Welcome
International Solid Waste Association
May 26, 2016

Ray Schauer
Director, Engineering & Public Works
Solid Waste Authority of Palm Beach County
What is the Solid Waste Authority of Palm Beach County?

- Dependent Special District established in 1975 responsible for management of the solid waste generated in Palm Beach County, Florida
- Approximately 2,400 square miles with approximately 1.4 million residents
- Approximately 400 employees with annual budget exceeding $300,000,000
- Funded by a non-ad valorem assessment, tip fees, energy and recovered material sales
- Integrated Solid Waste Management System handling approximately 2.1M TPY
Integrated Solid Waste Management System

- Waste Reduction
- Aggressive Recycling Program
- Renewable Energy
- Residue to Existing Landfill
System Goals

• In-County, self-reliant solution
• Maximize recycling
• Environmentally responsible
• Lowest risk, highest probability of success
• Cost-effective
• Extend landfill life - maximize volume reduction
• Maximize renewable energy
Solid Waste Authority of Palm Beach County

Integrated Solid Waste Management

WTE Facility, Landfills, Materials, Recycling, Composting, Ferrous Processing

North County Transfer Station
Central County Transfer Station
Southwest County Transfer Station
South County Transfer Station
Glades Regional Transfer Station
Loxahatchee National Wildlife Refuge
Lake Okeechobee
The Solid Waste Authority of Palm Beach County has developed an award-winning integrated solid waste management system that includes the following facilities to service the residents and businesses in Palm Beach County, Florida:

- Two Renewable Energy Facilities
- Recovered Materials Processing Facility
- Six Transfer Stations
- Class I Landfill
- Class III Landfill
- Biosolids Processing Facility
- Two Household Hazardous Waste Facilities
Renewable Energy Facility #2

Overall Timeline

- **March 2009**: Six Statements of Qualifications received.
- **April 2009**: $22M in Bonds allocated for the New WTE.
- **December 2008**: RFQ issued.
- **October 2008**: Board selects Mass Burn technology for the Facility by 2015.
- **February 2010**: Board Approval of Issuance of Original RFP.
- **March 2009**: Six Statements of Qualifications received.
- **April 2009**: $22M in Bonds allocated for the New WTE.
- **July 2009**: Draft RFP Discussion Meetings with vendors.
- **December 2009**: Board approved three Qualified Respondents.
- **October 2008**: RFQ issued.
- **March 2010**: Evaluation Committee Reviews Costs Proposals and Final Ranking.
- **February 2011**: Board Approval of Reissuance of RFP.
- **August 2010**: Board Approval of Reissuance of RFP.
- **April 2011**: Board Awards Contract.
- **May 2011**: Notice to Proceed for Design.
- **March 2011**: Evaluation Committee Reviews Costs Proposals and Final Ranking.
- **February 2011**: Technical Proposal Review and Ranking.
- **September 2010**: Reissuance of RFP.
- **March 2011**: Evaluation Committee Reviews Costs Proposals and Final Ranking.
- **April 2012**: Full Notice to Proceed.
- **December 2010**: RFP Responses Received Series 2010 Bond Sold.
- **Federal Air Permit Issued**
- **August 2010**: Board Approval of Reissuance of RFP.
- **First Quarter 2012**: Series 2010 Bonds Remarketed.
- **July 2015**: Construction Complete Commercial Operation Begins
Initial Consideration of Future Program Elements

- Western Landfill
- NCRRF 3rd Unit Expansion
- Alternative Technologies
- Biosolids Pelletization
- New and Expanded Recycling Facility
- New WTE Facility
Public Outreach

