



# **ECO GLOBAL ENGINEERING INCORPORATION**

## **(ECOGEI)**

### **REPUBLIC OF SINGAPORE**

**An Advanced Environmental cum Mechanical Global Engineering Enterprise**

## **CORPORATE PRESENTATION**





## Who We Are:

- Innovative R&D based Manufacturer and Global Distributor of Various Ranges of Ultra Modern Organic Waste Management Products and Impure, Chemical, Industrial Waste Water of any kind and Brackish Water Purifiers using Highly Sophisticated Technologies, Headquartered in Singapore
- R&D Team and Microbes Specialization Team in Singapore
- Solution Providers on Environmental Issues and Related Engineering





# **ECO GLOBAL ENGINEERING INCORPORATION (ECOGEI) REPUBLIC OF SINGAPORE**

**In Collaboration & Tie up with Giant Companies of the Following Countries:**

- **REPUBLIC OF SINGAPORE**
- **REPUBLIC OF MALAYSIA**
- **UNITED KINGDOM (UK)**
- **UNITED STATES OF AMERICA (USA)**







## ECOGEI GROUP, SINGAPORE

### 3 Overseas offices in:

- United Kingdom
- Singapore
- Malaysia
- Republic of India
- Manufacturing Facilities in Singapore, UK , India and Malaysia







# **ECO Global Engineering Incorporation (ECOGEI)**

## **Singapore, India**



### **What We Can Provide**

An eco-friendly and cost-effective solution to managing food waste disposal

Reduction in waste disposal costs in the long run

Clean, Pest-free, Odour-free Bin Centre or Waste disposal area

An opportunity to build positive corporate social responsibility and better brand identity, to differentiate from competitors

Achieving 4Rs - Recycle, Reuse, Reduce and Restore







**EC**  **GEI**

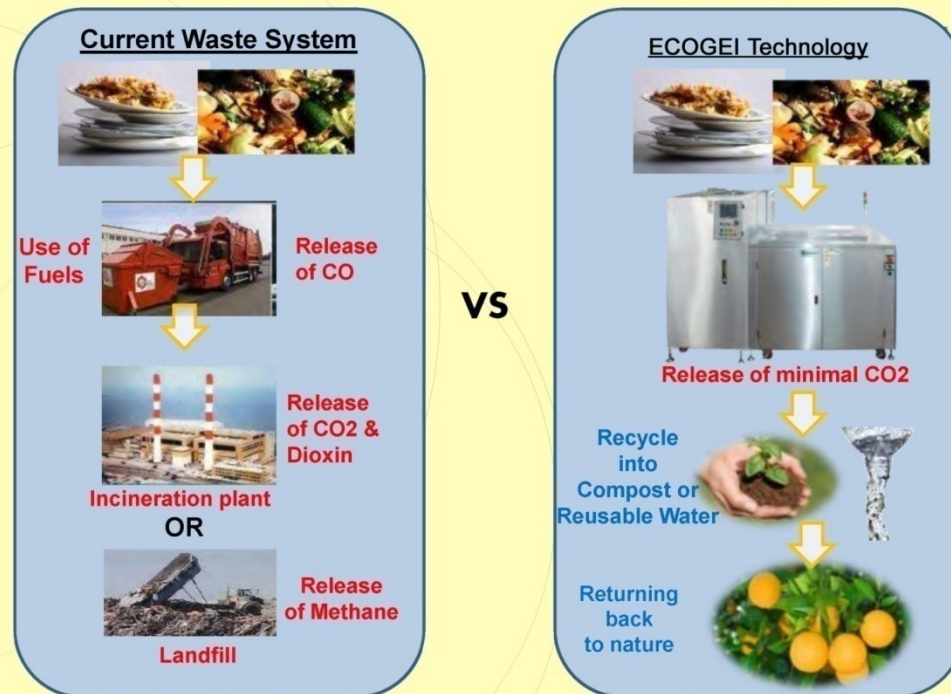
## **Municipal Solid Waste Management in Kerala**



