

Key Information on the Project:
Waste to Energy and Fertilizer in the City of Naga, Cebu, Philippines

The main aim of the project “Waste to Energy and Fertilizer in Naga” is to process unused organic waste streams into renewable energy and organic fertiliser through processing it in a biogas plant. This process not only generates electricity and fertilizer but also prevents the waste from going to landfill, where decomposition under uncontrolled anaerobic (“air free”) conditions leads to the emission of methane, a greenhouse gas 27 more potent than CO₂. The most important sources of organic waste materials processed in this project is the organic fraction of household waste combined with industrial organic waste.

CEEI will establish the biogas plant where under controlled anaerobic conditions the organic material is processed to biogas, which is utilized to generate renewable energy. The electrical energy will be fed into the national power transmission grid providing households with renewable electrical power. The residual organic matter is processed to organic fertilizer. This will be distributed to farmers across Cebu, helping improve the productivity and sustainability of local agriculture. The operation of the biogas facility (including the collection logistics) will create jobs for members of the local communities.

The project activities shall be supported by carbon finance for the reduction of greenhouse gases. For this purpose, the project is seeking certification under the Gold Standard. The Gold Standard is one of the highest available standards for climate change mitigation projects, following strict social and environmental criteria. The Local Stakeholder Consultation is an essential part of the project registration process.

Project Implementation

The project is led by CEEI, a local company based in the Visayas region. Its sister company, FDR-IRRMI, already operates the municipal waste treatment facility in Naga City, Cebu. This facility is expanding to process around 500 tons of municipal solid waste daily from various towns (LGUs), separating recyclable materials and converting non-recyclable waste into industrial fuel.

The organic portion of the waste is sent to CEEI. A small biogas plant has been installed, to produce power for the waste treatment facility itself. The new, larger biogas plant will be capable of processing up to 290 tons of pre-sorted organic waste per day, generating approximately 100,000 kilowatt-hours of electricity daily—enough to power around 15,000 households.

Targeted Implementation Plan

2026	Construction of the biogas plant
2029	Full capacity operation (200 t organic waste/day)

Social, economic and environmental impacts of the Project

Besides reducing GHG emission in line with the UN's **Sustainable Development Goal (SDG) 13**, the project is designed to contribute to the following SDGs:



SDG 5: CEEI actively tries to attract female employees and gender wage equity will be ensured among all employees hired in the project.



SDG 7: The project will generate renewable (electrical) energy from organic waste.



SDG 8: The operation of the biogas plant drives economic development of the local communities and generates employment and professional development opportunities.



SDG 11: The project provides a sustainable waste management solution that will process the organic fraction of the urban waste (MSW).



SDG 12: The project installs sustainable waste management solutions that recycle organic waste to fertilizer and thereby close the nutrient cycle.