- More than two dozen Board meetings or workshops over 5 years
- Proactive public outreach program:
  - Meetings with Homeowner Associations, Special Interest Groups, Community Groups, Environmental Groups and Elected Officials
  - Homeowner notification – 65,000 mailings
  - Materials Separation Plan public notices and meetings
    - Public notice of Preliminary Draft Plan published in the Palm Beach Post (including locations to review plan and public meeting details) - June 2009
    - Preliminary Draft Plan public meeting – July 2009
    - Public Notice of Final Draft Plan and Siting Analysis published in the Palm Beach Post (including locations to review plan and public meeting details) – May 2010
    - Final Draft Plan public meeting – June 2010
    - Final Plan submitted to FDEP as part of PPSA – July 2010
Solid Waste Authority of Palm Beach County

Waste to Renewable Energy?
Solid Waste Authority of Palm Beach County

Palm Beach Renewable Energy Facility No. 2 Overview

Side View Looking West
Solid Waste Authority of Palm Beach County

Comprehensive Procurement Process

Request for Qualifications
Request for Proposals
Evaluation
Selection
RFP Document Structure

Request for Proposals

Volume I

Design/Build Contract and O&M Agreement

Volume II

Design Criteria Package

Volume III
The RFP Process

- Competitively Negotiate Construction Contract
- Competitively Negotiate O&M Agreement
- Competitively Negotiate Design Criteria
- Separate Cost and Non-Cost Proposals
- D/B/O Evaluation and Selection
Proposal Requirements

Technical (Non-Cost) Proposal

Cost Proposal
Cost Evaluation and Comparison
## Performance Guarantees

<table>
<thead>
<tr>
<th>PERFORMANCE GUARANTEES</th>
<th>B&amp;W</th>
<th>COVANTA</th>
<th>WHEELABRATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELECTRICAL GENERATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Electric Energy Generation Rate</td>
<td>681 kWh/ton</td>
<td>636 kWh/ton</td>
<td>640 kWh/ton</td>
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<tr>
<td>Electric Energy Generation Guarantee</td>
<td>575 kWh/ton</td>
<td>554 kWh/ton</td>
<td>550 kWh/ton</td>
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<tr>
<td>Electric Capacity Guarantee</td>
<td>77.3 MW/month</td>
<td>72 MW/month</td>
<td>69.5 MW/month</td>
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<tr>
<td><strong>METALS RECOVERY</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ferrous Recovery Rate</td>
<td>90%</td>
<td>80%</td>
<td>85%</td>
</tr>
<tr>
<td>Non-Ferrous Recovery Rate</td>
<td>85%</td>
<td>80%</td>
<td>85%</td>
</tr>
<tr>
<td><strong>REAGENT USAGE</strong></td>
<td></td>
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</tr>
<tr>
<td>Pebble Lime Usage Rate</td>
<td>11.9 lbs/ton</td>
<td>17 lbs/ton</td>
<td>14 lbs/ton</td>
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<tr>
<td>Ammonium Hydroxide Usage Rate</td>
<td>0.95 lbs NH₃/ton</td>
<td>1.0 lbs NH₃/ton</td>
<td>1.425 lbs NH₃/ton</td>
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<tr>
<td>Carbon Usage Rate</td>
<td>0.38 lbs/ton</td>
<td>0.5 lbs/ton</td>
<td><strong>0.2 lbs/ton</strong></td>
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<tr>
<td><strong>SCHEDULE</strong></td>
<td></td>
<td></td>
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<tr>
<td>Commercial Operation Date</td>
<td>5/22/2015</td>
<td><strong>3/31/2015</strong></td>
<td>5/28/2015</td>
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## SUMMARY OF COST PROPOSALS

<table>
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<tr>
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<th>B&amp;W</th>
<th>COVANTA</th>
<th>WHEELABRATOR</th>
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<tbody>
<tr>
<td>Design/Build Contract</td>
<td>$667,981,128</td>
<td>$829,524,000</td>
<td>$605,200,000</td>
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<tr>
<td>Total Lump Sum Construction Cost</td>
<td></td>
<td></td>
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<tr>
<td>Annual Operating Fee</td>
<td>$20,490,000</td>
<td>$24,530,729</td>
<td>$28,300,000</td>
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<tr>
<td>(First Year Operation &amp;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Cost)</td>
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## Net Present Value Evaluation

