GENERAL MANAGER REGULAR ITEM #071159

Evaluation of Biomass Fueled Generation Proposals

Presentation to the
Gainesville City Commission
April 28, 2008

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Presentation Outline

1. Staff's Recommendation
2. Need for Biomass Fueled Power
3. Comparisons of Proposals
4. Evaluation of Proposals
5. Additional Analysis
6. Next Steps

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Staff's Recommendation

Staff's Recommendation

The City Commission:

1) **approve the ranking of proposals received in response to the Request for Proposals for a Biomass-Fueled Generation Facility;**

2) **authorize the General Manager, or his designee, to negotiate and execute a contract with Nacogdoches Power, LLC for a long term purchase power agreement for a 100 MW net capacity, 100% biomass fueled facility to be constructed at the Deerhaven site, subject to approval of the City Attorney as to form and legality; and**

3) **if the General Manager is unable to negotiate an acceptable contract with the highest ranked proposer, the General Manager/Designee may then negotiate with the next highest ranked proposer in order; and**

4) **authorize staff to procure various services, equipment and materials in conjunction with the project within approved budget limitations, as required.**

Need for
Biomass Fueled Power

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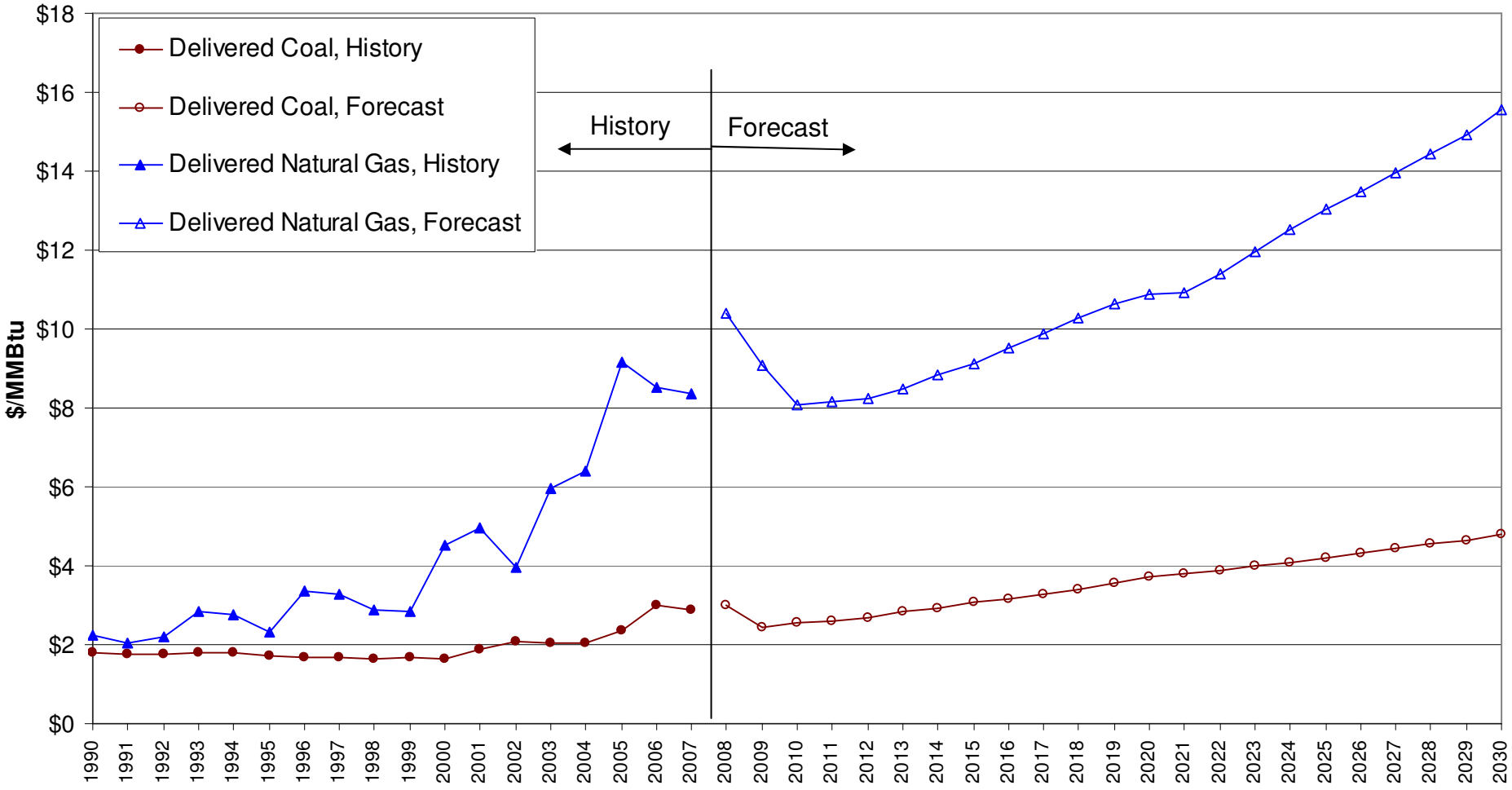
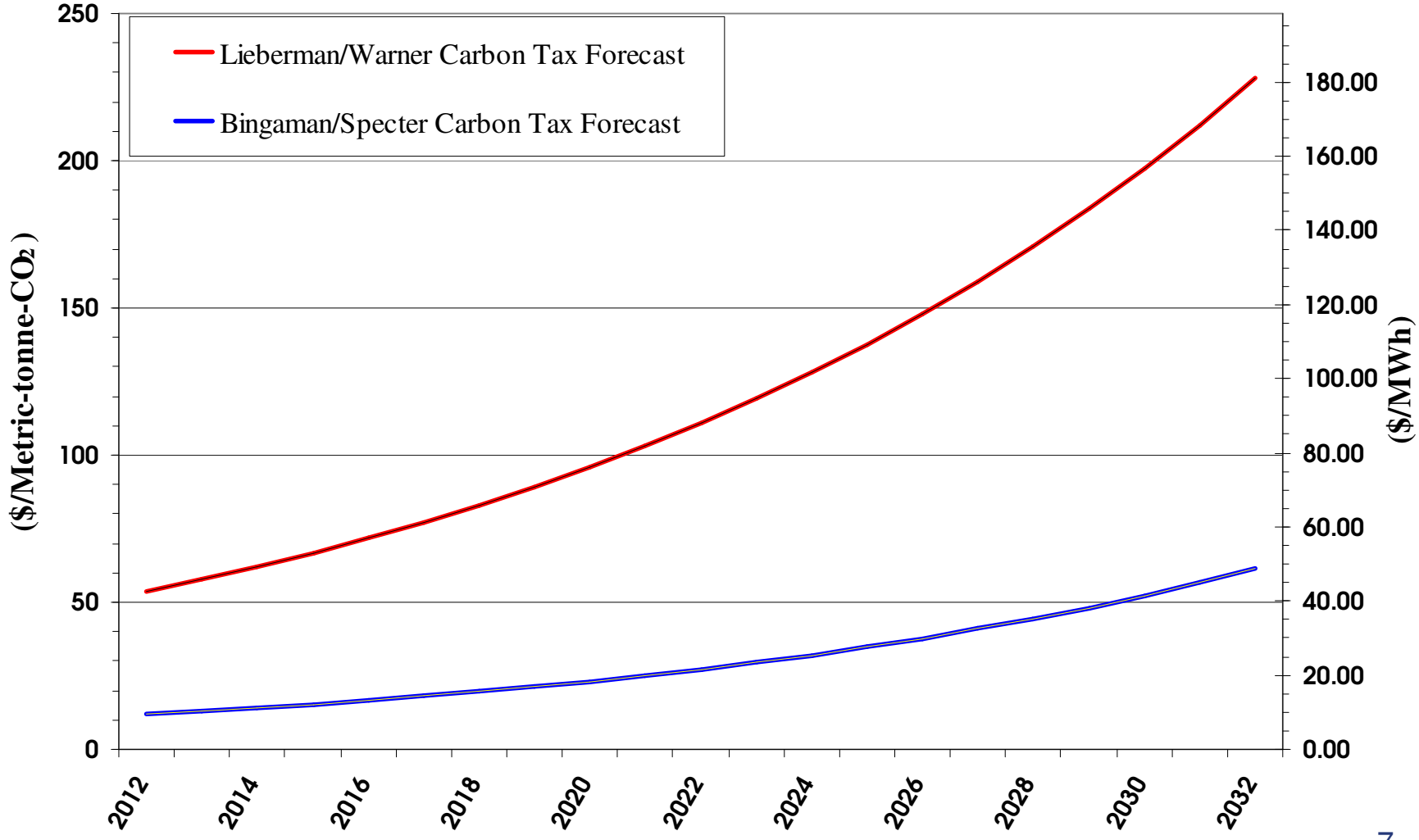
High Fuel Prices Keep Coming

