PROSPECTS FOR WATER AND ENERGY SAVINGS, RENEWABLE ENERGY and RESOURCE RECOVERY FROM WASTE on TRIBAL LANDS

ENVIRONMENTAL LEADERSHIP

Adds Value to Your Bottom Line and Reputation

Leveraging Technology and Innovation

Presentation by: Doug Haughn, President of Team Gemini

Leveraging Technology, Innovation and Savings

Who are we...
Make Commitment

- Re-Assess Performance & Set New Goals
- Create / Update Plan of Action
- Implement Action Plan
- Evaluate Progress
- Recognize Achievements

Use Less Energy & Water = Build Savings
STEP ONE

Simple Energy and Water Efficiency
<table>
<thead>
<tr>
<th>Building Envelope</th>
<th>Lower Energy Usage</th>
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<tbody>
<tr>
<td>Extra Insulation</td>
<td>LED Lighting</td>
</tr>
<tr>
<td>Seal Cracks and Gaps</td>
<td>– Add Timers and Sensors</td>
</tr>
<tr>
<td>Windows and Window Film</td>
<td>High SEER A/C Units</td>
</tr>
<tr>
<td>Radiant Barrier Paints</td>
<td>– Add Programmable T-Stats</td>
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<tr>
<td>Solar Attic Fans</td>
<td>– Split Systems (Heat Pumps?)</td>
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<tr>
<td>Roofing</td>
<td>Solar Lighting</td>
</tr>
<tr>
<td>ACC Block Construction</td>
<td>– Active and Passive</td>
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<tr>
<td>Xeriscape / Landscaping</td>
<td>Water Heating</td>
</tr>
<tr>
<td></td>
<td>– Solar / On-Demand / Timers</td>
</tr>
</tbody>
</table>

**Energy Efficiency First**
Residential Water Savings

• Low Flow Fixtures
  < 1.28 GPF Toilets
  < 0.5 GPM Showers and Faucets
• Rain Sensors on Irrigation
• Collect Rainwater for plants
• Energy Star Appliances
  – Washing Machine
  – Dish Washer

Commercial Water Savings

• Low Flow Fixtures
  < 1.28 GPF Toilets
  < 0.125 GPF Urinals
  < 0.5 GPM Showers and Faucets
• Smart Irrigation Systems
  – Weather Tracking
• Low Water Laundry Systems
• Waste Water Pre-Treatment
• Right Size Water Metering

Water Efficiency has the BEST ROI
STEP TWO

Utility and Centralized Opportunities for Power, Water and MORE
Integrating Renewable Energy with Agricultural Sustainability

Recovering Commodities out of Solid Waste, Waste Water and Agriculture Waste

Team Gemini

People. Planet. Prosperity.
Creating a holistic solution is more cost effective and has greater paybacks.

- Ag Waste to Bio-Diesel and Jet Fuel
- On-Site Waste Water Treatment
- Ag Waste to Ethanol & Butanol
- Alternate Water Sourcing
- Water Treatment
- Ground Water Water Cleaning
- Medical Waste Solutions
- Electro-Chemical Processes
- Zero Landfill Solutions
GSC Process Flow
UDR MonoTube

Overview
Dimension: 12ft diameter by 45 ft high (incl. gas storage)
Daily Capacity: 8 tons organic feedstock at up to 18% solids
Retention Time: 10 to 15 days (depending on the feedstock)
Generated Power: 30 to 110 kW (depending on the feedstock)
Seismic Tank Foundation: 30 inch reinforced concrete pad (if requested)
Installation: less than 2 weeks
Start Up: 4-6 weeks (depending on the feedstock)

- Small Foot Print (< 1,000 sf)
- Flat Slab Foundation
- No Gas Pressure Blower
- No Methane Loss
- Heat Availability
- Building Block System
- Moveable

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Municipal (Centralized)

- Small and Large Scale
- MBR with Low O&M cost

Agricultural / Manure

- State of the art treatment
- Separation of resources

Waste Water Treatment
Biomass Power and Fuel Generation
Distilling and Electrochemical Technology
Centralized

Large Scale High Capacity

Small Locations

Low O&M costs

Medical Waste Treatment
“We have Millions of Tons of MSW and 365 Acres of vacant land next to a landfill, what would you do with it?” – SWACO RFP in 2012

“A FEEDSTOCK FOR A GROWING INDUSTRY?”

