



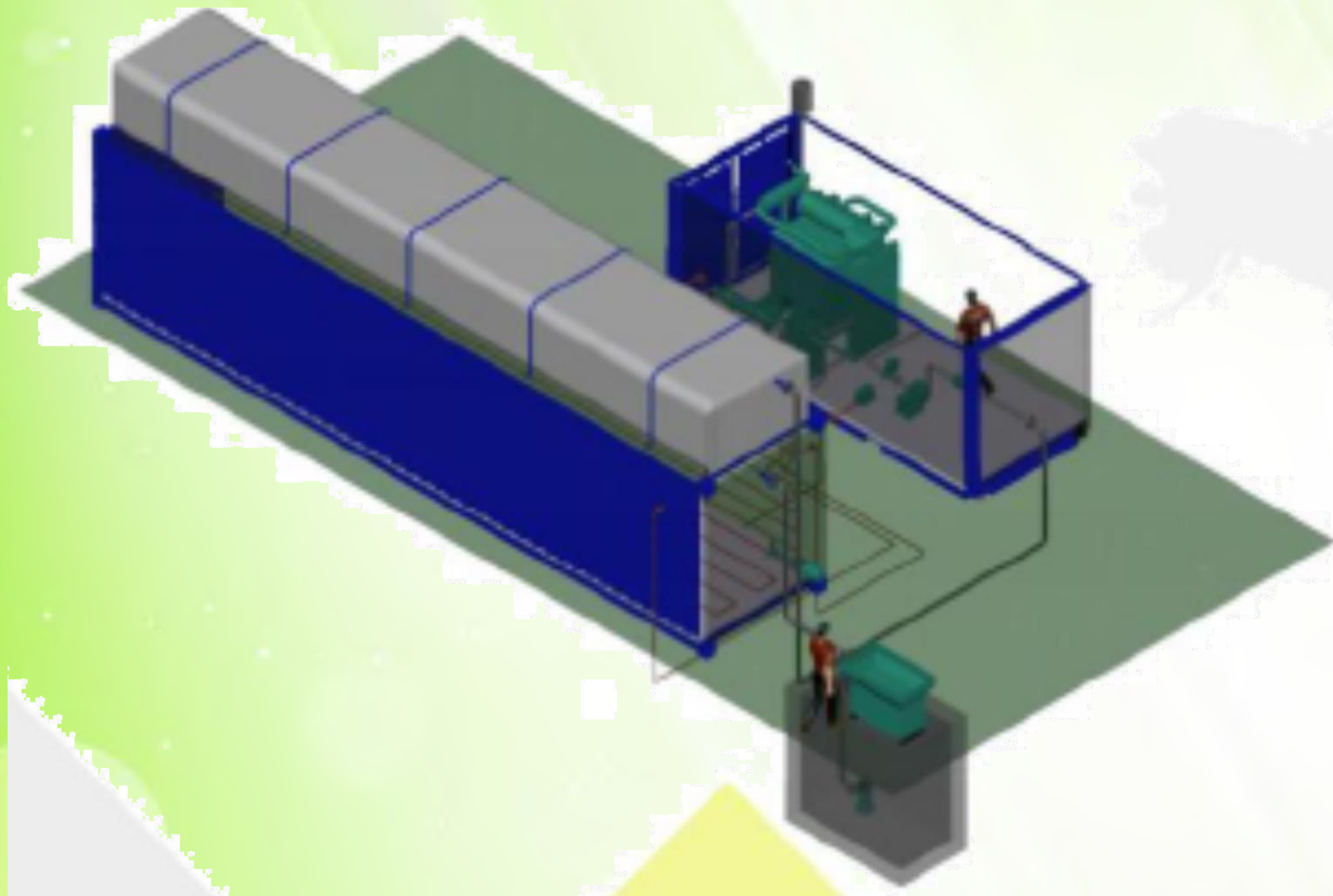
SPUMBA

THE
GREEN
Solution providers



Containerized **BIOGAS**

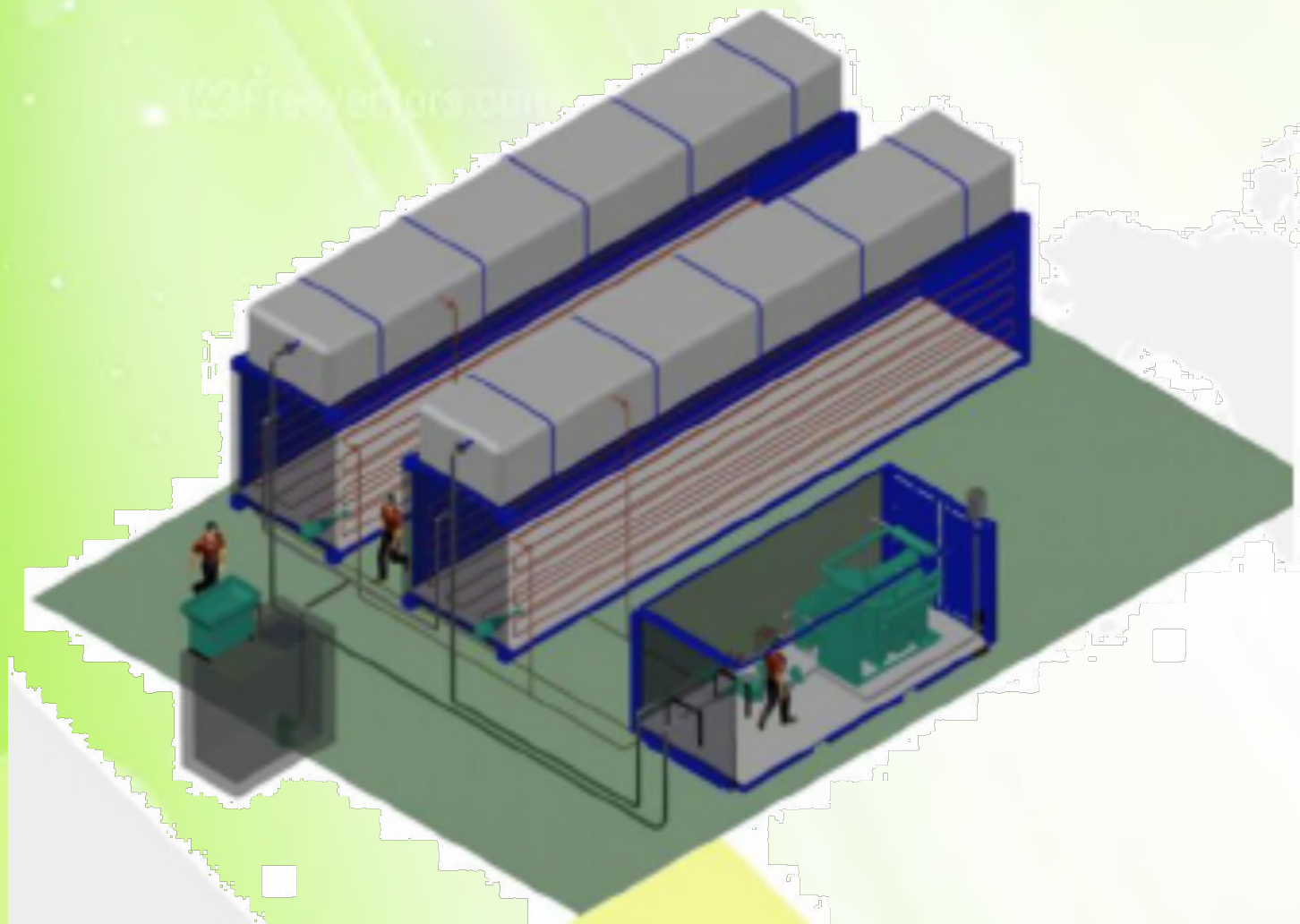
Containerized MOBIL 60-15



Handling Capacity	3.000 kgs/day
Substrates	Animal slurry, Food waste, other biomass
Type	Plug flow containerised
Material of Construction	Mild Steel, internal anticorrosive
Size Digester	12 m (L) x 2.3 m (W) x 2.6 m (H)
Loading	Pumping
Shredder	10 HP
Feeding Pump	1.5 HP
Mixer	5.0 HP
Biogas produced (depend on substrates)	150-240 m ³ /d
Technical container 6m x 2.3m x 2.6m	Includes CHP and all equip. for biogas
CHP	15 kW x 8600 h = 129.000 kWh /yr.
Area required for Installation	15 m x 4 m

