

# Management Discussion and Analysis

## Sugar Business

### Indian Sugar Industry

**Triveni Sugar Business: Overview**

**Triveni Sugar Business: Performance**

**Triveni Sugar Business: Sugarcane Development Programme**

**Triveni Sugar Business: Outlook**

## Alcohol Business

### Indian Alcohol Industry

**Triveni Alcohol Business: Overview**

**Triveni Alcohol Business: Performance**

**Triveni Alcohol Business: Outlook**

## Power Transmission Business

**Market: Overview**

**Triveni Power Transmission Business: Performance**

**Triveni Power Transmission Business: Outlook**

## Water Business

**Water Business: Overview**

**Triveni Water Business: Overview**

**Triveni Water Business: Performance**

**Triveni Water Business: Outlook**

## SUGAR BUSINESS

### Indian Sugar Industry

#### Indian Sugar Industry Overview

India has the distinction of being the largest consumer and the second-largest producer of sugar in the world. A significant contributor to the country's economy, the Indian sugar industry provides employment and creates significant value for over 50 million farmers.

As an ecologically sustainable crop, sugarcane produces sugar and generates a variety of by-products, such as bagasse, molasses, filter cake (commonly known as press mud) etc. These by-products have economic value, and also a strong potential as a feedstock for the production of biofuels/bioenergy, such as power, bioethanol, biogas, etc.

Over the years, the industry has undergone modernisation and diversification, and has become more sustainable and profitable as a result of effective exploitation of the potential of its by-products to generate additional revenue streams. This has made the sugar industry more viable and valuable in the country's economic growth landscape.

Since sugar and sugarcane are essential commodities under the Essential Commodities Act, the Government regulates various aspects pertaining to the industry. Sugarcane pricing, sugarcane procurement through land demarcation, sale of sugar by mills in the domestic and international markets, diversion of sugarcane/sugar for other uses such as production of alcohol/bioethanol etc. are the key Government intervention areas.

Recent years have also seen the sugar sector emerge as a major contributor to the alcohol industry through bioethanol production, in view of the Government impetus 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 boosting the agriculture sector.

#### Government initiatives have eradicated the cyclicity of the Indian sugar industry

Once saddled with cyclicity and huge sugarcane arrears, the industry has come a long way in the last 10 years. The transition has been driven by a series of favourable and supportive Government policy measures, aimed at facilitating



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

timely payments of outstanding dues to the sugarcane farmers. These measures include:

- Fixing Fair and Remunerative Price (FRP) of sugarcane
- Fixing Minimum Selling Price (MSP) of sugar to prevent fall in ex-mill sugar prices & accumulation of sugarcane arrears
- Diversion of surplus sugar to production of ethanol, leading to improved financial conditions of the sugar mills
- Progressive export policies, such as export subsidies and timely evacuation of surplus sugar stocks at remunerative prices

Sugar season 2023-24 reported the lowest pending cane arrears in the history of the sugar sector, with 99.5% cane dues of the previous sugar season 2022-23 and 99.9% of all other sugar seasons already paid to the farmers. India has the unique distinction of being the highest sugarcane price payer to its farmers, while still being efficient enough to make profits and operate in a self-sufficient manner without any financial assistance from the Government.

### Indian Sugar Industry: Balance Sheet

The total acreage under sugarcane in the country is estimated to be around 59.81 lakh hectares in Sugar Season (SS) 2023-24, which is almost at a similar level as that for SS 2022-23.

The all-India sugar production estimate for SS 2022-23 (after diversion to ethanol) was 32.8 million tonnes. This took into account diversion of about 4.1 million tonnes of sugar equivalent to ethanol, implying a gross production estimate of 36.9 million tonnes for the season.

For SS 2023-24, however, there was a wide divergence in production estimates throughout the season. Preliminary estimates in August 2023 had projected all-India sugar production at 31.7 million tonnes after diversion of 4.5 million tonnes for ethanol, implying a gross production estimate of 36.2 million tonnes for the season. By October 2023, expectations for gross sugar production had declined considerably to 33.7 million tonnes, driven by projections of substantially lower crush in Maharashtra and Karnataka.

On December 15, 2023, the Department of Food and Public Distribution (DFPD), Government of India, issued directions that in view of the lower expected sugar production in the country (with major drop in Maharashtra & Karnataka), the sugar industry should restrict the sugar sacrificed for ethanol through the B-heavy & sugarcane juice/syrup route to 1.7 million tonnes vs 4.1 million tonnes in the previous season.

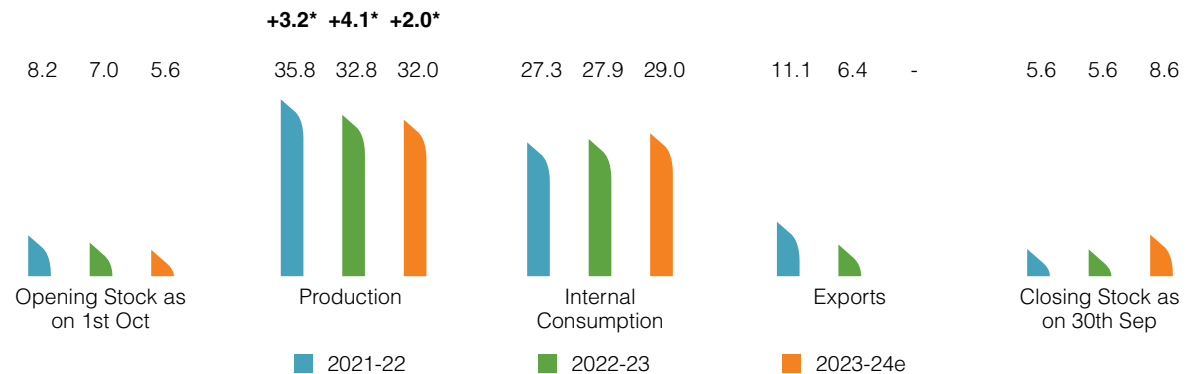
In March 2024, the sugar production estimates were revised upwards to 34 million tonnes, owing mainly to higher sugarcane yields expected in Maharashtra and Karnataka. Assuming 2 million tonnes for production of ethanol via sugarcane juice / B-heavy molasses for Ethanol Supply Year (ESY) 2023-24, it implies net sugar of around 32 million tonnes.

In terms of state-wise split, sugar production in Maharashtra is estimated to increase to 11 million tonnes this season, up from 10.53 million tonnes in the previous season. Production in Karnataka is estimated at 5.26 million tonnes, lower than last season's 5.8 million tonnes but above the initial estimates. Uttar Pradesh is expected to produce around 10.3 million tonnes sugar, marginally up from the previous season but below the initial estimates.

### Healthy closing stocks of 8.6 million tonnes for SS 2023-24

With an opening balance of around 5.6 million tonnes as on October 1, 2023, net sugar production of around 32 million tonnes, and domestic sales of around 29 million tonnes, the closing stock is expected at 8.6 million tonnes. This translates into approximately three months of consumption. The net sugar production measure takes into consideration diversion of about 2 million tonnes of sugar equivalent into ethanol (as stated above).

(in million tonnes)



\*sugar diversion to ethanol production in million tonnes

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

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

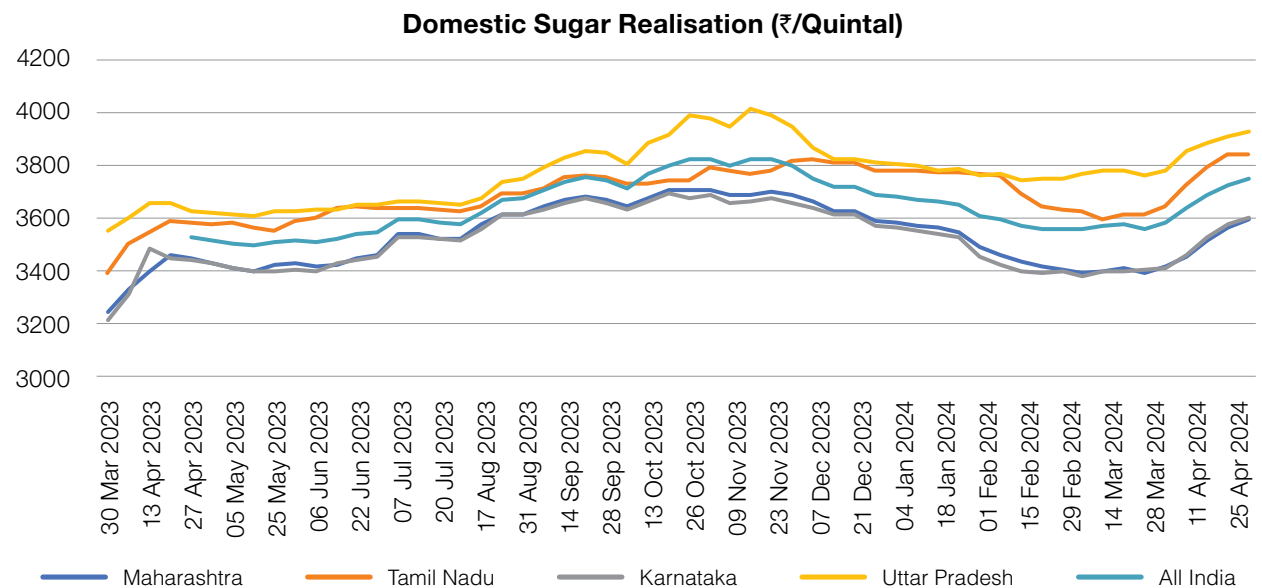
### Indian Sugar Industry: Market Updates