“Team Gemini was awarded the RFP in 2013 because of its holistic approach” – Phil Honsey, Project Director, SWACO
Gemini Synergy Center Aerial Photo
• Combines COR3, Advanced Greenhouses (Hydroponic, Aquaponic, Aquaculture), Biogas / Biomass, Water Treatment, Micro Grid, Business & Education Center, and room for Tenants
• 345 acres (140 ha) Development, Providing all Utilities Off Grid with a Negative Carbon Footprint

Site Plan Rendering
• Features 5 Conveyor Lines from COR3 to Waste-to-Energy Plant and the rest of the Gemini Synergy Center

Gemini Innovation Center
• Advanced Solar PV Greenhouse
• Biogas Plant: pilot size with CHP Unit
• Research and Training Center
• Collaboration with Universities and Researchers

Business & Education Center
• Management + Administration, General Control Center by ABB, 2 Warehouses
• Total Size: 65,000 sq. ft.

Biogas/Biomass Plant
• Over 208,000 tons annual Feedstock
• 6 CHP Units: (4 ∙ 1,500 kWh) + (2 ∙ 1,240 kWh)
• Generates Power, Steam and Cooling 24x7x365

Waste-to-Energy Plant
• WLE Liquefying Process: Organic Feedstock to Biomass Plant; Gasification Process for Syngas Production; Plastic-to-Fuel and Oil Production
• Power Production & Heat Recovery

Center of Resource Recovery & Recycling
• 225,000 Square feet
• Powered by Landfill Gas
• Over 100 Feet Tall
• Combination Landfill Transfer Station and MRF

Center of Resource Recovery & Recycling (COR3) - MRF Equipment
• Features a 135 TPH Materials Recovery Facility (MRF) that will process high-value recyclables for sale, and divert other waste products to the Gemini Synergy Center for further processing (cellulosic fibers, feedstock, etc.)
GSC Grove City, Ohio
Available Feedstock Economics:

- Large volume
- Consistent quality
- Low cost
- Long term stability
- $ Not based on grain markets
- Doesn’t distress food supply
- Local and Regional Availability
- Ability to locate new product production next to feedstock

Feedstock Needs to Fuel Industry Growth
**Centralized**
- Unlimited in Size 50 TPD +
- Accepts all types of waste
  - Municipal Solid Waste
  - Food and Organic Waste
  - Manure & Sewer Sludge
  - Medical Waste
- Generates
  - Electricity
  - Steam Heat
  - Bio Gas
  - Compressed Natural Gas (CNG)
  - Bio Diesel / Jet Fuel / Synthetic Oil
  - Separates Chemicals
  - Concentrated Fertilizers
  - Zero Landfill

**De-Centralized**
- Can be as small as 5 TPD
- Customized for Needs
- Same Technology / Smaller
- 5-10 Year ROI
- Can create hybrid solutions
- Similar Output Options
- Modular
- Small Foot Print
- Low / No Odor

**Works Big or Small**
Even though there are numerous incentives, grants and loan guarantees available for these solutions...
STEP THREE

Procurement Efficiencies
Why use a GPO?

- Combine Buying Power
- Low / No Cost Third Party Purchasing Group
- Better Buying Power Means Better Terms & Conditions
- Qualifies for Triple Bid
- Added Buying Benefits for Employees
- You Still Deal Direct with Vendors
- You can be a Client and a Vendor

What can a GPO buy?

- Construction / Reno Materials
- Furniture, Fixtures & Equip.
- Office Supplies & Computers
- Appliances & Vehicles
- Medical Supplies
- Food and Food Services
- Sundries & Maintenance Supplies
- Janitorial & Cleaning Supplies
- Cellphone Service
- Payroll and HR Services
- Insurance

Red Road Group Purchasing Organization

Group Buying
What will a GPO Cost?

• Joining the GPO is FREE to qualified Groups
• Red Road offers an initial free audit of current expense to estimate savings
• You can also Hire Red Road to replace or add manpower to your purchasing department

What are the restrictions?

• Must be a qualified Group, Company, Tribe or Organization
• No Obligation to buy
• Optional buying commitments can increase savings
• Can not disclose discount pricing you receive
• Purchased Items are not for retail sale
• Only for Operations, Maintenance and Cost of Doing Business

Group Buying

Red Road
Group Purchasing Organization
All efficiencies can also create jobs
• From Installing Water and Energy Saving Materials
• From Creating a Centralized Utility / Service
• Savings on O&M Costs can free up funding for needed employees in other areas
• New businesses created from the Synergy Model, create skilled technical numerous jobs
• Job creation and training grants are available

Job Creation
Maximizing Commodities, Not Waste

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