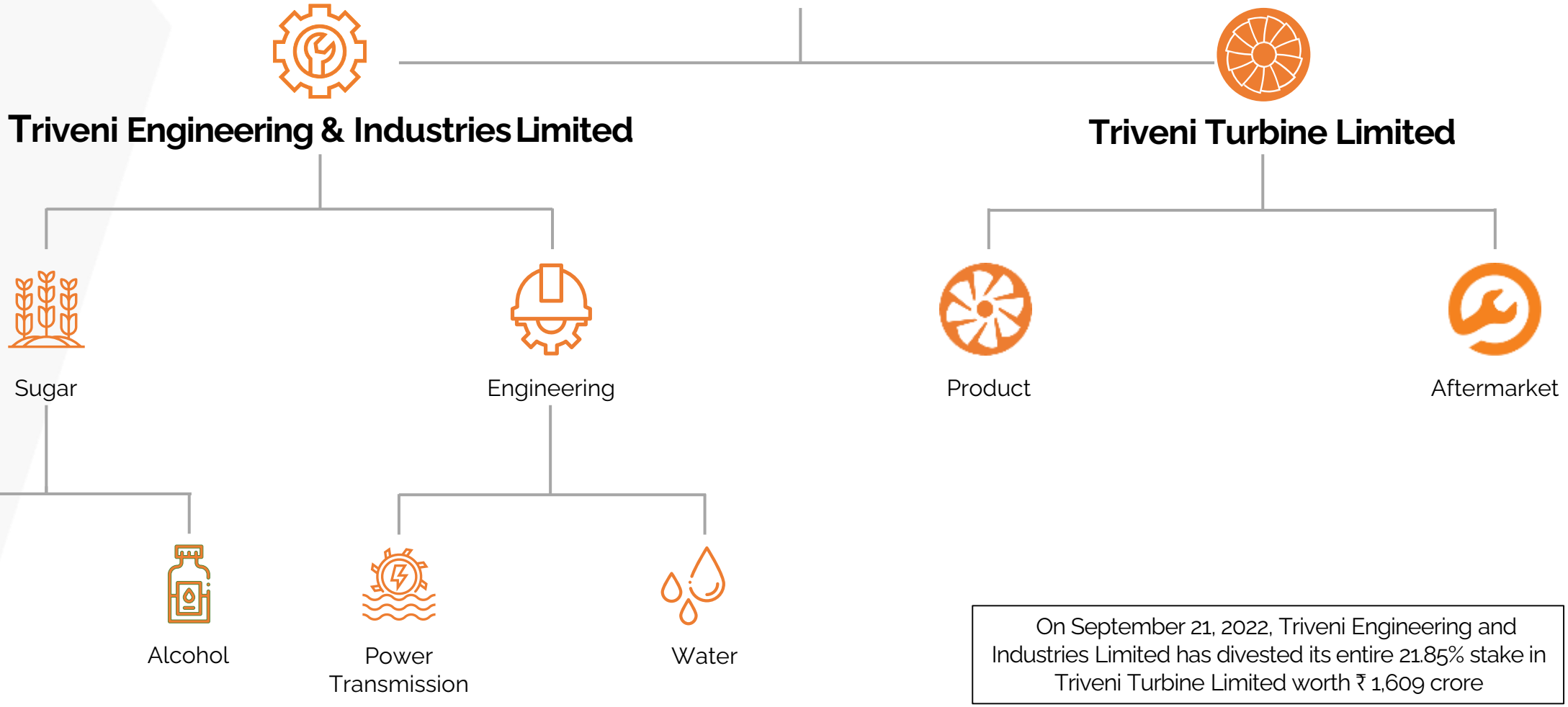
Triveni ENGINEERING & INDUSTRIES LTD. | Triveni GROUP

SMART WATER DISTRIBUTION

National Mission for Clean Ganga (NMCG)

02-March-23

STRUCTURE



On September 21, 2022, Triveni Engineering and Industries Limited has divested its entire 21.85% stake in Triveni Turbine Limited worth ₹ 1,609 crore