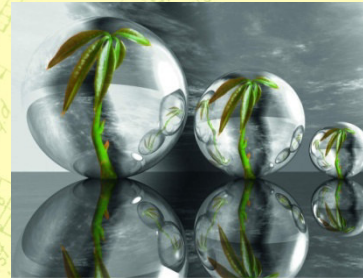
**Challenges & Options**



## Eco-Friendly and Cost-Effective Solution for Treating and Digesting Organic Wastes of Any Kind without Pollution



**Segregated Storage of Food Waste**

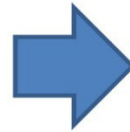




## Clean, Pest-free, Odour-free Bin Centre or Waste disposal area



Exposure of food waste  
at bin-center



No storage of food waste

## ACHIEVING – 4 R

**RECYCLE** Food Waste

**REUSE** compost for landscape/gardening/soil amendment

**OR**

**REUSE** the recycled water for cleaning or washing purposes

**REDUCE** use of incineration units/landfill/ plastic trash bag

**RESTORE** the environment with thriving landscape/gardens.



# DEVELOPING CSR AS A COMPETITIVE ADVANTAGE

- **Emphasis on “Green Efforts” by Governments**
- **Tap on the environmental advantage and build better brand identity**
- **Strategic branding tool to differentiate from competitors**
- **Positive CSR will build confidence and goodwill with stakeholders**





## ecoDigester

**-Breakthrough Technology-**

Recycles food waste into  
clear reusable  
water On-Site

Controlled conducive  
environment  
enabling microbes to  
naturally digest  
food waste at a higher  
rate

Multiple applications of  
clear re-usable  
water



- Washing cars, floors
- Use in toilets for flushing
- Planting / Gardening

**we are concentrating more on the Eco-digester to convert MSW to compost.**





## ecoDigester® Digesting Food Waste into Water

**ecoDigester®** is an entirely self-contained and continual feed disposal system for organic waste. It is designed to convert solid food waste materials into crystal-clear reusable water which can be applied for multiple purposes e.g. washing floor or watering of plants.

**ecoDigester®** increases the speed of the natural decomposition process through biological means like maintaining optimal levels of aeration, moisture, temperature. Under these controlled conditions, microorganisms can safely decompose food waste at a rate much faster than under natural conditions which are subjected to soil and groundwater contamination.

**ecoDigester®** can safely and quickly decomposes any kind of food waste including vegetables, fruits, scraps, raw and cooked meat, fish, poultries and dairy products.

**The food waste enters the ecoDigester and is decomposed within 24hrs**

**The sludge is run through a grease separator**

**Followed by microbial treatment and filtration through our MBR system**

**The result is water which meets sewage standards**

**If there is a requirement to reuse the water, the result is put through a Reverse Osmosis System to further treat the water**







## ecoComposter

-Returning back to nature-

Recycles food waste into compost within 24 hours

Compost is a natural soil conditioner, a key ingredient in organic farming/planting

Used for gardening to foster a gardening culture

Used for landscaping

LOVE  
FOOD  
hate waste







## ecoDigester® Digesting Food Waste into Compost

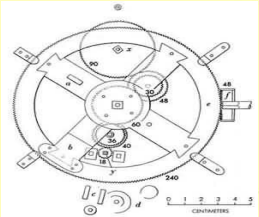


Like the wet series, **ECOGEI/Eco-Wiz® Dry Series** is also an organic waste disposal system that is totally self-contained and is a continual feed. This dry series however, is meant to convert food waste materials into compost.

Apart from keeping your organic waste out of landfills, composting it will give you natural fertilizer for your lawns and gardens. This rich, sweet-smelling, soil-like substance increases the health of your soil with nutrients that are easily absorbed by plants' roots.