- Restrictions on use of sugarcane-based feedstocks for production of ethanol:** On December 15, 2023, the Department of Food and Public Distribution (DFPD), Government of India, issued directions that in view of the lower expected sugar production in the country (with major drop in Maharashtra & Karnataka), the sugar industry should restrict the sugar sacrificed through the B-heavy & sugarcane juice/syrup route for ethanol to 1.7 million tonnes vs 4.1 million tonnes in the previous season. It directed sugar units countrywide to operate on C-heavy process. This was done to ensure sufficient sugar stock availability in the country to meet internal consumption requirements. At the end of April 2024, the Government allowed sugar mills to convert their existing stocks of 6,70,000 tonnes of B-heavy molasses into ethanol.
- Hike in Fair and Remunerative Price (FRP):** The Central Government fixed the FRP of sugarcane for SS 2024-25 at ₹ 340 per quintal. This was linked to a basic recovery of 10.25% and subject to a premium of ₹ 3.32 per quintal for every 0.1% increase of recovery, over and above 10.25%, and also linked to reduction in FRP at the same rate for each 0.1% decrease in the recovery rate till 9.5%. With a view to protecting the interests of farmers, the Government has decided that there shall be no deduction where recovery is below 9.5%; such farmers will get ₹ 315.1 per quintal for sugarcane. The FRP for SS 2024-25 was 8% higher than the previous sugar season.

- Hike in State Advised Price (SAP):** On January 18, 2024, the Government of Uttar Pradesh revised the State Advised Price (SAP) of sugarcane for Sugar Season 2023-24 as follows:
  - Sugarcane price for Early Variety was revised from ₹ 350 to ₹ 370 per quintal
  - Sugarcane price for General Variety was revised from ₹ 340 to ₹ 360 per quintal
  - Sugarcane price for Rejected Variety was revised from ₹ 335 to ₹ 355 per quintal
  - The society commission rate was maintained at ₹ 5.50 per quintal
  - There was a revision in the transportation rebate for lifting of sugarcane from outside centres to ₹ 9 per quintal - up from the previous ₹ 8.35 per quintal. The slab rate within the transport rebate was adjusted to ₹ 0.45 per quintal per km from the earlier ₹ 0.42 per quintal per km
- Minimum Selling Price (MSP) remains 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 remains unchanged. It is imperative that the MSP of sugar and ethanol prices undergoes enhancement in a coordinated manner, along with input costs.

### Domestic Sugar Prices

Sugar prices in India moved up by 5-7% on an average in FY 24. Since April 2024, the domestic prices have inched up 3-4%, due to higher demand during the peak summer season.



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

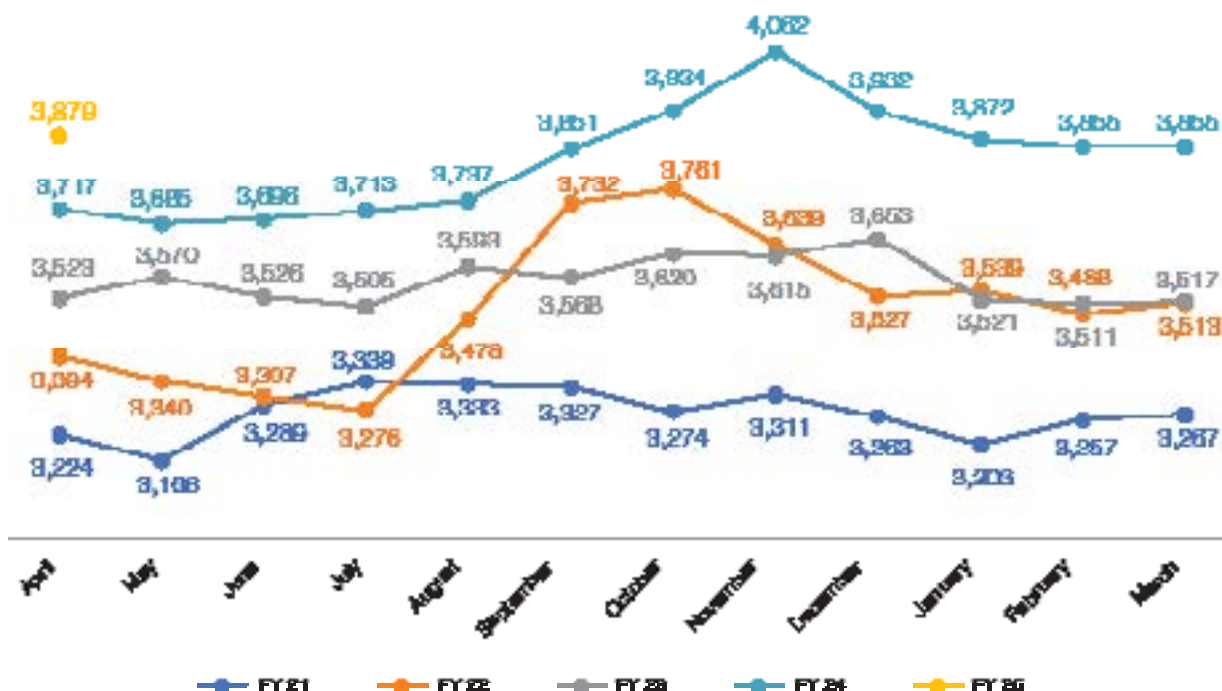
### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

Triveni Sugar Realisation (Domestic) (₹/Quintal)



## International Sugar Industry

### International Sugar Industry: Balance Sheet

As per recent estimates, the global sugar balance is estimated to be in surplus of ~1.89 million tonnes in 2023-24, and over 6 million tonnes in 2024-25. This is on account of improved supplies from key producing nations, such as Brazil and Thailand, along with sufficient production in India.

Sugar production in Brazil's Centre South (CS) region is expected to improve in this year's sugar season due to rains in late March and early April. As per recent reports, Brazil's CS sugarcane crop for 2024-25 is projected to be in a range between 620 million tonnes and 630 million tonnes. The sugar production is estimated at 42.5-44.5 million tonnes, with a crop target of 43.8 million tonnes, which would nearly equal the record production seen in the previous crop.

The sugar mills in Brazil are boosting their sugar production capacity as much as 10% in the new season from April, to take advantage of the relatively high sugar prices and relatively lower returns in ethanol.

Expectations from Thailand have also improved with the overall sugar production of ~9 million tonnes, up from initial estimates of 8 million tonnes. For next year, the crop is expected to further improve, with an estimated production of ~10-11 million tonnes.

### International Sugar Prices

On an average, the international sugar prices increased by 20-25% during FY 24. However, most of this outperformance was during the early part of the financial year. In November 2023, the NY #11 raw sugar futures front month contract nearly broke the US 28.00 cents/lb threshold, driven by global supply concerns due to lower production expectations. London White Sugar #5 also peaked at USD 763.40 per tonne. Prices have trended downwards since then, with emergence of news of higher production in Brazil and Thailand. In mid-March 2024, London White Sugar #5 front month contract was trading at USD 611.60 tonne, whereas the New York Sugar #11 front month contract was trading at US 21.72 cents/lb.

As on May 10, 2024, the NY #11 front month contract was trading at US 19.3 cents/lb, while London #5 was trading at USD 569.3 per tonne.