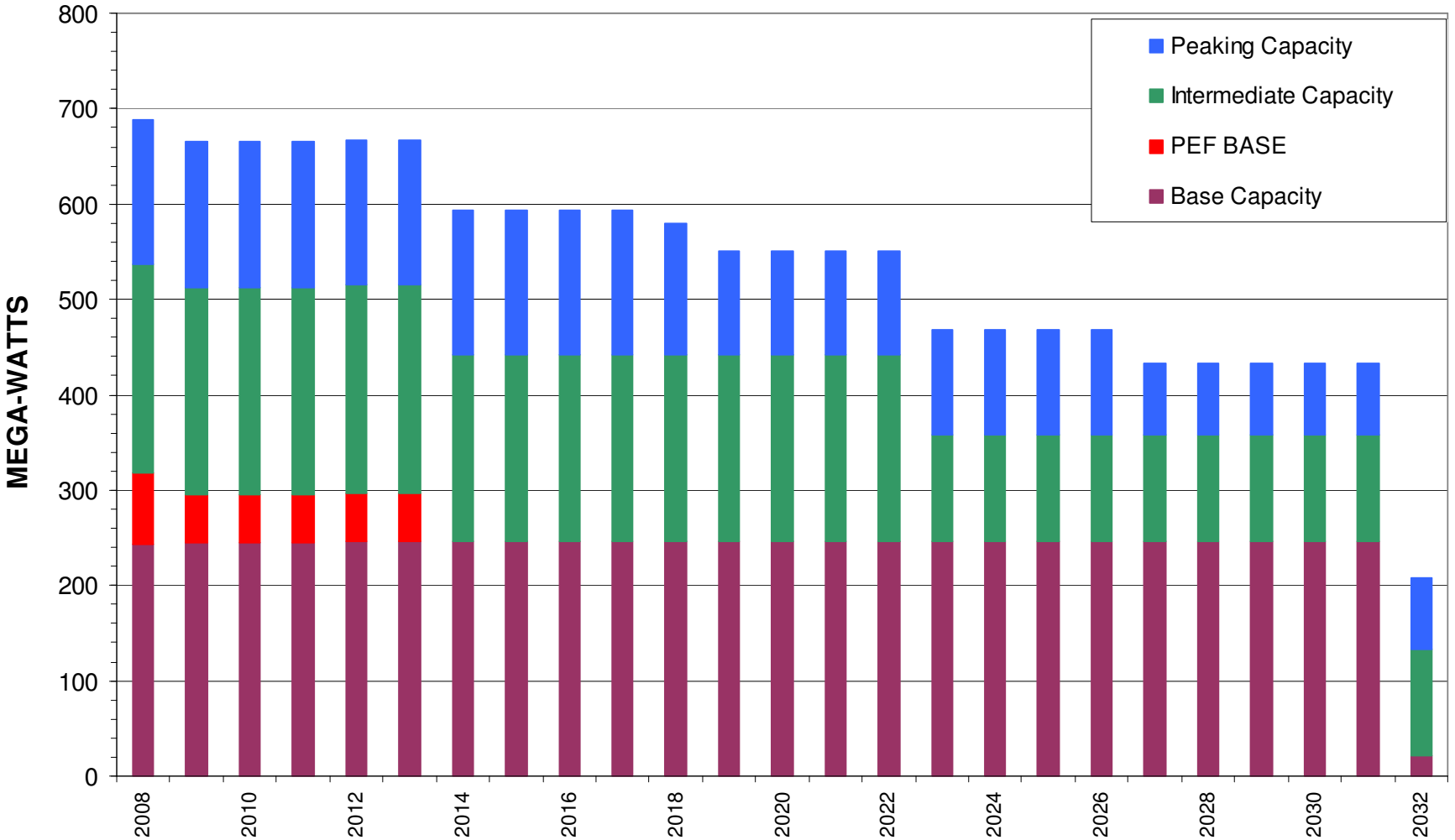


Source: Gainesville Regional Utilities 2008 Ten-Year Site Plan, Strategic Planning Department, GRU

Carbon Constraints and Renewable Portfolio Standards have been Proposed



Our Generation Capacity Will Need Replacement



The “Green” Business Case

1. Stabilize long term costs
2. Buy fuel from local region
3. Reduce carbon emissions
4. Reduce air pollution in the region
5. Be competitive in the market
6. Positioned for new regulations

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Changing Economic Environment

- Production tax credits
- Depreciation tax credits
- Interest rate difference between tax exempt and taxable financing has grown smaller

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Comparisons of Proposals

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Three Proposals with Five Options

(All 100% Biomass)

Covanta Energy:

- 50 MW net Purchased Power Agreement (PPA)
- 50 MW net GRU Financed and Owned (EPC)

Nacogdoches:

- 50% of 100 MW net at Deerhaven, PPA
- 100% of 100 MW net at Deerhaven, PPA

Sterling Planet, Inc:

- 30 MW net, PPA

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Comparisons of Proposals

TECHNICAL INFORMATION			
PARAMETER	**COVANTA ENERGY**	**NACOGDOCHES POWER, LLC**	**STERLING PLANET, INC.**
Capacity - net MW	50 - PPA 50 - EPC	50% of 100 MW at DH 100% of 100 MW at DH	30 PPA
Heat Rate - Btu/kwh	Middle	Best	Worst
Boiler	Bubbling Bed	Bubbling Bed	Bubbling Bed
Emission Control	SNCR/Baghouse	SNCR/Baghouse	Overfire air/ESP
Zero Water Discharge	Yes	Yes	Yes

Comparisons of Proposals
(Continued)

FUEL SUPPLY AND HANDLING			
PARAMETER	**COVANTA ENERGY**	**NACOGDOCHES POWER, LLC**	**STERLING PLANET, INC.**
Amount – tons per year	601,000 Half forest waste & thinnings Half urban wood waste	1,073,133 Half forest waste & thinnings Less than half mill residue Some urban wood waste	350,000 All urban wood waste
Fuel Delivery - trucks/day - op. hrs. - op. days	80 -100 avg 7 am – 7 pm Mon - Sat	120 - 140 avg 4 am – 8 pm Mon - Sat	50 ns ns

ns - not specified

Comparisons of Proposals
(Continued)

CONTRACT STRUCTURES			
PARAMETER	**COVANTA ENERGY**	**NACOGDOCHES POWER, LLC**	**STERLING PLANET, INC.**
Purchased Power Agreement	25 years Renew with 3 yr notice	20 year	25 year
EPC Option	Acceptable Covanta O&M Contract Term & Conditions same	Not interested	Not interested
Env. Attr. Ownership - REC	GRU	GRU	GRU up to need
- CO_2	GRU	GRU	All others marketed by Sterling Planet with GRU getting 70% of proceeds
- NOx	GRU	GRU	
- SO_2	GRU	GRU	
- future	Covanta	GRU	
Performance Guarantees	Yes	Yes	Yes
Buy Out - 10 Year	Yes	Yes	Yes
- End of PPA	Yes	Yes	Yes

Comparisons of Proposals

(Continued)

FINANCIAL AND PRICING			
PARAMETER	**COVANTA ENERGY**	**NACOGDOCHES POWER, LLC**	**STERLING PLANET, INC.**
Total Cost	$267,500,000	>$300,000,000	>$70,000,000
Pricing Escalation - Fuel	-Basket index - Labor/Diesel/Stumpage	- Starting price with performance incentive	- True to actual cost
- O&M	-Basket index- Labor/Mach/Chem/Diesel	- Rolled into non-fuel charge	- Rolled into non-fuel charge
- Capacity	-Fixed escalation – 2.5%/yr	- Fixed non-fuel charge	- Fixed 3 years, then CPI
Plan to Set Final Prices	Handy/Whitman construction index from proposal to notice to proceed	Fixed in proposal	Handy/Whitman index for EPC component from PPA to notice to proceed

Comparisons of Proposals

(Continued)

WATER, WASTEWATER, SOLID BY-PRODUCTS			
PARAMETER	**COVANTA ENERGY**	**NACOGDOCHES POWER, LLC**	**STERLING PLANET, INC.**
Biosolids	Pending feasibility study	Feasibility study completed. Not recommended	Not recommended
Reclaimed Water	Compatible with proposed treatment processes	Feasible, may affect pricing	Feasible, may affect pricing
Fly And Bottom Ash	Non-hazardous, recyclable	Non-hazardous, recyclable	Non-hazardous, recyclable
Brine Residual	Non-hazardous, land fill	Non-hazardous, land fill	Non-hazardous, land fill

Evaluation of Proposals

	Overall Weight
- Environmental Attributes	30%
- Economics	37%
- Risk and Reliability	33%
	100%

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Environmental Attributes

	Factor Weight
- Air Emissions	10%
- Commitment to Forest Stewardship	7%
- By-product waste characterics	8%
- Project site requirements	5%
	30%

