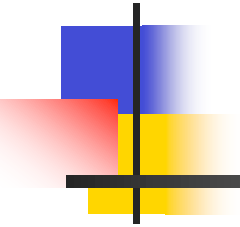
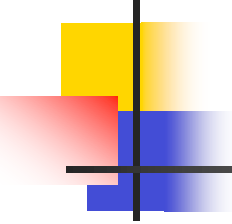


EXECUTIVE SUMMARY PRESENTATION



WASTE TO ENERGY PROJECT

"Reasonable, Responsible & Recycling"



Hawaii Pacific Energy Group, LLC

a Division of Pacific Service Group, LLC

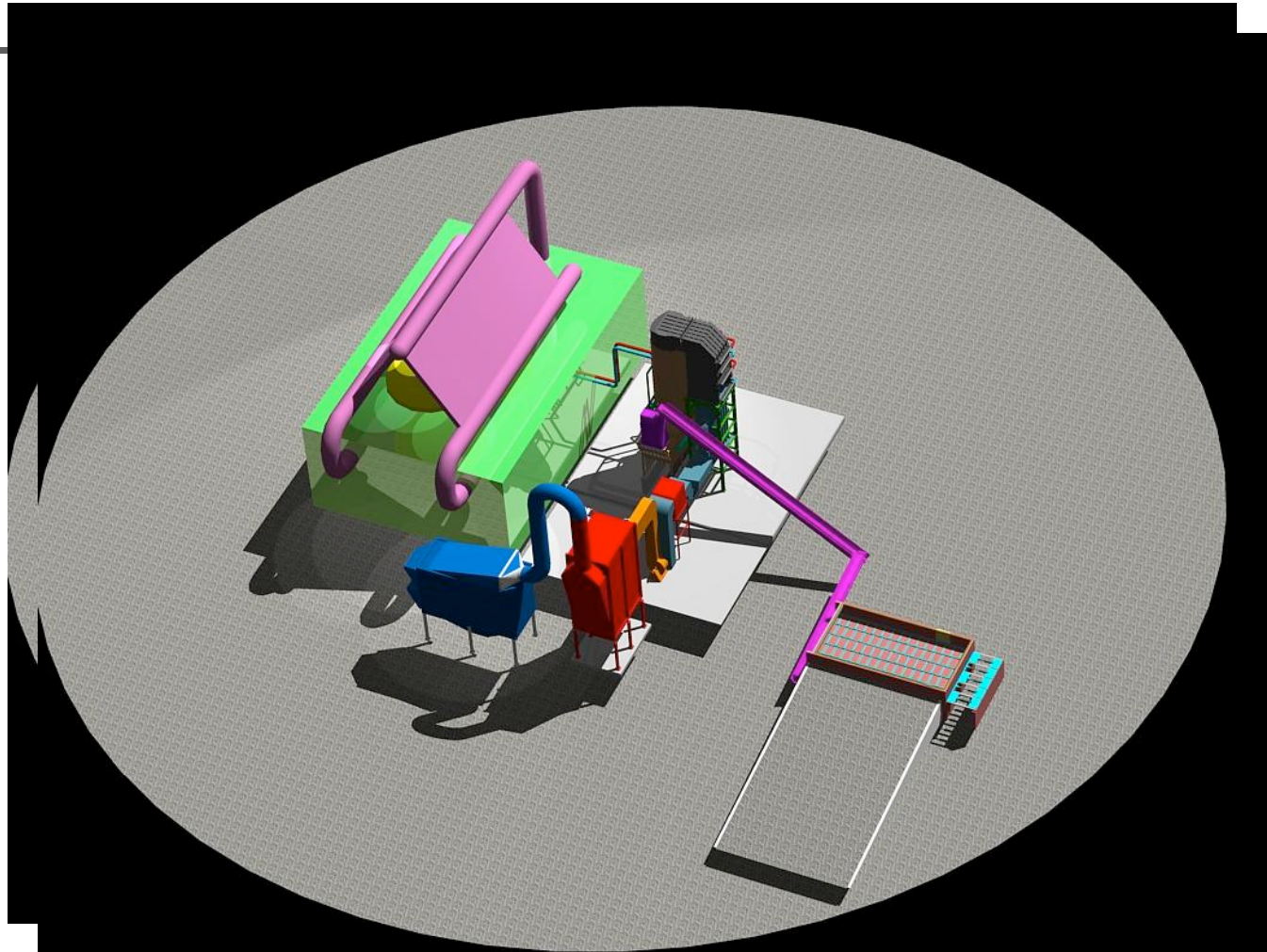
Access Energy Technologies LTD

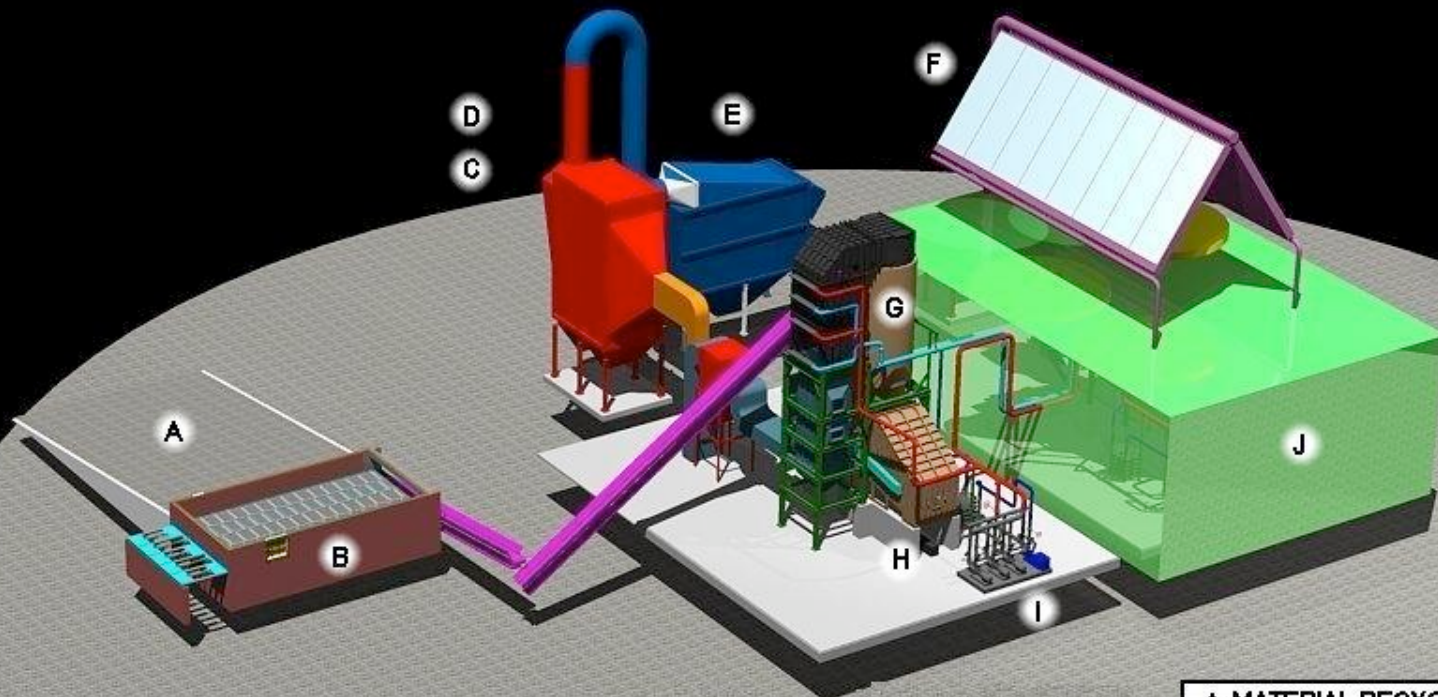
NEC

NORTHERN ENERGY CONSTRUCTORS

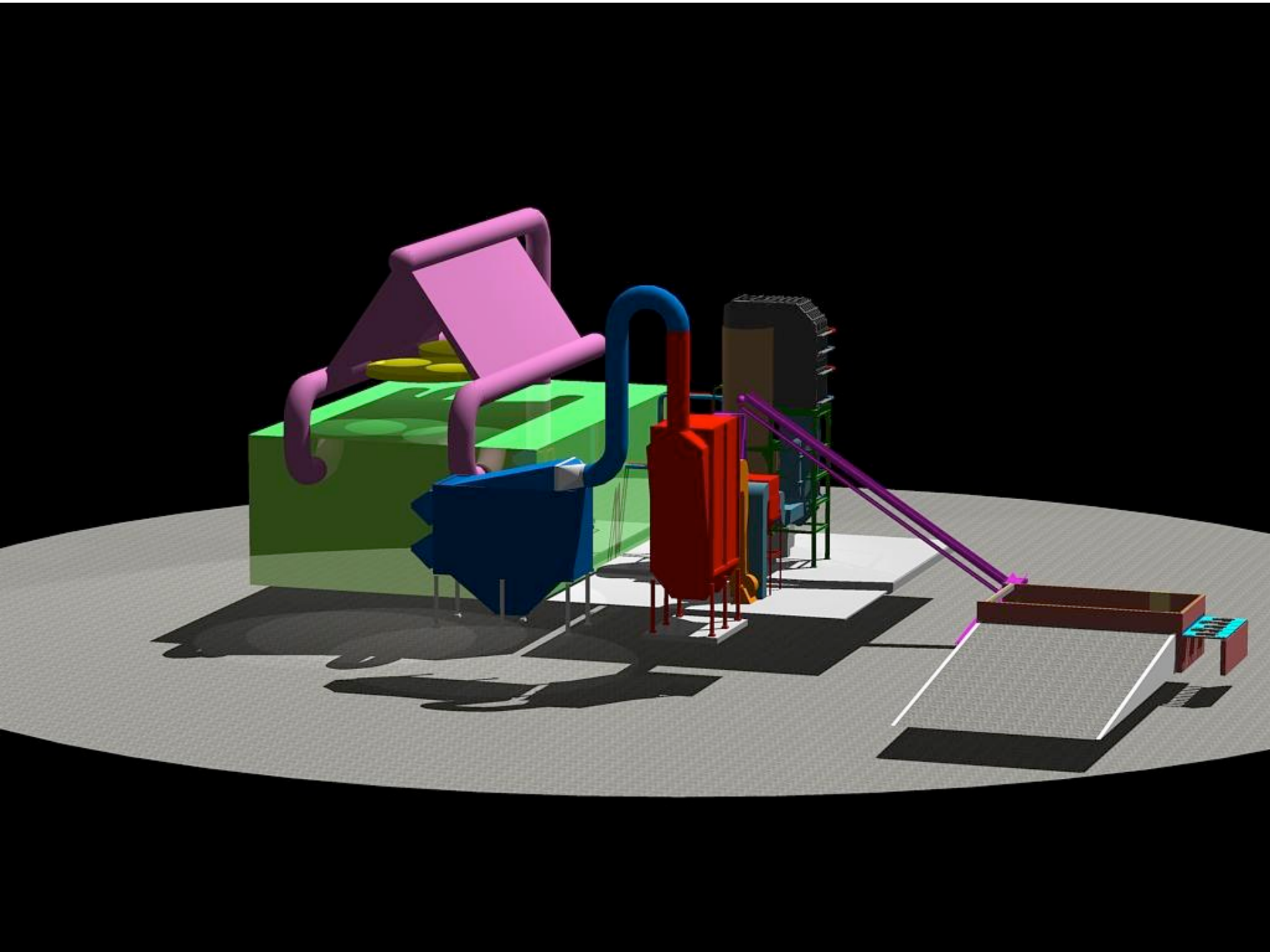