<table>
<thead>
<tr>
<th>Proposer</th>
<th>Construction Cost (millions)</th>
<th>O&amp;M Cost (millions)</th>
<th>Total Net Present Value (millions)</th>
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<tbody>
<tr>
<td>B&amp;W</td>
<td>$672</td>
<td>($171)</td>
<td>$500</td>
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<tr>
<td>Covanta</td>
<td>$830</td>
<td>($50)</td>
<td>$780</td>
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<td>Wheelabrator</td>
<td>$603</td>
<td>$24</td>
<td>$627</td>
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<tr>
<td>FY</td>
<td>Landfill Till 2030</td>
<td>With Mass Burn</td>
<td>Mass Burn Δ</td>
</tr>
<tr>
<td>------</td>
<td>-------------------</td>
<td>---------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>2011</td>
<td>$166.00</td>
<td>$166.00</td>
<td>$-</td>
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<tr>
<td>2012</td>
<td>$137.00</td>
<td>$169.00</td>
<td>$32.00</td>
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<tr>
<td>2013</td>
<td>$134.00</td>
<td>$174.00</td>
<td>$40.00</td>
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<td>2014</td>
<td>$137.00</td>
<td>$176.00</td>
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<td>2015</td>
<td>$140.00</td>
<td>$172.00</td>
<td>$32.00</td>
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<td>2016</td>
<td>$142.00</td>
<td>$171.00</td>
<td>$29.00</td>
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<tr>
<td>2017</td>
<td>$142.00</td>
<td>$172.00</td>
<td>$30.00</td>
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<tr>
<td>2018</td>
<td>$143.00</td>
<td>$171.00</td>
<td>$28.00</td>
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<tr>
<td>2019</td>
<td>$144.00</td>
<td>$170.00</td>
<td>$26.00</td>
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<tr>
<td>2020</td>
<td>$145.00</td>
<td>$171.00</td>
<td>$26.00</td>
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<tr>
<td>2021</td>
<td>$147.00</td>
<td>$172.00</td>
<td>$25.00</td>
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<tr>
<td>2022</td>
<td>$148.00</td>
<td>$172.00</td>
<td>$24.00</td>
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Projected Future Assessment Rate based on Recommended Proposal
## Renewable Energy Facility #2

### By The Numbers

<table>
<thead>
<tr>
<th>Structural Pilings</th>
<th>4,600+</th>
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<tbody>
<tr>
<td>Reinforcing Steel Bar</td>
<td>3M pounds</td>
</tr>
<tr>
<td>Structural Steel</td>
<td>9,000 tons</td>
</tr>
<tr>
<td>Concrete in Pilings and Foundations</td>
<td>90,000 cy</td>
</tr>
<tr>
<td>Piping</td>
<td>20 miles</td>
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<tr>
<td>Electrical Wire and Cable</td>
<td>227 miles</td>
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<tr>
<td>Construction Jobs</td>
<td>900</td>
</tr>
<tr>
<td>Full-Time Operations Jobs</td>
<td>60+</td>
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Renewable Energy Facility #2

New Facility Highlights

- First project of its kind in almost 20 years in the US.
- Processes 3000 TPD / 1,000,000 TPY Post Recycled Solid Waste
- Reduce waste land filled by over 90%
- 96 MW Renewable Energy, equivalent to powering more than 40,000 homes
- 27,000 Tons Recovered Metals
- Sustainability – Water Conservation, energy efficiency, metals recovery
- State-of-Art Emission Control – SCR, CEMS, and combustion control

Local Economic Impact

- Over 1,081,000 hours in direct Palm Beach County Labor
- Over $137,000,000 Palm Beach County Vendors
- Over $36,000,000 SBE Firms
Material Recovery - 33%
Energy Recovery – 50%
Landfill Disposal - 6%
Ash?? – 11%
THANK YOU!

Ray Schauer
Director, Engineering & Public Works
Solid Waste Authority of Palm Beach County