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Air Emissions Evaluated

Parameter	Description
CO	Carbon Monoxide
NOx	Oxides of Nitrogen
SO_2	Sulfur Dioxide
PM	Particulate Matter
VOC	Volatile Organic Compounds
Hg	Mercury
Pb	Lead
Fl	Fluoride
CO_2 combustion	Carbon Dioxide from combustion
CO_2 harvest/transport	Carbon Dioxide from harvesting and transportation

- Scored on lbs/MWh
- Based on MWh's taken by GRU
- CO_2 subfactors weighted twice as heavily
- CO_2 harvest/transport based on common assumptions

Air Emission Results

Respondent/Option	Factor Score
Covanta 50 MW PPA	3.81
Covanta 50 MW EPC	3.81
Nacogdoches 50% of 100 MW	1.88
Nacogdoches 100 MW	3.23
Sterling Planet 30 MW	2.06

Differentiating Factors:

- Heat rates
- NO_X control technology
- Particulate control technology
- Fuel collection radius
- Fuel harvesting and transport results

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Sustainable Forest Resource Management Plan

GRU's Forest Stewardship Program responsibilities:

- Adopt standards that will protect natural forests, promote forest health, protect native systems, support diversity and promote sustainable natural resource management practices with the procurement of forest related biomass.
- Provide financial incentives for participation
  - % adder to fuel price
- Establish quality assurance program to sample loads and visit sites (randomly or as needed)

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Sustainable Forest Resource Management Plan (Continued)

Plant operator's responsibilities:

- Only take acceptable fuels
  - logging residues
  - urban vegetation management
  - land clearing
  - tree stand thinnings
- Document geographic source of material
- Manage stewardship premium payments
  - passed on to GRU

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Forest Stewardship Commitment

(Qualitative Assessment)

Respondent/Option	Factor Score
Covanta 50 MW PPA	5.0
Covanta 50 MW EPC	5.0
Nacogdoches 50% of 100 MW	5.0
Nacogdoches 100 MW	5.0
Sterling Planet 30 MW	3.0

Differentiating Factors:

1. **Fuel purchasing contracts**
2. **Completeness of plan for operations**

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By-Product/Waste Production And Disposition

Tons/MWh to GRU

Respondent/Option	Factor Score
Covanta 50 MW PPA	3.81
Covanta 50 MW EPC	3.81
Nacogdoches 50% of 100 MW	3.87
Nacogdoches 100 MW	4.44
Sterling Planet 30 MW	2.33

Differentiating Factor:

1. **Heat rate (efficiency) affects mass of material required**

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Project Site Requirements

Respondent/Option	Factor Score
Covanta 50 MW PPA	4.0
Covanta 50 MW EPC	4.0
Nacogdoches 50% of 100 MW	3.0
Nacogdoches 100 MW	5.0
Sterling Planet 30 MW	3.3

Differentiating Factors:

1. Acres per MW to GRU
2. Trucks per MWh to GRU

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Project Economics And Resource Efficiency

	Factor Weight
All-in Production Costs	25%
Heat Rate (Efficiency)	5%
Project Plan	4%
Local Economic Impact	3%
	37%

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Power Cost Evaluation Methodology

1. Base case – what would be available as more economic than our own units
   - Modeled as 7FA generation capacity
   - Same approach taken in FPL & PEF Need Certification applications
   - Matches current market well
2. Assumed a “low” carbon constraint cost
   - Bingaman-Specter proposal
   - Modeled as a carbon tax

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Power Cost Evaluation Methodology
(Continued)

3. Normalized cost assumptions
   - Added property taxes to costs (excluded City of Gainesville share)
   - Escalated capital charges to start date using our projections
   - Escalated fuel costs uniformly
4. Scored based on $NPV/MWh and volatility
   - Weighted 90% $NPV/MWh
   - Weighted 10% volatility

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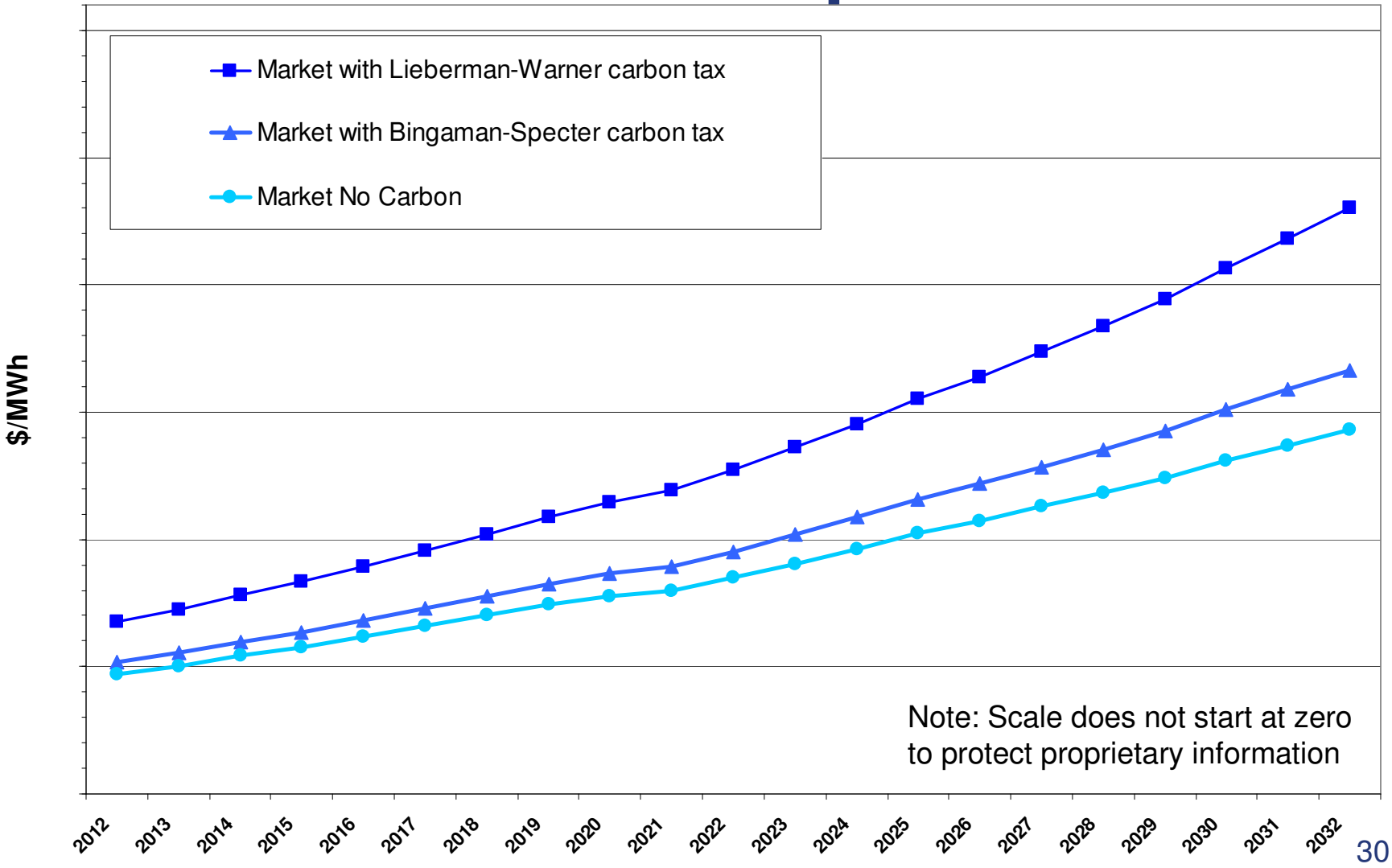
Market Cases to Compare to Biomass Proposals



