

Lloyd's List Awards
North American | 2014
Maritime



TERRAGON

Short Introduction to :
Terragon Environmental Technologies Inc.

December 2014



Terragon Environmental Technologies Inc. was:

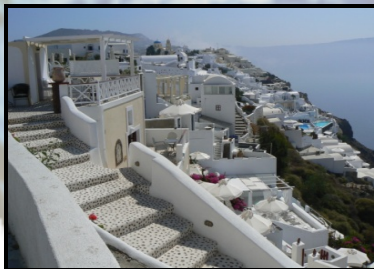
- **Incorporated in 2004 as a Private Canadian company**
- **Located in Montreal,CA,**
- **25.000 ft2 of office, laboratory & manufacturing**
- **Specialized in technology development, application and system engineering**
- **With an exceptionally skilled team of managers and engineers (25)**
- **Proven track record technology development and application**
- **Experts in the field of : resource recovery & thermal processes**
- **Focused on development and commercialisation of waste treatment technologies that :**
 - ✓ **Facilitate the principle of “harvesting of embedded energy”**
 - ✓ **Enable waste stream “transformation” to re-use or as resource**
 - ✓ **At the site, location where the waste is generated**
 - ✓ **via practical, clean and safe devices**



Terragon's vision



A world in which every human habitat uses its own waste locally to recover resources



Enabling the zero waste habitat

Terragon's mission



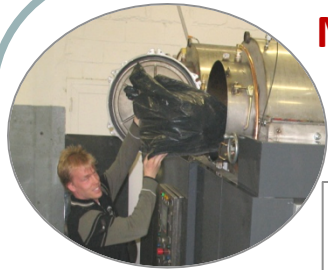
**To enable people, communities and enterprises to treat their
waste locally in a Safe and Economical way
Via Practical resources generating appliances**



Practical Resource Generation Appliances ?

MAGS:

Eliminates all organic waste whilst generating energy for the habitat



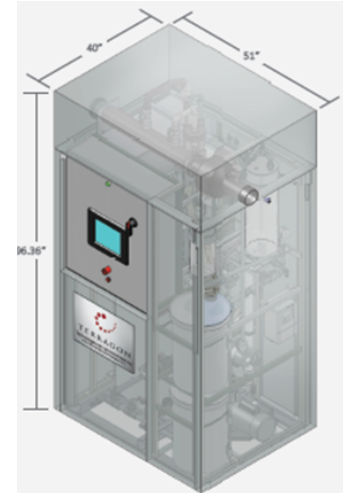
MAGS: Micro Auto-Gasification System
(commercially available)



WETT:

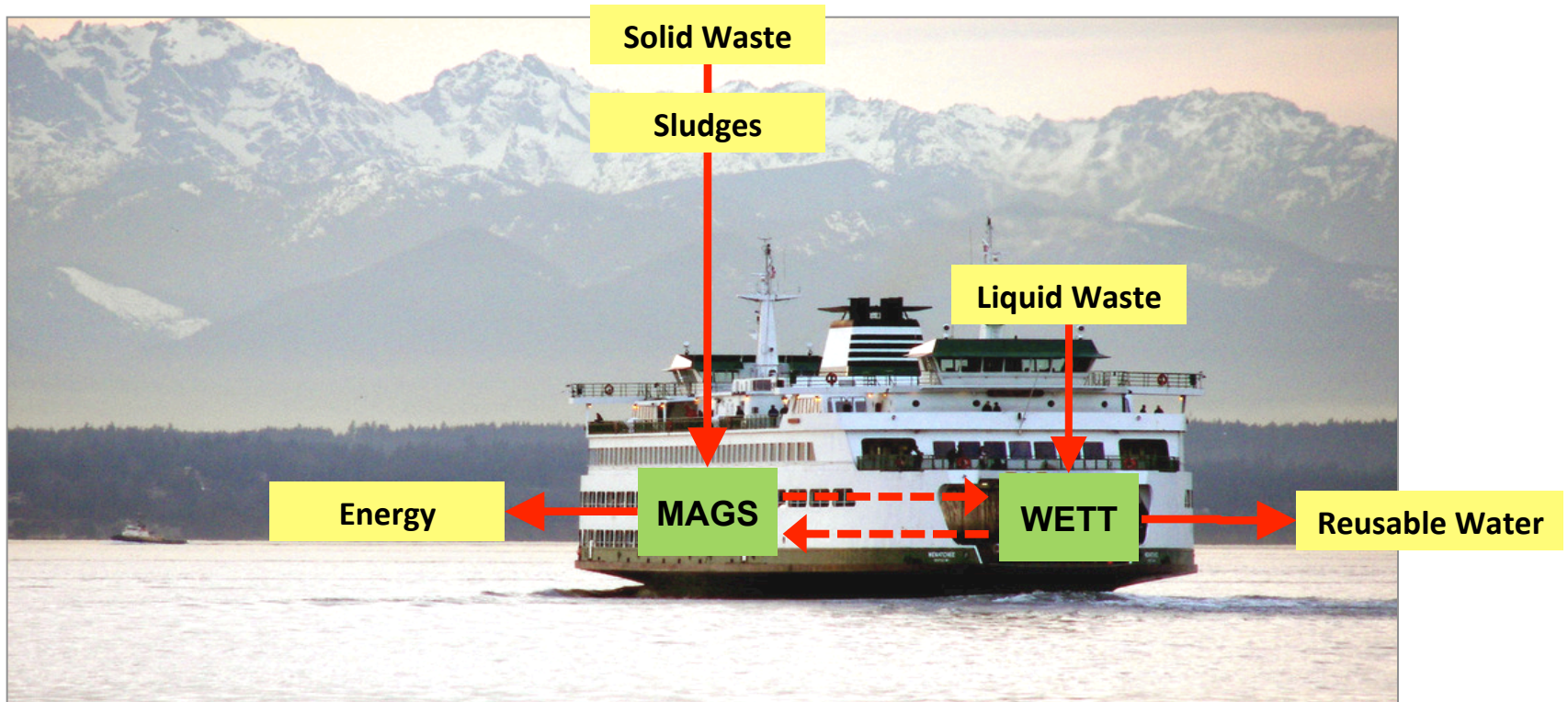
Purifies all waste water streams for re-use by the habitat

