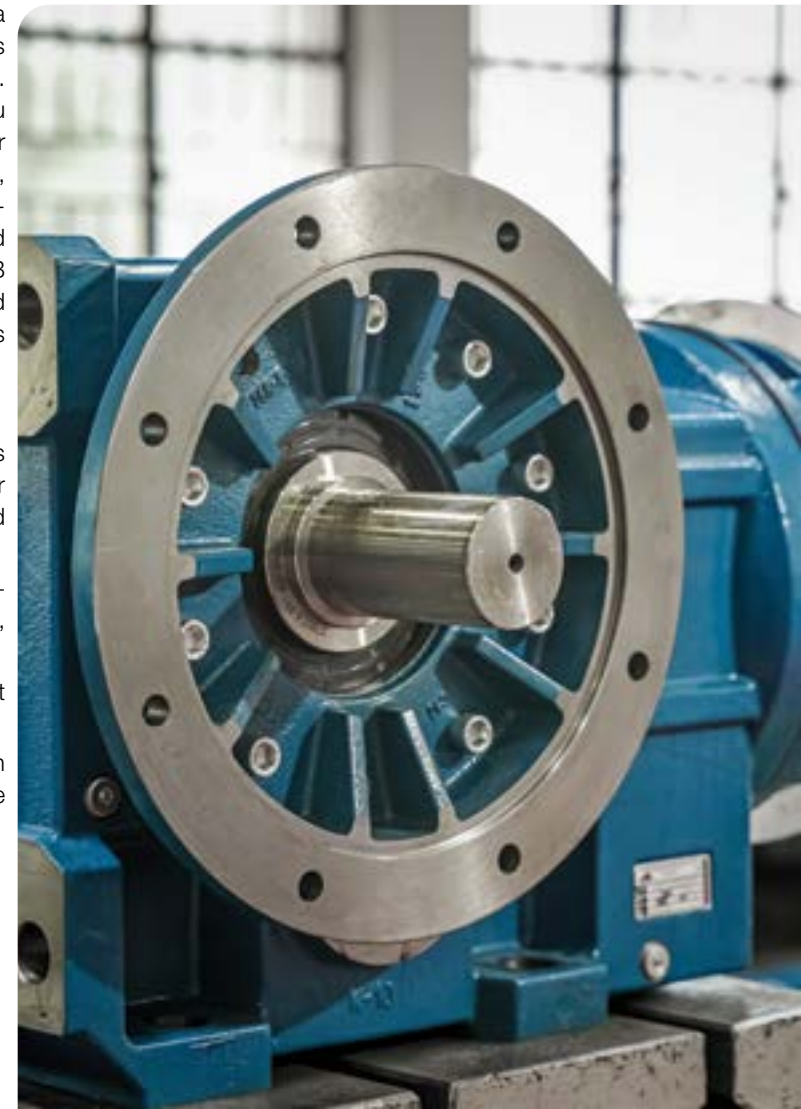
- **Infrastructure:** Investments in Steel, Cement, Refineries, Petrochemicals, Power and Ethanol, etc.
- **Aftermarket:** Increasing demand for refurbishments and efficiency upgrades.