Triveni Water Business Group

- Water Treatment Plants
  - ❖ Raw water treatment plants
  - ❖ Process water treatment plants
  - ❖ Desalination plants
- Wastewater and Sewage Treatment Plants based upon Conventional/ ASP/ SBR/ BNR/ MBR/ Others
- Effluent Treatment Plants and CETPs
- Sludge Treatment
- Bio Gas System for Power Generation
- Recycling & Reuse of Sewage and Industrial effluents
- Water Supply & Sewerage Networks

KEY FACTS

1,200	~ 10,000 MLD	2,000 +
Installations across various segments	Water & Wastewater treated through Triveni projects	Process equipment supplied and commissioned

Monetisation of Developments under NMCG

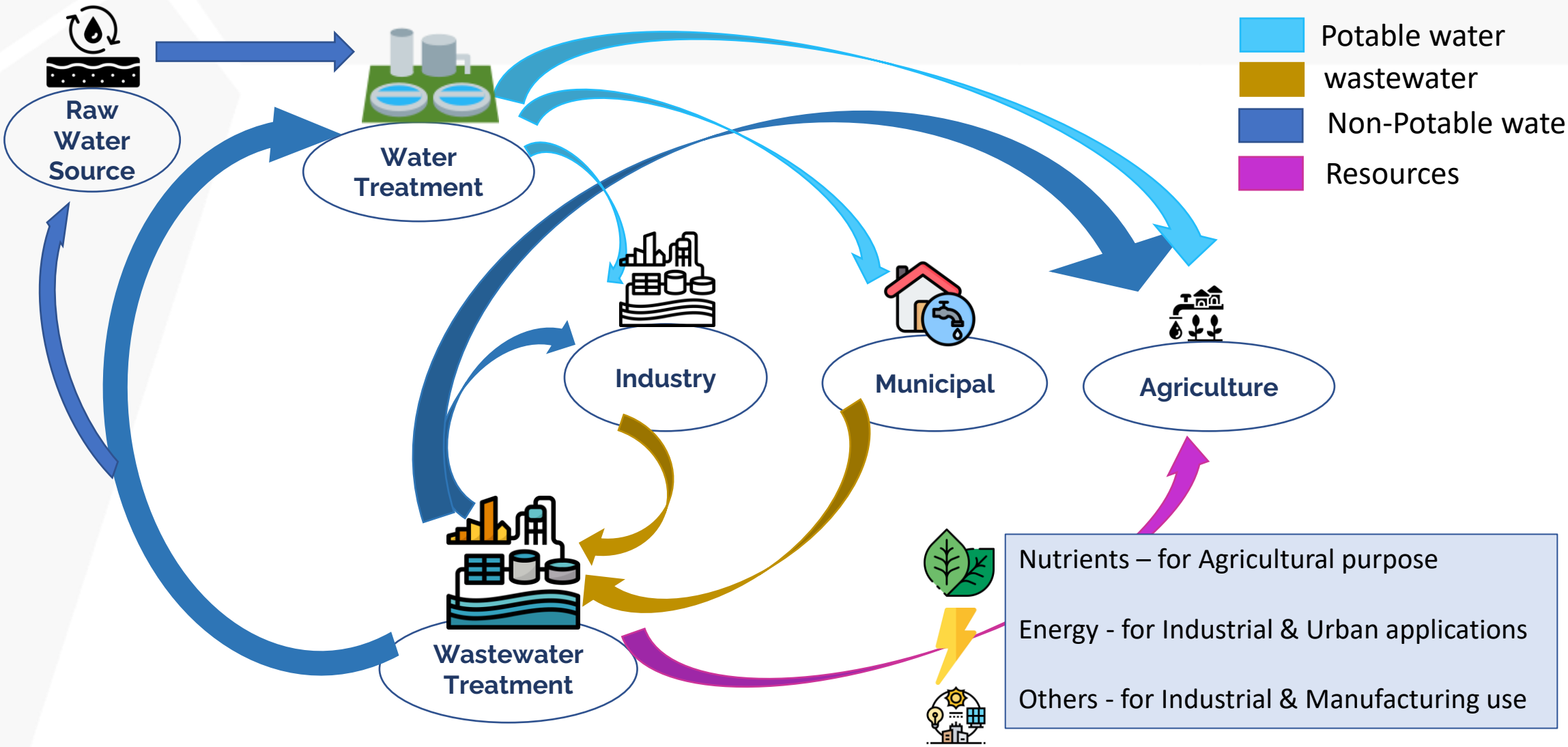
- **Mathura HAM project** under one-city-one-operator is a First ever integrated PPP/ HAM project wherein 20MLD tertiary treated sewage is sold to IOCL Refinery.
- UP Jal Nigam to get around Rs. 20 Crores per year as revenue by selling the sewage to IOCL.
- The project components include 20 MLD tertiary treatment plan at Trans Yamuna, 30MLD STP at Masani, Rehab. of 14.5 MLD and 16MLD STPs at Trans Yamuna, 20 I&D work, Pumping stations, etc. besides O&M of the entire facilities for a period of 15 years.
- NMCG focus of Phase-II of Namami Gange Program will be on sewerage infrastructure on the tributaries of Ganga/ Yamuna and scaling up of PPP development efforts.

