GeoSmart India

Urban Development & Smart Utility Summit

Theme - Accelerating Inclusive Urban Transformation through Digital Integration
3-4 December 2025, Bharat Mandapam, New Delhi

Session title –
India's Urban Landscape: Challenges, Policies, Integrated Utilities and Innovation.

Presented by -
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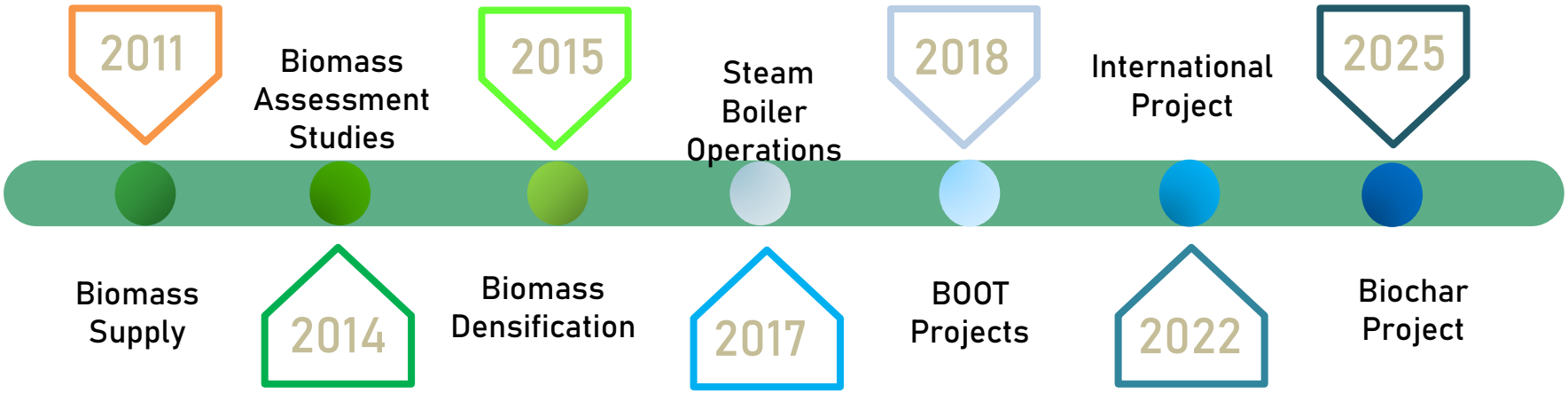
PRESPL

Our Journey



PRESPL – Veteran Driven Company

PRESPL's Core Competency: Biomass-to-Energy Transformation

PRESPL is India's premier Vertically Integrated Biomass Supply Chain company. Replacing Fossil Fuels by Agri Waste across industrial sectors Pan India.

- ✓ **Biomass aggregation and densification**
- ✓ **Briquette & pellet manufacturing**
- ✓ **Industrial steam solutions**
- ✓ **Waste-management innovation**
- ✓ **Eco-friendly end-of-life solutions (Eco Cremation)**

This makes PRESPL unique—***it manages the entire lifecycle of biomass,*** **from collection to green utility applications.**

PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

India's Urban Landscape & the Waste Challenge

- India's urban growth has led to an exponential increase in agro-residue, municipal solid waste, and industrial waste streams.
- Traditional disposal—burning, dumping, or inefficient processing—creates major environmental and public-health challenges.
- Industries are under pressure to decarbonize their thermal energy needs, which form the **largest component (60–70%) of industrial energy consumption**.
- Waste-to-energy solutions present a unique opportunity to convert liabilities into clean thermal energy sources.

PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

PRESPL: A Pioneer in Biomass & Waste-to-Steam Solutions

- PRESPL has been at the forefront of **biomass aggregation, supply-chain innovation, and decentralized bioenergy solutions** in India.
- Over the past decade, the company has built the country's most robust biomass ecosystem—working directly with farmers, FPOs, industries, and state governments.

PRESPL's approach focuses on

circularity, **rural income enhancement** and **industrial sustainability**.