Gasification/Thermal Oxidation





- A. MATERIAL RECYCLING FACILITY
- B. FUEL FEED BUNKER
- C. ELECTROSTATIC PRECIPITATOR
- D. FLUE GASES
- E. SCRUBBERS
- F. CONDENSER
- G. GASIFIER/THERMAL OXIDIZER
- H. GRATE AND ASH REMOVAL SYSTEM
- I. PUMP SYSTEM
- J. POWERHOUSE (ORC BUILDING)



Front End Recycling



- **Materials that cannot be oxidized are removed (i.e. stone, glass, aluminum cans)**
- **These materials are re-sorted into recyclables and non-recyclables**

Waste transfer can be clean



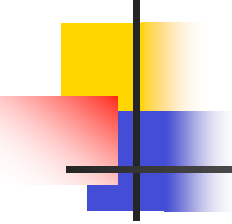
- **Transfer to Waste Processing can be direct or by trans shipment.**
- **Baling systems can produce wrapped waste with NO odor and NO negative image.**



Visually neutral

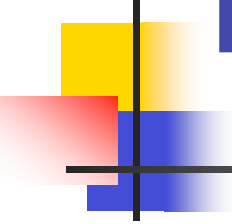
- Bales weigh approximately 3,500 pounds each
- Compression ratio approximately 14:1
- Can be stacked deeply, and held in high temperatures without problems





