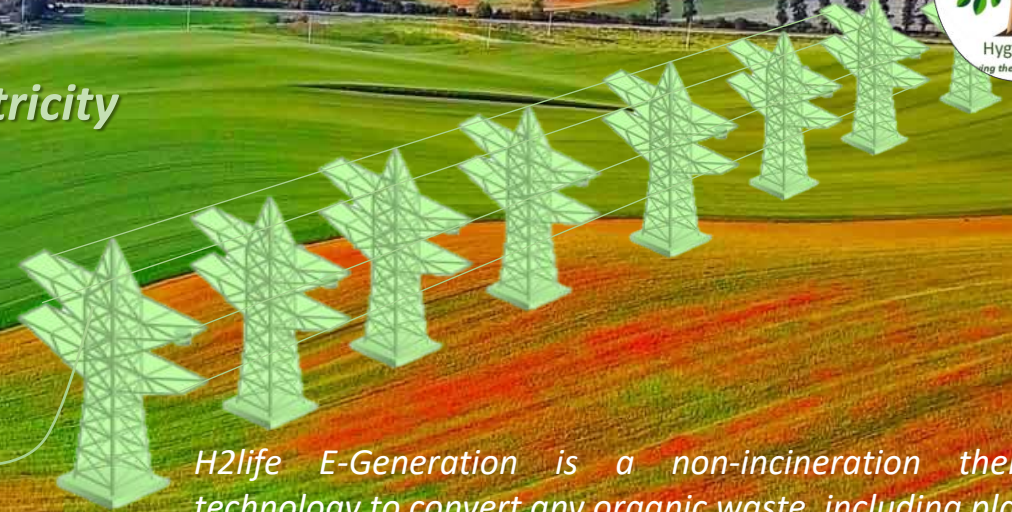




H2life E-Generator

Valorization of Biomass to Green Electricity



H2life E-Generation is a non-incineration thermal technology to convert any organic waste, including plastic, biomass, food, sludge, etc. to electricity with minimal carbon emission. H2life offers 21 different models with daily electricity production from 10 to 1,000KWH. H2life E-Generator is compact, and fully automatic, controlled by sophisticated AI-based PLC. H2life E-Generator is the ultimate solution to decarbonized organic waste for hotels, shopping centers, industry, agriculture, waste-treatment plant and more.



Key data

- Feedstock capacity: 0.36-36T/day
- Electricity production/ton: 600-1,000KWH
- Electricity production: 8 – 900 KWH (200-21,600KWH/d)
- Syngas energy: $\approx 4-4.5 \text{ MJ/m}^3$
- System space: 20-150m²
- Emissions of gases in electricity generation (PPM) : CO₂ 8000<, CO 4400<, NO_x 220<
- No. of models: 21
- Average time for ROI: 8-12months