**The global sugar balance is estimated to be in surplus of ~1.89 million tonnes in 2023-24, and over 6 million tonnes in 2024-25.**

## Sugar Business

Indian Sugar Industry

[Triveni Sugar Business: Overview](#)

[Triveni Sugar Business: Performance](#)

[Triveni Sugar Business: Sugarcane Development Programme](#)

[Triveni Sugar Business: Outlook](#)

## Alcohol Business

Indian Alcohol Industry

[Triveni Alcohol Business: Overview](#)

[Triveni Alcohol Business: Performance](#)

[Triveni Alcohol Business: Outlook](#)

## Power Transmission Business

Market: Overview

[Triveni Power Transmission Business: Performance](#)

[Triveni Power Transmission Business: Outlook](#)

## Water Business

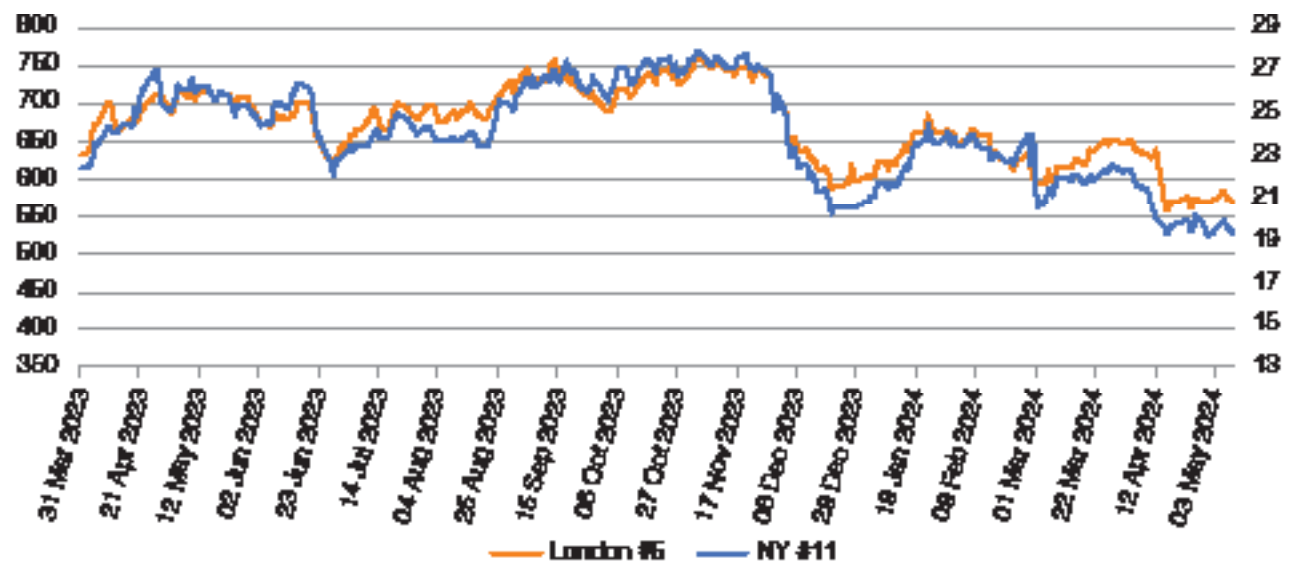
Water Business: Overview

[Triveni Water Business: Overview](#)

[Triveni Water Business: Performance](#)

[Triveni Water Business: Outlook](#)

NY#11 & London#5 Price Trend



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

### Triveni Sugar Business

#### Triveni Sugar Business: Overview

One of the largest integrated sugar producers in India, Triveni has a production footprint spanning seven state-of-the-art sugar manufacturing facilities, spread strategically across the state of Uttar Pradesh (UP). All units are located in well irrigated and fertile areas suitable for sugarcane cultivation. While Khatauli (District Muzaffarnagar), Deoband (District Saharanpur), Sabitgarh (District Bulandshahr) are located in Western UP, Chandanpur (District Amroha), Rani Nangal (District Moradabad) and Milak Narayanpur (District Rampur) are located in Central UP. One unit, namely Ramkola (District Kushinagar), is located in Eastern UP.

The Company's diverse product profile comprises plantation white sugar as well as refined sugar. The latter currently constitutes ~70% of the total sugar production and realises a premium over normal crystal sugar realisation. The Company also produces different grades of pharmaceutical (pharma) sugar that can be customised as per the user requirements. Refined and pharma sugar is supplied to high grade end-users, thereby creating a niche customer profile for Triveni. The Company also supplies high quality crystal sugar from some of its non-refinery units to large institutions, securing a high premium for it.

In addition, Triveni Sugar has a contract manufacturing business for private label sugar in North India, and is focussing on branded sugar for growth. All the seven sugar units of

the Company are FSSC 22000 certified, and pursue the highest standards in terms of manufacturing processes and quality. The Company supplies sugar to major multinational soft drink companies, leading confectionery manufacturers, breweries, pharmaceutical companies, dairies, top ice cream producers, etc.

#### Triveni Sugar Business: Performance

##### Key financial highlights of our Sugar business performance in FY 24:

- During FY 24, the Company's Sugar segment reported revenues of ₹ 3,858 crore, lower by 11.6% on a year-on-year basis. The decline was the outcome of 16.4% lower overall dispatches, both domestic and international. The Government did not announce any export programme for SS 2023-24, and the only sugar exported during the financial year was a balance of 14,531 tonnes from the previous year's programme
- Blended sugar realisations improved 5.8% y-o-y to ₹ 38,175/tonne, mitigating some of the impact of lower dispatches and cost increases
- Segment PBIT was largely flat y-o-y at ₹ 306 crore, with margins enhancing by ~90 bps to 7.9% in FY 24

##### Key operational highlights of our Sugar business performance in SS 2023-24:

- **Reduced crush due to water logging, crop submergence, and red-rot disease:** During SS 2023-24, there was a general trend of lower crush across Uttar

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

Pradesh, especially in the Western and Central parts of the state. The Company crushed 8.26 million tonnes of sugarcane in SS 2023-24 across the state. This marked a decline from 9.33 million tonnes crushed in the previous season, and was attributable to lower cane yields in three of the Company's sugar units, viz. Rani Nangal, Deoband and Milak Narayanpur. The cane yields came down due to heavy rains and water logging in certain regions, and the associated proliferation of red rot disease in the plant crop in the second half of sugar season. The Co0238 variety of sugarcane, which is widely used in the state of UP, has become susceptible to red rot disease in recent years. This impacted many sugar groups, including Triveni, in SS 2023-24. A comprehensive varietal replacement programme is underway at the Company to reduce dependence on this variety. SS 2023-24 witnessed a greater impact of higher diversion of sugarcane to kolhus and khandsari (unorganised jaggery sector), affecting the availability of sugarcane (drawal) to each of the Company's units.

- **Sugar production and recoveries:** The Company reported a gross recovery of 11.49% in SS 2023-24, as compared to 11.47% in SS 2022-23. It produced 0.89 million tonnes of sugar in SS 2023-24 as compared to 0.95 million tonnes in SS 2022-23. In view of restrictions on the use of B-heavy molasses and sugarcane juice to limit sugar sacrifice for ethanol production, sugar operations were largely carried out with C-heavy molasses, which led to relatively higher sugar production.
- **Capex initiatives underway:** Triveni continued to focus on enhancement in crushing capacity, modernisation, debottlenecking, and efficiency improvement activities, with its previously announced Capex. This includes expansion in the crushing capacity of the Sabitgarh sugar unit by 2,000 TCD, thereby increasing the crushing capacity to 9,000 TCD. This will lead to increased crushing capacity for the Company as a whole, from 61,000 TCD to 63,000 TCD.
- **Increase in refined sugar contribution:** In addition to Khatauli, Sabitgarh and Deoband facilities, the Company has transitioned to refinery process (DRP) at its Milak Narayanpur sugar unit. This has enhanced the contribution of refined sugar to its overall portfolio - from ~60% in the previous season to ~70% this year. It is important to highlight that, in addition to fetching a premium over normal sugar, the growing contribution of refined sugar also reduces the amount of sulphur used by the Company. The Company thus benefits from both, a superior product mix and more environment-friendly operations.



- **Improved performance in Khatauli and Ramkola units:** Despite the lower crush overall, two of the Company's facilities stood out in SS 2023-24. Khatauli, Triveni's largest unit, performed well yet again, and was the largest sugarcane crushing and sugar producing unit in Northern and Central India with a crush of 2.4 million tonnes. It was also one of the last units in UP to close the operations for SS 2023-24. Ramkola, the Company's only Eastern UP unit, saw a sharp improvement in crush, from 0.78 million tonnes in SS 2022-23 to 0.87 million tonnes in SS 2023-24. The sugarcane command area for this unit has a lot of low-lying areas, where the Company noticed some incidence of red-rot, albeit small, in the previous season. In the spring planting season, a structured programme was implemented to move to non-Co0238 varieties, such as Co0118 & CoP9301 etc. This effort yielded exceptional results during the season, with Ramkola becoming the Company's only unit to see increased crush along with an improved recovery. The Company aims to implement similar plans in the units affected in the current season, in order to improve its crushing performance in the upcoming season.
- **Lower steam consumption in Deoband:** The Company had undertaken a major process steam reduction activity at Deoband, which resulted in 3% lower process steam consumption during the year.