Refuse Derived Fuel

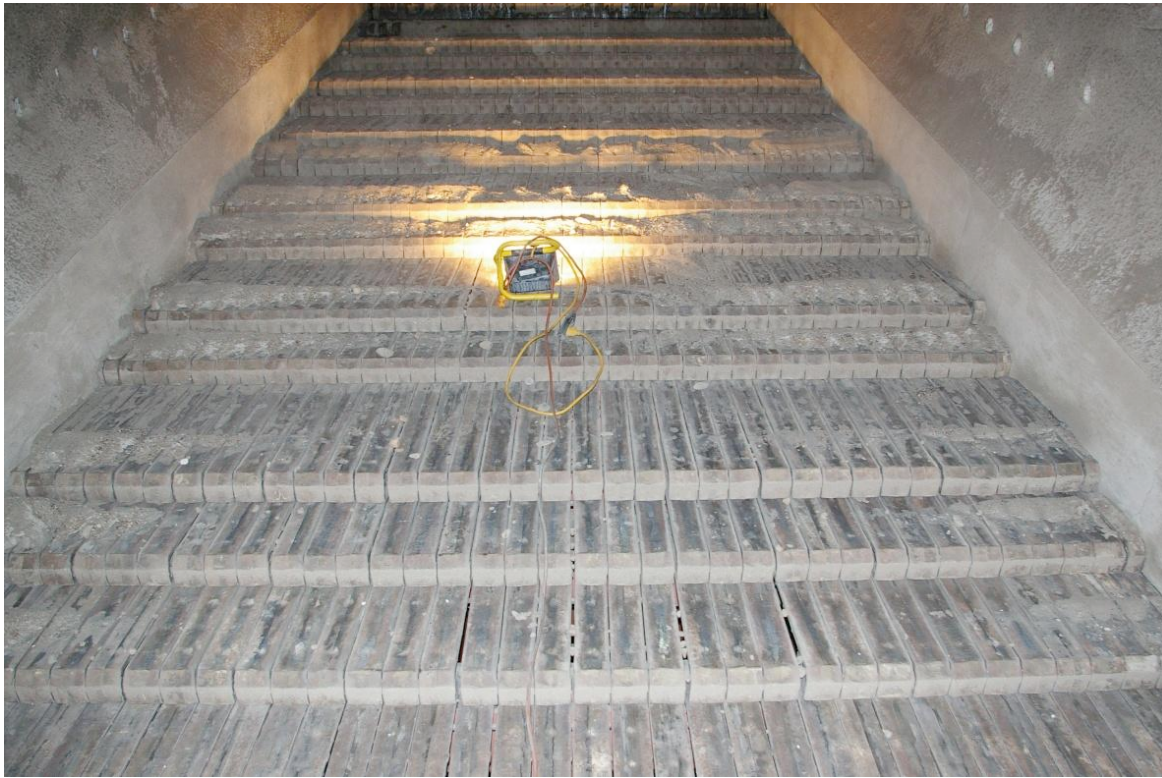
- **Municipal solid waste (MSW) is processed into Refuse Derived Fuel (RDF) in a Material Recycling Facility (MRF)**
- **The RDF can be processed in the Thermal Oxidizer**
- **The RDF can also be mixed with 82% moisture content, “belt pressed” with local municipal sewage sludge and processed in the Thermal Oxidizer**

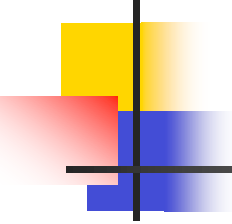


MSW Thermal Oxidizer History

- **Technology for MSW thermal oxidizers is well proven**
- **Installations in Russia, Germany, and China**
- **Biomass version of NEC Thermal Oxidizer used extensively in Canada, Europe and Asia**

Reciprocating Grate



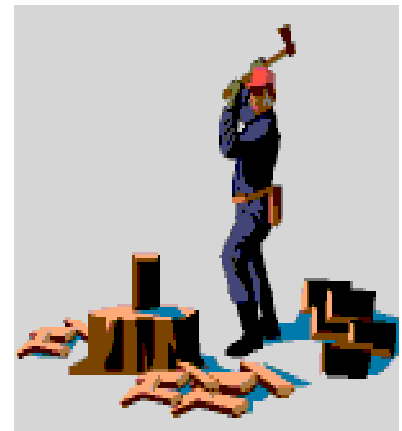


Proven Commercial Performance

- **This technology is well proven in dozens of installations over the world**
- **Reliable, robust, solid and commercially proven design that can be project-financed**