**₹ 369.9 Crore**

Revenue

**₹ 389.4 Crore**

Closing order book



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### Gear Product Portfolio



Steam Turbine



Gas Turbine



Centrifugal Compressors



Reciprocating Compressors



Centrifugal Pumps

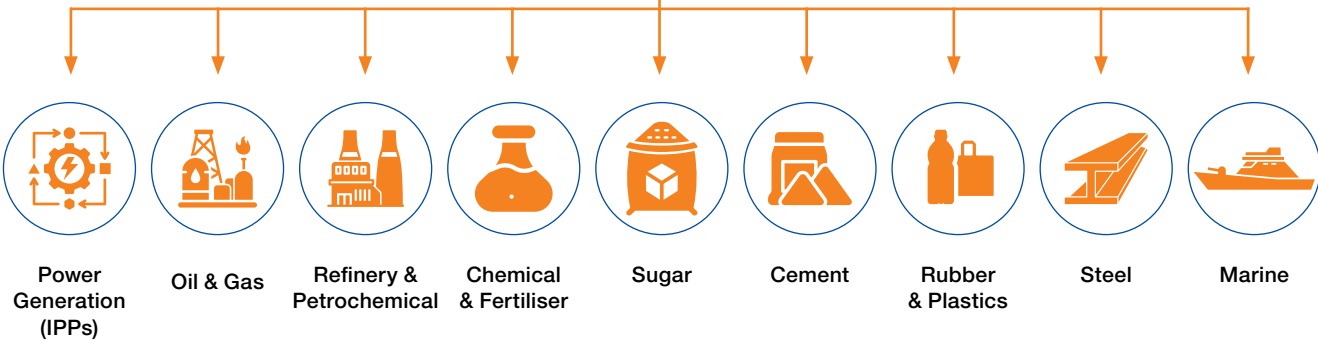


Fans and Blowers



Hydel Turbines

### Industries We Serve



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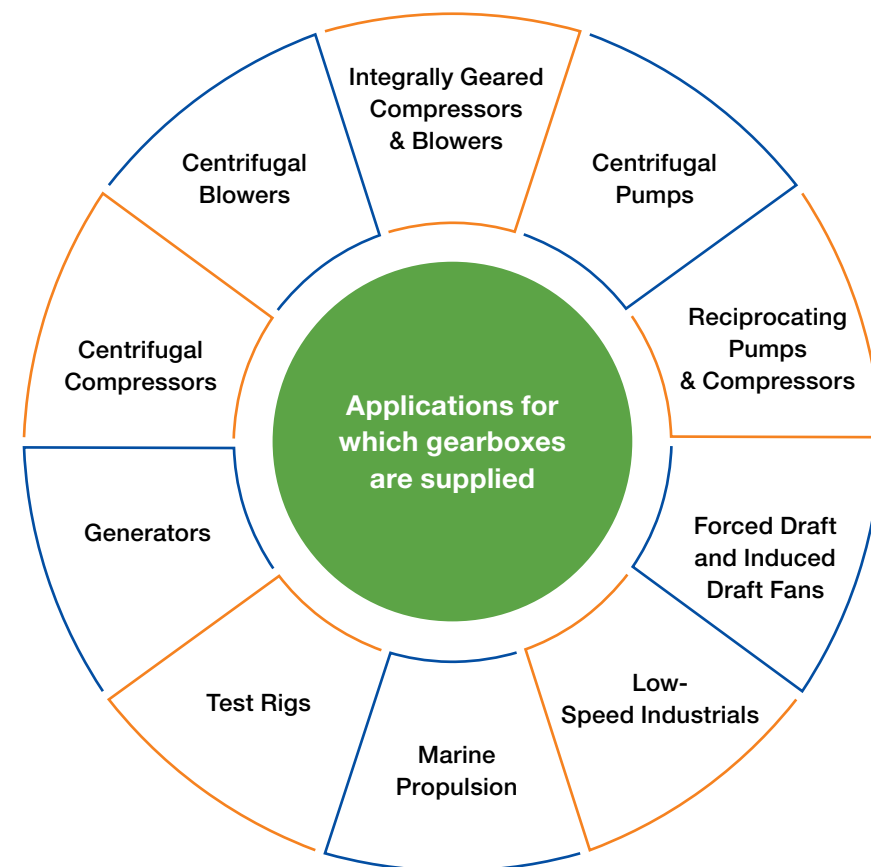
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### Pillars of our strategic approach:



World-class technology



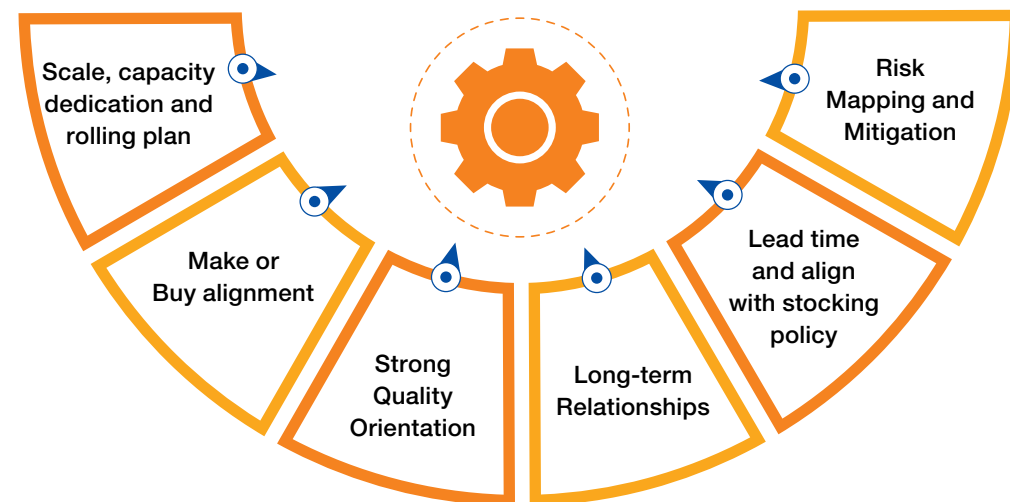
Automation & Digitalisation



Associations & tie-ups



Cost Management & efficiencies



### State-of-the-art Infrastructure

In the power transmission business, Triveni has developed a strong competitive edge by manufacturing quality products aligned to the highest domestic and global standards. Its state-of-the-art manufacturing facilities are equipped with the most advanced world-class multi-axis Computer Numerical Control (CNC) machinery and equipment-handling capacity of 80 tonnes. They are also equipped to support the manufacturing of technologically superior products for the Indian Defence sector.

In FY 25, Triveni's Board announced a Capex, aggregating to ₹ 60 crore, towards expansion of the Power Transmission business. This Capex will enhance the capacity of the gears business alone (not including defence) from ₹ 400 crore to ₹ 700 crore (revenue) by September 2026, and prepare Triveni PTB to meet the anticipated growth in this segment.

### Focus on R&D

PTB consistently focusses on R&D, driving energy-efficient, low-noise gearboxes and defence technologies like lightweight

marine gearboxes and fin stabiliser systems, in alignment with global sustainability and OEM standards.

- Development of special profile journal bearings, namely offset profile and lemon bore.
- Efficiency improvements:
  - Achieved reduction in power loss in bearings by 10%, thereby increasing gearbox efficiency by 1%.
  - Developed and validated a new shroud design.
- Achieved weight optimisation by 15-18% across models, through Finite Element Analysis.
- Lube oil flow optimisation – achieved 25% reduction by optimising the bearing design.
- Specification for High PLV gear materials – Developed fundamental understanding to arrive at the cleanliness and ultrasonic quality requirements.

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### Triveni Power Transmission Business: Performance

PTB has maintained its robust majority market share across high-speed applications in diverse markets, in both new products as well as Aftermarket segments.

#### Gears Business:

**New Products:** Strengthened OEM partnerships by delivering high-performance gearbox solutions for critical applications; leveraged advanced engineering and innovative designs to meet the demands of Steam & Gas based captive Power, Oil & Gas, Petrochemical, Carbon Capture Utilisation & Storage (CCUS), Waste Heat Recovery System (WHRS) and Waste to Energy.

#### Domestic Market Highlights

- Domestic market saw marginal growth in order bookings, driven primarily by the Steam Turbine Generator (STG) segment. The average order value increased due to shift in higher power. The steel segment was a major contributor, at the back of multiple projects in excess of 40MW, with the largest being for a 58MW steam turbine generator application.
- Rolled out highest power 57MW compressor gearbox for the steel segment from the recently expanded manufacturing facility.
- Supplied highest power 48MW API gearbox for PowerGen.
- 70,000 RPM gearbox supplied to Defence Research establishment.
- Supplied a Test Rig Gearbox for a European OEM's hybrid propulsion system, demonstrating capability in innovative and sustainable technologies.
- Developed a Test Rig Gearbox with a Dog Clutch mechanism for a 200-tonne Vacuum Tunnel Balancing Machine, demonstrating expertise in specialised applications.

#### Export Market Highlights

- PTB's focus on Middle East and Europe markets resulted in multiple breakthrough orders from Oil and Gas majors.
- Supplied highest power 27MW compressor gearbox to a large European OEM.
- Supplied multiple API Gas Turbine driven pump gearboxes for an oil & gas pipeline in South America.
- Supplied first 48MW Steam Turbine Generator gearbox to a European OEM.
- Entered Japanese market for compressor application.
- Gained entry into Oil & Gas majors (Middle East) through various OEMs for pump application.
- Entered Floating Production Storage and Offloading (FPSO) projects for South America and Africa.