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Area under sugarcane (Ha)	167068	156671	166675	183423	194159	191840	195537	198376	204092	206170
Sugarcane crushed (LQ)	512.72	452.07	640.03	836.70	797.58	874.25	853.97	840.91	932.54	825.72
Sugar produced (LQ)	49.1	48.8	70.8	95.2	94.0	100.9	93.8	88.8	95.4	89.0
Net recovery (%)	9.57	10.80	11.06	11.38	11.79	11.54	10.98	10.55	10.23	10.78
Gross recovery (%)	9.57	10.80	11.06	11.38	11.79	11.97	11.86	11.70	11.47	11.49

Units	Sugar Recovery (%) *		Sugarcane Crushed (Million Tonnes)		Sugar Production (Million Tonnes)	
	SS 2022-23	SS 2023-24	SS 2022-23	SS 2023-24	SS 2022-23	SS 2023-24
Khatauli	9.96	10.87	2.49	2.40	0.25	0.26
Deoband	10.17	10.29	1.85	1.55	0.19	0.16
Ramkola	10.64	11.07	0.78	0.87	0.08	0.10
Sabitgarh	10.53	11.10	1.23	1.17	0.13	0.13
Chandanpur	10.28	10.98	1.04	0.91	0.11	0.10
Rani Nangal	10.54	10.67	1.11	0.71	0.12	0.08
Milak Narayanpur	9.82	10.53	0.83	0.65	0.08	0.07
<b>Group</b>	<b>10.23</b>	<b>10.78</b>	<b>9.33</b>	<b>8.26</b>	<b>0.95</b>	<b>0.89</b>

\*Recovery for SS 2023-24 is not comparable with previous season due to switching from B-heavy to C-heavy operations in line with the Government's directives

#### Triveni Sugar Business: Sugarcane Development Programme

Triveni's sugarcane development programme is pivotal to its sustainable growth strategy. The Company has in place a comprehensive sugarcane development programme, through which it continuously engages with farmers to increase sugarcane productivity. Its dedicated sugarcane development team works closely with the farmers, disseminating knowledge

on new technologies and innovations in the field of agriculture in general and sugarcane in particular.

The Company has been relentlessly pursuing a six-pronged strategy, aimed at the development of improved planting, cultivation, crop protection and harvesting techniques. The strategy also seeks to boost the crop quality and land productivity, resulting in enhanced income in the hands of farmers.



## THIS STRATEGY IS PILLARED ON

### Sugar Business

#### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

### Alcohol Business

#### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

### Power Transmission Business

#### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

### Water Business

#### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

#### Structured varietal substitution programme

In SS 2023-24, many sugar mills in the state of UP, including Triveni, faced the problem of red rot, resulting in a decline in sugarcane processing and consequently, in sugar production. A major factor behind this was that Co0238, which is widely grown, is highly susceptible to red rot. The Company has been working on diversifying crop varieties in the command area of its sugar factories. It has also adopted rigorous crop management practices. An aggressive varietal substitution programme is underway for identification, faster multiplication, and commercial use of desired high sugar and disease resistant varieties for the mutual benefit of the Company and the farmers. Various digitalisation measures have been undertaken as part of this programme to promote real-time information sharing and interventions, as well as faster dissemination of best practices across units and among the farmer community.

#### Significant focus on yield improvement

through various agronomic interventions (e.g. wide spacing, trench planting, etc.). The Company has been emphasising on before-wheat planting and ratoon management, providing higher time in the field to the spring planted sugarcane, thus leading to increased yield.

#### Active farmer engagement

Triveni has developed a large number of model demonstration (demo) plots, with yields 40-50% higher than normally obtained by farmers in their sugarcane fields. The aim is to showcase advanced practices to farmers. The plots are also helping educate the farmers on ways to achieve yield improvement, for replication in their own plots for income enhancements.

#### Crop protection from various pests & diseases

, using a structured and scientific surveillance programme: The Company is working rigorously to help farmers in implementing all recommended agronomic practices to mitigate disease severity. These include utilising healthy planting materials and certified seeds, maintaining field sanitation, practising crop rotation, ensuring proper drainage facilities, and implementing bunding in infected fields.

#### Soil health improvement

The Company is judiciously applying balanced dosage of fertilisers and nutrients, as per soil analysis reports and recommendations

#### Improvement in farm implements and mechanisation

This is aimed at making farm activities less labour intensive and driving economic improvements.

Various digitalisation measures have been undertaken with regard to the above-mentioned programmes to promote real-time information sharing and interventions, besides faster dissemination of benchmark practices across units and among the farmer community.



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

### Triveni Sugar Business: Outlook

The Company is focussing on substitution of the Co0238 variety through its robust and well-structured sugarcane development programmes across its seven sugar units. It is striving to substantially improve its crush, and enhance recoveries further in the upcoming sugar season over SS 2023-24. Judicious investments in improving efficiencies and reducing energy consumption are being made to reduce the overall cost of production.

Triveni's varietal replacement programme is driven by other promising, well-proven and high yielding/high sucrose varieties in the sugarcane command areas of its sugar units. Coupled with various yield enhancement measures, like spaced row, trench and autumn planting, this will help assure sugarcane availability to meet higher sugarcane requirements at the sugar units.

The Company's overall crushing capacity enhancement, from 61,000 TCD to 63,000 TCD, is progressing well, and is expected to support a higher crush in the coming season.

### ALCOHOL BUSINESS

#### Indian Alcohol Industry

The Indian Alcohol industry consists predominantly of ethanol for the purpose of blending with petrol, as well as industrial alcohol such as Extra Neutral Alcohol (ENA), Rectified Spirit (RS) and Denatured Spirit (SDS), which are used in various industries such as potable spirits, chemicals, solvents, etc.

### Indian Ethanol Industry: Overview

The Central Government has been focussing on reducing the country's dependence on imported crude oil, while minimising the environmental impact resulting from pollution and emissions. The Government has been actively promoting the production and blending of fuel ethanol with petrol, and has targeted 20% blending through Ethanol Blended Petrol (EBP) Programme or EBP20 by 2025. EBP20, which was earlier targeted by 2030, was advanced in December 2020, reaffirming the Government's focus and commitment towards biofuels as a key sustainability initiative.

The blending of ethanol with petrol increased from 1.53% in 2013-14 to 12% in ESY 2022-23, on the back of efforts made by farmers and industry, aided by favourable government policies. The supply of ethanol to Oil Marketing Companies (OMCs) increased from 38 crore litres in 2013-14 to 502 crore litres in ESY 2022-23.

According to a report by Niti Aayog and remarks of the Food and Consumer Affairs Ministry, ~1,016 crore litres of ethanol would be required in order to achieve the target of 20% EBP by 2025. About 334 crore ethanol would be required for other usages. This would necessitate capacity addition of 1,700 crore litres, with the plant operating at 80% efficiency.



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

### Indian Ethanol Industry: Market Updates

#### Ethanol feedstock related updates

- In July 2023, the Food Corporation of India (FCI) suspended supplies of surplus rice for the purpose of ethanol production. Despite the feedstock challenges, the industry has promptly shifted to damaged foodgrain and maize in the wake of this decision by FCI.
- On December 15, 2023, the Department of Food and Public Distribution (DFPD) issued directions that in view of the lower expected sugar production in the country (the major drop being from Maharashtra & Karnataka), the sugar industry should restrict the sugar sacrificed through the B-heavy & sugarcane juice/syrup route for ethanol, to 1.7 million tonnes vs 4.1 million tonnes in the previous season. It directed sugar units countrywide to operate on the C-heavy process. The move was prompted by the need to ensure sufficient sugar stock availability in the country to meet internal consumption requirements. At the end of April 2024, the Government allowed sugar mills to convert their existing stocks of 6,70,000 tonnes of B-heavy molasses into ethanol.