**ECOGEI/Eco-Wiz® Dry Series** uses a natural process to decompose food wastes. We biologically manipulate the environment in the Eco-Wiz system to attract microbes that can decompose food waste at the highest speed.





## Components of ecoDigester

The main components of the ecoDigester/ecoComposter comprises of 3 parts

- 1) The EW System which the waste food is digested into liquid form
- 2) The EW System which the waste food is digested into compost form
- 3) The grease separator which separates the grease from the liquid

### ecoDigester -Water



The MBR (Membrane Bio Reactor), this further processes the liquid into water which meets sewage standards.

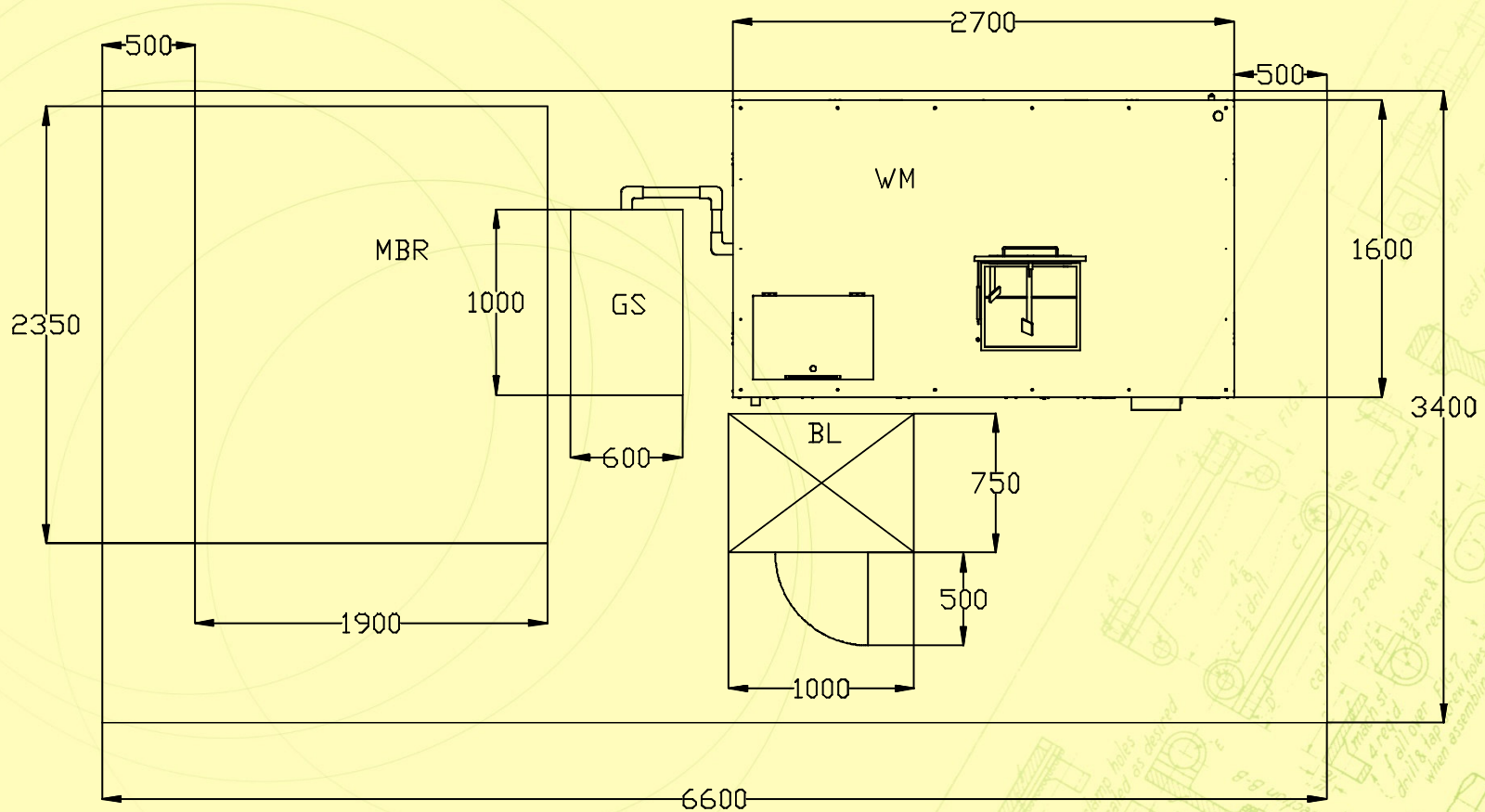
### ecoComposter -Compost



The MBR would be replaced with a Dry Unit to turn the liquid into compost.



## Proposed Space Requirement for WP-1000-UF Model





- **How it works:**

The **ecoDigester** primary function is to accelerate the natural decomposition process by maintaining optimal levels of aeration, moisture and temperature. Under this manipulated environment, our unique microorganisms safely decomposes food waste at an accelerated rate then natural decomposition without soil and ground water contamination

- **Its operation:**

Step1: Microbes are poured into the system for activation (system inoculation only once)

Step2: Food waste is added

Step3: System will mix food waste with the microbes

Step4: Decomposition of food waste by microbes

Step5: Discharge as liquid or compost

Step2-5: is repeated over and over within 24hrs.

**The Approximate Full Load Power Electricity Consumption of 1 ton Machine is 9.32Kwh (Full Load). Approximate Running Power Consumption is 2.49 kwh (ecoDigester-Water).**



**Approximate Full Load Power Consumption of the MBR is 9.36kwh and Approximate running Power Consumption is 2.47 kwh (ecoDigester-Compost)**

**We do recommend ecoDigester® for digesting food waste into compost**



## ECOGEI MICROBIAL ADDITIVE

Enzyme-enhanced microbial technology gives us the biological tools necessary for improving organic waste management.