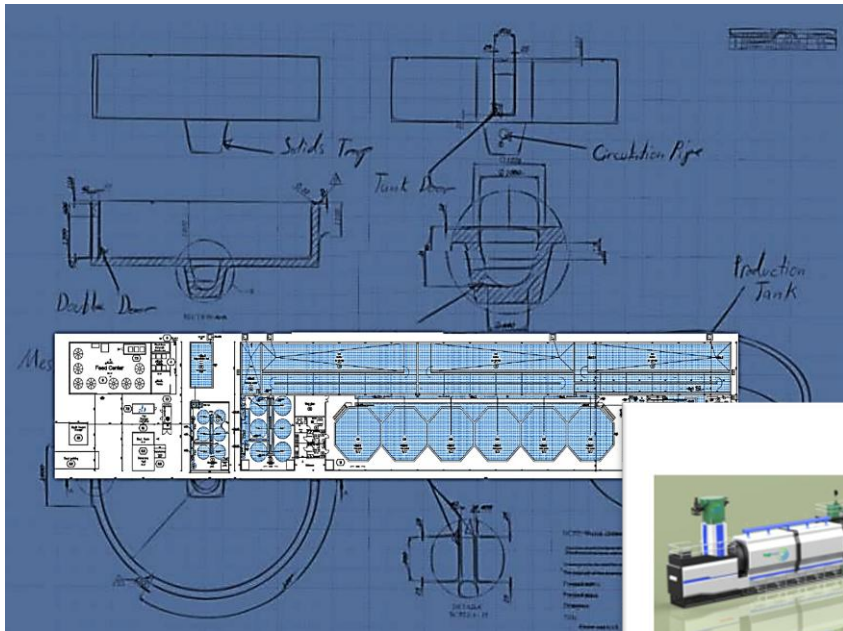


EWA TECHNOLOGIES GROUP

Saving the environment



PROFESSIONAL IN WASTE TO ENERGY AND SOLID WASTE MANAGEMENT, SORTING AND RECYCLING SOLUTIONS



Environmental "Turn-key" projects



MSW sorting systems



Medical waste management,
treatment and recycling



Waste to clean Energy



Bio-digestion



Valorization of Organic waste to
Granulated organic fertilizer and biochar

EWA technologies group - PROFILE



EWA Technologies Group, was formally established in January 2016 as a research and development enterprise, followed more than 20 years of experience in the field of waste to energy, environmental microbiology and medical sanitation, solid waste sorting and recycling and smart agricultural. EWA Group is a business organization of 7 companies, sells and provide service of the Group's products, under exclusive basis. EWA Group having activities in Europe, China and Asia-Pacific, Australia and New Zealand, Africa and Latin America and Caribbean and USA. EWA Group products sold under the brands name Hygimed®, IQS and H2life. EWA Group constantly developing and innovating, pursuing quality and gaining recognition from the industry with scientific strength. All EWA's products comply with global standard, and certify by CE and ISO.



EWA TECHNOLOGIES GROUP

for better future



EWA Group is active mainly in 3 fields:.

Environmental field:

- ❖ Pyrolysis, Gasification and biogas technologies for W2E applications
- ❖ MSW sorting and recycling systems
- ❖ Hygimed Deashing for production high quality of rCB and activated carbon from waste.

Medical field:

- ❖ Hygimed OnSite, PY Med and Hygimed Mobile for medical waste treatment and recycling.
- ❖ Hygimed electrolyzed disinfection generator



Agriculture field:

- ❖ Electrolyzed water generator for organic disease-control in agriculture.
- ❖ Biochar-based granulated organic fertilizer

EWA Group committed to the environment,
to the quality and to the Society.



EWA Group's members and global activities



management and expert team

Dr. Eytan Bar

- Founder and CEO of EWA Technologies Group
- Ph.D. in Environ. Biotech., HUJ, Israel, Postdoct Fellow, Max Planck Institute, Germany
- Lecturer and Founder of the Dept. of Environ. Eng. The faculty of Engineering Sciences, BGU, Israel
- High-end foreign technical talents and Expert of the industry technology innovative alliance department of Guangdong Province

Dr. Avital Dror-Ehre

- Ph.D., Environ. Technology, HUJ, Israel
- Former director of water division of the Israeli Ministry of water and energy
- Director at the Israeli Ministry of Environment
- Manager of R&D at IDE Technologies

Raanan Adin

- HUJ, Israel; Physics, Mathematics, Computer Science
- CEO, Adin Horizon - Innovation; Sustainability
- Chairman (ret.), Israeli Water association
- Technology Transfer, GTIIT (Guangdong); Weizmann Institute of Science (Israel)

Dr. Jean-Christophe Henry

- PhD of Environmental Science
- Technical Adviser to the Ministry of the Environ.
- Former UNESCO International Consultant
- Expert in invasive plants

Noy Bar

- MBA (specializing in innovative technologies), LLB, and Software engineering
- 10+ year as BD, PM and strategic partnerships at Fortune 500 companies.
- Founder and CEO of **Thunderact** (USA)