#### Ethanol requirements and supplies

- For ESY 2023-24 (November-October), OMCs floated tenders for 825 crore litres with a 15% blending target. Offers were received for 560 crore litres with 48%, i.e. 267 crore litres, from sugarcane-based feedstocks, and the balance 52%, or 292 crore litres from grain-based feedstocks. The ratio for sugarcane and grain-based feedstocks supplied in the previous tender stood at 73:27
- Till March 31, 2024, OMCs had procured 224.46 crore litres out of the total requirement of 825 crore litres for ESY 2023-24 (November-October). The sugar sector contributed 126.25 crore litres of this procurement, while the grain sector contributed the remaining 98.21 crore litres
- The achieved blending percentage, as of March 31, 2024, stands at 11.96%

**For ESY 2023-24 (November-October), OMCs floated tenders for 825 crore litres with a 15% blending target. Offers were received for 560 crore litres with 48% from sugarcane-based feedstocks, and the balance 52% from grain-based feedstocks.**

- The sugar sector supplied 56% of the total supplied quantity, whereas the grain sector supplied 44% of the total supplied quantity, as of March 31, 2024
- Contracts for 320.36 crore litres had been executed by the OMCs till March 31, 2024
- Uttar Pradesh Molasses Policy:** During the year, the UP State Government retrospectively amended the Molasses Policy for 2022-23 on levy molasses obligations. The amendment was aimed at equating B and C heavy molasses without considering the respective increased generation and equivalent ethanol output. For molasses year 2023-24, the State Government has introduced an elevated levy obligation. In case of C-heavy molasses, sugar mills are now mandated to allocate 26% of their molasses generation for country liquor purposes, and in case of B-heavy molasses they are obligated to allocate 19% of their B-heavy molasses generation for country liquor purposes. It is important to point out that a different levy obligation in respect of C-heavy and B-heavy molasses recognises the distinction in their respective ethanol output, as desired by the industry.

### Indian Ethanol Industry: Prices

Keeping in mind the developments and volatility in feedstock, the rates of ethanol were revised on multiple occasions during the year. The prevailing ethanol prices, along with recent changes, are summarised as under:

Name of Feedstock used for producing Ethanol	ESY 2022-23	Revised Rates ESY 22-23 Effective from August 22, 2023	Revised Rates with incentive (₹/litre)	
			ESY 2023-24	ESY 2023-24 Effective from January 5, 2024
Sugarcane Juice / Syrup	65.61	65.61	65.61	65.61
B-Heavy Molasses	60.73	60.73	60.73	60.73
C-Heavy Molasses	49.41	49.41	56.28	56.28
Damaged Food Grains	55.54	64.00	64.00	64.00
Maize	56.35	66.07	66.07	71.86
Surplus Food Grains (FCI Rice)	58.50	58.50	58.50	58.50

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook



### Triveni Alcohol Business

#### Triveni Alcohol Business: Overview

As on March 31, 2024, the Company had an overall capacity of 660 Kilo Litre Per Day (KLPD), which was further enhanced by 200 KLPD, taking the aggregate distillation capacity to 860 KLPD.

The Company has 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) in Uttar Pradesh, and a recently commissioned 200 KLPD facility at Rani Nangal (RNG).

MZN houses two facilities, with the latest being a grain-based distillery. The first 200 KLPD distillery at MZN boasts of flexible product manufacturing capability - Ethanol, Extra Neutral Alcohol (ENA), Rectified Spirit (RS) and Denatured Spirit (SDS) from molasses. The second 60 KLPD grain-based facility at MZN produces both Ethanol and ENA. Dried Distillers Grain with Solubles (DDGS), a by-product produced in grain plants, is sold to premium institutions and has been well accepted in the market. The Company also manufactures Indian Made Indian Liquor (IMIL) at this complex, to effectively use molasses that are reserved to be sold to country liquor units at a price much lower than the market price, and to facilitate forward integration of its distillery operations.

SBT distillery produces high quality ethanol from molasses, while the distillery at MNP is a multi-feed stock plant equipped with the ability to use molasses and sugarcane juice/syrup, as well as grains to produce high-quality ethanol. At the time

of its commissioning, the distillery at MNP was among the largest new multi-feed distilleries set up in India. The newly commissioned facility at RNG is also a multi-feed stock plant, having the ability to use molasses and sugarcane juice/syrup, as well as grains to produce high-quality ethanol.

As an environmentally conscious and responsible corporate, the Company follows the highest standards in Environment, Health, and Safety (EHS), with stringent compliance to environmental and pollution norms. It has set up concentrated spent wash (termed SLOP) fired incineration boilers at all the distilleries, as per the prescribed directives and guidelines for effluent treatment, ensuring Zero Liquid Discharge (ZLD).

#### Our distillation capacity journey over the years and outlook

In FY 23, the Company embarked on capacity expansion and enhanced its total distillation capacity from 320 KLPD to 660 KLPD. This was achieved through capacity augmentations at Sabitgarh & Muzaffarnagar distillery to 200 KLPD each, commissioning of the 200 KLPD multi-feed distillery at Milak Narayanpur (MNP), and a 60 KLPD grain-based distillery at Muzaffarnagar Distillery complex, where superior quality Ethanol / ENA is produced. In the next phase of expansion, the Company announced that its capacity will be further enhanced through two new multi-feed stock distilleries with an aggregate capacity of 450 KLPD, at Rani Nangal and Sabitgarh, UP, at a cost of ₹ 460 crore. This will take the total distillation capacity to 1,110 KLPD.

In May 2024, the Company commissioned the 200 KLPD multi-feed distillery unit at its Rani Nangal sugar complex, taking its aggregate distillation capacity to 860 KLPD.

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

However, considering the Government's existing policy and challenges in availability of permitted grains at viable procurement costs for distillery operations, it has been decided to keep the implementation of the new proposed distillery expansion project at Sabitgarh, UP, in abeyance.

#### Triveni Alcohol Business: Performance

FY 24 saw the Company gripped by several feedstock challenges, leading to disruption in planned production, such as abrupt stoppage of surplus rice by FCI, restrictions with respect to usage of B-heavy molasses, introduction of maize as feedstock, price volatility in feedstocks, etc.

The distillery operations in the latter part of FY 24 were carried out with C-heavy molasses and maize as feedstocks, instead of the B-heavy molasses and FCI rice which were being used earlier. This caused the operating capacities to decline, leading to lower production. This, in turn, resulted in the margins on maize operations being relatively lower despite price corrections.

While it was creditable on the part of the Government to act swiftly to revise the prices of ethanol produced from maize and from Damaged Food Grains (DFG), most of this increase did not, however, materialise in terms of profitability as raw material prices also went up considerably.

The Company also experienced reduced availability of sugarcane-based feedstocks for its distillery operations due to lower crush in SS 2023-24, which also impacted the overall operational and financial metrics.



During the year, the Company ventured into the new business of manufacturing, marketing and selling own brands in the premium segment of Indian Made Foreign Liquor (IMFL) as a forward integration of its distillery operations. The business foray would involve setting up a state-of-the-art bottling plant in Muzaffarnagar, Uttar Pradesh, to produce high quality IMFL products at an estimated cost of about ₹ 25 crore, subject to receipt of necessary statutory clearances. The new facility is expected to be ready for commencement of production during H1 FY 25.

#### Summary of Alcohol business performance is as follows:

- Achieved production of 18.44 crore litres & sales of 18.27 crore litres during FY 24
- The net turnover in Distillery business increased by 8.6% over the previous year, mainly due to 1.3% higher dispatches, 2.9% higher average realisation price on account of increase in the ethanol prices and product mix, and higher turnover of IMIL business driven by 34% higher dispatches (44.73 lakh cases in FY 24 as compared to 33.36 lakh cases in the previous year)
- During the year, revenues from the distilleries contributed 24% of TEIL's net turnover
- Ethanol constituted 93% of alcohol sales during FY 24, similar to last year
- Sale of Ethanol / ENA produced from sugarcane-based feedstocks (majorly B-heavy) constituted 67% of the total alcohol sales for FY 24 (75% for FY 23), while Ethanol / ENA produced from grain contributed to the balance 33% in FY 24 (25% in FY 23)

#### Triveni Alcohol Business: Outlook

Our long-term strategy for growing the Alcohol business, and to be an active partner in India's E20 programme and self-reliance journey, is driven by our passion for manufacturing premium quality products at all our manufacturing facilities.

Our distillation facilities have the flexibility to operate with a range of feedstocks to choose from, which also mitigates the risk of dependency on a particular feedstock. However, it is equally important for the Government to set viable prices for each feedstock, to facilitate continuous and uninterrupted capacity additions to meet the overall ethanol blending targets.

Regarding further enhancement of capacity, the situation is under watch and the Company is hopeful that the feedstock and profitability challenges faced in FY 24 are temporary, and the situation will normalise soon as the Government of India is committed to ethanol blending targets.

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

## POWER TRANSMISSION BUSINESS

### Market: Overview

#### Indian Industrial Gears Industry Overview

The Company estimates the Indian industrial gear industry at ~USD 500 million, of which the high-speed gear market is estimated at ~USD 30 million. High-speed gears are used in various applications like Steam Turbine Generators / Gas Turbine Generators / Rotary & Reciprocating Compressors / Centrifugal and Reciprocating Pumps / Blowers, Hydro Turbine Generators / ID-FD Fans.