Solution – Green Waste to Sustainable Renewable Energy

Supply Chain for Green Waste from Urban & Rural Areas

Coconut Shell, Palm Fronds, Leaves etc

Densification into Bio-coal

Briquetting Plant

Waste to Energy Green Steam

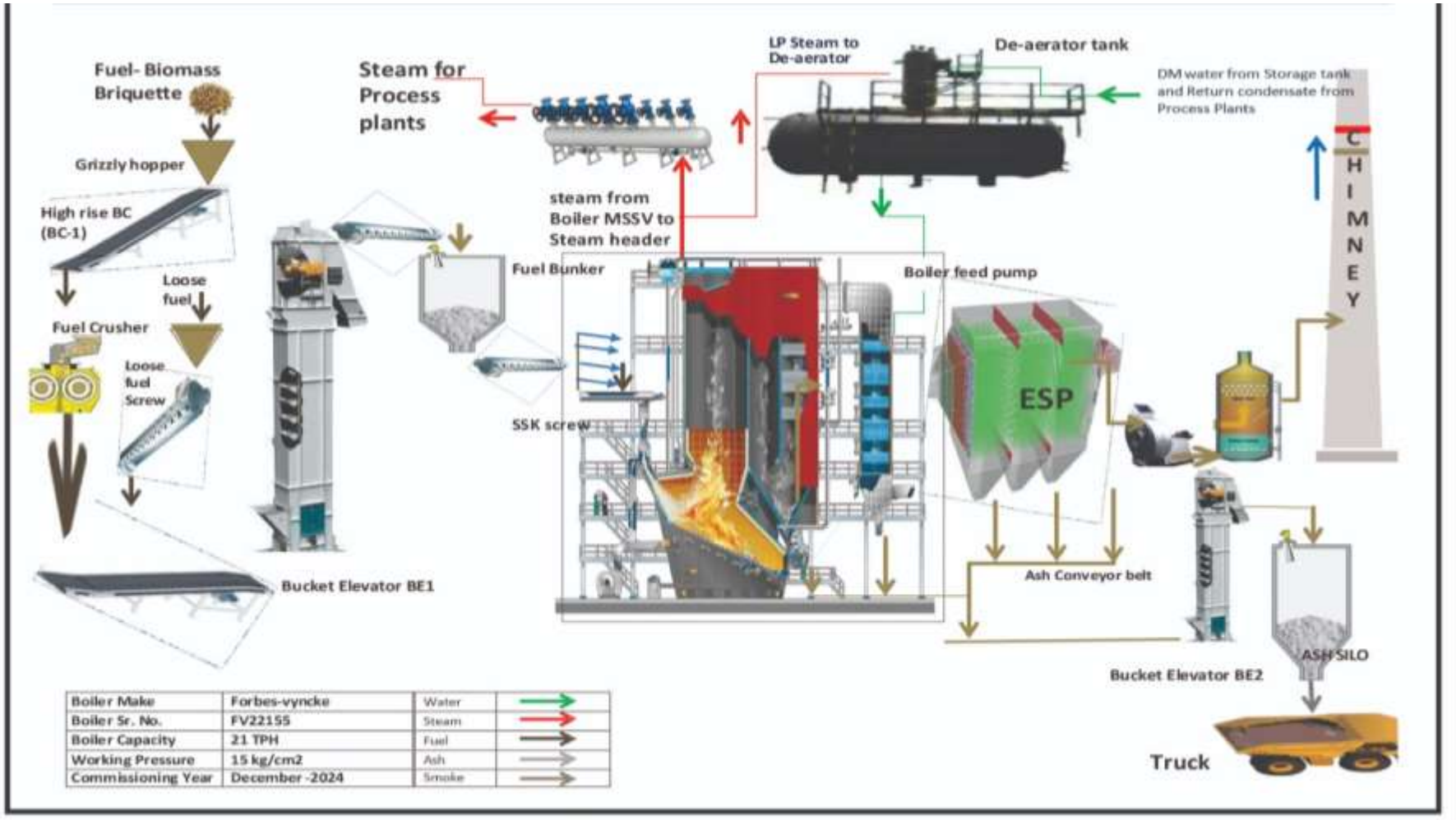
Green Steam Plant

Zero Pollution

Ash to Bricks

6

Agri waste to Industrial Steam



PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

Establishing Decentralized Biomass Processing Facilities

PRESPL sets up biomass collection centres and processing units **close to rural generating points**, reducing logistics costs and preventing open-field burning.