Shimon Kashti

- Economist, mathematician
- President of the Academic Askelon College
- CEO & Chairman of IQS Global (UK) and CEO of IIB Technologies (UK).
- Chairman of IQS Innovation (Romania/Israel)

Ilanit Metzuyanin - Melman

- MSc, Environmental Engineering, BGU Israel, Biotech Eng., Founder, Ariel Uni.
- Director and founder of of RICETO FQ, Israel-China
- Manager of Public Health at Israeli Ministry of Health





***H2life* Biomass electric generator – non-incineration technology for production of electricity directly from biomass**



Back view



Front view

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Introduction

H2life Biomass E-Generator system is a process and system for valorization of biomass to energy, mainly electricity, hydrogen or steam. The technology is a low-carbon, incineration-free thermal process to break down any type of biomass to low carbon energy. The process is carried out in 2 main stages: 1. pre-treatment that homogenized any type of biomass, including organic waste mixed with plastic; 2. Non-incineration thermal decomposition of the product from stage 1 into hydrogen-rich syngas, that further feed to AI-controlled E-generator. The process is fully automatic, requires minimal manual operation.

Sectoral environmental benefits include:

1. Tourism, including hotels and isolated camping area
2. Agriculture
3. Industry
4. Energy
5. Emergency and backup

Key data

Type of feedstock: any biomass, organic waste, plastic (up to 30%), manure, wooden material

Capacity dry biomass: 0.36-36T/day

Electricity production/ton: 600-1,000MWH/t feedstock

Electricity production: 8KWH (192HWH/d)) – 900KWH-21.6MWH/d

Gas energy: $\approx 4-4.5\text{MJ/mN}^3$

System space: 20-150m²

No. of system models: 21

Average time for ROI: 4-7 months

Emission (ppm, before carbon dioxide absorption): CO 4400<, NO_x 22, SO_x ND , CO₂ 8800<, HC ND



H2life e-generator – Production of clean electricity from plastic

The only available no-incineration, low carbon emission technology for valorization of *non-segregated plastic waste* to clean electricity