New product demand in this segment is being fuelled by investments in end use industries, which include Ethanol Blended Petrol (EBP) programme, capacity enhancement of refineries, and investments in Petrochemical complexes attached to refineries, along with captive power requirements across all segments. Aftermarket growth is driven by higher capacity utilisation, leading to higher maintenance spends, increased demand for efficiency enhancements, and the need for upgrades, to name a few.

#### Defence Industry Overview

The Government's 'Make in India' policy is propelling the Indian defence industry towards the development of indigenous capability and technology across a wide spectrum, including critical areas, to minimise import dependence.

The Defence Budget of India has seen a consistent and notable increase over the past few financial years. The Ministry of Defence (MoD) has been allocated ₹ 6.21 lakh crore, which is 13% of the total budget, for FY 25. The allocation to DRDO for Research and Development in Defence in the FY 25 budget is ₹ 23,855 crore, of which a significant portion is for capital expenditure. MoD is proactive in identifying and encouraging competent and capable vendors. The geopolitical environment is also driving higher defence budget spending due to a growing focus on national security.

#### Triveni Power Transmission Business: Overview

Triveni's Power Transmission Business (PTB) is segregated across two streams - Gears & Defence. Within gears, the business segments include Original Equipment Manufacturer (OEM), Built to Print (which together are referred as Product), and Aftermarket.

PTB was founded in 1976 to meet the increasing demand for high-speed gears for Steam Turbine Generator (STG) applications. It has, over the years, evolved and grown, and is today synonymous with cutting-edge technology, knowledge and expertise, covering installations in 80 countries across

a wide range of applications. The business has extensive expertise in design and development of all sorts of gears and gearboxes, as well as a modern, globally benchmarked manufacturing facility.

PTB has grown to become one of the largest and leading gear manufacturing companies in India with a 48-year track record and a rich legacy. It has carved a niche for itself by being ubiquitous across industry segments and application spectrums.

#### OEM Segment:

- PTB caters to international OEMs for their new product requirements, provides durable aftermarket solutions across all brands, and also manufactures built-to-print gears for some of the world's leading OEMs
- PTB is a world-class business, with an unwavering dedication to research & development, product excellence, technological superiority, and customer care
- PTB is being patronised by all the major global OEMs in India, Southeast Asia and other parts of the world, offering power transmission solutions to various applications like Steam Turbine Generators / Gas Turbine Generators / Rotary & Reciprocating Compressors / Centrifugal and Reciprocating Pumps / Blowers, Hydro Turbine Generators / ID-FD Fans
- PTB gearboxes are compliant to API and AGMA standards, and cater to various industry segments like Thermal, Oil & Gas, Petrochemicals, IPPs, Fertilisers, Steel, Cement, Sugar, Rubber & Plastics, spanning all geographies
- PTB gearboxes are optimally designed to comply with stringent API and AGMA standards for installation in extreme ambient conditions of sub-zero or high temperatures. The gearboxes are engineered to various configurations, such as multiple outputs, vertical and horizontal offset, quill shaft, etc. Accessories include in-built and skid-mounted lubrication system and temperature, as well as vibration instrumentation package suitable for hazardous area applications, meeting stringent noise and vibration limits
- Reliability, achieved through superior technology, manufacturing and product quality, coupled with over four and half decades of rich experience in high technology gears, is the Company's key strength in this business. This enables Triveni to develop customised gear drives, meeting tough demands of industries across high-speed as well as niche slow-speed applications

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

### Built-to-Print Segment:

- PTB has ventured into built-to-print gears of high quality for select global customers, leveraging its high-precision specialised manufacturing capability. The precision quality requirements for these select customers resonate well with PTB's forte in high-speed gearing
- PTB's strong edge in this segment aids the business with recurring revenues and effective utilisation of its capacities through selective participation in opportunities

### Aftermarket Segment:

- Aftermarket services are integral to the industry. PTB undertakes repair & refurbishment, predominantly of world-renowned brands followed by local brands as well
- A two-pronged strategy is adopted in the event of failure - short-term & long-term solutions. Short-term solutions include minor repair with minimum lead time to maximise the uptime of the equipment, whereas long-term solutions are aimed at creating higher order of reliability, and include major repair and replacement of parts
- PTB's current product portfolio - OEM as well as repair & refurbishing - is supplemented by its service portfolio, which includes:
  - Diagnostic study and health check-up
  - Overhauling
  - Upgradation and automation of existing plants
  - Installation and commissioning
  - On-site training and assistance
- Triveni PTB provides reliable 360-degree customised services throughout the product life cycle at the lowest cost, thus maximising uptime and performance. Major end customers include global O&G companies and refineries, Cement, Sugar, Steel, Fertiliser, IPP, Thermal, Hydro, Paper and Pulp, Petrochemical and Chemical industries

### Defence Business:

Triveni is an OEM for a host of important products for the Indian Navy and Indian Coast Guard. The Indian Navy has chosen Triveni as its reliable supplier for propulsion shafting and turbopumps for its indigenous sub-surface project.

Triveni Defence business solutions include: platform level support, propulsion systems equipment as gearboxes and propulsion shafting, gas turbine generator for auxiliary power generation, and individual equipment such as pumps,

**A new multi-modal Defence facility is being set up with large-scale infrastructure for manufacture, integration and testing of various naval marine equipment.**

etc. Based on its vast expertise and experience in rotary equipment and engineered systems, Triveni has ventured into the development of indigenous technology for many major equipment for defence.

Triveni's expertise lends it the versatility needed to take on the development of a range of engineered equipment and systems for different applications. A new multi-modal facility is being set up with large-scale infrastructure for manufacture, integration and testing of various naval marine equipment. PTB has ventured into a specialised business vertical of propulsion shafting by partnering with an internationally renowned technology partner for all upcoming projects related to surface ships. The Company's in-house technology for multiple products, coupled with technology partnerships for other product lines, is facilitating participation in multiple ship building projects of Indian Navy and Coast Guard. This is a pioneering initiative aligned to the Atmanirbhar Bharat policy of the Government of India.

Triveni's offerings in this segment are backed by:

Research & development expertise on critical turbo products

Fully equipped design, engineering and analysis capability

Best-in-class manufacturing infrastructure

Compliance with the dynamic defence market demands in India

Stringent adherence to quality requirements

Vast experience in reverse engineering, retrofitting, and customisation

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

### State-of-the-art Infrastructure

Triveni manufactures quality products, benchmarked to the highest standards, in this segment at its state-of-the-art manufacturing facilities. The facilities have the most advanced world-class multi-axis CNC machinery and equipment-handling capacity of 80 tonnes, and are ideally suited to support the manufacturing of technologically superior products for the Indian Defence sector.

In FY 24, Triveni's Board announced Capex towards expansion of the Power Transmission business aggregating to ₹ 360 crore, of which ₹ 180 crore was approved by the Board of Directors in Q3 FY 24. This Capex enhances the capacity of gears business alone (not including Defence) from ₹ 250 crore to ₹ 500 crore. The investments are aimed towards the development of a new bay (grinder/hobber/equipment) for both power transmission and defence products.

Expansions include setting up a new multi-modal facility, dedicated to Defence products. Given the potential for further expansion and growth in this segment, Triveni is in the process of establishing a large, dedicated multi-modal manufacturing, assembly and testing facility at Mysuru for defence products. This will have 50-80 tonnes handling capability and large-scale machining facility, in addition to dedicated test benches for a range of equipment and system integration capability.

### Focus on R&D

PTB's continued focus on R&D is directed towards the development of products to address its international forays, improve product performance to stay ahead, and also to create a robust fundamental understanding of different technology elements of high-speed gearing. The new upcoming specialised R&D laboratory will strengthen PTB's ability to fast-track the introduction of new specialised products and technologies.

During the year, the business developed a high-speed high-power compressor gearbox, based on the market projections for international growth. The new gearbox can be horizontally deployed across multiple customers in the high potential Western markets. Accordingly, the project was initiated for a speed increaser compressor application for a European customer and validated through testing, both of which were completed in FY 24. This new technology is deployable for medium to high power compressor applications, utilising specialised bearings and materials.

### Triveni Power Transmission Business: Performance

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

In FY 24, PTB obtained substantial orders in 40 MW and above power ranges, including that of API standards, which incidentally shall be one of the highest power API gearboxes to be installed in India. PTB's presence in high technology compressor gearboxes, both for integrally geared as well as centrifugal compressor units, is laying the foundation for future growth in international markets. Some of the very large API gearbox orders were received from South American and European customers, including the first order from a leading Organic Rankine Cycle turbine manufacturer in Europe. During the year, PTB also saw healthy orders coming from high power small hydro turbine applications – an area of renewed potential expected to show growth in the coming years.