This supports state pollution-reduction strategies and contributes to India's clean-air goals.

PRESPL provides **Fuel Supply Agreements (FSAs) Supporting Industrial Steam Needs** like -

- FMCG
- Textiles
- Food processing
- Pharmaceuticals
- Chemicals

To contribute to eco sustainability and social responsibility, these industries are switching from **fossil-fuel boilers (coal, furnace oil) to biomass-based steam generation facilitated by PRESPL's reliable supply chain, operations and maintenance.**

PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

Decarbonization

- PRESPL's waste-to-steam operations enable industries to achieve **substantial CO_2 reductions**, **supporting ESG commitments and carbon-neutral pathways.**

- **Tapping of Carbon from Flue Gases.**

PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

Socio-Economic Impact

- Creates **sustainable rural livelihoods** through year-round biomass aggregation opportunities.
- Adds income to farmers by monetizing crop residues otherwise considered waste.
- Reduces stubble burning—a critical challenge in northern states, especially Punjab and Haryana.
- Supports the broader national vision of **Atmanirbhar Bharat**, **Swachh Bharat**, and **energy security**.
- Opportunity to utilise Biomass for producing clean Bioenergy

PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

PRESPL's Vision Ahead -

- Scaling waste-to-industrial-steam clusters across urban-industrial corridors.
- Expanding municipal biomass processing integrated with city waste-management authorities.
- Collaborating with industries, state governments, and technology partners to build India's **next generation of circular bioeconomy infrastructure**.
- Driving India toward a **renewable thermal energy revolution**, complementing the renewable electricity transition.

PRESPL's Contribution to India's Waste-to-Industrial Steam Ecosystem

At PRESPL, our mission is simple yet transformative — to ensure that no form of biomass waste goes unused, and every industry, big or small, has access to clean, renewable, and reliable thermal energy.

"Waste-to-steam is not just an energy solution;

it is a pathway to cleaner cities, empowered farmers, and a sustainable industrial future for India."

PRESPL®

PRESPL's **Innovation** to empower Sustainable Cremations

Sustainable Transition to Eco-Cremation using Biomass Briquettes and thereby reducing carbon footprint & retaining trees-green cover and natural carbon sinks for a Greener Future!

Energy Mapping

Eco-Cremation: Sustainable End-of-Life Solutions Powered by Biomass

PRESPL supports **biomass-based eco-cremation systems**, offering an alternative to:

- Traditional wood-based cremation
- High-emission electric cremation
- Expensive LNG/LPG cremation systems

Energy Mapping Highlights

- **Heat Utilised** (Core Combustion in specially designed chamber): ~65 -70% of total energy.
- **Heat Lost** in Surroundings: ~30- 35%.
- **Environmental Benefit**: Drastically reduces fossil fuel use & wood usage, ensuring carbon neutrality, resource efficiency, and aligning with **India's Mission Life goals**.

Problem Statement

- Hindu cremations/year in India: 76.65 lakh (aprox.)
- Each cremation uses 400–500 (2 trees)kg of wood → deforestation
- Emission of already capture harmful gases: CO_2, SO_2, NOx
- Wood procurement is seasonal and negative to Mission Life.
- Environmental & health hazards from open burning of farm agri-residue

Analysis of the problem

Sustainable initiative: Perfectly aligns with "**Powering the Net Zero Goals**" by dramatically lowering cremation carbon emissions.

Purpose: Replaces deforestation-causing wood pyres with clean biomass briquettes, reducing air pollution and serving climate objectives.

Scalable Opportunity: Showcases significant potential to make funeral practices sustainable at scale.