80% plastic waste



20% biomass



0.3% catalyst



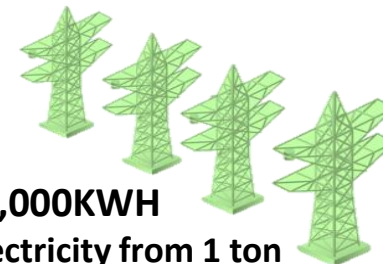
Feedstock



H2life E-generator



Syngas E-generator



1,000KWH
Green electricity from 1 ton
feedstock

H2life Biomass e-generator – Principal of operation and components



2life

Accepted biomass



Banana biomass



Sargassum



Coconut Shell



Palm Shells



Peanut Shells



Rice Husk



straw



Bamboo Waste



Corn Stalk



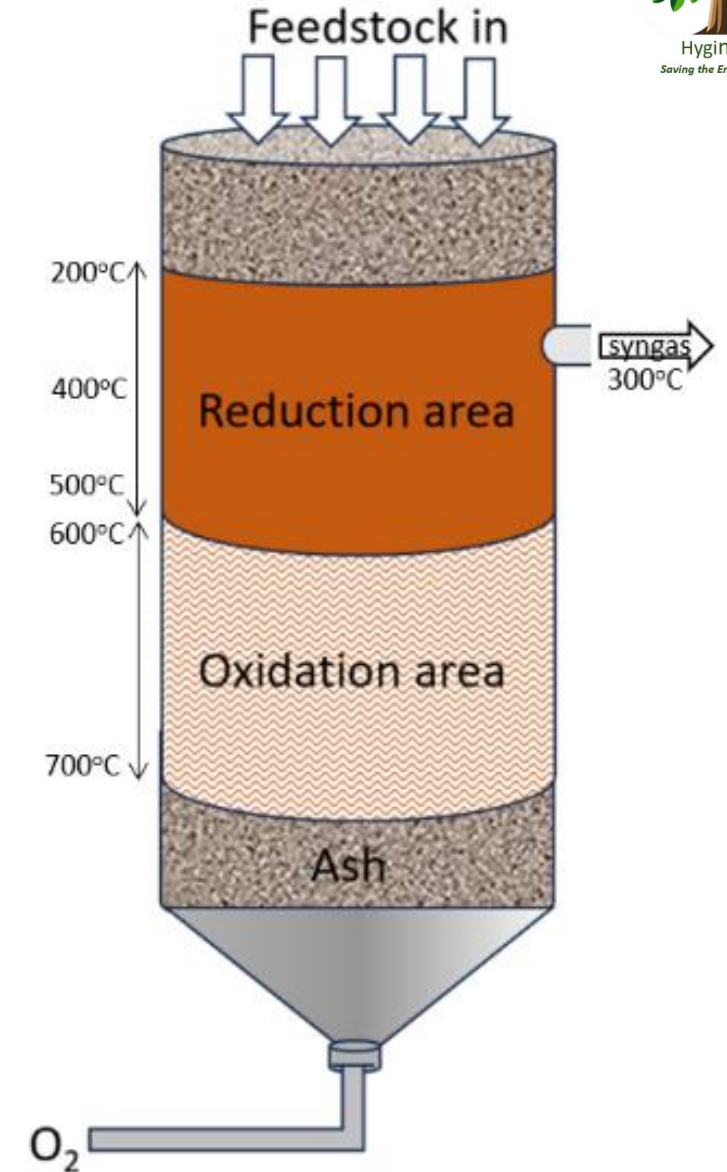
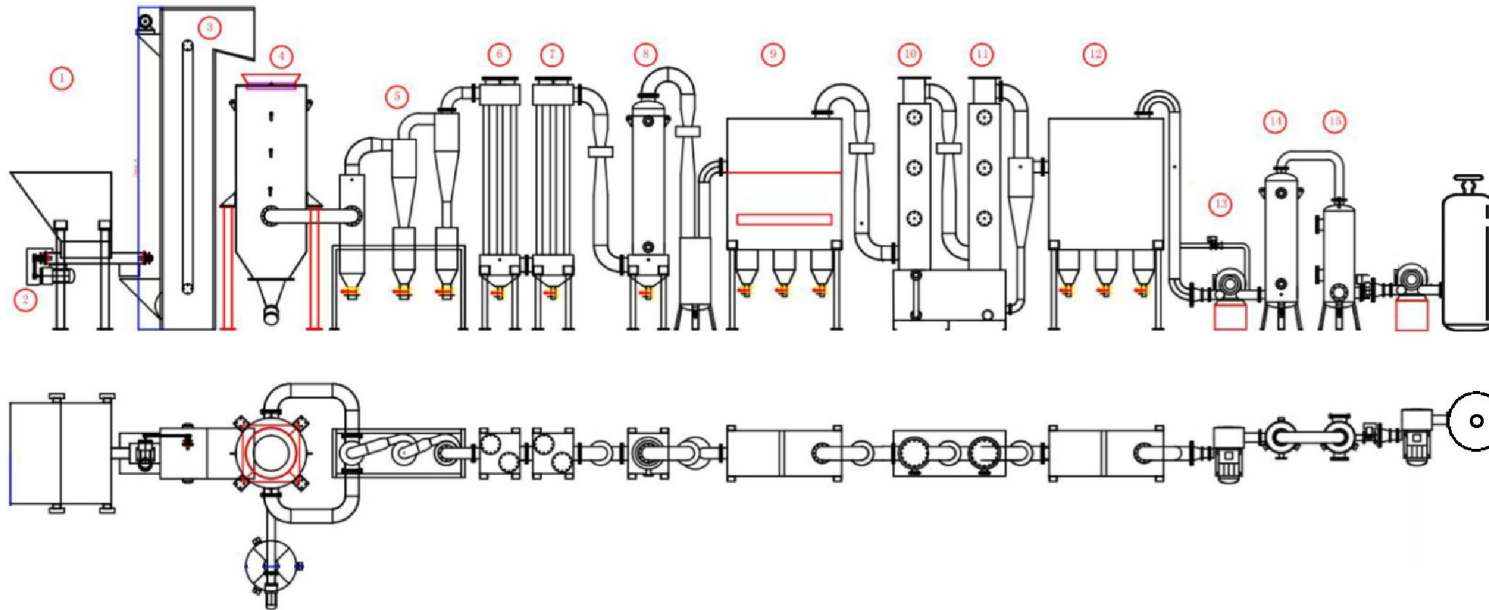
Wood chips