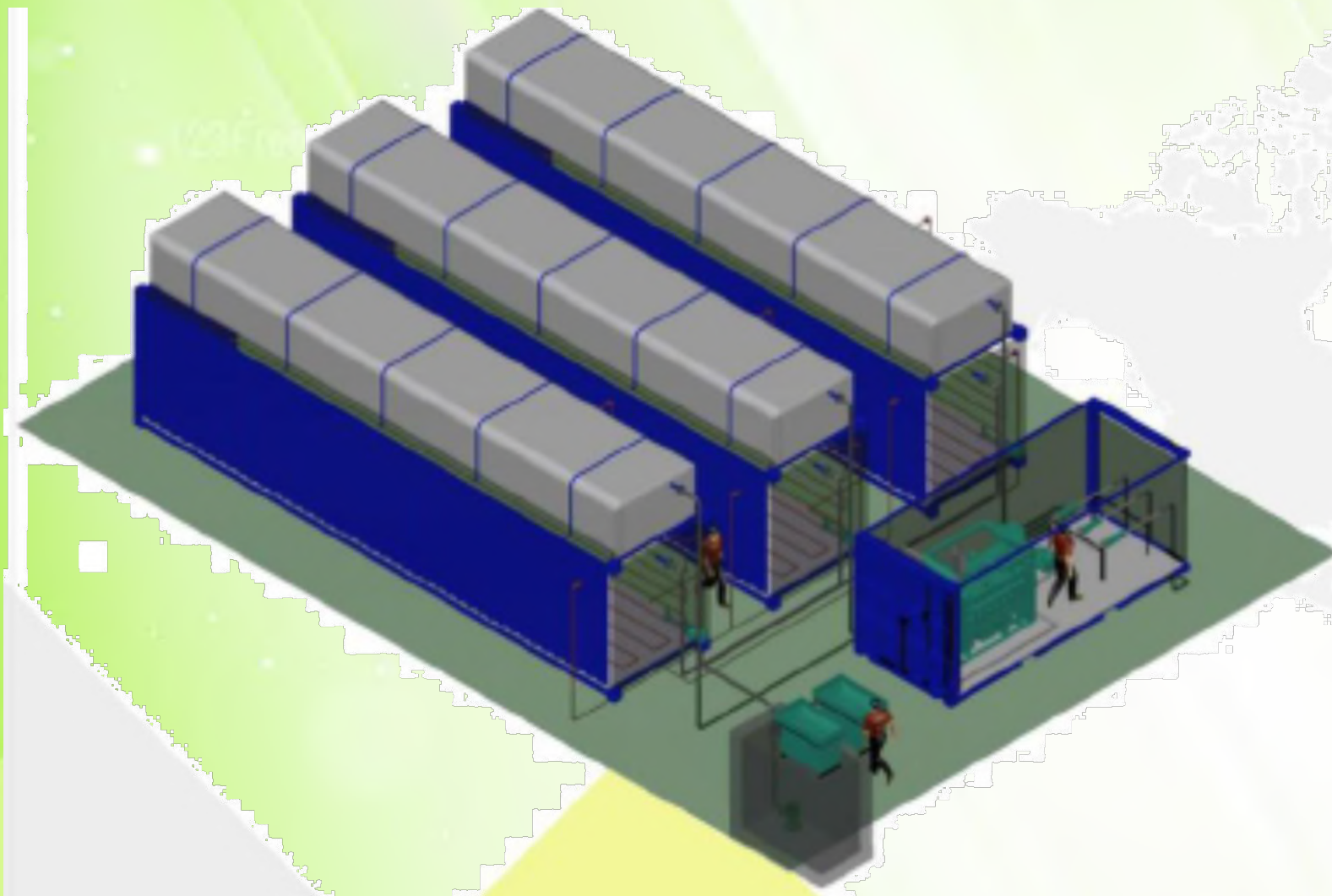
2 containers are sufficient for the small biogas plant

Containerized MOBIL 120 - 30



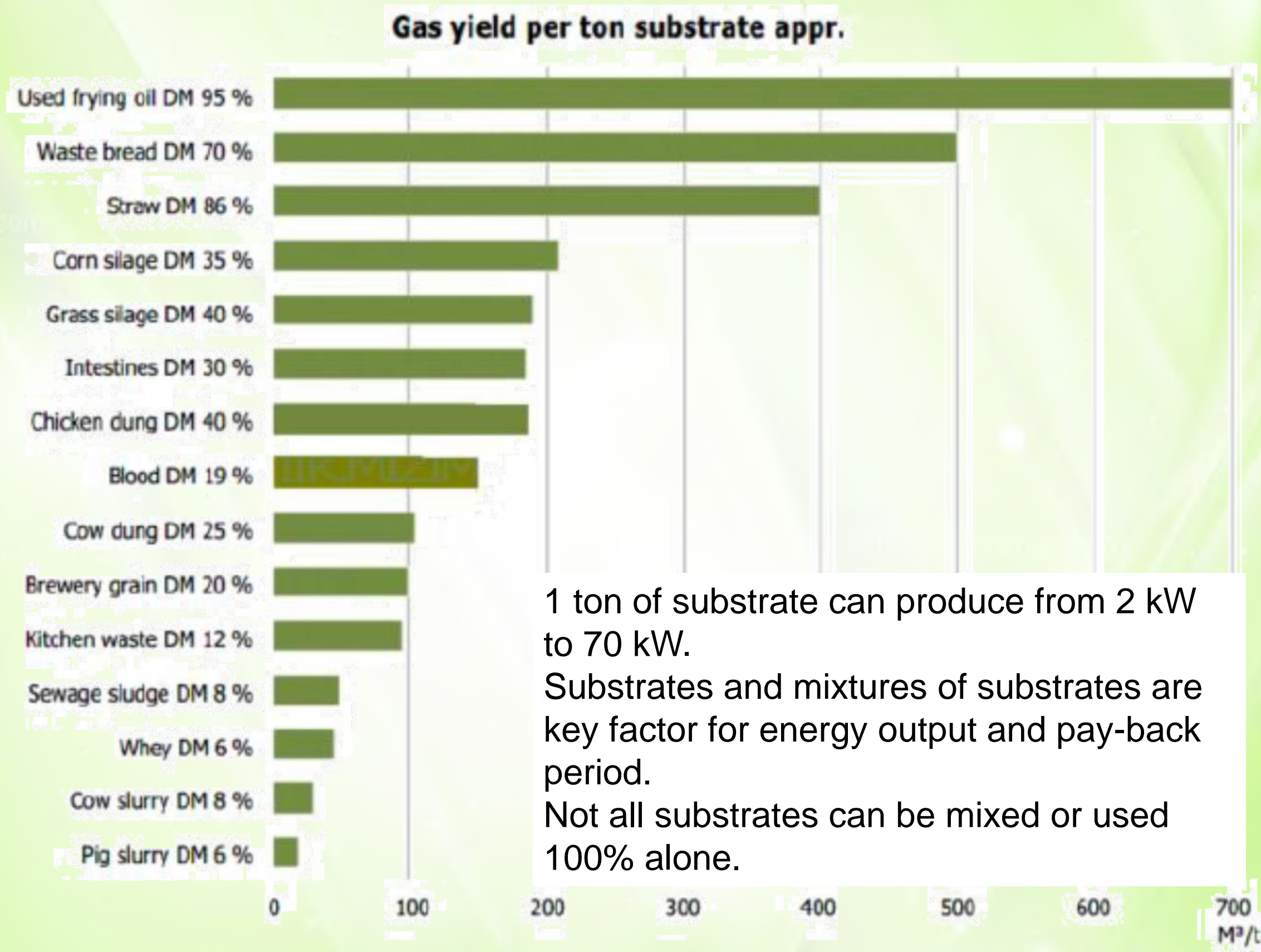
Handling Capacity	6.000 kgs/day
Substrates	Animal slurry, Food waste, other biomass
Type	Plug flow containerised
Material of Construction	Mild steel internal anticorrosive
Size Digester	12 m (L) x 4.6 m (W) x 2.6 m (H)
Loading	Pumping
Shredder	10 HP
Feeding Pump	1.5 HP
Mixer	5.0 HP (2 nos)
Biogas produced (depend on substrates)	300-480 m ³ /d
Technical container 6m x 2.3m x 2.6m	Includes CHP and all equip. for biogas
CHP depends on substrate quality	30 kW x 8600 h = 258.000 kWh /yr.
Area required for Installation	15 m x 8 m