The liquefaction of organic waste associated with food waste is improved and waste degradation is sped up. This is done by introducing specialised and naturally-occurring microorganisms with enhanced degradation capabilities into the **ECOGEI** Systems.

**ECOGEI** products work with a Microbial Additive that is specially designed by our team of Bio Scientists. This additive contains a powdered blend of organisms blended with crude enzymes and emulsifiers specifically designed to digest and deodorise organic wastes.

Microbial additive is classified as **BIO-Safety Level 1**, making it completely safe for Human and animal contact.



**We would supply Microbes and Spare Parts as and when these are required**







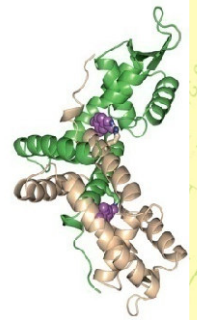
## How ECOGEI Works

- Step1 : Microbes are poured into the system for activation
- Step2 : Food waste is added
- Step3 : System will mix food waste with the microbes
- Step 4 : Decomposition of food waste by microbes
- Step 5 : Discharge as liquid or compost



Designed and produced by ECOGEI team of Bio Scientists

Contains a powdered blend of organisms specifically designed to digest and deodorise organic wastes



Eco-Wiz Microbes is classified as BIO-Safety Level 1, making it completely safe for Human and animal contact





## ADDITION OF CHEMICALS AND ITS IMPORTANCE

- ❖ There are **no Chemicals** involved in the **ecoDigesters**

### Ecological benefits

- ❖ Reduction of harmful emissions ➤ Transportation
  - Carbon Monoxide
- ❖ Reduction of vermin at Bin Centre
- ❖ Cleaner environment for future generations

### Economical benefits

- ❖ Easy installation at site
- ❖ Fully automated system
- ❖ Food waste no longer stored on site, reduce pest control
- ❖ Reduction in use of plastic bags
- ❖ Increase Organization Profit



### How much manual work is required

Manual work on the client side would be to separate food waste from general waste before depositing the food waste into the machine.