Cow Manure

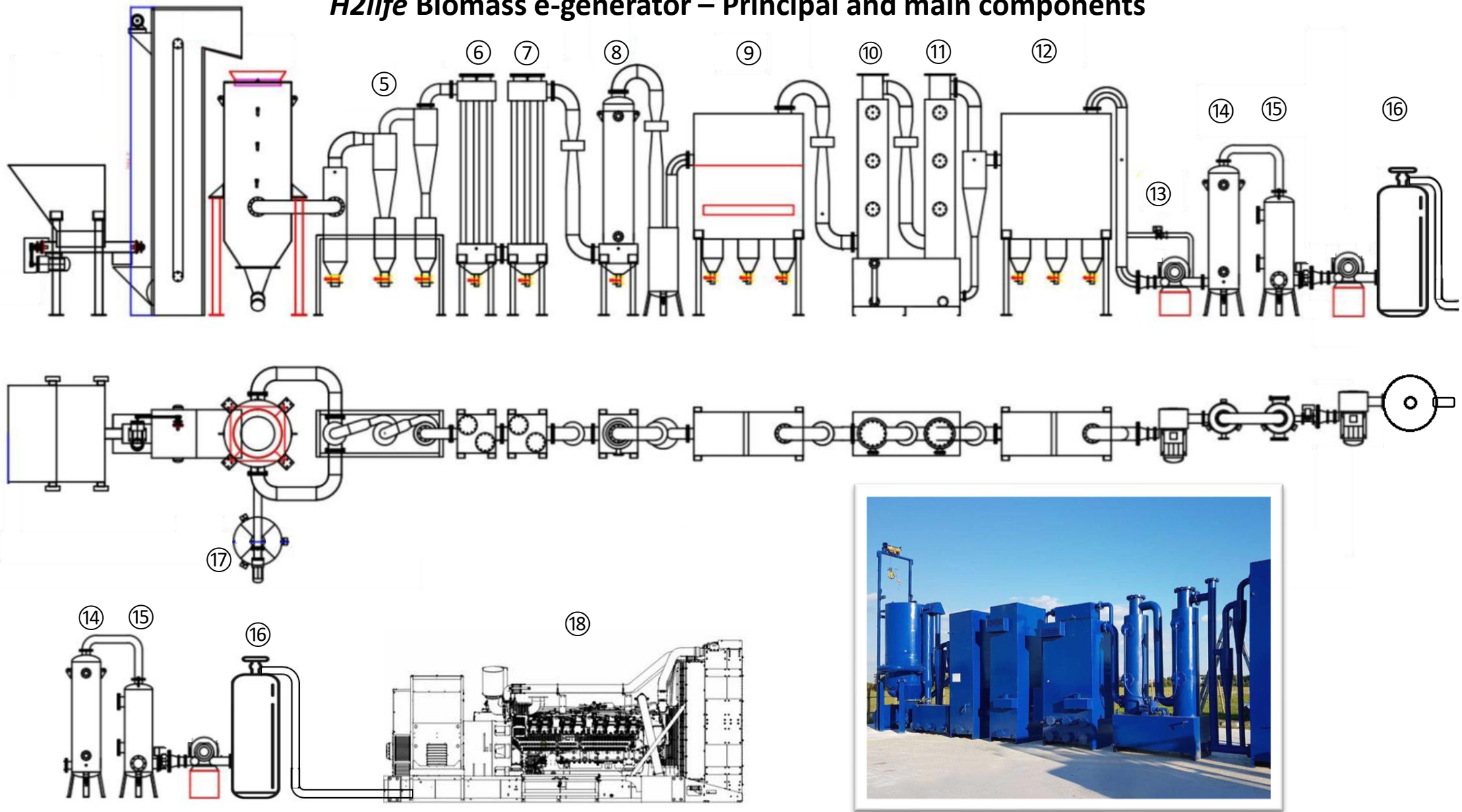


Sugarcane bagasse



1 Biomass storage	2 biomass conveyor	3 Skip charger	4 Gasifier	5 dust collectors	6 air cooler	7 Air cooler	8 Gas cooler	9 Gas filter
10 CO2 absorption	11 CO2 absorption	12 Gas dryer	13 Blower	14 Gas cooler	15 Gag filter	16 Gas storage	17 Dry ash discharge	

H2life Biomass e-generator – Principal and main components