#### Aftermarket:

#### Domestic Market Highlights

- Entered the renowned American OEM market for replacement of Oxyblower gearbox.
- Executed multiple replacements for European and American brands in the steel sector in the power range of 30-45MW.
- Executed multiple replacements for European and Indian brands in the cement industry in the power range of 8-25MW.
- Replaced European OEM for blower and pump application in fertiliser industry.

#### Export Market Highlights

- Received order from a leading Middle East Independent Power Producer (IPP) for two 54MW Frame-6 Gas Turbine Load Gearboxes, replacing a prominent European brand. This order positions us as a reference supplier for the global oil & gas market, with potential for business expansion across multiple IPP sites.
- Received order from Middle East for supplying Integrally Geared Compressor gear internals, replacing a European brand and strengthening the Company's presence in the industrial compressor sector.

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- Secured an order from the Middle East for gear internals and bearings for a Frame-5 Gearbox and a Quill shaft for a Frame-6 Gearbox, enhancing the Company's aftermarket offerings in the energy sector.
- Secured an order from Africa for a complete gearbox for a blower application, replacing a European brand and expanding the Company's footprint in the African industrial market.
- Orders from Latin America for various mill gearboxes, replacing European brands and highlighting the Company's growing role in the Latin American industrial sector.

#### Customer-Centric Innovations and Initiatives

- Introduced warranty-backed retrofit solutions, boosting confidence in cost-effective alternatives.
- Promoted eco-friendly refurbishments as part of green initiatives, aligning with sustainability trends.
- Launched XPERIA – an AR-based app for hands-on training and virtual troubleshooting, empowering customers to manage diagnostics independently.
- Conducted technical webinars and on-site engagements to guide retrofitting decisions, positioning PTB as a strategic partner.
- Adopted laser cladding technology for critical downtime scenarios and interchangeable spares, enhancing efficiency.

#### Global Outreach:

- Expanded networks through global conferences and exhibitions, generating high-value leads.
- Enhanced AMCs to include inspections for other brands at no cost, driving customer satisfaction.
- Leveraged satisfaction surveys to address concerns and generate leads for AMCs and spares.

#### Built-to-Print:

Delivered high-precision machining of select gear components, optimising capacity utilisation through long-term supply contracts.

#### Defence Business:

Key milestones of Triveni PTB's defence segment:

- Successfully delivered 16 light weight body marine gearboxes for Fast Patrol Vessel (FPV) within a 14-month timeframe, showcasing operational efficiency and reliability in meeting stringent project deadlines.
- Secured a significant order for 54 gearboxes across two projects for FPV and Off-shore Patrol Vessels (OPVs) with Triveni technology.

- Secured order for propulsion shafting for global technology partner.
- Developing technology for propulsion shafting for surface ships.
- Developed technology for fin stabiliser control systems.
- Expanded portfolio to include propulsion systems, gas turbine generators, special pumps, winches, and platform support, driven by in-house R&D and reverse engineering.
- Ongoing thrust on exploring opportunities in Land & Air Defence services involving adjacencies as well as total solutions.

#### Strategic Vision

PTB's vision aims to sustain its market share in India and nearby countries, and simultaneously increase its share in high potential overseas markets:

1. **Domestic Leadership:** Capitalise on infrastructure and defence growth, driven by production linked incentives in steel, refinery, cement, and fertiliser.
2. **Global Expansion:** Target increase in export share, focussing on gas turbine gearboxes, compressors, and FPSO projects.
3. **Defence Innovation:** Expand naval portfolio, and explore opportunities in Army and Aerospace, leveraging Government of India's Atmanirbhar Bharat scheme.
4. **R&D:** Continue investments in R&D for next-generation gear technologies.

**Secured an order from the Middle East for gear internals and bearings for a Frame-5 Gearbox and a Quill shaft for a Frame-6 Gearbox, enhancing the Company's aftermarket offerings in the energy sector**



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## WATER BUSINESS

**Market: Overview**

**India's Water Crisis: A Strategic Opportunity for Sustainable Solutions**

With 18% of the world's population but only 4% of its freshwater stock, India is among the most water-stressed countries. The escalating water scarcity underscores the urgent need for sustainable water management solutions. The wastewater treatment sector in India is experiencing significant growth. In 2024, the market was valued at USD 9.64 billion and is projected to reach USD 18.63 billion by 2033, growing at a CAGR of 7.6%. Increasing urbanisation and industrialisation, along with heightened environmental awareness, are driving the market growth.