**Other than that the machine is fully automated**



## APPLICATION OF ECOGEI/ECO-WIZ ECODIGESTERS IN:

- **Hotels (Singapore)**

- ◆ Fairmont Hotel
- ◆ The Stamford
- ◆ Orchard City Centre
- ◆ Swissotel
- ◆ Holiday Inn
- ◆ Hotel Continental

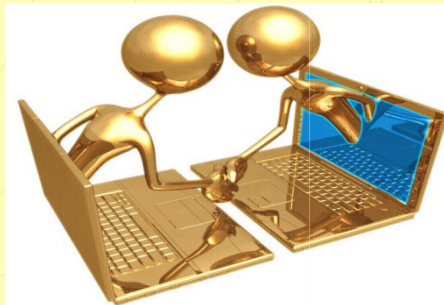
- **Food Processing Factories (Singapore)**

Country Foods  
SATS foods (Under Singapore Airline)  
An all rounded food service provider in Singapore

- **Hospitals (Singapore)**

In negotiation with

- ◆ Alexandra Hospital and
- ◆ Khoo Teck Puat Hospital



- **Training Institution (Singapore)**

Civil Defence Academy

- **Schools (USA)**

Bridgewater State College

- **Supermarket (Singapore)**

NTUC

- **Fresh Markets (Singapore)**

Kovan-Hougang Fresh Market

- **General Waste Company (Singapore)**

Sembwaste

- **Recreational Club (Singapore)**

Singapore Swimming Club

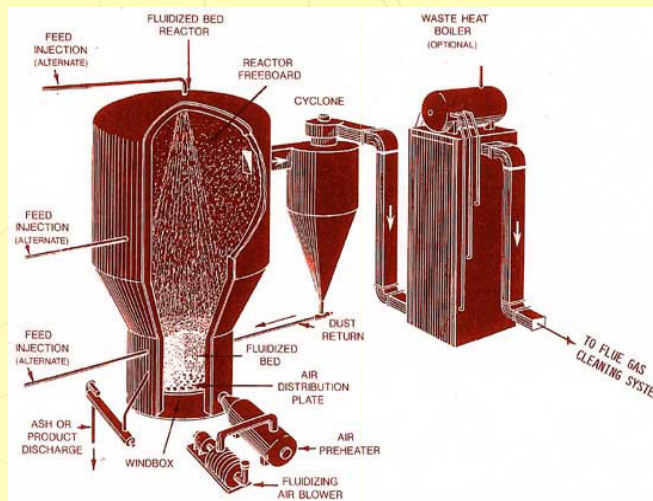


# **WE CAN OFFER AND PROVIDE INCINERATORS OF THE FOLLOWING:**

The main uses of our Incinerators vary between the wide varieties of models we have to offer.

Our Incinerators are designed to burn all kinds of wastes, for example...

**Medical  
Poultry  
Pig farm  
Wood / paper  
Camp Waste**



**Veterinary  
Sheep  
Kennels  
Industrial waste  
Catering Waste**





## TOP LOAD WASTE INCINERATORS

40 kg capacity and will burn at around 5 to 20 Kg/hr.

Has a heavy duty refractory cement lining for maximum heat retention

Operates at over 1100 deg C in the primary chamber to ensure complete combustion



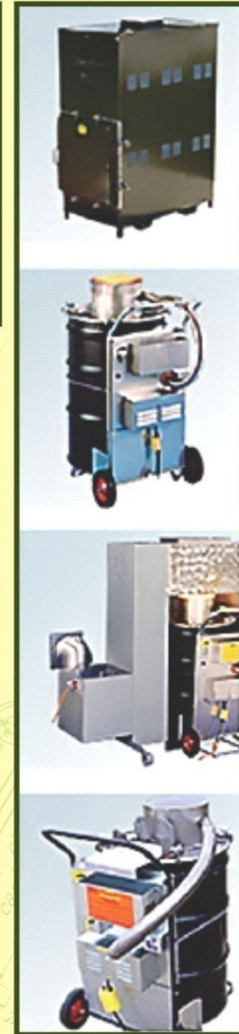
## TOP LOAD WASTE INCINERATORS

### Ease of Use

Auto ignition.  
No pilots to light.  
Automatic control and temperature monitoring  
Built-in skid facilitates placement

