putting the pieces together

METAN Presents

SOLUTION FOR INDUSTRIAL , COMMERCIAL AND HEALTHCARE WASTE MANAGEMENT in ENVIRONMENTALLY SOUND MANNER

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HAZARDOUS WASTE MANAGEMENT IN AN ENVIRONMENTALLY SOUND MANNER

CAPEGATE

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Biohazard symbol

Old radiation symbol

New radiation symbol

WHAT IS HAZARDOUS WASTE

According to the EPA, hazardous waste is any solid, gaseous, liquid or sludge waste that is potentially harmful to public health and the environment.

All of these substances pose significant health risks to human, animals and the environment.
Most industrial plants and manufacturing concernsgenerate hazardous waste that requires the use of proper disposal techniques.
Correctly disposing of the hazardous waste is crucial to maintaining national and global health.

Corrosive (C)

These substances attack and destroy living tissues, including the eyes and skin.

Highly flammable (F)

These substances easily catch fire (flash point: 21–55 °C). Never store flammable substances together with explosive ones.

Toxic (T)

These substances can cause death. They may have their effects when swallowed or breathed in, or when absorbed through the skin.

Harmful (Xn)

These substances are similar to toxic substances but are less dangerous.

Explosive (E)

An explosive is a compound or mixture susceptible to a rapid chemical reaction, decomposition or combustion, with the rapid generation of heat and gases with a combined volume much larger than the original substance.

Irritant (I)

These substances can cause reddening or blistering of skin.

Extremely flammable (F+)

Liquid substances and preparations that have an extremely low flash point (<21 °C) and therefore catch fire very easily.

Very toxic (T+)

Substances and preparations that, in very low quantities, cause death or acute or chronic damage to health when inhaled, swallowed or absorbed via the skin.

Oxidising (O)

These substances provide oxygen, which allows other materials to burn more fiercely.

Dangerous for environment (N)

Substances that, were they to enter into the environment, would present or might present an immediate or delayed danger for one or more components of the environment.

No direct equivalent; use harmful or irritant symbol as appropriate

Specific organ toxicity

These substances may cause:

- damage to organ or organs after single or repeated exposure
- respiratory sensitization
- allergy or asthma or breathing difficulties if inhaled.

BASIC SYMBOLS

- **Examples of industrial hazardous waste that require special disposal processes include:**

- Spent solvent wastes
- Wastes from wood preserving
- Petroleum refinery wastewater treatment sludge
- Multisource leachate
- Dioxin bearing wastes