Estimated Property Taxes

(Thousands of Dollars per Year)

Respondent/Option	City	Other Agencies	Total
Covanta 50 MW PPA	800 - 900	3,800 - 4,000	4,600 - 4,900
Covanta 50 MW EPC	0	0	0
Nacogdoches 50% of 100 MW	1,200 - 1,300	5,200 - 5,400	6,400 - 6,700
Nacogdoches 100 MW	1,200 - 1,300	5,200 - 5,400	6,400 - 6,700
Sterling Planet 30 MW	400 - 500	2,100 - 2,300	2,500 - 2,800

All-in Production Cost

Respondent/Option	Factor Score
Covanta 50 MW PPA	2.38
Covanta 50 MW EPC	2.80
Nacogdoches 50% of 100 MW	4.21
Nacogdoches 100 MW	4.21
Sterling Planet 30 MW	4.77

Weighted 90% $NPV/MWh and10% volatility
Market case = 3
Best NPV or Volatility = 5

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Variable Production Costs

Full Load Heat Rates – BTU/KWh

Respondent/Option	Factor Score
Covanta 50 MW PPA	2.60
Covanta 50 MW EPC	2.60
Nacogdoches 50% of 100 MW	4.10
Nacogdoches 100 MW	4.10
Sterling Planet 30 MW	2.00

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Project Plan

Respondent/Option	Factor Score
Covanta 50 MW PPA	2.33
Covanta 50 MW EPC	2.33
Nacogdoches 50% of 100 MW	4.67
Nacogdoches 100 MW	4.67
Sterling Planet 30 MW	3.67

Differentiating Factors:

1. How final pricing will be set
2. When final pricing will be set
3. Financial cost to GRU of Proposer's exit options

Local Economic Impact

Respondent/Option	Factor Score
Covanta 50 MW PPA	4.0
Covanta 50 MW EPC	4.0
Nacogdoches 50% of 100 MW	5.0
Nacogdoches 100 MW	5.0
Sterling Planet 30 MW	3.0

Differentiating Factors:

1. Number of on-site jobs
2. Salary level of on-site jobs created
3. Number of forestry industry jobs created

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Risk and Reliability

	Factor Weight
Contractual terms and conditions	10%
Technology and reliability	5%
Fuel requirements and sources	3%
Project design	5%
Proposer's experience and resources	5%
Proposer's financial strength	5%
	33%

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Contractual Terms and Conditions

Respondent/Option	Factor Score
Covanta 50 MW PPA	4.72
Covanta 50 MW EPC	4.72
Nacogdoches 50% of 100 MW	5.00
Nacogdoches 100 MW	5.00
Sterling Planet 30 MW	4.00

Technology Readiness

Respondent/Option	Factor Score
Covanta 50 MW PPA	3.4
Covanta 50 MW EPC	3.4
Nacogdoches 50% of 100 MW	5.0
Nacogdoches 100 MW	5.0
Sterling Planet 30 MW	3.4

Differentiating Factors:

1. Projected Availability Factor
2. Projected Capacity Factor

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Fuel Requirements and Resources

(Qualitative Assessment)

Respondent/Option	Factor Score
Covanta 50 MW PPA	4.75
Covanta 50 MW EPC	4.75
Nacogdoches 50% of 100 MW	3.75
Nacogdoches 100 MW	3.75
Sterling Planet 30 MW	2.75

Differentiating Factors:

1. Quality assurance/quality control
2. Specificity of supply options
3. Fuel supply diversity
4. Fuel processing

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Project Size and Design

Respondent/Option	Factor Score
Covanta 50 MW PPA	3.70
Covanta 50 MW EPC	3.70
Nacogdoches 50% of 100 MW	4.10
Nacogdoches 100 MW	4.10
Sterling Planet 30 MW	3.50

Qualitative Assessment of:
- Design
- Redundancy
- Fuel delivery management

Differentiating Factors:
- Equipment Specification
- Fuel Handling Equipment

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Experience and Resources of Project Developer/Resources