### Fuel Efficiency

Rapid incineration means low fuel consumption.  
Up to 20 kg/hr (dependant on application).  
Thick refractory lining rated to 1400 deg C in main chamber  
retains heat, increasing efficiency







# TOP LOAD WASTE INCINERATORS

## Quality Built to Last

Heat resistant 3mm steel.

Stainless steel stack.

Fully Automatic and simple to operate control panel

Afterburner Preheat Incineration Temperatures in Excess of 900 degrees C

3 mm Steel Casing and Fully insulated

Dense Refractory Concrete Lining Rated to 1400 degrees C

Solid Hearth to Allow Maximum Burnout

Large Top Opening Lid For Easy Loading



## ADVANTAGES

### Key Features:

- ⇒ Virtually smoke, fumes & smell free
- ⇒ High temperature, refractory lining giving excellent heat retention
- ⇒ Quick heat up times & high burn rates of up to 500kg per hour
- ⇒ Easy installation and maintenance
- ⇒ One year warranty and full access to technical backup
- ⇒ Compliance with the EU ABPR 1774/2002
- ⇒ CE Certified
- ⇒ Worldwide coverage

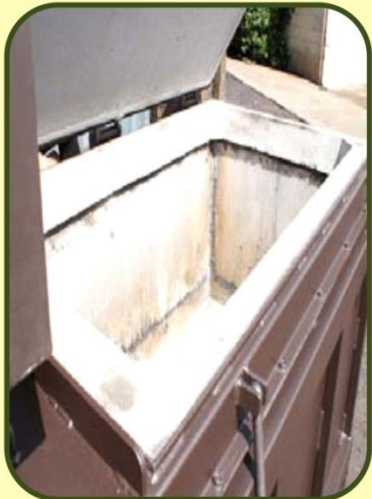
One of the main features of our incinerators range is that they burn virtually smoke and smell free without the need for a secondary burner because of their patented internal design. Not only do we supply a range of incinerators in many different sizes but we are now able to make them all fully mobile and self contained