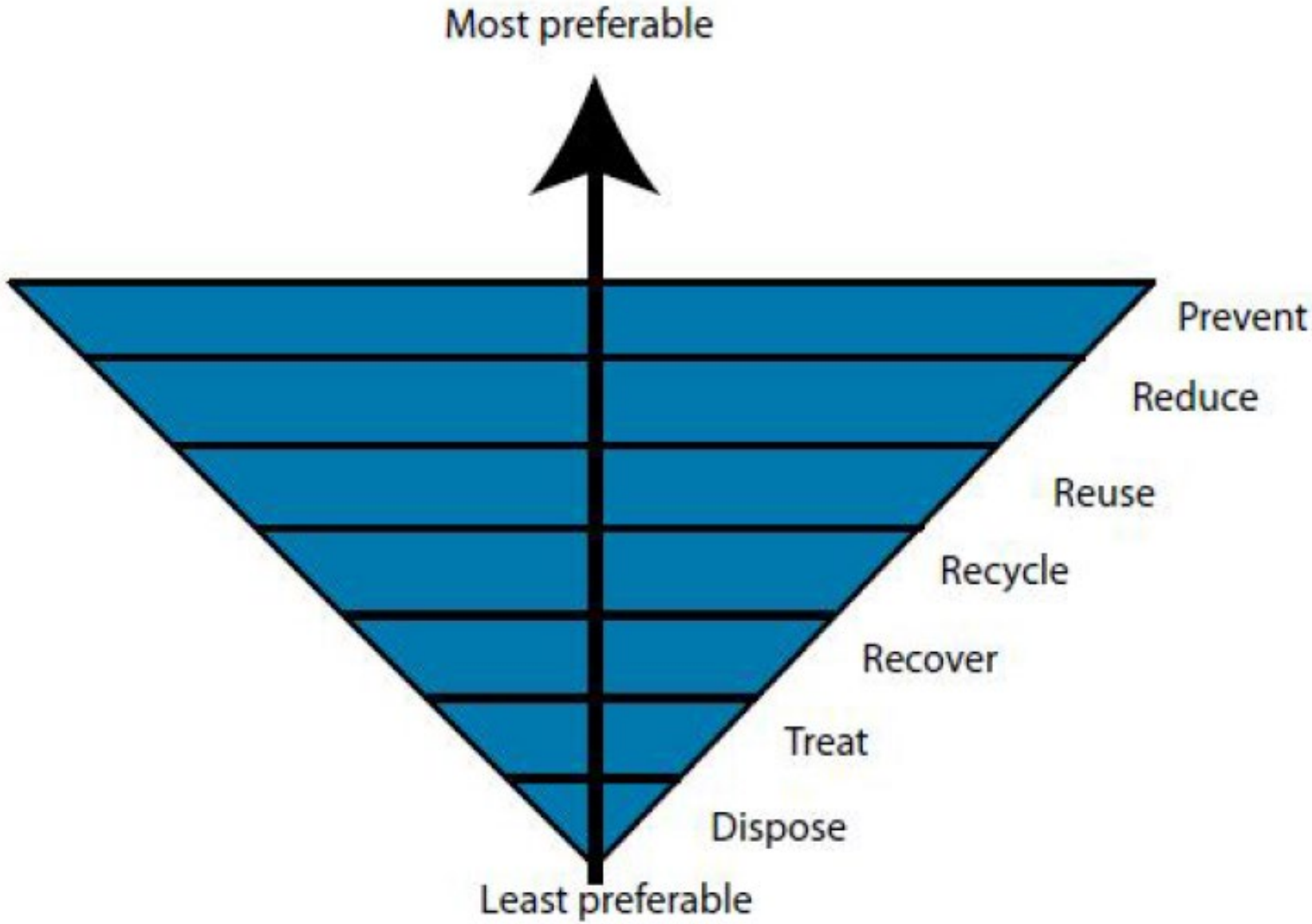
- Inorganic pigment & organic chemicals manufacturing
- Explosives manufacturing inputs and byproducts
- Coking
- Iron & steel production byproducts
- Pesticides manufacturing processes

- Primary aluminum production

- **Examples of common household hazardous waste materials that require specialized disposal include, but are not limited to:**

- Computers, cellphones, televisions
- Paints & solvents
- Certain types of batteries
- Aerosols & propane cylinders
- Used motor oil
- Antifreeze
- Pesticides
- Cleaning agents
- Radioactive waste (e.g. some household smoke detectors)
- Ammunition


Waste Management Hierarchy
Most Preferred
Source Reduction & Reuse
Recycling / Composting
Energy Recovery
Treatment
& Disposal
Least Preferred


Most preferable
Prevent
Reduce
Reuse
Recycle
Recover
Treat
Dispose
Least preferable

MANAGEMENT OF HAZARDOUS WASTE

Starts form Point of Generation

Ends up with Re-Use, Re-Cycling, Disposal

AT THE POINT OF GENERATION

REDUCE

REUSE

RECYCLE

is tried as much as possible in a safe maner

Analyzing, Sorting, Labeling, Containerization

Inventory and Record Keeping,

Temporary storage

Spil Control

Tranfer to permanet disposal-recycling

Reporting to the Authorities

Storing Hazardous Waste

Hazardous waste is stored for a temporary period before it is treated, disposed or stored elsewhere. Hazardous waste is stored in containers, tanks, waste piles, containment buildings and surface impoundments.

A container is a portable device in which the hazardous waste can be stored, treated, disposed or otherwise handled.(Example: 55-gallon drum.)