We expect more such projects in the Country

Building Circular Economy around NMCG initiatives

- India is home to 17% of world's population while it holds only about 4% of global water stock. As per CPCB, currently urban India generates 72,368 MLD of municipal sewage which will increase to 120,000 MLD by 2050.
- This treated sewage can be a viable resource to offset part of the increased requirement for non-potable applications of water in agriculture, industry and municipal domains, thus bringing-in circularity in water-wastewater sector.
- NMCG to develop a Circular Economy model focused on 3R (Reduce, Reuse, Recycle) approach which is also a popular strategy of the UN Sustainable Development Goal (SDG) 2030 Agenda.
- As per estimates, Circular economy approach can generate Rs. 3285 Crores per year from sale of treated sewage (assuming 25% of treated sewage is reused), and Rs. 6700 crores per year from Sludge recycle & reuse by utilisation of gas & compost
- Key factors for success of Circular Economy for Wastewater and Sludge
  - Institutional mechanism at National & State level for circular economy.
  - Preparation of comprehensive new standards for designated reuse of the treated wastewater/ sludge.
  - Preparation of State Wastewater Reuse policy including industry specific business models.
  - Incentivising by-products & biogas generated out of sludge and tagging sale with chemical fertilizers.
  - Creating PPP/ HAM models for STPs and reuse of treated wastewater in different sectors.
  - Mandating use of recycled water in thermal power plants located within 50 km of ULB.
  - Imposing tax/ fine on dumping sludge in landfills/ open land.

Water in Circular Economy



Progress and Challenges of NMCG Projects

- The UN listed the 'Namami Gange' project to clean up the Ganga river as one of the world's ten "pioneering" initiatives that are successfully restoring the natural world.
- NMCG HAM Concession Agreements are well structured and risks are adequately allocated.
- Choice of Technology is open which is a positive approach.
- Payments are cleared promptly by NMCG.

Challenges of NMCG projects

- Pre-qualification - Entry barrier is very low which is resulting in established player with proven experience not getting projects and inexperienced players are quoting extremely low price to get the project.
- Power Guarantee in price evaluation – There is no benchmark in evaluating power guarantees. Some bidders are quoting abnormally low power figures which are not possible to achieve during O&M. There is no system to check what is reasonable power consumption levels.

It is recommended to remove power guarantee figures from price evaluation.

- There are land related constraints in some projects like Meerut, Mathura Gokul barrage, and Bareilly projects which is making layout very tight or have to go for double storey structures. In Saharanpur, several I&Ds proposed does not have enough space to construct structures.
- In some projects, incoming raw sewage parameters are different from Concession Agreement which is affecting performance of STP. In some cases, Industrial effluent is getting mixed with sewage and creating serious issues in O&M and damaging the plant.

It is recommended to prepare DPR with good due diligence and proper testing should be done

Triveni
ENGINEERING & INDUSTRIES LTD.

THANK YOU