WETT: Wastewater Electrochemical Treatment Technology
(ready to commercialize mid 2015)



Terragon is revolutionizing waste management by enabling the generation of resources with simple and economical appliances.

STEP: an integrated approach



STEP (System for Total Environmental Protection) is an integrated approach that combines MAGS and WETT and offers the possibility of resource recovery.

Milestones -YTD



- **2005 Development contract for Defense Research Canada**
- **2006 Awarded contract from the US office of Naval Research**
- **2008 Major contract from Sustainable Development Technology**
- **2010 MAGS validated and demonstrated to target markets**
- **2012 Global Foundation Awarded Terragon for :**
 - ✓ **Excellence in emerging technologies**
- **2013 Selected in Group of 50 contributors to clean capitalism**
- **2014 Winner Technology Innovator Award North America 2014**
- **2012- 2014 Market validation contracts awarded for all Target Markets :**
 - ✓ **Merchant Marine and Naval**
 - ✓ **Bio-medical**
 - ✓ **Isolated communities**
 - ✓ **Specialized Hazardous materials on site processing**
 - ✓ **Defense Navy rapid field deployment**
 - ✓ **Offshore industry**
- **2014 First appliance MAGS received IMO MEPC Type approval**



About MicroAutoGasificationSystem



What MAGS does:



MAGS converts all organic waste, such as plastics, papers, food, cardboards, textiles, wood, used oil, sludge, and biomedical waste into:

- **Bio-char;**
- **Water; and**
- **Thermal energy.**



MAGS generates 70 kWh of energy in hot water from about 40 kg of mixed waste every hour.