A waste pile is an open, uncontained waste pile used for storing or treating waste. The waste is placed on top of a double liner system to prevent groundwater contamination from the waste leachate.

Tanks are stationary devices made of non-earthen materials like steel, glass or concrete and are used to treat or store hazardous waste.

Containment buildings are self supported, completely enclosed structures used to treat or store non-containerized hazardous waste.

Surface impoundments are man-made excavations such as a lagoon or storage pit lined by synthetic liners.

TRANSPORTING IN ACCORDANCE WITH THE LOCAL LAWS, DIRECTIVES by LICENSED TRUCKS AND COMPANIES

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DISPOSAL

Past Disposal Practice

- Soil Spreading
- Pits/Ponds/Lagoons
- Sanitary Landfills
- Drum Storage Areas
- Underground Storage Tanks
- Midnight Dumping
- Uncontrolled Incineration

CURRENT DISPOSAL METHODS

Disposal techniques include, but are not limited to:

Incineration. This process has undergone extensive technological advances that fully comply with regulatory standards.

Landfill disposal. With underground barriers, this method is considered environmentally viable, as hazardous substances are caught before they seep into the ground. DOT certified waste management workers arrive onsite, properly label and store your waste in regulatory storage tanks and safely transport the materials to the landfill site for disposal.

Concrete mixing. To stabilize or solidify certain toxic substances, some waste management operations mix a specific concrete concoction with the hazardous material.