Containerized MOBIL 180 - 45



Handling Capacity	9.000 kgs/day
Substrates	Animal slurry, Food waste, other biomass
Type	Plug flow containerised
Material of Construction	Mild steel internal anticorrosive
Size Digester	12 m (L) x 6.9 m (W) x 2.6 m (H)
Loading	Pumping
Shredder	10 HP
Feeding Pump	1.5 HP
Mixer	5.0 HP (3 nos)
Biogas produced (depend on substrates)	400-720 m ³ /d
Technical container 6m x 2.3m x 2.6m	Includes CHP and all equip. for biogas
CHP depends on substrate quality	45-60KW
Area required for Installation	15 m x 12 m

Difference in Energy output



1 ton of substrate can produce from 2 kW to 70 kW.
Substrates and mixtures of substrates are key factor for energy output and pay-back period.
Not all substrates can be mixed or used 100% alone.

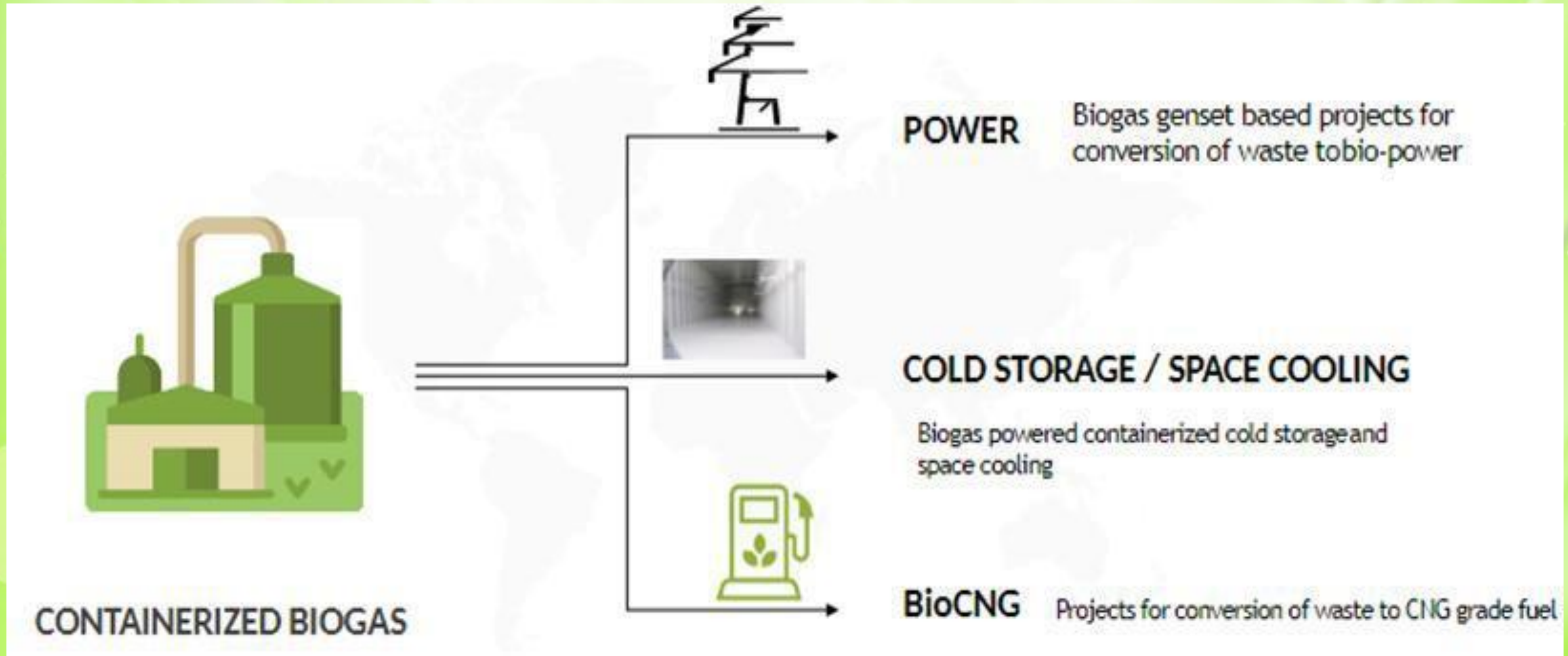


Containerized

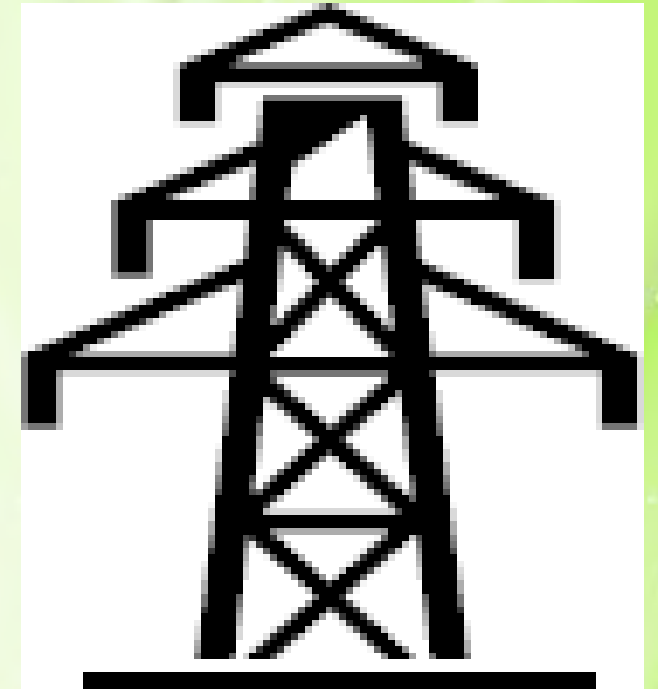
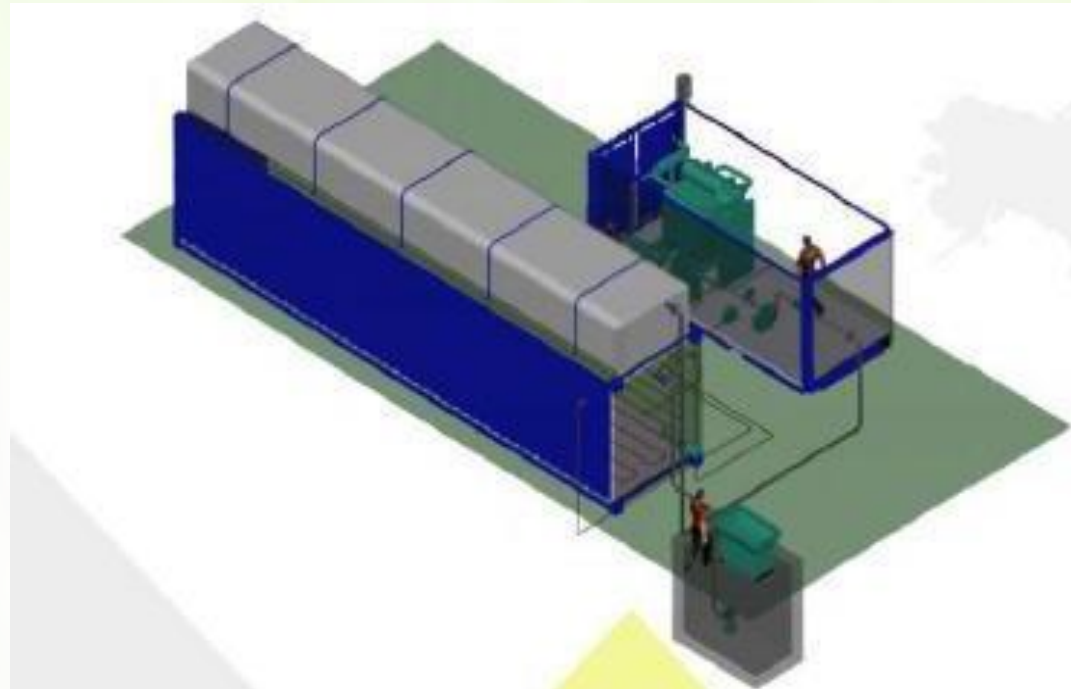
BIOGAS