Appeal: Urges public, private, and policy support under India's Net Zero pledge & Mission Life to advance this solution.

Key data of the PROBLEMS

- Hindu cremations/year in India: 76.65 lakh (approx.)
- Briquettes needed: 200-250 kg per cremation against 400 - 500 Kg wood
- Offset: 153 lakh MT of wood annually corresponding to 11.42Lakhs Cr. of National asset value worth & carbon sink with 4.87 lakhs MT of CO_2 saved
- Briquette calorific value: 3600–3800 Kcal/kg (better than wood)

Implementation of Eco-cremation across India

- **Project**: Eco-Cremation Using Biomass Briquettes
- **Start Date**: 8 February 2022 (Aurangabad)
- **Implemented in: Aurangabad, Pune, Delhi, Ahmednagar, Guwahati, Nagaon and Varanasi**
- **Objective1**. Replace wood with biomass briquettes for cremation pyres.
- **Objective2:** Ensuring NBS & Carbon Sink retention.
- **Objective3:** Reduce cost of Cremation
- **Objective4:** Save national asset
- **Objective5:** Work for Societal change towards environment Mission Life

Counter-measures identified

- Retrofitting of cremation pyres to improve briquette combustion
- Onboarding and awareness of Shamshan Yogis/Cremation Workers
- MoUs with Municipal Corporations for direct procurement of Briquettes.

- Involvement of traditional wood vendors towards briquettes & thereby maintaining business/job availability.
- Policy support from CAQM directives and state orders

Solutions implemented

- 34 crematoriums (86 pyres modified) converted in Aurangabad
- 12,600+ trees saved in Aurangabad from July 2022 – May 2025.
- Briquettes needed: 200–250 kg per cremation
- Briquette calorific value: 3600–3800 Kcal/kg (better than wood)
- 6,300+ cremations completed using briquettes in Aurangabad
- Eco-cremation extended in Pune, Delhi, Faridabad , Ahmednagar, Nagaon, Guwahati, Varanasi with further 1800+ Cremations
- Development of Local distributor/wood vendors conversion and continuous briquette supply chain
- Information Education & Communication campaigns with religious and civic groups

Results Achieved

- Cremations with briquettes, conducted at -

  Aurangabad: 8000+ / Pune: 2200+ / Delhi: 200+ / Ahmednagar: 100+/ Assam 150+

- Public acceptance grew from 11% (July 2022) to 91% (Nov 2025)
- Over 1500+ MT of briquettes used
- Net deforestation, emissions, and cost reduced – **₹ 1586 Crore worth of forest value saved (National Asset Value of trees)**

Key Takeaways

Uniqueness:

- Cultural & religious sentiments continuity with climate circularity innovation
- Circular economy: Agri-waste → Briquettes Densification → Fuel → Cremation → Ash → Fertilizer

Takeaways:

- Scalable across 8000+ cremation grounds in India
- Aligns with Mission life ESG/CSR/Net Zero mandates
- Demonstrates replicable socio-environmental transformation & religious acceptance.

Socio-Economic & Environmental Benefits

Environmental

- Reduction in stubble burning across key agricultural states.
- Lower GHG emissions through biomass substitution.
- Cleaner air in cities and peri-urban areas.

Rural Development

- Additional income sources for farmers.
- Sustainable rural employment through biomass collection centers.

Urban Infrastructure Upgrade

- Eco-cremation modernizes civic amenities.
- Reduced dependence on firewood preserves green cover.

Industrial Sustainability

- Industries gain access to reliable, renewable thermal energy.
- Helps meet carbon neutrality commitments.

PRESPL's journey—from briquettes to eco-cremation—demonstrates how local biomass can power industries, support communities, and provide eco-friendly solutions for every stage of life.

PRESPL believes in a circular, geospatially informed bioeconomy where waste becomes wealth and sustainability becomes a shared responsibility."

Thank you Team

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Jai Jawan* II *Jai Kisan* II *Jai Vigyan* II *Jai Anushandan

Jai Hind!