

Organic Recycling systems Ltd. (ORSL) Embarks on Napier Grass Cultivation to Secure Sustainable Feedstock through Solapur Bioenergy Systems Pvt. Ltd. To Implement Conversion of Biogas to CBG Upgradation In existing Facility at Solapur.

Organic Recycling Systems Limited (ORSL) through its a wholly owned subsidiary Solapur Bio-Energy Systems Pvt. Ltd. (SBESPL) has initiated the cultivation of Napier grass as part of its strategic efforts to mitigate supply-side risks for its biogas plant in Solapur. By introducing this fast-growing and energy-rich crop, it aims to ensure a consistent and reliable feedstock for biogas production through co-digestion processes. The integration of Napier grass into the biogas plant's operations is expected to enhance the financial viability of Municipal Solid Waste (MSW) to Compressed Biogas (CBG) projects, especially in areas where resources for such cultivation are available.

Napier grass, known for its high biomass yield, is a promising solution to address the fluctuating supply of organic feedstock, which can often hinder the operations of biogas plants. The decision to cultivate the grass on captive farms—either owned or leased—within a 30-kilometer radius of its Solapur biogas facility demonstrates its commitment to optimizing energy output per kilogram of biomass. The cultivation will be carried out in compliance with specific energy yield requirements and applicable permits to ensure the successful integration of this renewable resource into the plant's operations.

In collaboration with appointed farmers and aggregation agencies, it has undertaken the cultivation of Napier grass across approximately 150 acres of land in Solapur district. SBESPL will oversee the entire farming process, including manpower allocation, equipment provisioning, and resource management such as fertilizers, water, and land optimization. The aggregation agency will work closely with SBESPL's partners to ensure seamless coordination of farm operations, from cultivation to the supply of Napier grass to the biogas plant. The first harvest is expected to be ready within the next two months, marking a significant milestone in the integration of farm operations with waste-to-energy initiatives.

This is a significant step towards ensuring a stable and reliable feedstock supply for biogas production, particularly through the cultivation of Napier grass. By securing a consistent source of high-yield biomass, the project not only mitigates the risks associated with fluctuating feedstock availability but also creates a replicable model that can be adopted by biogas plants throughout the region. The integration of agricultural operations with waste-to-energy facilities offers a comprehensive approach that enhances the efficiency and sustainability of Municipal Solid Waste (MSW) to Compressed Biogas (CBG) projects.

From an operational standpoint, the co-digestion of Napier grass alongside organic waste ensures that biogas plants can maintain steady production levels, even in the face of seasonal or supply-related challenges. Financially, this model becomes increasingly viable as it lowers the dependency on external feedstock sources, reducing costs and improving the overall economic feasibility of MSW to CBG projects. With reduced variability in feedstock supply, biogas plant operators can achieve more predictable energy outputs and revenues, making these projects more attractive to investors and stakeholders.

In addition to securing a reliable feedstock supply, It is also reducing cultivation costs by eliminating the need for chemical fertilizers in its Napier grass farming operations. Instead, the company is utilizing fermented organic manure (FOM)/city compost, by-product of the anaerobic digestion process at the SBESPL plant, to nourish the Napier grass crops. This

approach lowers input costs positioning it as a prime example of circularity in waste management.

By utilising the FOM into its agriculture operations, the project is creating a closed-loop system that captures carbon and minimizes the environmental footprint of its operations. This innovative use of FOM helps maintain soil fertility and gradually increase the nutrient content of the soil naturally. The project serves as a model for sustainable agricultural practices within the renewable energy sector, demonstrating how biogas plants can integrate waste-to-energy processes with eco-friendly farming techniques.

ORSL initiative highlights how biogas projects can go beyond energy production, contributing to environmental sustainability and making MSW to CBG projects more financially viable. By integrating farm-based feedstock cultivation with organic by-products from its operations, the company exemplifies a circular economy approach that optimizes resources, supports carbon capture, and promotes climate resilience. This is in complete sync with the technology licensing signed up with National institute of bioenergy to establish a pilot plant for culture preparation at solapur specifically for napier grass digestion and as well as VPSA based biogas purification system licensed for solapur project.

This innovative model sets a new standard for waste-to-energy/CBG projects in India, demonstrating how renewable energy production can sustainably align with agricultural practices, furthering India's clean energy goals.

About Us

Organic Recycling Systems Limited (ORS) is a pioneering engineering firm specializing in environmental solutions, offering comprehensive waste management solutions across various waste types and the entire value chain. Established in 2008 by technocrats, ORS focuses on developing robust, cost-effective, and eco-friendly technologies. With proven expertise, ORS operates India's premier Waste to Energy (WTE) plant, leveraging patented anaerobic biomethanation technology, recognized by the Government of India's National Master Plan. ORS operates a Municipal Solid Waste (MSW) processing plant in Solapur, Maharashtra, converting waste into electricity and compost since 2013. Recognized as a leader in best practices under the Swachh Bharat Mission, ORS is now positioned for EPC opportunities nationwide. ORS operates through three main business verticals: Project development & Technology Licensing, Product Vertical, and Consulting Vertical, providing a comprehensive range of services and solutions in the environmental sector. Through ongoing R&D initiatives and intellectual property development, ORS continues to innovate with new products and technologies, further expanding its presence and impact across the waste value chain.