Respondent/Option	Factor Score
Covanta 50 MW PPA	5.0
Covanta 50 MW EPC	5.0
Nacogdoches 50% of 100 MW	3.0
Nacogdoches 100 MW	3.0
Sterling Planet 30 MW	2.0

Differentiating Factors:

1. EPC experience
2. Operations and maintenance experience
3. Biomass fuel procurement

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Financial Strength

(Credit Guarantors)

Respondent/Option	Factor Score
Covanta 50 MW PPA	3.45
Covanta 50 MW EPC	3.45
Nacogdoches 50% of 100 MW	4.64
Nacogdoches 100 MW	4.64
Sterling Planet 30 MW	1.00

Differentiating Factors:
- **Indebtedness**
- **Profitability**
- **Assets, Net Worth**

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Final Rankings

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Final Overall Evaluation Matrix

Category / Factor	Factor Weight	Covanta Energy Corp: 50 MW PPA		Covanta Energy Corp: 50 MW EPC		Nacogdoches Power, LLC: 50% of 100 MW PPA		Nacogdoches Power, LLC: 100 MW PPA		Sterling Planet 30 MW PPA	
(1) Environmental		Factor Score	Weighted Total	Factor Score	Weighted Total	Factor Score	Weighted Total	Factor Score	Weighted Total	Factor Score	Weighted Total
(d) Environmental Emissions	10.00	3.81	38.10	3.81	38.10	1.88	18.80	3.23	32.30	2.06	20.60
(g) Project Commitment to Sustainable Forest Resource Management	7.00	5.00	35.00	5.00	35.00	5.00	35.00	5.00	35.00	3.00	21.00
(m) By-product/Waste Production and Disposition	8.00	3.81	30.48	3.81	30.48	3.87	30.96	4.44	35.52	2.33	18.64
(h) Project Site Requirements	5.00	4.00	20.00	4.00	20.00	3.00	15.00	5.00	25.00	3.30	16.50
Category Total	**30.00**		**123.58**		**123.58**		**99.76**		**127.82**		**76.74**
(2) Economics											
(a) Project All-in Production Cost	25.00	2.38	59.50	2.80	70.00	4.21	105.25	4.21	105.25	4.77	119.25
(b) Project Variable Production Costs	5.00	2.60	13.00	2.60	13.00	4.10	20.50	4.10	20.50	2.00	10.00
(f) Anticipated Project In-Service Date and/or Energy Delivery	4.00	2.33	9.32	2.33	9.32	4.67	18.68	4.67	18.68	3.67	14.68
(n) Local Economic Impact	3.00	4.00	12.00	4.00	12.00	5.00	15.00	5.00	15.00	3.00	9.00
Category Total	**37.00**		**93.82**		**104.32**		**159.43**		**159.43**		**152.93**
(3) Risk & Reliability											
(k) Proposed Contractual Terms and Conditions	10.00	4.72	47.20	4.72	47.20	5.00	50.00	5.00	50.00	4.00	40.00
(c) Technology Readiness and Project Reliability	5.00	3.40	17.00	3.40	17.00	5.00	25.00	5.00	25.00	3.40	17.00
(e) Fuel Requirements and Sources	3.00	4.75	14.25	4.75	14.25	3.75	11.25	3.75	11.25	2.75	8.25
(i) Project Size and Design	5.00	3.70	18.50	3.70	18.50	4.10	20.50	4.10	20.50	3.50	17.50
(j) Experience and Resources of Project Developer/Sponsor	5.00	5.00	25.00	5.00	25.00	3.00	15.00	3.00	15.00	2.00	10.00
(l) Proposer's Financial Strength	5.00	3.45	17.25	3.45	17.25	4.64	23.20	4.64	23.20	1.00	5.00
Category Total	**33.00**		**139.20**		**139.20**		**144.95**		**144.95**		**97.75**
Grand Total	**100.00**		**356.60**		**367.10**		**404.14**		**432.20**		**327.42**

Note: Each of the above Factors is given a raw numerical score from 1 - 5.

Summary Ranking Table

Summary Table Color Key

Highest Score in Category or Overall (Best)	*5*

Respondent	Environmental	Category Ranking	Economics	Category Ranking	Risk & Reliability	Category Ranking	Total Score	Overall Ranking
Covanta: 50 MW PPA	123.58	4	93.82	1	139.20	3	356.60	2
Covanta: 50 MW EPC	123.58	4	104.32	2	139.20	3	367.10	3
Nacogdoches: 50% of 100 MW PPA	99.76	2	159.43	*5*	144.95	*5*	404.14	4
Nacogdoches: 100 MW PPA	127.82	*5*	159.43	*5*	144.95	*5*	432.20	*5*
Sterling Planet - 30 MW PPA	76.74	1	152.93	3	97.75	1	327.42	1

Additional Analysis

Nacogdoches Power, LLC.
100 MW Option

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Key Attributes

- Nacogdoches Power, LLC.
  - BayCorp Holdings, Ltd. and
  - Energy Management, Inc.
- 100 MW, zero water discharge
- 100% biomass fueled
  - Independent biomass fuel resource study
  - Gain sharing formula for delivered cost
- By-products non-hazardous, 86% recyclable
- Ecological and community support plan
  - Outreach meetings
  - $25,000 annual grants for ecosystem research

Key Attributes (Continued)

- 520 local jobs
  - 490 in forest industry
  - 35 in generating facility
- Sufficient carbon credits to meet Kyoto Protocol
- Positions GRU for future Renewable Portfolio Standards, and carbon constraint regulations