According to the CPCB report of 2021, only about 28% of wastewater is treated, with the untreated sewage posing significant risks to public health and the environment. Treated sewage presents a valuable resource that can help meet the growing demand for non-potable water in agriculture, industry and municipal domains. Use of treated water can promote circularity in the water and wastewater sector, supporting the broader goals of a circular economy.

More than 50% of the total clean water demand in India is met by groundwater extraction. In fact, India extracts more groundwater than China and USA combined. This over exploitation has led to an alarming depletion of groundwater tables and aquifers. Promoting the use of treated industrial wastewater and treated domestic sewage for industrial processes will be a game changer for India's water security.

**Government Funding: Paving the Way for Sustainable Solutions**

The Indian government has launched several key funding programmes to address water scarcity and improve wastewater management. These include Jal Jeevan Mission (JJM), Atal Mission for Rejuvenation and Urban Development (AMRUT), Atal Bhujal Yojana, Namami Gange, etc. These programmes are backed by substantial funding from both central and state governments, and also by international financial institutions like World Bank, ADB, JICA, EXIM bank, etc. Multiple financing models – including Public-Private Partnership (PPP) and Hybrid Annuity Model (HAM) – have been deployed to attract private sector investment and boost sustainable water infrastructure development.

India's water management journey reflects the broader global trends, with comparable opportunities emerging in Eastern Europe, expanding market potential across South Asian countries, increasing demand in African nations, and significant development prospects throughout the MENA region.

### Triveni Water Business

#### Triveni Water Business: Overview

##### Key highlights FY 25

<b>12,200+</b> MLD	<b>1,200+</b>
Water and Wastewater treated	Total installations
<b>2,000+</b>	
Process equipment supplied (nos.)	



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Triveni's Water Business Group (WBG) is well-equipped to execute projects in both India and international markets. It has an active presence in India, the Maldives and Bangladesh, and offers an extensive portfolio of water and wastewater solutions, leveraging advanced technologies and innovative equipment across a broad spectrum of applications.

Amid the increasingly stringency of regulatory standards for water and wastewater discharge, which often exceed the capabilities of conventional treatment systems, WBG delivers cost-effective solutions designed to optimise operational efficiency and reduce life-cycle costs.

Triveni's EPC offering is driven by the strength of its in-house equipment design and manufacturing capabilities, backed by strong in-house design and engineering capabilities. The Company has successfully implemented projects on Public-Private Partnership (PPP) and Hybrid Annuity Model (HAM) frameworks, and continues to explore new opportunities. It is fully geared to undertake medium to large sized projects in these segments, in both domestic and international markets.

#### Water and wastewater solutions offerings

- Design and manufacturing of a wide spectrum of process equipment for the water and wastewater treatment industry.
- Design, construction, O&M of water and wastewater collection and distribution networks.
- Water treatment based on conventional processes, ultra filtration, reverse osmosis, demineralisation, and sea water reverse osmosis.
- Wastewater and sewage treatment based on advanced technologies like Sequencing Batch Reactor (SBR), Moving Bed Biofilm Reactor (MBBR), etc., both for municipal and industrial effluents.
- Design, Build and Operate (DBO) water and wastewater treatment plants, based on Ultra Filtration, Reverse Osmosis, Zero Liquid Discharge and Reuse.
- DBO water and wastewater management systems on Engineering Procurement and Construction (EPC), Public Private Partnership (PPP), Hybrid Annuity Model (HAM) and Build Own Operate Transfer (BOOT) models.
- Operations and maintenance of water and wastewater treatment plants.

Driven by its strong reputation, Triveni is leading the journey towards shaping the future of water and wastewater

management. It deploys advanced technologies to provide innovative, sustainable solutions that address the growing global need for clean water and efficient wastewater treatment.

