Dry Anaerobic Digestion (DAD) Biogas Plant:
Bioenergy from Municipal Organics in Cebu, Philippines

7th Bioenergy Week
Global Bioenergy Partnership (GBEP)
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Presented by:
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WHO WE ARE

2009 Built Cebu’s first fully integrated recovery facility in Naga City and provide waste management services.

2010 One of the country’s pioneer to commercially produce & supply Refuse Derived Fuel (RDF) from municipal green & residual waste.

2017 Commissioned the country’s first Dry Anaerobic Digestion (DAD) Biogas Plant generating electricity from municipal organics.
WHAT WE DO

LOCAL GOVERNMENTS & PRIVATE COMPANIES

CITY OF NAGA
MUNICIPALITY OF MINGLANILLA
CITY OF CARCAR

service for collection, treatment & disposal

Integrated Waste Processing Facility

power from biogas

供应 recyclables, RDF & compost

CEMEX PHILIPPINES
PHIL PAPER INDUSTRIES
RECYCLING CONSOLIDATORS

END-USERS:
LOCAL RECYCLERS
CEMENT / BIOMASS PLANTS
FARMS

SERGIO’S FARM
GOLF COURSES
Mechanical Biological Treatment (MBT)

Garbage collected from source

1. MRF Material Recovery Facility
2. RDF Refuse Derived Fuel Facility
3. DAD Biogas Plant Dry Anaerobic Digestion
4. Composting

Accredited Landfill / TSD

Wastewater Treatment Facility
Digester Box, 7 units

1. Load pre-sorted organics to boxes and close.
5. Filter gas prior to removal of digestate out of box.

Store gas & leachate. Check quality.

Load pre-sorted organics to boxes and close.
CHALLENGES & LESSONS

1. QUALITY OF WASTE MATERIAL
   - Level of segregation-at-source: enforcement of mandated segregation.
   - Need to invest in efficient pre-treatment to maximize value from waste especially energy.

2. FINANCIAL SUSTAINABILITY
   - Savings from recovered energy not enough to cover costs - adjustment in tipping fees.
   - Needed for preventive maintenance to keep operations efficient.

3. PERSONNEL RETENTION
   Establishment of personnel program to enhance & motivate key personnel.
1. **EXPANSION & UPGRADE**
   Years of experience in preparation for increase capacity for MRF & RDF and upgrade to a more complex biogas system – “Wet” ADOS.

2. **OTHER ENERGY APPLICATION**
   Possibility to upgrade to biomethane to run our own waste collection fleet.

3. **REPLICATION OF MODEL TO OTHER LGU-CLUSTERS**
   Installation in other cluster LGUs with enough waste tonnage, long-term agreement & financial commitment.

**Reference:**
Waste Management CNG station in Pompano Beach, Florida

*Plant visit with Environment Secretary Roy Cimatu*
THANK YOU

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ON-GOING UPGRADE & EXPANSION OF PRE-TREATMENT PROCESS

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