Managing Excess Power

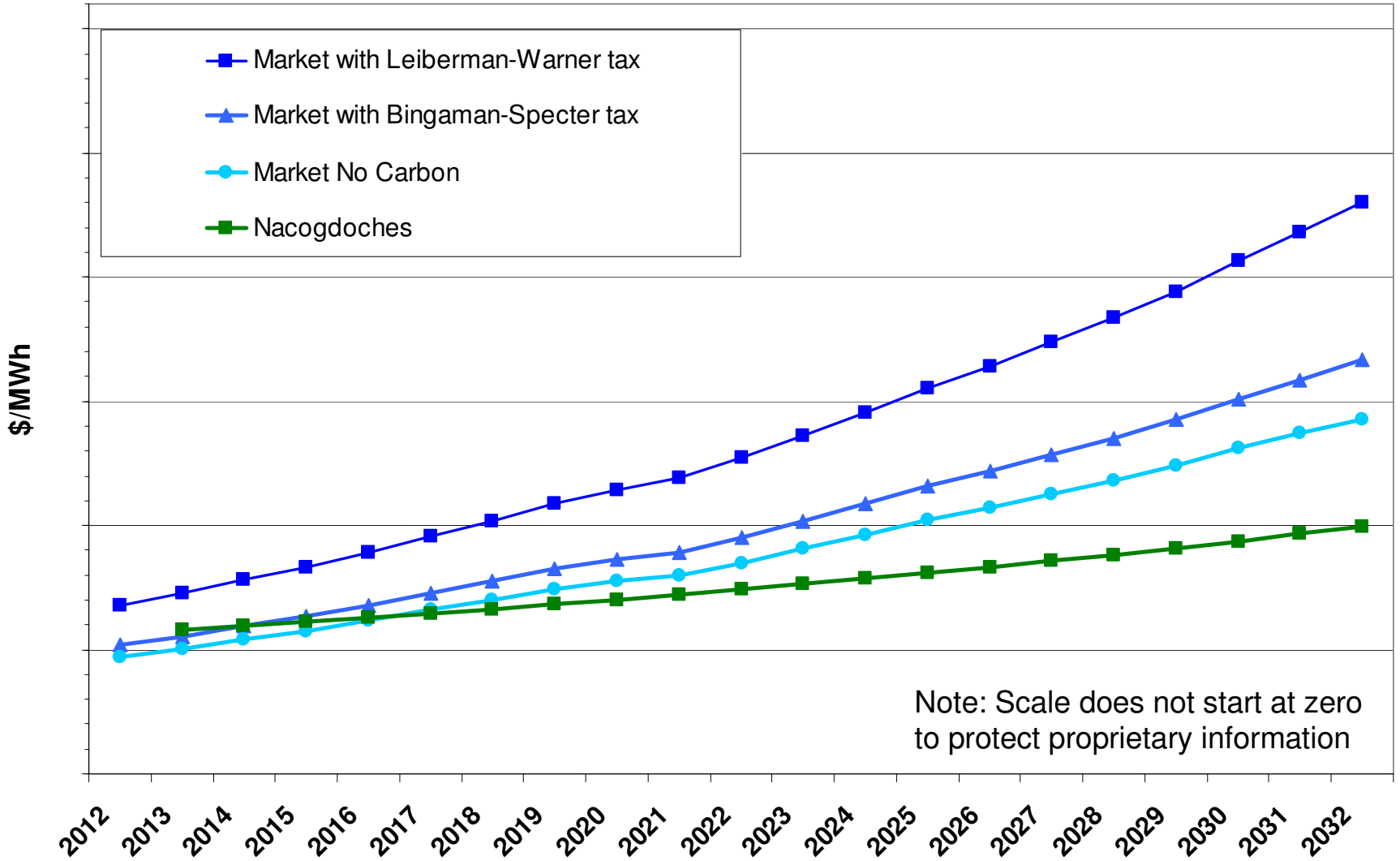
1. Current Projection[1] of Base Load Requirements

Year	MW
2008	63
2013	70
2018	92
2022	136

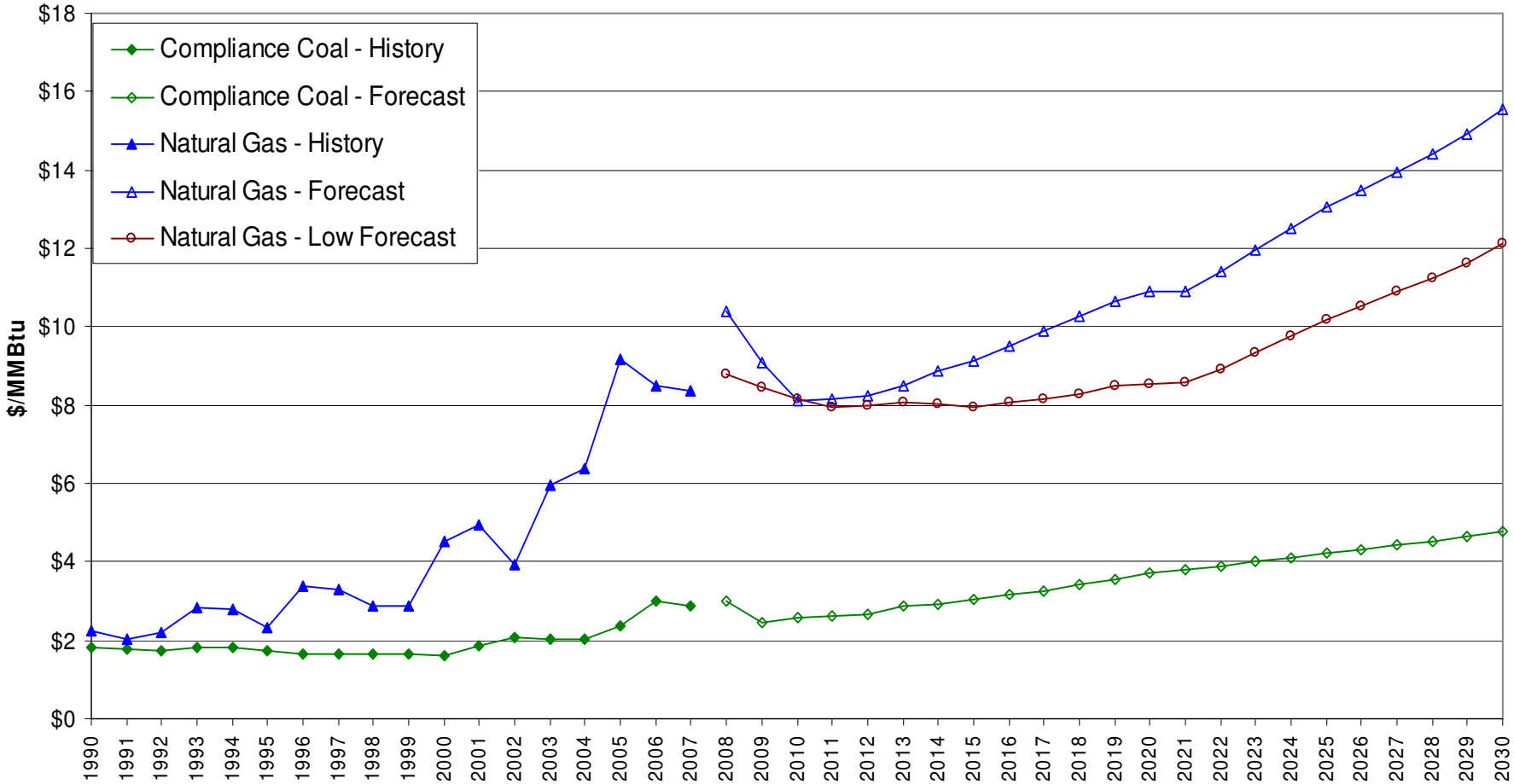
2. Management of Excess Capacity
   - Strong market for green power
   - Price competitive in Florida market
   - Potential PPA takers known