PTB's strong share of market in the Aftermarket space has been sustained, enabling it to maintain business-level profitability. PTB's key focus continues to be on providing replacement and refurbishment of any make of gearboxes, not just in high speed but also in niche low speed applications. PTB so far has replaced over 90 international brands in India and overseas, totalling more than 1,200 third party gearboxes.

#### Key highlights for FY 24 are:

- PTB order booking stood at ₹ 375.4 crore, registering a growth of 42%, and revenues stood at ₹ 291.8 crore - a growth of 30% over FY 23
- Aftermarket contributed ~36% to the overall revenue from the Power Transmission Business
- PBIT for the business grew faster than revenues at 40.1% to ₹ 107 crore, with PBIT margins of 36.7%, up 276 bps on a year-on-year basis
- Steam Turbine Generator segment continues to be the mainstay for PTB, while the emerging compressors segment shows the highest potential for growth in the future. From end users' point of view, sectors like Sugar, Ethanol, Oil & Gas, Steel and Cement have witnessed considerable investments, with large power range orders coming from infrastructure sectors like Steel

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

### Triveni Power Transmission Business: Outlook

India's economic growth is likely to sustain its momentum, with major investments being realised in infrastructure development. Thus, Steel, Cement, Oil & Gas and other process industries are likely to fuel growth, even as India is emerging as an attractive manufacturing hub for the global majors. Geopolitical factors are also favouring India's growth story.

PTB's growth is being realised not only from the growing economy and India's emergence as a manufacturing hub but also from the gain in the overseas market share, as well as forays into new product applications.

The Government of India's continuing thrust on Atmanirbhar Bharat and Make in India programmes directly opens up a plethora of opportunities for indigenisation of imported gearbox installations in all the public sector units. This is expected to be a growth driver for the Aftermarket business as well as Defence.

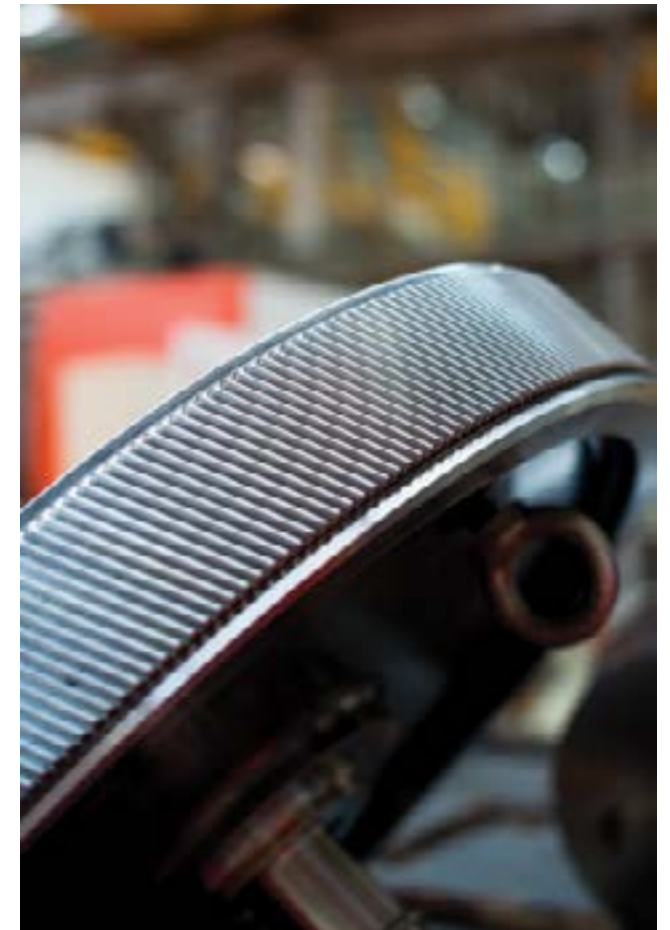
In Defence, Triveni's presence in multiple product lines and partnerships positions it ideally for participation in many upcoming ship building projects of Indian Navy and Indian Coast Guard. Further, Triveni's strength in providing complex engineered products and solutions, developed over the last many decades, shall be leveraged to venture into very diverse product lines and other services as well in the future.

In FY 24, Triveni amplified its focus on exports by leveraging its own technology and the fact that its products are qualified by all major global OEM customers. The diligence process included stringent qualification criteria, and the successful qualifications achieved through execution of initial orders during the year underlined Triveni's growing acceptance in the international market. Triveni's competitive technology, along with its cost and quality leadership, are the major drivers of its leadership position, not just in the domestic market but also in the high potential export markets from where Triveni expects major growth in the coming years.

### WATER BUSINESS

#### Market: Overview

India is one of the most water-stressed regions in the world, with 600 million Indians facing extreme water stress, according to a NITI Aayog report. The report warns that by 2030, water demand could be twice the existing supply, which could lead to severe water scarcity for millions of people and a ~6% loss to the country's GDP. In this backdrop, the importance of understanding and managing the nation's water needs and resources in an efficient manner is becoming ever more crucial. Recycling and reusing wastewater is essential to maintaining a sustainable future. Despite ongoing efforts to expand treatment



infrastructure, there remains a significant gap between sewage generation and installed treatment capacity.

Water and wastewater management is a promising subsector in India's environmental technology segment. Public and private sector facilities have ambitious plans to develop comprehensive water and wastewater treatment and distribution infrastructure. Demand for high-end treatment technologies is growing in India. Ensuring sustainable wastewater management is also crucial for public health and environmental well-being.

Notwithstanding the continuing growth in the industry, challenges exist in the form of lack of skilled manpower, inadequate funding, and inefficient regulatory frameworks. However, the Indian Government and private sector are working towards overcoming these challenges, and building a more sustainable and efficient wastewater treatment industry.

The Indian Government and various State Governments have launched several programmes and missions to improve water supply, sanitation, and wastewater management.



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

- National Rural Drinking Water Programme (NRDWP) and Jal Jeevan Mission (JJM) aim to provide potable tap water to every rural household
- The National Mission for Clean Ganga (NMCG) or Namami Gange programme is another initiative aimed at rejuvenation of the river Ganga and effective abatement of pollution
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT) aims to provide basic services like water supply and sewerage to households in urban areas
- Global agencies like the World Bank, Japan International Cooperation Agency (JICA), and the Asian Development Bank (ADB) are actively involved in funding water infrastructure projects in India
- State Governments fund various water & wastewater projects through their own budgets
- Private sector investments are promoting wastewater treatment, particularly in the PPP/HAM projects in municipal and industrial sectors

Water business opportunities are also arising in Eastern European Countries, South Asia, several African countries and MENA region.

### Triveni Water Business

#### Triveni Water Business: Overview

Triveni Water business has pan-India presence, besides operations in Maldives and Bangladesh. The Water Business

Group (WBG) of Triveni offers complete range of Water & Wastewater solutions, utilising innovative and advanced equipment and technology across a wide spectrum of applications. As tightening water and wastewater quality regulations are challenging the limits of conventional treatment systems, the Company provides cost-effective systems and services to optimise operational efficiency and lower the life-cycle costs.

In-house Equipment department of Water Business adds to its strength in EPC business. The business also boasts of a strong in-house Design & Engineering team. Triveni's good financial health is a key strength for participating in PPP/HAM concession projects, and it is actively exploring opportunities. The Company is geared up to undertake medium and large sized projects in India and overseas.

The various business sub-segments are detailed below:

#### Turnkey/Engineering Procurement and Construction (EPC) solutions

- Manufacturing of equipment for the entire spectrum of water and wastewater treatment Industry
- Water and wastewater collection and distribution networks, including their design, construction, operation and management
- Water treatment based on Conventional processes, Ultra Filtration, Reverse Osmosis, Demineralisation, and Sea Water Reverse Osmosis



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

- Wastewater/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 water & wastewater treatment plant, based on Ultra Filtration, Reverse Osmosis, Zero Liquid Discharge and Reuse
- Design, Build and Operate (DBO) water & wastewater management systems on Engineering Procurement and Construction (EPC)/ Public Private Partnership (PPP)/ Hybrid Annuity Model (HAM)/ Build Own Operate Transfer (BOOT) models
- Operations & maintenance of water and wastewater treatment plants

### Water Treatment, Wastewater Treatment, Tertiary Treatment, Recycle & Reuse, and Zero Liquid Discharge

The Company is committed to contributing sustainable solutions for water treatment, wastewater treatment, tertiary treatment, recycle & reuse, and zero liquid discharge, along with environmental protection with enhanced quality of life. It strives to provide a growing number of people with access to clean drinking water, and to secure environmentally-compatible disposal of municipal and industrial wastewater. This task drives the Company towards the development of new technologies, besides the ongoing optimisation of existing processes with a focus on emerging markets.