Miscellaneous Wastes

- **Municipal Solid Waste**
- **Refuse derived fuel**
- **Bio Solids or sludge from waste water**
- **Used railway ties & telephone poles**
- **Construction and demolition debris**
- **Land clearing debris**
- **Poultry litter**
- **Cow manure**
- **Pig manure**
- **Mixtures of the above**



Power Generation Equipment

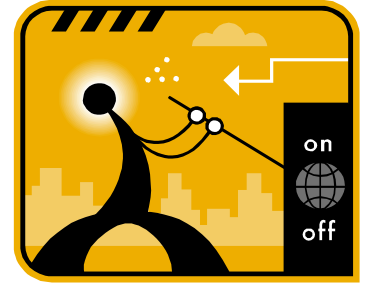


Significant Features, 1



- **Very large stage grate area**
- **Low Grate Loading**
- **Hence essentially zero slag**
- **Large refractory mass stabilizes oxidation**
- **Large baffled oxidizer ensures complete conversion to heat and emission compliance**

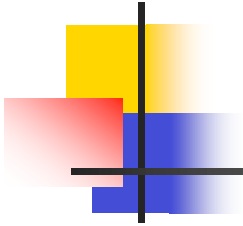
Significant Features, 2



- **The unit can process MSW with moisture contents up to 60% (wet basis) at reduced output and ash contents up to 35%**
- **4:1 turndown ratio**
- **Continuous de-ashing**
- **Water cooled ash conveying system**

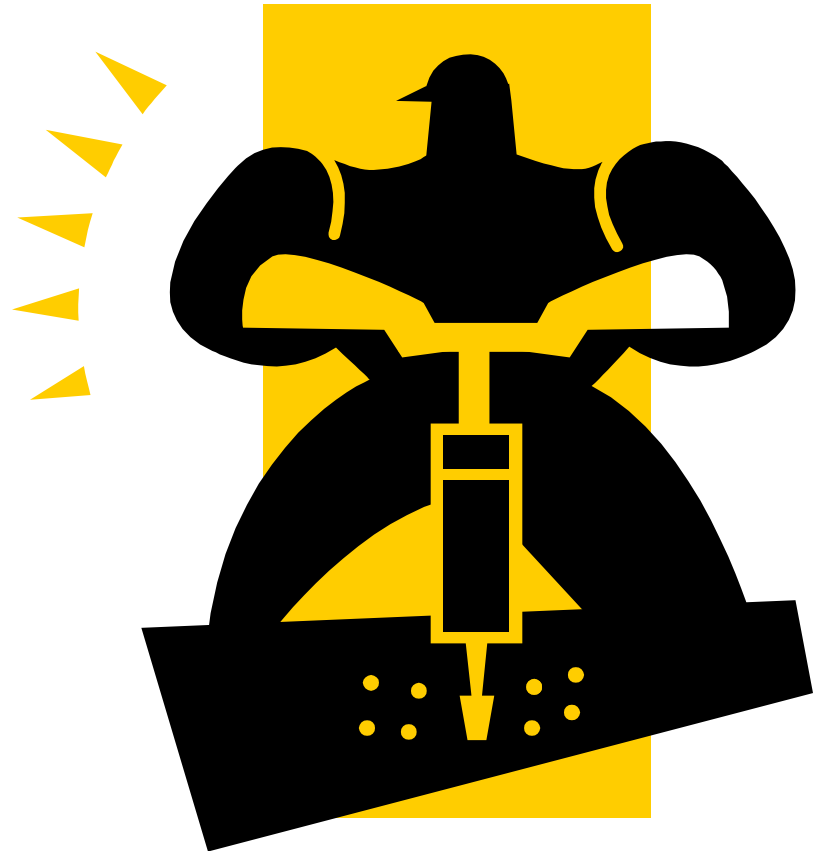
Physical Plant Construction





Construction

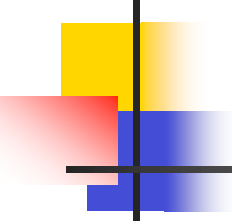
- **Estimated direct workforce will be 35 to 40 men for approximately 14 months**
- **Additional jobs will likely be in transportation and supply.**