100% effective and reliable meeting International Standards



**No smokes  
No fumes**

**Least minimum mission of solid particles  
meeting international standards**





## Time & Fuel requirement

**0.665 Lit of Diesel can burn 20 Kg  
of Municipal Solid Wet Waste in an hour**

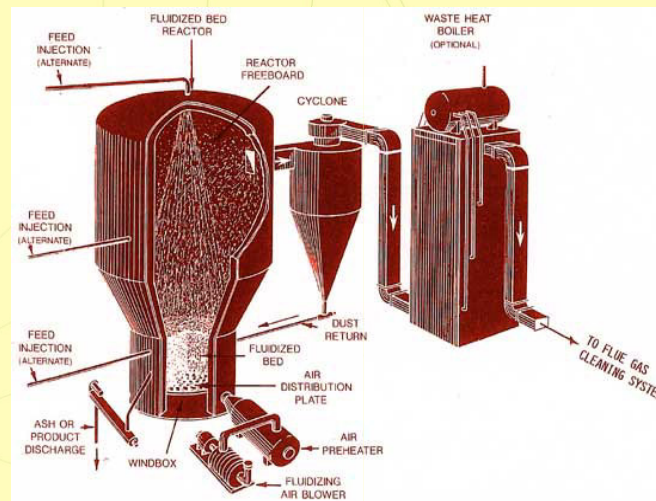


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Catering Waste**





# Short Form List Of Recent Incinerator Customers

Halliburton Co. - Germany & Libya  
Enqua Kft -Hungary  
STS Hostivice – Czech Republic  
D. Matsoulis & H. Bletsas – Greece  
Chore Time Europe – Netherlands  
AVICOLA LUMINA S.A – Romania  
SC “Mineral Protan Agigea” SA - Romania  
SC Carnob SRL Lumina – Romania  
STS – Slovakia  
Agrovet Plus - Belarus  
PCF - Azerbaijan  
Royal Palace – Jordan  
United Nations – Northern Cyprus  
Gvardia - Stavropol Kray, Russia  
Business Yemen for Trading- Yemen  
US Army, USA  
US Navy, USA  
British Foreign Office, USA

USONA, UK  
BP Oil, UK  
Pet cremation services - Singapore  
Chem Labs - Kenya  
Grampian Food Group - U.K.  
PD Hook Agriculture - U.K.  
Fugro Marine - Netherlands  
Kosovo Government (Agriculture) - Kosovo  
KCA Deutag - Germany  
Naval Medical Research Unit - Egypt  
Shell Oil, Libya  
Medecins Sans Frontiers (MSF) - Cambodia  
BGP – China  
Kumasi Medical Centre – Ghana  
Peregrine Diamonds - Canada  
Matrix Helicopters - Canada  
City of Lucedale - USA  
Norwegian Red Cross - Sudan

Cancer Hospital - Maharagama, Sri Lanka  
Kandy Teaching Hospital - Sri Lanka  
Peradeniya Teaching Hospital - Sri Lanka  
Medical research Institute - Sri Lanka  
Welisara Hospital - Sri Lanka  
Intraskins - Belgium  
RA International - Afghanistan, Chad



# **INSTALLATION, COMMISSION, OPERATION AND MAINTENANCE**



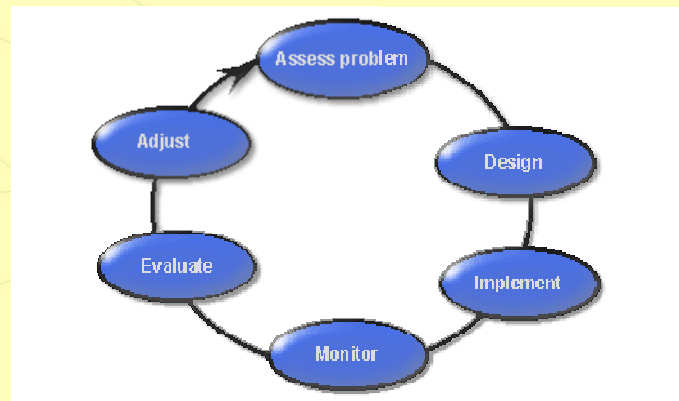
**Company Engineers from Singapore would install and commission the machineries. Company Engineers would train service staff to operate and service the machines.**

**Spare Parts of Machineries and Microbes will be supplied by ECOGEI, India in association with Singapore, as and when these are required for.**





## **MANAGEMENT STEPS REQUIRED FOR:**



**Management steps required for handling of the machineries, maintenance, and compost received from the ecoDigester, such as classifying screening, whether there is any inert material, how to manage this material, operating and handling machineries, storage of compost required.**



## ECOGEI Clients



Singapore Civil Defence Force







**More Details & Trade Enquiry:**  
[www.ecogei.com](http://www.ecogei.com)





**ECO Global Engineering Incorporation**

Singapore

**EC**  **GEI**

**Thank You**  
from

No. 14, Robinson Road, #13-00

Far East Finance Building

Republic of Singapore-048535

Phone: +65 66897671 H/P: +65 92452739

H/P: +65 97283719 Fax: +65 67258018

E-mail: [info@ecogei.com](mailto:info@ecogei.com) Shype ID: rgc-rmc-dr

URL: [www.ecogei.com](http://www.ecogei.com)

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