ORGANIC RECYCLING SYSTEMS LIMITED
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Organic Recycling Systems Limited Announces path breaking Validation by SSS-NIBE of Proprietary catalyst "MethanoBoost Catalyst" (MBC) : potential to increase Methane Production by 30%, enhancing viability of CBG plants

Mumbai, India – 25th August 2025– Organic Recycling Systems Limited (ORS), a leading player in sustainable waste valorisation and Bio-energy sector, today announced a significant milestone in advancing Compressed Biogas (CBG) technology. The **MethanoBoost Catalyst (MBC)** developed by ORS has been **validated by the Sardar Swarn Singh- National Institute of Bio-Energy (SSS-NIBE)** for its potential to enhance biomethane yield and process efficiency.

The MBC is a proprietary catalyst designed to enhance biomethane yield & digestate enrichment in anaerobic digestion systems. Its advanced formulation, enriched with dispersed nanoparticles, facilitates in-situ CO_2 methanation, thereby boosting overall methane production.

The **breakthrough validation by SSS-NIBE** marks a step forward in sustainable CBG production, where **MBC**, derived from biomass residues, acts as an accelerator to improve microbial activity and optimize bio-methane yield. Independent laboratory evaluations and subsequent pilot-scale trials by SSS-NIBE validated MBC's efficacy in enhancing biomethane generation. Mechanistically, **MBC improves** redox conductivity, enhances direct interspecies electron transfer (DIET), and stabilizes pH buffering-key factors that underpin efficient hydrolysis and methanogenesis. Overall, MBC **increases methane yield by up to 30%,** while simultaneously improving process stability and substrate-to-biogas conversion efficiency.

The **MBC** demonstrates a scalable, robust, and sustainable solution for intensifying bio methanation efficiency, especially in systems utilising **lignocellulosic substrates** like Napier Grass & Paddy Straw. Its **dual impact-enhancing** Biomethane yield and digestate enrichment- positions it as a transformative catalyst for **integrated waste-to-Bioenergy and biofertilizer** applications. The incremental methane yield directly **improves profitability** and supports more sustainable CBG plant operations.

Building on this validation, ORS is launching demonstration at select commercial CBG plants across India. These deployments will demonstrate real-world performance, scalability, and long-term impact of the MBC on CBG plants productivity.

Commenting on the development, Mr. Sarang Bhand, Managing Director of Organic Recycling Systems Limited, said:
*"We are proud to have received validation from SSS-NIBE, a premier institution in bioenergy research. The **MBC** is a pioneering step towards making CBG production more efficient, sustainable, and economically viable. With further demonstration studies underway, we are confident this innovation will create a benchmark in the bioenergy sector and accelerate India's transition to clean energy."*

The demonstrations will be closely monitored in collaboration with CBG plant operators and technology partners. Once successfully demonstrated, ORS aims to integrate the catalyst across future projects and share the innovation with industry stakeholders to drive adoption at scale.

This initiative is aligned with the **Government of India's National Bio-Energy Mission** and the target of setting up **5,000 CBG plants under the SATAT (Sustainable Alternative Towards Affordable Transportation) scheme.** By improving biomethane yields, the innovation will strengthen the commercial viability of CBG projects and contribute to India's energy security and climate commitments.

About Organic Recycling Systems Limited (ORSL)

Organic Recycling Systems Limited (ORS) is a pioneering environmental engineering company specializing in sustainable waste management and valorisation solutions. Established in 2008 by technocrats, ORS develops and deploys robust, cost-effective, and eco-friendly technologies across the entire waste value chain.

ORS operates India's first municipal solid waste (MSW) processing plant based on a patented anaerobic biomethanation process, recognized by the Government of India under the National Master Plan. One of its flagship projects is located in Solapur, Maharashtra, where biodegradable waste is converted into **Compressed Bio-Gas (CBG)** *and* **fermented organic manure**, *exemplifying a scalable circular economy model.*

ORS currently has a total processing capacity of 400 tonnes per day (TPD) across its facilities, with 50% of this capacity currently utilized.

The company's operations span three strategic business verticals:

- **Project Development & Technology Licensing** – *Delivering turnkey projects and technology solutions for waste valorisation.*
- **Product Vertical** – *Offering a growing portfolio of bio-based products such as CBG, organic manure etc. that support sustainable energy and agriculture.*
- **Consulting Vertical** – *Providing specialized advisory services in environmental strategy, waste management, and regulatory compliance.*

Recognized under the Swachh Bharat Mission for operational excellence and innovation, ORS is actively pursuing EPC (Engineering, Procurement, and Construction) opportunities nationwide.

ORS's research and innovation efforts are reinforced through collaborations with esteemed institutions such as **IIT Bombay (IITB)**, **AGH University Poland, University of Birmingham (UOB)**, *and other partners. These partnerships continue to drive the company's intellectual property development and technological advancements in the environmental sector.*

For further information on the Company, please visit https://organicrecycling.co.in/

INVESTOR RELATIONS ADVISOR

Captive IR Strategic Advisors Pvt. Ltd
Krunal Shah / Vinayak Shirodkar
Contact No: *+91 9867018508 / +91 9892288895 / +91 8828297297*
Email Id: *Krunal@cap-ir.com / Vinayak@cap-ir.com*

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