HAZARDOUS INDUSTRIAL AND HEALTHCARE WASTE DISPOSAL by INCINERATION

SIMPLY, BURNING THE MATERIAL at

1100-1200 ° C IN 2 STAGES

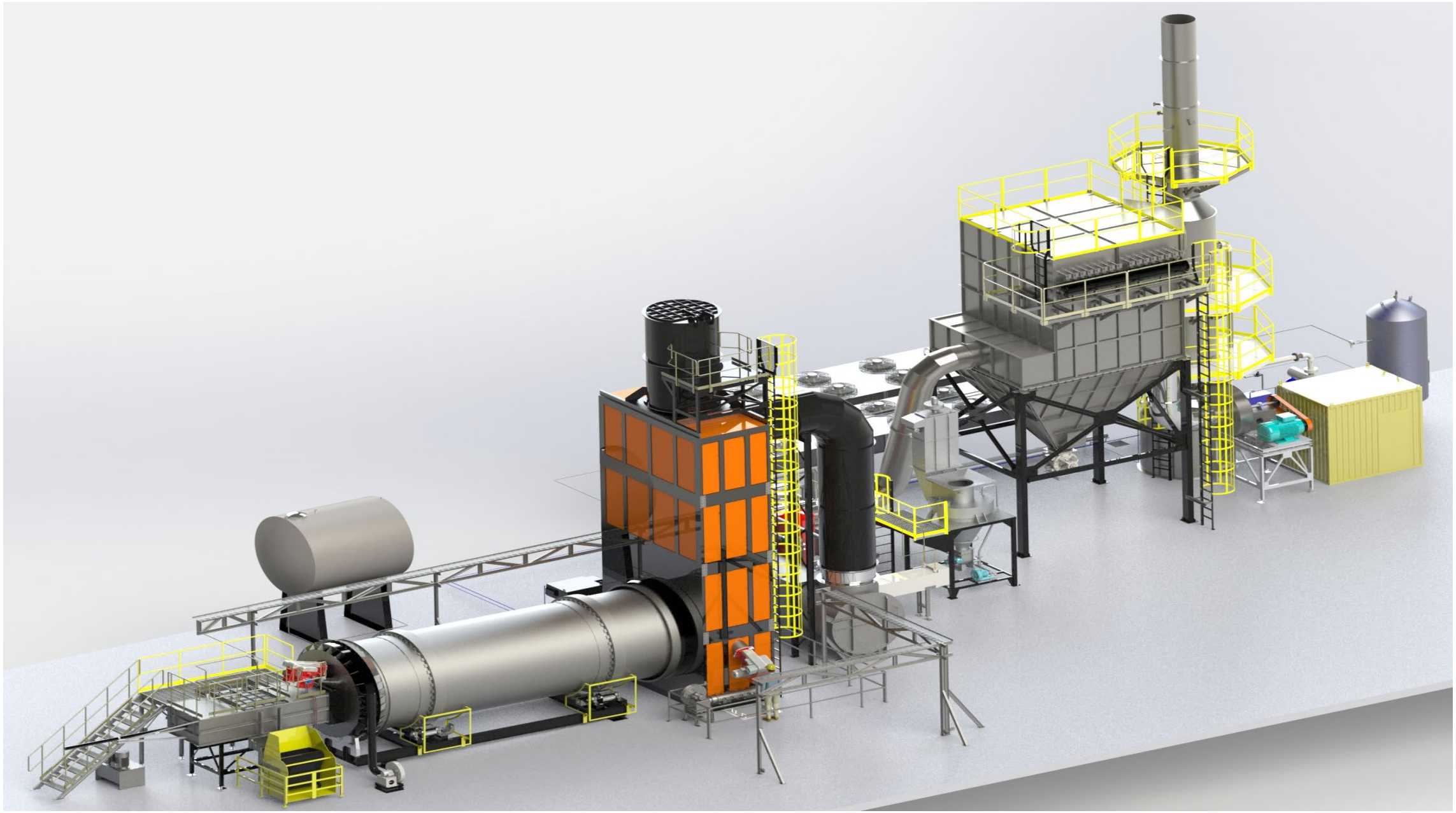
in an

Environmentally Sound Manner

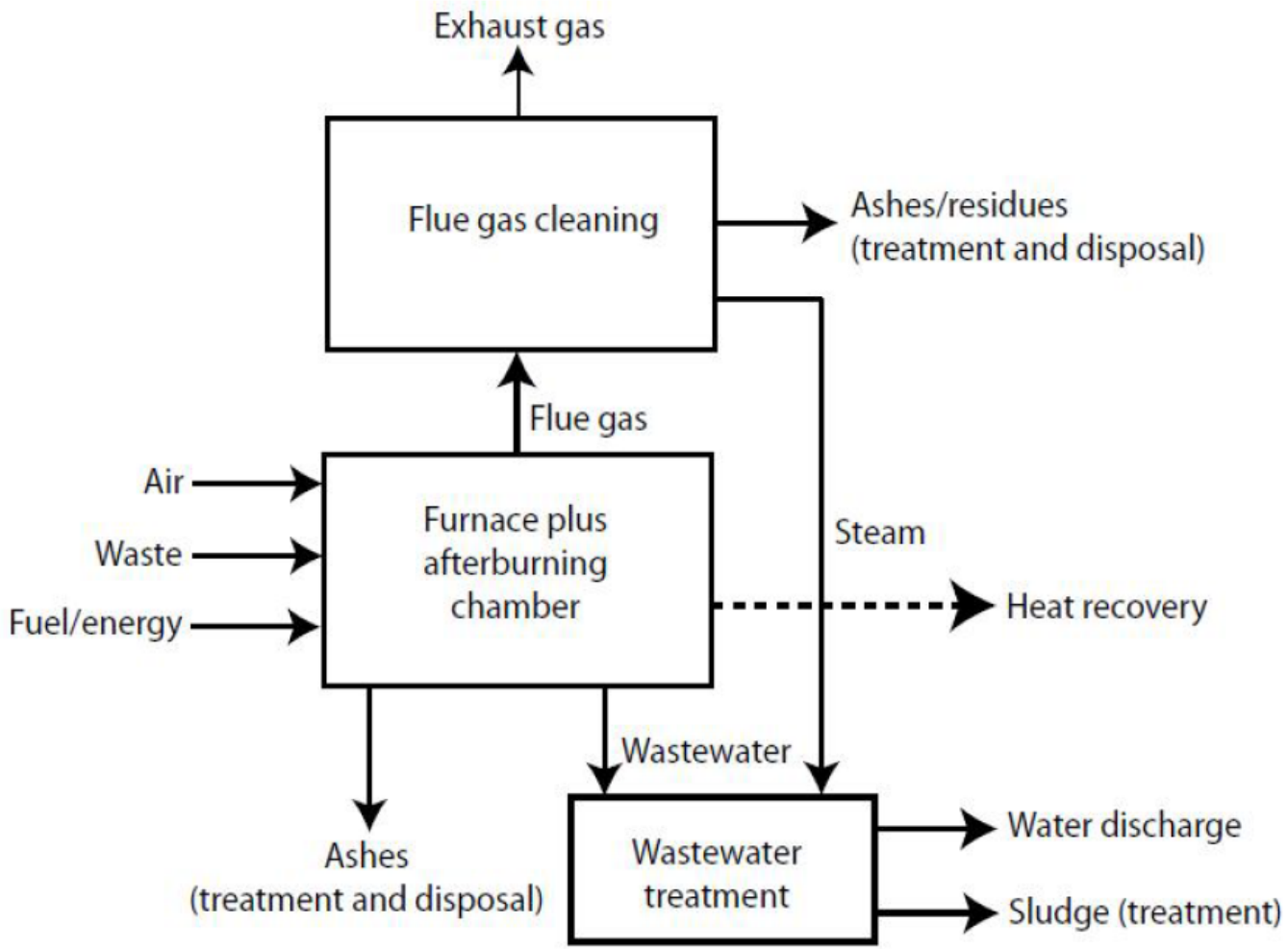
TO KEEP THE EMISSIONS UNDER THE (EPA, EU) LIMITS