1. Source: Section 19, RFP 2007-135

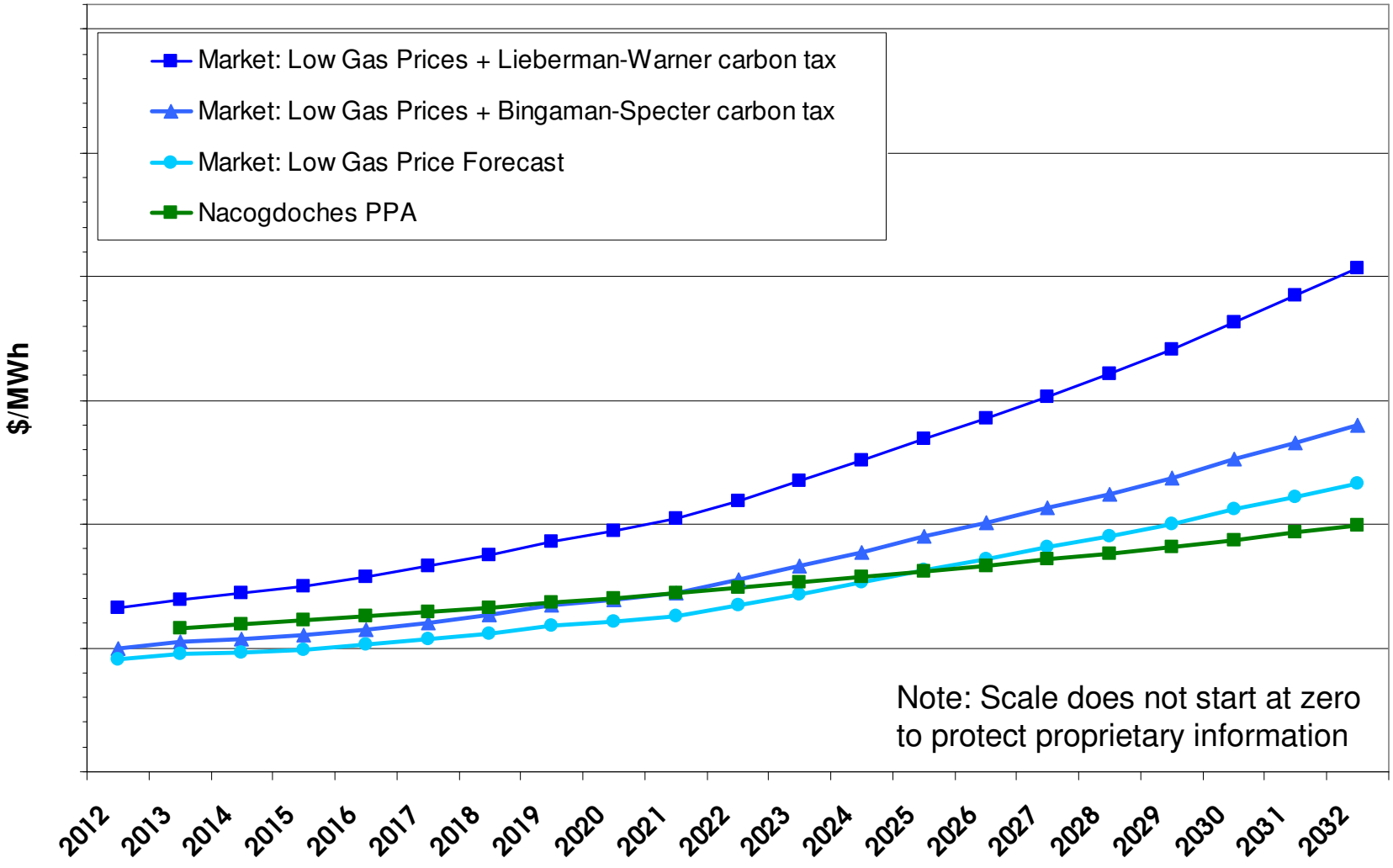
NPV Savings $260,000,000



Low Gas Price Forecast for Sensitivity Analysis



NPV Savings $47,000,000 (Low Gas Forecast Case)



Next Steps

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Next Steps

1. Negotiate and execute contract
2. Prepare Site Certification application
   - Biological and other site characterization
3. PSC Need Certification
4. Air permits
   - New Source Review
   - Prevention of Significant Deterioration
5. Notice to proceed (4th qtr 2009)
6. Substantial completion (4th qtr 2012)

Thank You

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