Solutions

Containerized BIO Gas Solutions



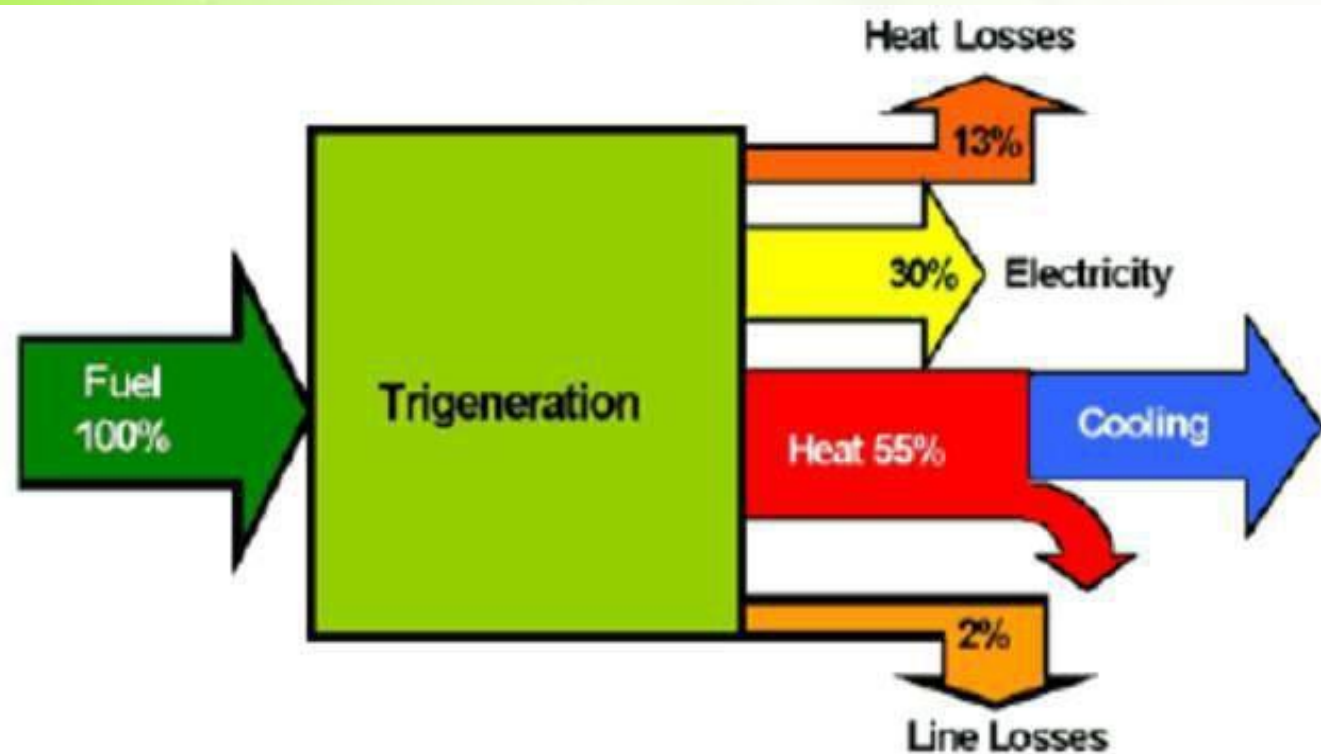