#### Operations and Maintenance (O&M)

Long-term operations and maintenance of water and wastewater systems is an integral component of the water and wastewater treatment business. The Company is focussed on achieving the following outcomes related to operations and maintenance, ensuring that its clients' systems remain sustainable and affordable:

- Minimise Non-Revenue Water (NRW)
- Safeguard Source Water Quality
- Understand System Infrastructure
- Monitor and Control Corrosion
- Ensure System Integrity
- Maintain Adequate Disinfection Residuals
- Ensure Positive Pressure
- Implement Backflow Prevention
- Adopt Best Practices for Disinfection and Flushing
- Maintain Operational Readiness
- Manage Distribution System Assets
- Spare Parts Inventory Management
- Product and Process Audits, Health Check-ups, and Overhauls

#### Triveni Water Business: Performance

##### Key Highlights FY 25

- Revenues declined due to slow execution in certain projects and delayed finalisation of new projects.
- PBIT stood at ₹ 32.8 crore in FY 25, higher by 4.4% y-o-y. The higher profitability was driven by cost optimisation and savings in various projects executed during the year.
- PBIT margins stood at 14.0% for the year, up approximately 124 bps y-o-y.
- Total order booking during the year was ₹ 586.2 crore, including EPC orders worth ₹ 312.10 crore. This excludes a project Letter of Award that was revoked recently due to administrative reasons and is being pursued for favourable consideration.

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- The outstanding total order book as on March 31, 2025 stood at ₹ 1,600.8 crore, which includes ₹ 1,120 crore towards O&M contracts for a longer period of time.
- WBG is making headways in recycling and reuse business and has robust experience in handling highly polluted industrial effluent and sewage recycling. Its current engagements include Balotra 18MLD ZLD and Pali 12 MLD ZLD project for textile effluent; Bhiwadi 6 MLD ZLD for mixed-use industrial effluent; 42MLD sewage recycling at Vadodara, and city-level Mathura facilities which are in different stages of O&M or execution, as the case may be.
- WBG completed Maldives project (6 islands) and handed over to client.
- WBG's regular participation in new bids in India and overseas has given it a strong market recognition.
- WBG is well positioned to undertake jobs in its areas of expertise in selected overseas markets of Asia, Africa, Eastern Europe and others, following its successes in Bangladesh and Maldives markets.

#### Key achievements during the year:

- Received a 90 MLD STP project based on SBR technology in Prayagraj, Uttar Pradesh.
- Received a 42 MLD Sewage Recycling project based on UF/RO in Vadodara, Gujarat.
- ADB Bangladesh project is in advanced stages of construction of two STPS for KWASA.
- Various major jobs completed in previous years continued to be in O&M phase during the year; these included CETPs at Bhiwadi and Balotra, desalination plants for Barmer Lignite, 204 MLD STP in Delhi, 210 MLD WTP in Greater Noida, and numerous WTPs, STPs, CETPs and desalination plants.
- Successfully completed EXIM-funded Maldives water and sanitation project for 6 islands, along with several others.

#### Triveni Water Business: Outlook

WBG's outlook for FY 26 remains strong, with robust order inflows expected across EPC and HAM projects. The Company is poised to capitalise on the growing opportunities fuelled by new investments from the Government of India and various state authorities. There is, concurrently, a pressing need to secure new funding avenues, while Urban Local Bodies (ULBs) continue to strengthen their financial and operational capabilities.

The water and wastewater treatment industry are on a positive growth trajectory, with demand for utilities outpacing the current supply of treatment infrastructure. This gap presents long-term growth prospects for EPC contractors, private developers, consultants, and suppliers of technology and equipment.

Significant opportunities are emerging in areas like water recycling, reuse, and Zero Liquid Discharge (ZLD) across both EPC and PPP/HAM models. The sewage recycling market is expanding, particularly in regions where industries are becoming off-takers of treated sewage, driving growth in this sector. This momentum is aided by initiatives like National Mission for Clean Ganga (NMCGs), which continue to drive demand for STP projects through EPC/HAM models. Additionally, government programmes like AMRUT and JJM are contributing to the sector's growth. Exim Bank of India's financing in Asia and Africa is also expected to open new avenues for expansion.

Triveni is also actively exploring international opportunities and preparing to participate in upcoming tenders for water and wastewater treatment projects. Simultaneously, it is engaging with municipal corporations, ULBs, and water boards to promote PPP and HAM projects. These efforts position Triveni to establish a strong foothold in this growing market. Backed by its solid financial health, the Company is well-equipped to invest in PPP/HAM ventures and broaden its EPC project portfolio.