



Sustainable Smart Biowaste-to-Energy System for Regional Revitalization

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Current initiatives/accomplishments related to the e-ASIA 13th Call for Proposals:

Co-funding:

PI for Kakenhi for JSPS Grant-in-Aid for Scientific Research (C)

Focus: **Sustainable smart waste management**

Member for Japan's Ministry of Environment funded research project:

Environmental Research General Promotion Fund Resource Recycling Area

Focus: **Contactless garbage collection system development**

Recent publications:

Pandyaswargo, A. H., Wibowo, A. D., & Onoda, H. (2022). Socio-techno-economic assessment to design an appropriate **renewable energy system for remote agricultural communities in developing countries**. *Sustainable Production and Consumption*, 31, 492-511.

Ogawa, A., Pandyaswargo, A. H., Tsubouchi, R., & Onoda, H. (2023). **Demonstration of a contactless waste collection system**: A Japanese case study. *IET Smart Cities*.

Pandyaswargo, A. H., Jagath Dickella Gamaralalage, P., Liu, C., Knaus, M., Onoda, H., Mahichi, F., & Guo, Y. (2019). Challenges and an implementation framework for sustainable **municipal organic waste management using biogas technology in emerging Asian Countries**. *Sustainability*, 11(22), 6331.



Alternative Energy



Renewable Energy



Zero-Waste Approach to Biomass Collection and Conversion Technologies
Integration of Biomass Waste-to-Energy Technologies into Existing Industries

Proposed solution:
 Integrated monitoring on the
 overall energy lifecycle

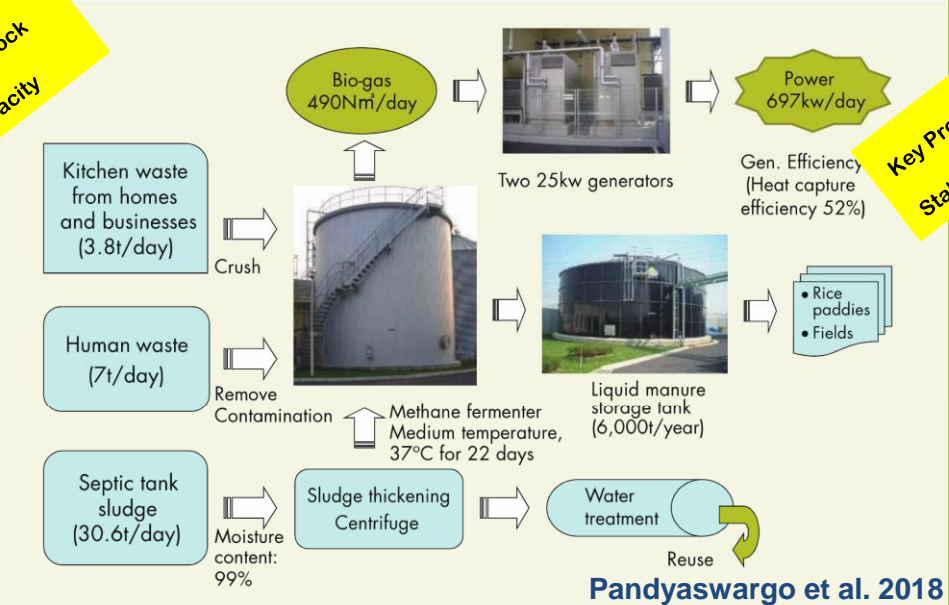
Smart monitoring dashboard integrated to all processes to ensure the sustainability of the overall system



Ogawa et al. 2023

Clean and efficient collection and transport of biowaste / feedstocks

Key Problem:
 Securing Enough Feedstock
 to meet the plant capacity



Biogasification and other biowaste-to-energy technologies

Pandyaswargo et al. 2018

Key Problem:
 Stability of power generation



Households / Industries powered by recovered Energy from biowaste