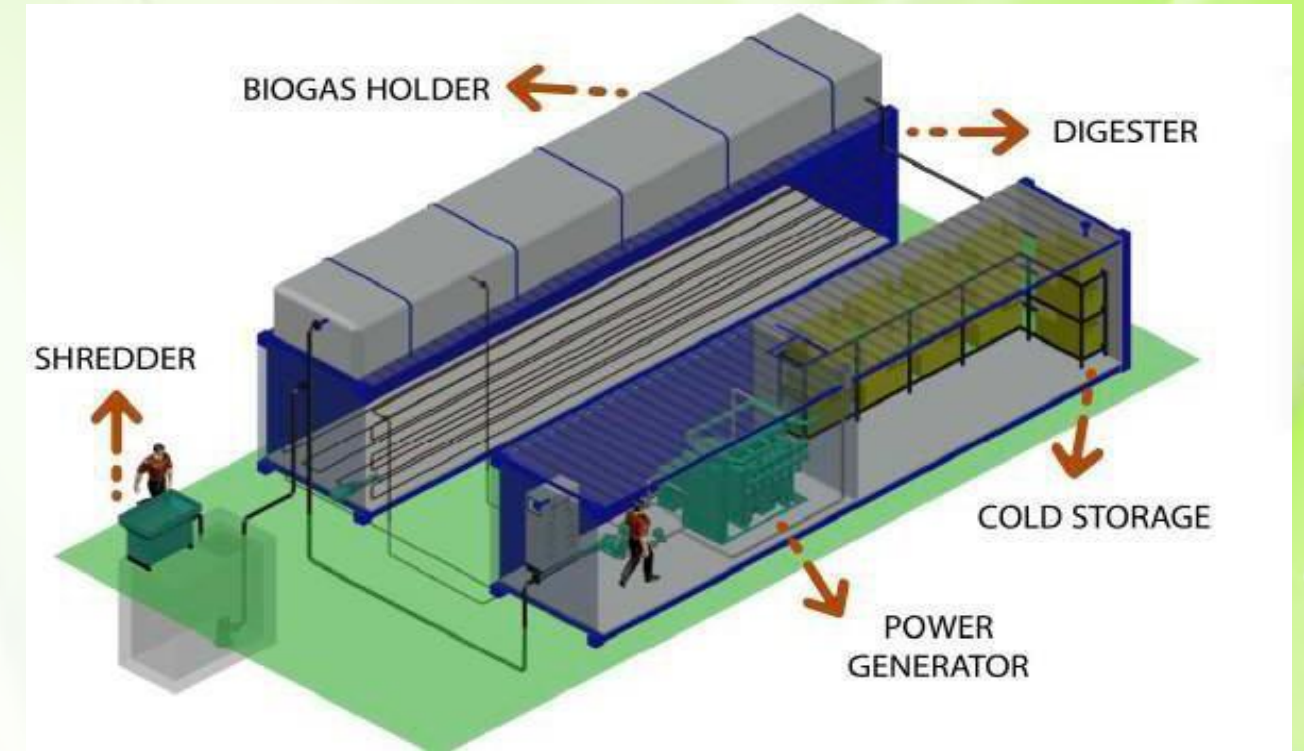
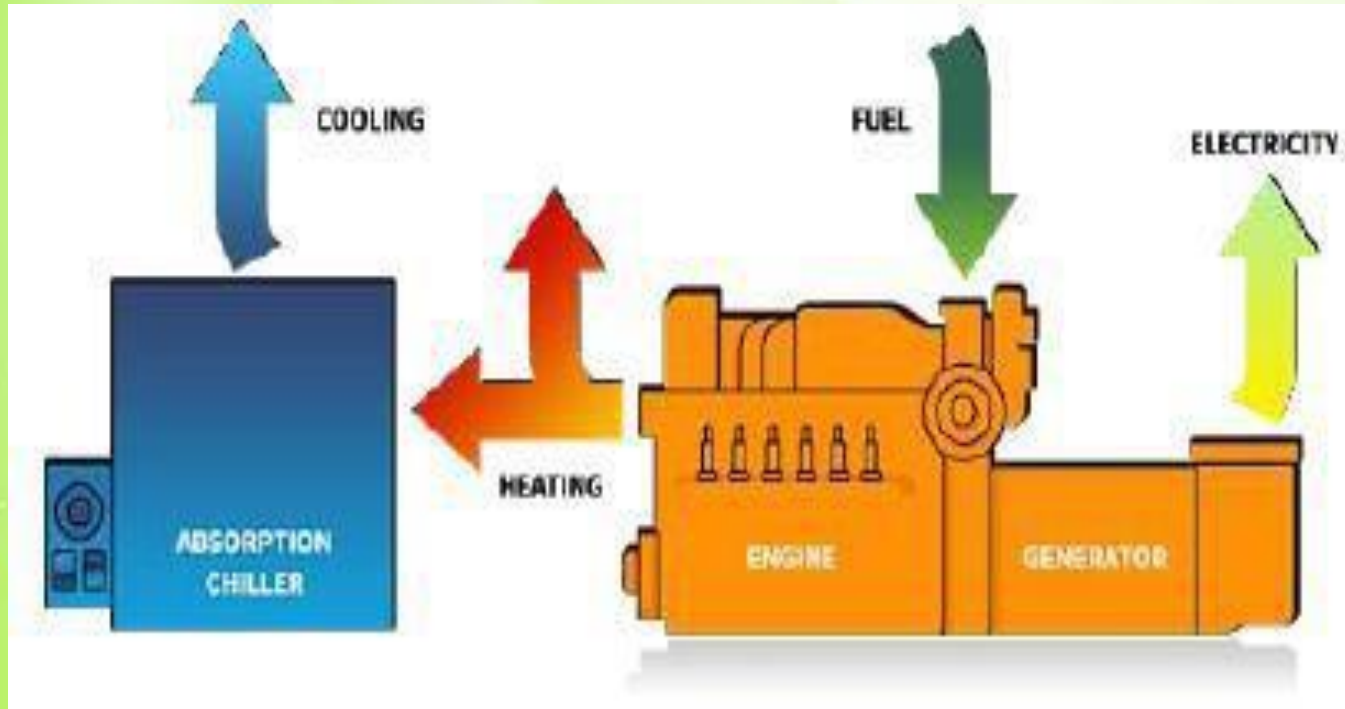
Application 1 – BioGas to Electricity