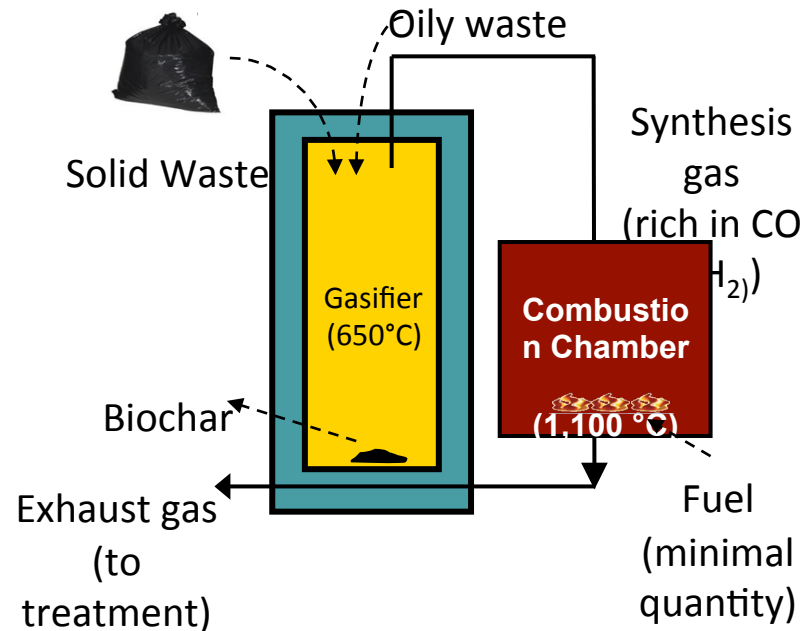
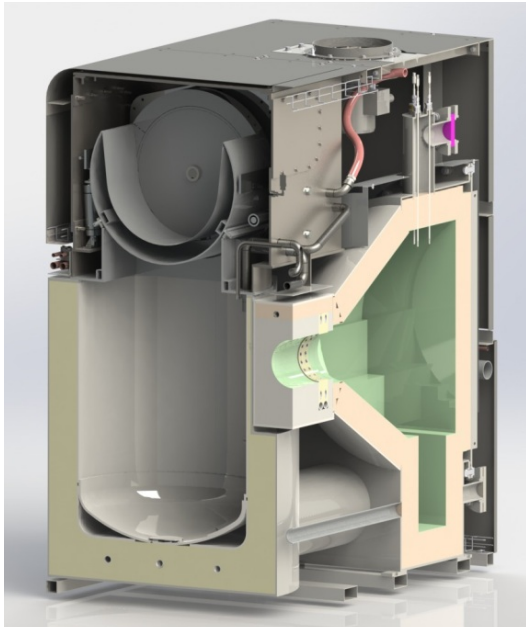
MAGS has very clean emissions and significantly reduces the release of CO₂ into the environment

MAGS core technology = Auto Gasification



Auto Gasification is a patented technology which thermally breaks down hydrocarbons into:

1. solid carbon and
2. synthesis gas => and uses the synthesis gas to fuel the process.



MAGS sequesters carbon and generates soil enriching bio-char.

MAGS benefits:

MAGS enables:

- On site processing of a diverse stream of dry organic waste
- On site processing of hazardous waste streams
- A significant reduction of your total disposal cost
- A Safer and more hygienic working environment
- A reduction of associated transportation costs and emissions
- Autonomy for isolated communities
- Flexibility for the user

MAGS is a Waste to Energy device and generates:

70 kWh of energy in hot water from about 40 kg of mixed waste every hour.



MAGS has very clean emissions and significantly reduces the release of CO₂ into the environment

Very suitable applications:



Marine & Offshore:
Waste - oils, sludge, chemicals
and contaminated waste



Medical:
bio hazardous classified waste



Military: deployment & camps:



Business: hazardous – toxic wastes



We also re-think How We Use Water



WETT is a patented electrochemical process that produces clean **water for safe reuse**

WETT Technology Description



Wastewaters

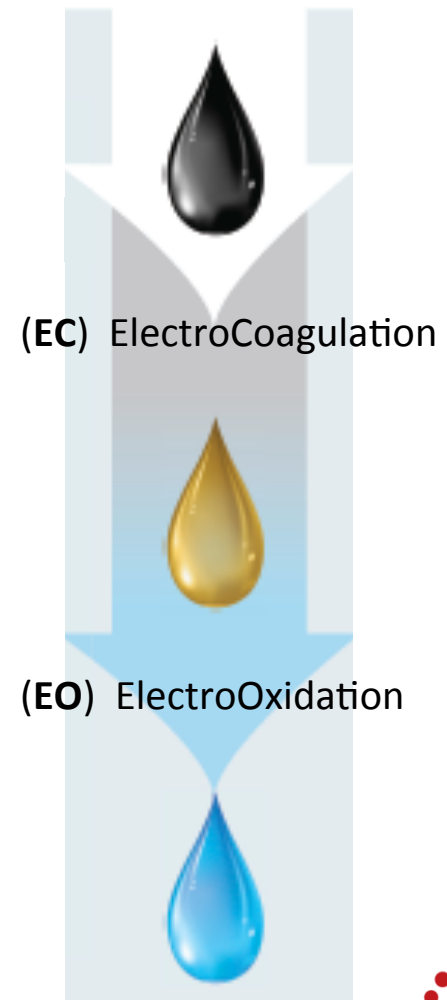
- Oily water, such a water collected from the bilge
- Greywater from showers, laundry and sinks
- Blackwater, including marine sewage

Treatment

- Based on cutting-edge advanced electrochemistry
- Not based on biological treatment or chemical addition
- Principal stages include **EC** and **EO**
- Removes suspended and dissolved solids
- Inactivates pathogens
- Requires only electricity and different types of electrodes
- Produces water that is safe to discharge or reuse

Operation

- Compact and easy to operate by non-technical persons
- Operates continuously, unattended, with on/off capability
- Stages and operating conditions depend on wastewater





THANK YOU FOR YOUR ATTENTION !