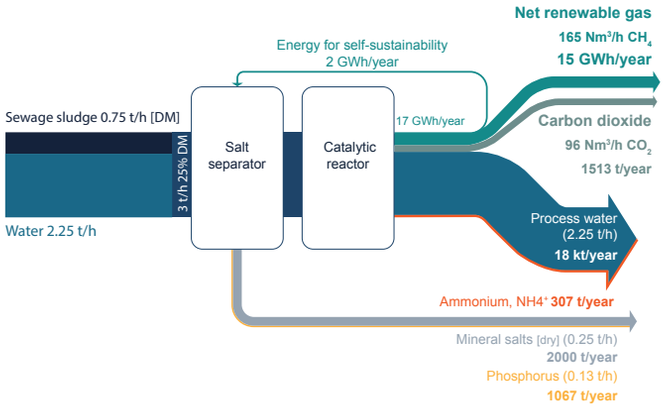
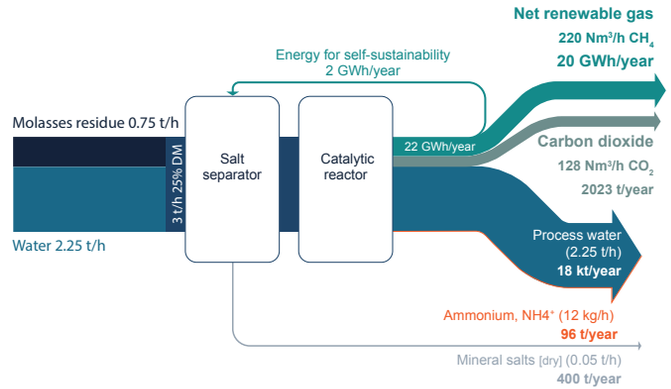
Case Studies

1. Municipal sector
HTG unit of 3 t/h treating digested sludge (6'000 tDM/year)



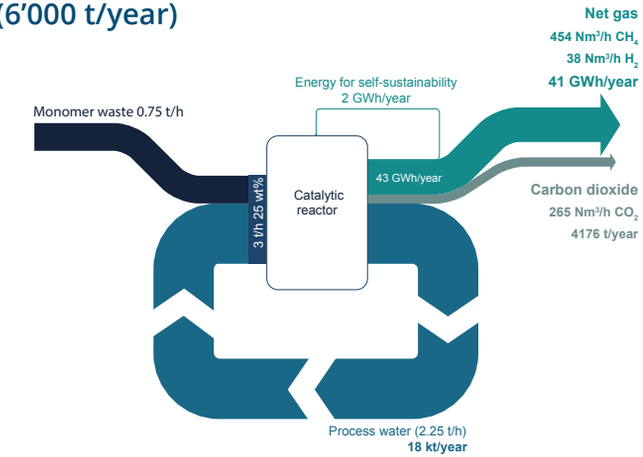
Mass and energy balance simulation for a plant treating 3 tons per hour of digested sewage sludge with our technology. The figures are based on the results obtained treating digested sewage sludge with our 1 kg/h prototype.

2. Food and beverage sector
HTG unit of 3 t/h treating molasses residue (6'000 t/year)



Mass and energy balance simulation for a plant treating 3 tons per hour of molasses residue with our technology. The figures are based on the results obtained treating molasses residue with our 1 kg/h prototype.

3. Chemical sector
HTG unit of 3 t/h treating monomer residue (6'000 t/year)



Mass and energy balance simulation for a plant treating 3 tons per hour of monomer waste with our technology. The figures are based on the results obtained treating monomer waste with our 1 kg/h prototype.

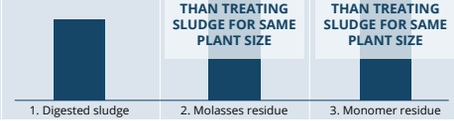
Municipal clients

Sewage sludge contains essential nutrients for agriculture and has traditionally been disposed of by spreading as fertilizer. The increasing concentration of heavy metals and micropollutants in sewage sludge and the urgent need for a transition to sustainable waste management has led to increasingly strict regulations concerning its disposal and the recovery of nutrients (phosphorus and nitrogen) from this waste. This has led to a trend shift towards incinerating sewage sludge.

However, this method results in the release of large amounts of CO_2, and wastes large volumes of water via non-recovered steam further exasperating clean water scarcity. In addition, the energy is generated in the form of heat which cannot be stored when produced off-season and neither transported over long distances. Compared to incineration, for 3 times less space, our solution is able to recycle up to 95% of the waste value; and it emits 94% less CO_2.

We have validated our technology with digested and undigested sewage sludge from several WWTPs in Switzerland and France.

	1. Digested sludge	2. Molasses residue	3. Monomer residue
Lower heating value [MJ/kg]	13	19	29
Carbon recovery in gas [%]	75	86	94
Specific energy production [kWh/t]	2'784	3'716	7'096
Net methane production [Nm3/h]	165	220	454
Carbon dioxide production [Nm3/h]	96	128	265
Net energy production [GWh/year]	15	20	41
		1.5X MORE ENERGY THAN TREATING SLUDGE FOR SAME PLANT SIZE	3X MORE ENERGY THAN TREATING SLUDGE FOR SAME PLANT SIZE



Benchmark for a 3 t/h plant based on the results obtained in the laboratory prototype (1 kg/h) processing digested sludge, molasses residue and monomer residue.

Industrial clients

Chemical, pharmaceuticals, oil & gas, and food & beverage manufacturers increasingly seek to valorise their waste streams, incentivized by net zero initiatives as well as the need of renewable gas to fuel their process.

The robustness of our technology allows us to treat and fully valorise a wide range of wastes from various industrial sectors. Our solution, installed at the source of the waste in the industrial site, can convert 99% of the organics into pollutants-free methane-rich gas that can be injected on the grid or used on-site. Moreover, we can separate and recover the CO_2 from the gas produced as well as the water contained in the waste that is clean after our process and can be reused or safely discharged.

We have validated our technology with more than 10 different industrial feedstocks from clients in Europe and the USA including residues from monomer production, plastic residues, paint residues and molasses residues among others.

Lonay, Switzerland
gael.peng@trea-tech.com
www.trea-tech.com

Experimental Testing

Test campaigns are meant to evaluate the process parameters e.g. stability of the process, quality of produced effluents. First, on a small scale of 1 kg/h and then on a scale of 100 kg/h. Based on the results, the dimensioning, financial requirements and engineering for the plant construction for the specific feedstock can be estimated.

	Test 1 kg/h	Test 100 kg/h
Feedstock conditioning & chemical analysis	✓	✓
Hydrothermal gasification test in a laboratory prototype (1 kg/h) or pilot plant (100 kg/h)	✓	✓
Analysis of the effluents produced	✓	✓
PDF report presentation via video conference	✓	✓
Evaluation of the gasification parameters, recovery of mineral salts, quality of process water.	✓	✓
CAPEX/OPEX calculation for 1 plant size	✓	✓
Face-to-face reporting within EMEA (expenses additional)	✗	Optional

Get in Touch for a Detailed Offer

Revolutionizing Waste Treatment

www.trea-tech.com