AND POSSIBLY TO RECOVER POWER

HOW AN INCINERATOR LOOKS LIKE



MOST PERMANENT WAY OF DISPOSAL
INCINERATION



Products

INCINERATOR:
- Medical Waste
- Municipal Waste
- Hazardous Waste
- Propellant
- Animal Waste
- Wastewater Sludge

FLUE GAS TREATMENT:
- Particulate Matter
- Corrosive Gasses
- Heavy Metals

WASTE SEPARATION SYSTEMS:
- Municipal Wastes
- Airport Wastes

Medical Waste Incineration System – Iraq

Municipal Waste Incineration System USACE Maywand Camp Site - Afghanistan

Hazardous Waste Incineration System – Saudi Arabia

Sludge Incineration System – Kandahar Air Field NATO

Propellant Incineration System - Roketsan

SOLUTION FOR TODAY

- TO START AND IMPLEMENT A CUSTOMIZED HAZARDOUS INDUSTRIAL, COMMERCIAL AND HEALTHCARE WASTE MANAGEMENT PROGRAM
- THROUGH GETTING CONSULTANCY FOR REVIEWING THE CURRENT SITUATION AND GENERATING A LONG-TERM WASTE MANAGEMENT PROGRAM TO INCLUDE THE BELOW STEPS

  - DEVELOPMENT OF AWARENESS TO REDUCE THE HAZARDOUS WASTE
  - SEGREGATION ON SOURCE
  - LABELING and MANIFESTING
  - DEVELOPING RE-USING, RECYCLING METHODS
  - INTERIM / INTERMEDIATE STORAGE
  - TRANSPORT TO DIPOSAL SITE
  - INSTALING A STATE OF THE ART, EU COMPLIED INCINERATOR
  - RUN THE INCINERATE FOR PERMANENT DISPOSAL

- *IF THE TRANSPORT OF HAZARDOUS WASTE IS POSSIBLE UNDER SAFE CONDITIONS*
- *IF NOT, IMPLEMENTING ON-SOURCE DISPOSAL METHODS WITH ON-SITE STERILISERS FOR MEDICAL WASTE AND SMALL CPACITY INCINERATORS FOR INDUSTRIES*

And FOR FUTURE
TO UPDATE THE METHODS AND MEASURES TAKEN TO BE SUSTAINABLE FOREVER

For any further information inquiry
Consultancy requirement
Technology selection inquiry
Feasibility requirement
Partnership possibilities

You may please contact:

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green thanks