Construction Major Trades

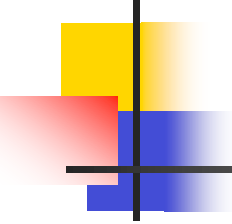


- **Heavy equipment operators**
- **Electricians - major and sub-systems**
- **Machinists, welders and fitters**
- **Operators for power equipment, cranes, concrete**
- **Refractory specialists**



Operating Costs and Renewable Power (con'd)

- **The 1850°F (1010°C) products from thermal oxidation from a 100 Million Btu/h system is routed through specially designed heat exchangers to provide heat to power generation equipment**

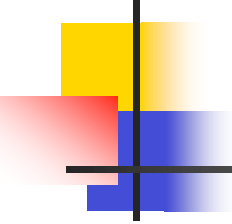


Operating Costs and Renewable Power

- **Typical operating costs for the Thermal Oxidizer system range from USD 15 to 25 per tonne of MSW depending on the size and location of the facility**
- **Net power supplied to the grid by one Thermal Oxidizer unit is ≈ 5.5 MWe**

Environmental Compliance





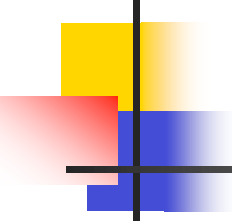
Emission Technology

- **Proven emission control system will be installed and tailored to meet local emission standards. Emission reduction technology may include:**
 - **Electrostatic precipitator and/or**
 - **NO_x re-burn chamber or NO_x wash unit for reducing NO_x emissions**

Significant Features, 3

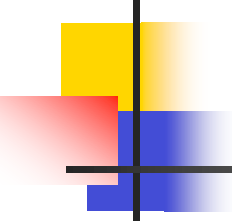
- **Dioxins and Furans Destroyed, from Oxidizer design**
- **Chlorine can react with cellulose to form dioxins and furans in the 1st stage - these gases are destroyed in the 2nd stage with its 1,800°F plus brick walls**
- **No black waterwalls are present to chill - and lock in - dioxins or furans in the 2nd stage**





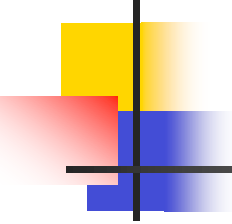
Significant Feature, 4

- **Project technology is recognized under the Kyoto Protocol (under the United Nations Framework Convention on Climate Change) to reduce greenhouse gases (CO₂ and CH₄)**
- **Project will displace CO₂ from fossil fuels used to generate grid power electricity**
- **Project will prevent CH₄ formation from landfilling MSW**



Revenue from Carbon Credits

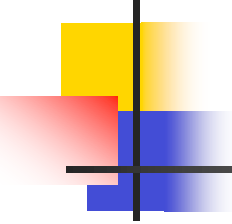
- **Additional revenue can be generated by certifying GHG reductions under the Kyoto Protocol's Clean Development Mechanism (or the mechanism that will be in place after 2012)**
- **A "Project Design Document" will need to be submitted to appropriate entities for registration**



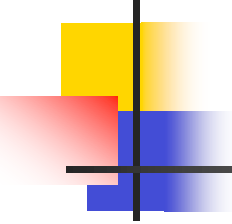
Project Preliminary Budget

- **430 tonnes/day MSW and other fuels depending on heat value and ash content**
- **5.5 MW net electricity production**
- **Assumptions:**
 - **Permits and government approvals granted**
 - **Skilled and labor workers available**
 - **Trucks and equipment available**
 - **Utilities provided to the plant.**

Project Preliminary Budget (con'd)

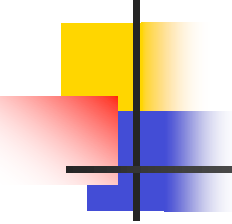


- **Not Included:** Connecting to the utility and any cost related to supply power to the plant including but not limited to transformer, utility poles, and related construction costs.
- **Budget:** (Subject to feasibility study)



Warranty and Guarantee

- **The system is wrapped in a warranty and guaranteed for the first year.**
- **This warranty insures that the system will work as specified and provides insurance of revenue stream.**



Thank you!

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- ***Mobile: 808-216-2210 (USA)***
- ***warrenslim@hawaiiantel.net***