1 Biomass hopper	2 Biomass feeder	3 biomass conveyor	4 Gasifier reactor	5 dust collectors	6 air cooler	7 air cooler	8 Gas cooler	9 Gas filter
10 Scrubber	11 CO2 absorption	12 Gas dryer	13 Blower	14 Gas cooler	15 Gas filter	16 Gas storage	17 ash discharge	18 e-generator



AI-controlled Syngas e-generators





H2life Biomass electric generator, features, performances and advantages



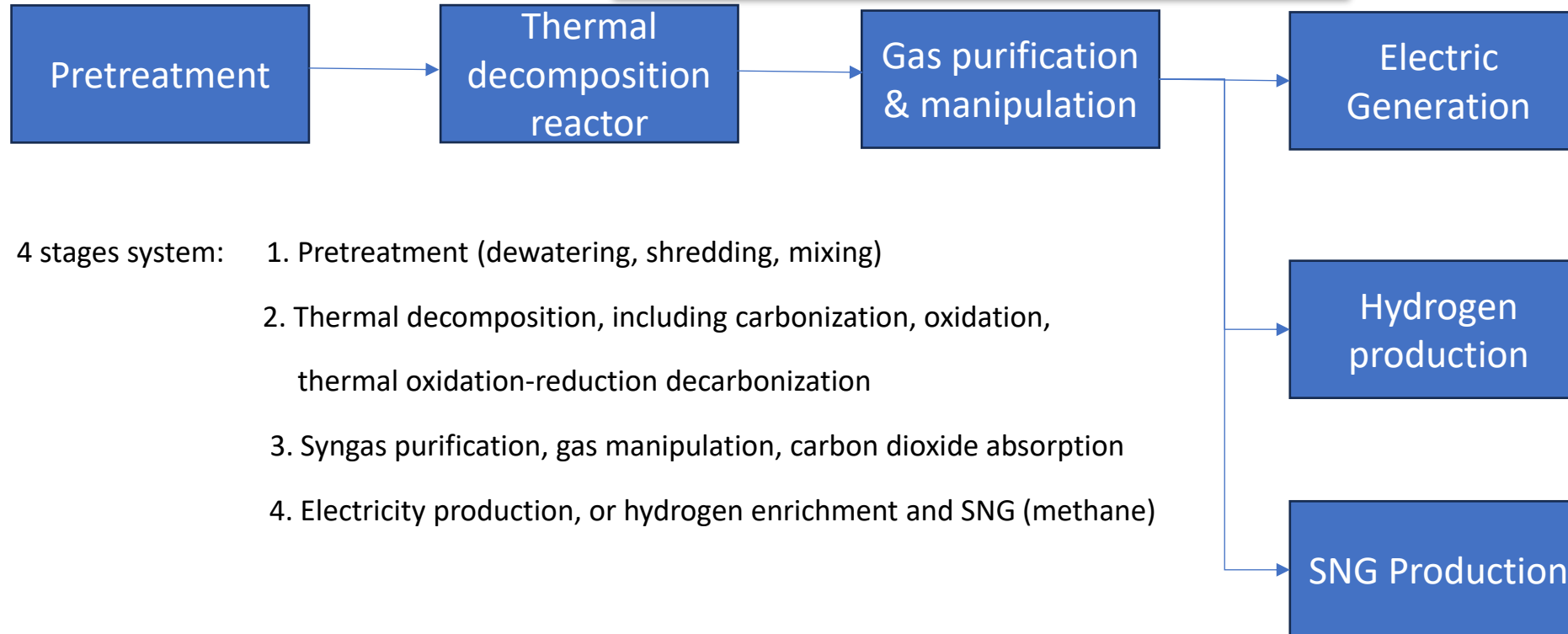
Features and advantages:

- ✓ Accept any organic material, including food waste, agriculture and industrial organic waste, coal and lignite
- ✓ Intelligent PLC controlling system
- ✓ Solid pretreatment, for standardized feedstock composition and optimized process and gas composition
- ✓ Automatic feeding
- ✓ Non-incinerating – low environmental fingerprint, low carbon emission technology, no smoke, no wastewater, minimal solid discharge (ash).
- ✓ Carbon dioxide absorption technology to eliminate carbon dioxide content, assure extremely low carbon emission.
- ✓ High efficiency, high energy mass to electricity process.
- ✓ Small space, flexible design, suitable for self installation in industrial and agriculture zone, with no need for special infrastructure
- ✓ 6000-1,000KWH/ton dry biomass (depending on the feedstock composition)
- ✓ Available at large range of sizes, 21 different capacities, from 10KWH to 900KWH, from 360kg to 30ton/day dry material
- ✓ Pretreatment feedstock preparation line to optimize management, maximize energy and hydrogen content and minimize carbon-dioxide emission
- ✓ Gas storage option for flexible electricity supply as needed

List of models and details

Model	SNG output (Nm ³ /h)	Material consumption (kg/h)	Material consumption (ton/day)	Net Electricity generation (KWH)	Net Electricity generation (KWH)/day	Efficiency KWH/ton
HT-30W	30	15	0.36	8	192	533
HT-50W	50	22.5	0.5	12.5	300	556
HT-60W	60	30	0.7	17	408	567
HT-100W	100	45	1.1	27	648	600
HT-120W	120	60	1.4	36	864	600
HT-150W	150	75	1.8	45	1,080	600
HT-200W	200	90	2.2	55	1,320	611
HT-250W	250	120	2.9	72	1,728	600
HT-300W	300	150	3.6	90	2,160	600
HT-400W	400	180	4.3	108	2,592	600
HT-500W	500	225	5.4	135	3,240	600
HT-600W	600	300	7.2	180	4,320	600
HT-700W	700	360	8.6	215	5,160	597
HT-900W	900	450	10.8	270	6,480	600
HT-1,000W	1,000	500	12	290	6,960	580
HT-1,200W	1,200	600	14.4	360	8,640	600
HT-1,500W	1,500	750	18	450	10,800	600
HT-1800W	1,800	960	23	540	12,960	563
HT-2,000W	2,000	1,000	24	575	13,800	575
HT-2,500W	2,500	1,200	28.8	720	17,280	600
HT-3,000W	3,000	1,500	36	900	21,600	600

H2life Biomass electric generator – concept for implementation





H2life Biomass E-Generator – various models, various applications around the world