Features –

- Shorter retention saves space.
- Higher biogas yield
- No scum formation
- Horizontal mixing to enhance gas production by providing interface between microbes and substrates in the digester.
- Can handle high solids content of the substrate to the tune of 15 to 20%.

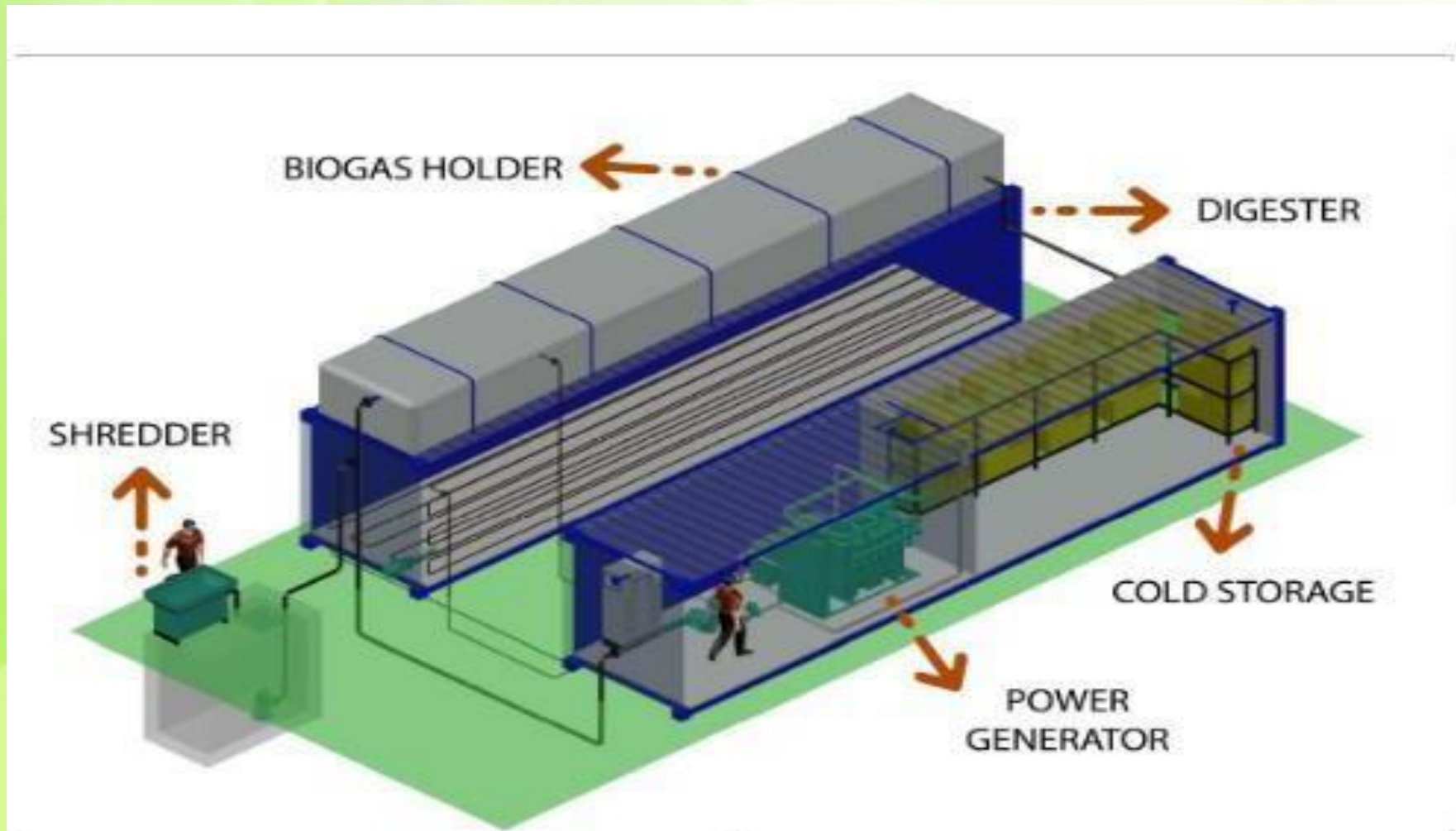
Combined Head and Power (CHP) Container



Advantages

- Onsite, high efficiency production of electricity and heat
- Reduce electricity consumption, reduce emissions and reduce costs substantially
- Reduce site CO₂ emissions by up to 60%
- Capture and reuse energy in the generator waste streams for new absorption chiller.
- Provide energy efficient cooling using waste heat
- Achieve a total system thermal efficiency of up to 85%.

Application 2 – Containerized Cold Storage and space cooling



How **organic waste** is transformed into **Compressed Biogas (CBG)**?



Compressed Biogas (CBG) is equivalent to Compressed Natural Gas (CNG)

Application 3 – Containerized BIO CNG



WHY BioCNG

- Prices paid for renewable electricity are plummeting
- Prices for diesel and gasoline are rising
- Desire for energy independence and control

Application 3 – Containerized BIO CNG



PSA Unit



High pressure
Compressor



BioCNG Cascade

BIO GAS Upgradation Unit

MODEL	RAW BIOGAS M3/HR	BIO CNG , KGS/ DAY AT 95% PURITY	CASCADE
BUU 10	10	90	8
BUU20	20	180	16
BUU 60	60	540	48

NOTE: Fuel dispensing unit can be provided, if required

**1
TON**

**CONTAINERIZED
BIOGAS PLANT**

offset

1.5 Tons of CO₂ emissions





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Contributing to a **Green** and Clean Future