The wide range of water & wastewater treatment plants supplied by Triveni in India includes:

Municipal Water Treatment Plants
Sea Water Desalination Plants
Brackish Water Desalination
Industrial Process Water Treatment Plants
Sewage Water Treatment Plants
Common Effluent Treatment Plants
Tertiary Treatment Plants using UF/RO
Recycle and Reuse of Wastewater
Zero Liquid Discharge

Triveni is a leading player in the Indian market, and also has presence in international locations such as Maldives and Bangladesh. The Company constantly endeavours to deploy advanced technological solutions to contribute towards the growing needs of the society.

### Operations and Maintenance (O & M)

Operation and Maintenance (O&M) of water and wastewater systems encompasses decisions and actions taken for control and upkeep of infrastructure and equipment. Triveni provides O&M to keep the water supply safe. It is focussed on achieving the following outcomes related to operations & maintenance, and ensures that its client's system remains sustainable and affordable:

- Reduction in Non-Revenue Water (NRW) through metered water supply and consumption to estimate water usage and losses and, if necessary, implement a leak detection programme
- Maintain the source water from intake point from river, sea, dam, raw water reservoir, or wellhead site
- Monitor any internal and external corrosion of piping and equipment and, if necessary, implement measures to reduce the rate of corrosion
- Monitor and maintain the condition of the water system
- Maintain a stipulated disinfection residual before discharge point
- Maintain positive water pressure under foreseeable operating conditions
- Implement a backflow prevention and cross-connection control programme
- Ensure the use of proper disinfection and flushing procedures for repairs and new construction
- Swab and/or flush the water mains
- Keep the treatment plant, pumping stations and reservoirs in good working order
- Keep the distribution system's valves and hydrants in good working order
- Maintain reasonable level of spare parts inventory

Triveni has significant experience in the Operations & Maintenance space of business for water and wastewater treatment plants, and offers the following services to customers:

## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

- Refurbishment, upgradation and automation of existing plants
- Spares, service consumables, and chemicals
- Annual maintenance contracts
- Operations and maintenance
- On-site or off-site piloting
- On-site training and assistance
- Product and process audits, health check-ups, and overhauls

### Processes and Technologies

Triveni Water has access to the latest technologies in water and wastewater treatment plants, and has gained vast experience in the following technologies:

- Moving Bed-Bio Reactor (MBBR)
- Sequential Batch Reactor (SBR)
- Activated Sludge Process (ASP)
- Anaerobic-anoxic-aerobic Process (A2O)
- Conventional technologies
- Filtration systems: Sand or Membranes
- High Rate Clarifiers
- Membranes systems
- Wastewater Recycling and Reuse of treated wastewater water
- Zero Liquid Discharge (ZLD)

### Hybrid Annuity Model (HAM)/ Public-Private-Partnership (PPP)

Triveni Water is executing following two projects in Hybrid Annuity Model (HAM) format:

#### Mathura Wastewater Management Private Limited (MWMPL) – a 100% subsidiary of TEIL

After achieving Commercial Operation Date (COD), MWMPL is successfully managing an Integrated Sewerage project under one-city-one-operator framework in PPP/HAM mode for the holy city of Mathura (Uttar Pradesh) under Namami Gange program of the Ministry of Jal Shakti, Government of India.

Objective is to make the Yamuna river flowing through Mathura city pollution-free for which all city sewage from the project's command area had been intercepted and diverted to various Sewage Treatment Plants (STPs) before discharging into the river. Part of sewage is being recycled post its treatment through membrane-based (Ultrafiltration followed by Reverse Osmosis – UF/RO) advanced treatment for process water use in a nearby Crude oil refinery of IOCL (Indian Oil Corporation Limited, Mathura).

The project is currently under Concession period of 15 years.

#### Pali ZLD Private Limited (PZPL) – a 100% subsidiary of TEIL

For the industrial city, Pali, in the state of Rajasthan, PZPL is executing a 12,000 M3 per day (12 MLD) capacity textile wastewater treatment plant to treat the wastewater from over 500 industrial units in its command area. This PPP/HAM job project is being part funded, as capital grant, by the CETP



## Sugar Business

### Indian Sugar Industry

#### Triveni Sugar Business: Overview

#### Triveni Sugar Business: Performance

#### Triveni Sugar Business: Sugarcane Development Programme

#### Triveni Sugar Business: Outlook

## Alcohol Business

### Indian Alcohol Industry

#### Triveni Alcohol Business: Overview

#### Triveni Alcohol Business: Performance

#### Triveni Alcohol Business: Outlook

## Power Transmission Business

### Market: Overview

#### Triveni Power Transmission Business: Performance

#### Triveni Power Transmission Business: Outlook

## Water Business

### Water Business: Overview

#### Triveni Water Business: Overview

#### Triveni Water Business: Performance

#### Triveni Water Business: Outlook

Foundation (Pali) along with Rajasthan Government through their designated agencies/departments.

This Common Effluent Treatment Plant (CETP) is Zero Liquid Discharge (ZLD) facility wherefrom the treated water shall be used by the Member industries and solids be disposed of in secured landfill facility. The treated water for Process water use for the member industries shall be generated through state-of-the-art advanced tertiary level treatment plant (TTP) involving UF & RO membranes system at post-treatment stage.

To minimise the Sludge generation as well as to ensure its least hazardous, extensive sludge dewatering, drying, heating & incineration processes are being deployed within the facility.

The project includes operation & maintenance (O&M) of the facilities for 15 years post COD.

### Triveni Water Business: Performance

#### Key Highlights

- The Water business achieved turnover of ₹ 246.33 crore in FY 24, lower by 30.1% y-o-y due to slow execution in certain projects and delay in receipt of new projects for which the Company's lowest bids are awaiting award
- PBIT stood at ₹ 31.41 crore in FY 24, higher by 29.4% y-o-y. The higher profitability was driven by cost optimisation/savings in various projects executed during the year
- FY 24 PBIT margins stood 12.8%, up 586 bps y-o-y
- WBG's regular participation in new bids in India and overseas has given it a strong market recognition and WBG is now recognised as a major force in this business
- Going forward, the majority of investments are expected from NMCG, BWSSB, DJB, UP, Telangana, Andhra Pradesh and Maharashtra. WBG is well positioned to undertake more jobs in its areas of expertise. Following its success in Bangladesh and Maldives, it is targeting selected overseas markets in Asia, Africa and Eastern Europe and others for new opportunities

#### Key achievements in recent years

- Across India, over 1,500 installations are successfully operating in various segments - infrastructures, industrial, and municipal
- Over 12,000+ MLD of water has been treated through WBG's projects and equipment
- Received several Water Awards for innovative project designs
- In 2022, received Bangladesh (construction of two sewerage treatment plant for Khulna Water Supply and Sewerage Authority), funded by ADB

- In 2022, received PALI HAM/PPP project
- In 2022, received Bhiwadi 6 MLD Zero Liquid Discharge (ZLD) project
- In 2021, received Maldives project of water and sanitation of 6 islands

### Triveni Water Business: Outlook

The WBG business outlook for FY 25 is positive. With current visibility, the Company expects to book healthy orders, including EPC and HAM projects. However, procedural delays may result in orders to be booked in the latter part of the year.

Overall, the business anticipates a surge in growth opportunities, and new funding will flow from Government of India and various State Governments. The private sector is ready to take investment position in PPP/HAM concessions and there is a need to structure the projects properly by the respective Concession Authorities. Equally important is the need to focus on mobilising new funding sources. Urban Local Bodies (ULBs) also need to build financial and operational capacity.

Due to significant gap between demand and current availability of water & wastewater treatment plants, Water industry growth will be sustainable for a long period of time. Demand for high-end treatment technologies is growing in India. Thus, the Water sector has a positive outlook and offers significant opportunities for various stakeholders, including EPC players, private developers, consultants, and technology and equipment suppliers.

New opportunities are emerging in recycle, reuse and Zero Liquid Discharge businesses on EPC as well as HAM model. Sewage recycling business opportunities are expanding, and wherever Industries are available as off-takers for buying treated sewage, this market segment will show significant adoption. With NMCG's focus on Ganga, STP opportunities continue to emerge on EPC/HAM basis, besides opportunities in schemes like AMRUT, JJM, etc. Exim Bank of India is providing significant funding in Asia and Africa, and it is expected that opportunities in the Water sector will increase with other major River Basins across India being taken up on the lines of Ganga River basin for holistic development.

The Company is also evaluating various international opportunities and intends to participate in several tenders in water & wastewater treatment projects.

The business is in discussion with several municipal corporations/Urban Local Bodies and water boards to catalyse PPP and HAM opportunities, and is trying to create a business niche. Triveni, with its strong financials, will invest in PPP/HAM concession projects and increase its EPC opportunities.