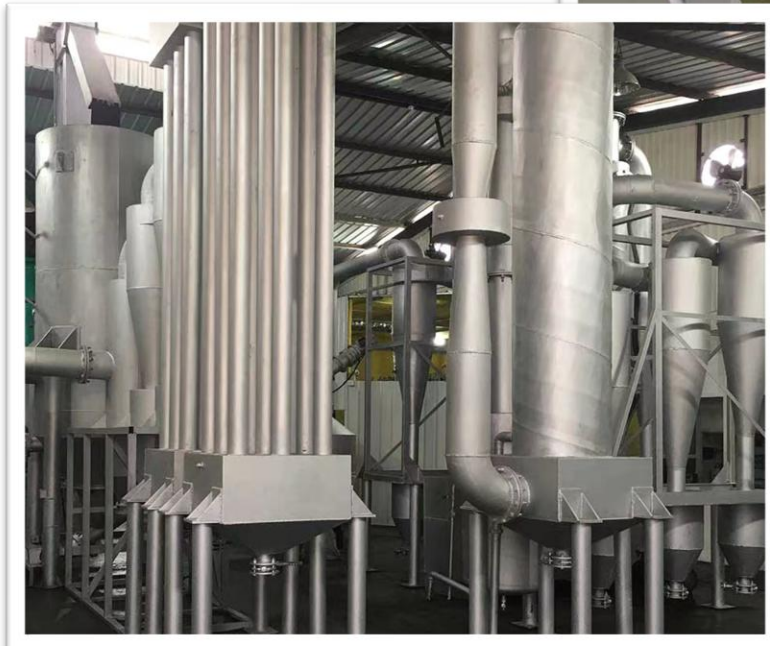
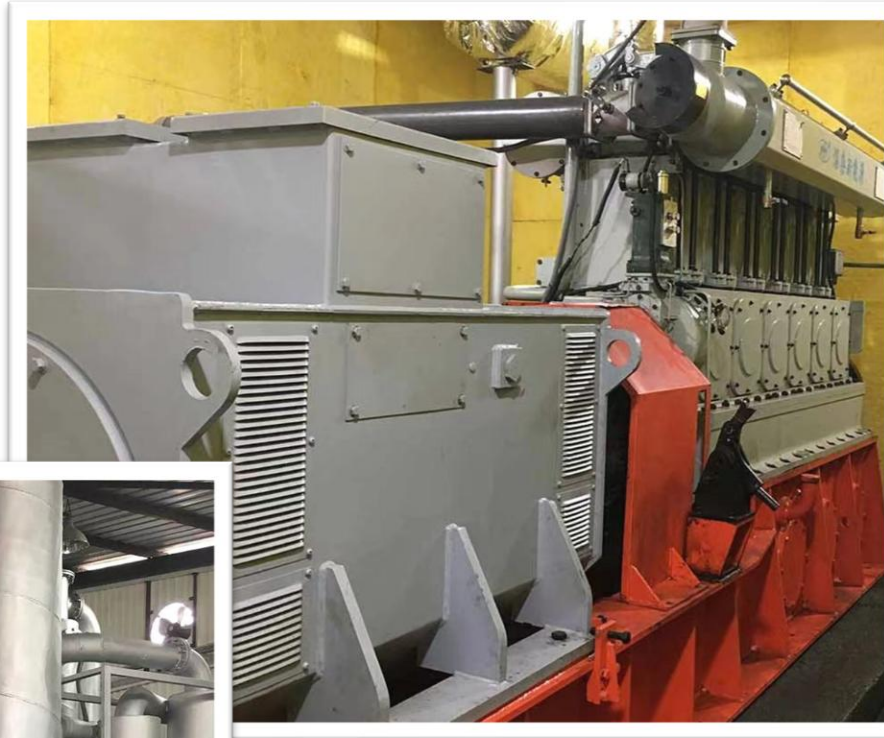


***H2life* Biomass electric generator, Italy 200KWH**
non-incineration technology for production of electricity directly from biomass





***H2life* Biomass electric generator, 540KWH**
non-incineration technology for production of electricity directly from biomass





EWA TECHNOLOGIES GROUP

Saving the environment



WE THANK YOU FOR YOUR ATTENTION

CONTACTS

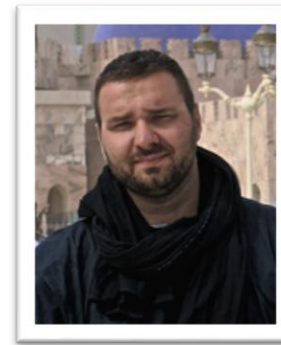


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