



Green Energy Payment Options

Item #110783

January 8, 2015

Agenda

- Other Utility Programs
- Current GRU Practice for Selling Green Energy
- Future Value of Green Energy/Impact of Regulation
- Adding Optional Programs to Meet Customer Needs & Increase Revenue
- Program Design Considerations
- Questions

Florida Green Pricing Programs

Utility	Program	Type	Premium	Minimum Size
PowerSouth	Green Power Choice	Landfill gas	2.0 ¢/kWh	100 kWh blocks
TECO	Renewable Energy	PV, landfill, biomass co-firing (wood)	2.5 ¢/kWh	200 kWh blocks
New Smyrna Beach	Green Fund	Local PV projects	Contribution	n/a

Other Contribution Green Pricing Programs

Utility	Program	Type	Premium	Minimum Size
Duke Energy*	GoGreen Power	Wind, PV, Landfill Gas	2.0 ¢/kWh	200 kWh
Georgia Power	Green Energy	Biomass	3.5 ¢/kWh	100 kWh
Georgia Power	Green Energy	Solar	5.0 ¢/kWh	100 kWh
DTE Energy	GreenCurrents	Biomass, Wind	2.5 ¢/kWh	100 kWh
DTE Energy	GreenCurrents	Biomass, Wind	2.0 ¢/kWh	100%

*In Ohio & Indiana

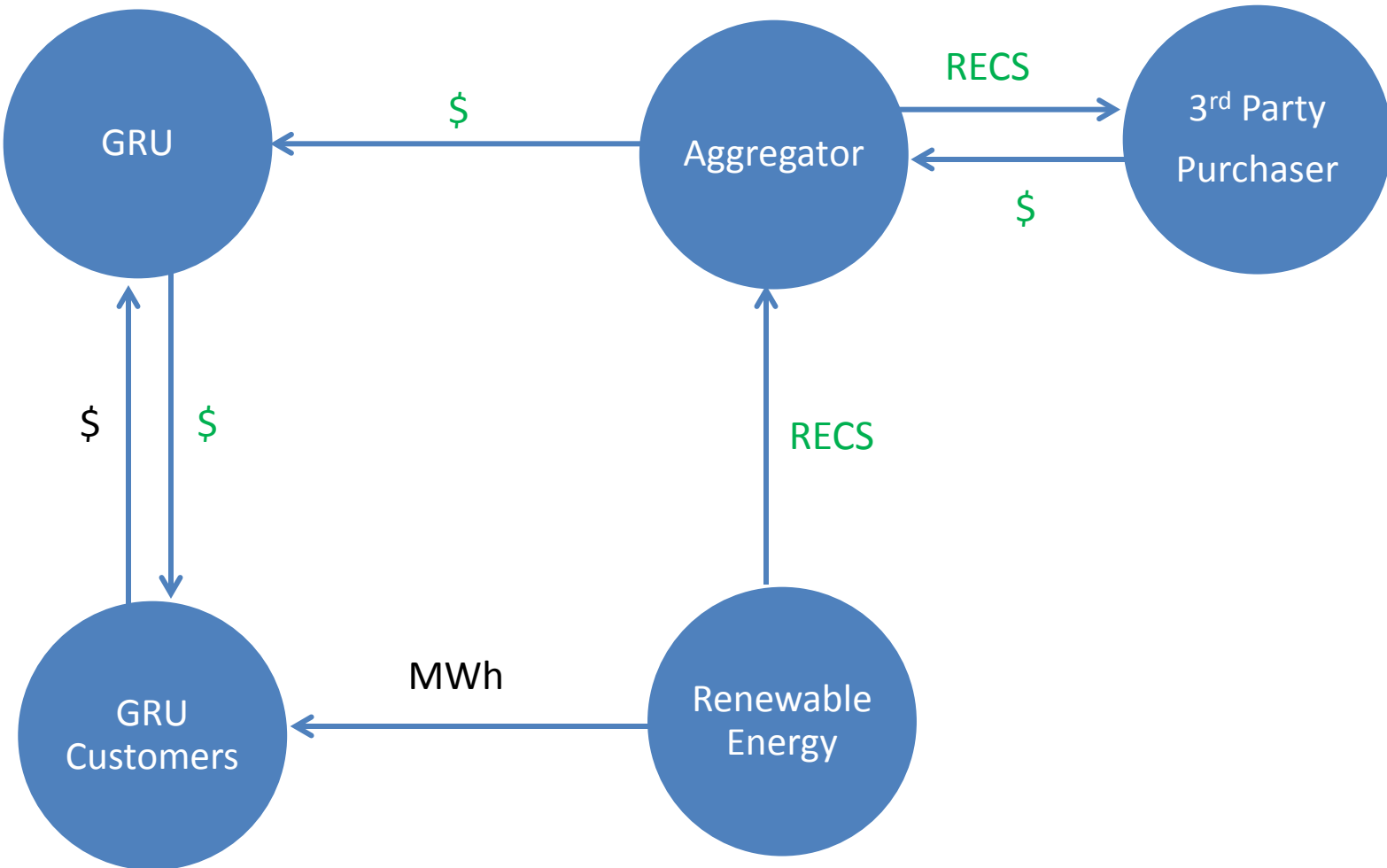
FA Replacement/Fixed Cost Green Pricing Programs

Utility	Program	Type	Premium	Minimum Size
Austin Energy	GreenChoice® SmartCents	Wind	1.0 ¢/kWh	100%
Austin Energy	GreenChoice® BusinessCents	Wind	No PSA* instead pay 4.709 ¢/kWh**	100%
Austin Energy	GreenChoice® Patron	Wind	No PSA instead pay 4.9 ¢/kWh fixed rate (12/2016)	100,000 kWh monthly
* Power Supply Adjustment - equates to Fuel Adjustment				
** Adjusted upon change in PSA				

GRU's Current Green Energy Sales Practice

- About 1/3 of all energy comes from renewable sources
- All customers receive the benefits of renewable energy
- All customers pay for renewable energy in rates
- All renewable energy credits (RECs) are sold
- All proceeds from REC sales are returned to customers through rates

GRU's Current Model for Selling Green Energy



Value of Green Energy

- Currently no state-wide renewable energy goals in Florida
- Typically sold unbundled as RECs in increments of 1 MWh
- Price for RECs on the voluntary market range from low of 0.1¢/kWh (Biomass) to high of 0.3¢/kWh(Solar)
- Proposed EPA climate regulation may transform the market

Future Value of Green Energy

- EPA's Clean Power Plan Proposed Rule
 - Plan to cut carbon emissions from existing power plants
 - If adopted, could significantly increase the value of RECs in the future
 - How to determine future value?

Predicting Future Green Energy Prices

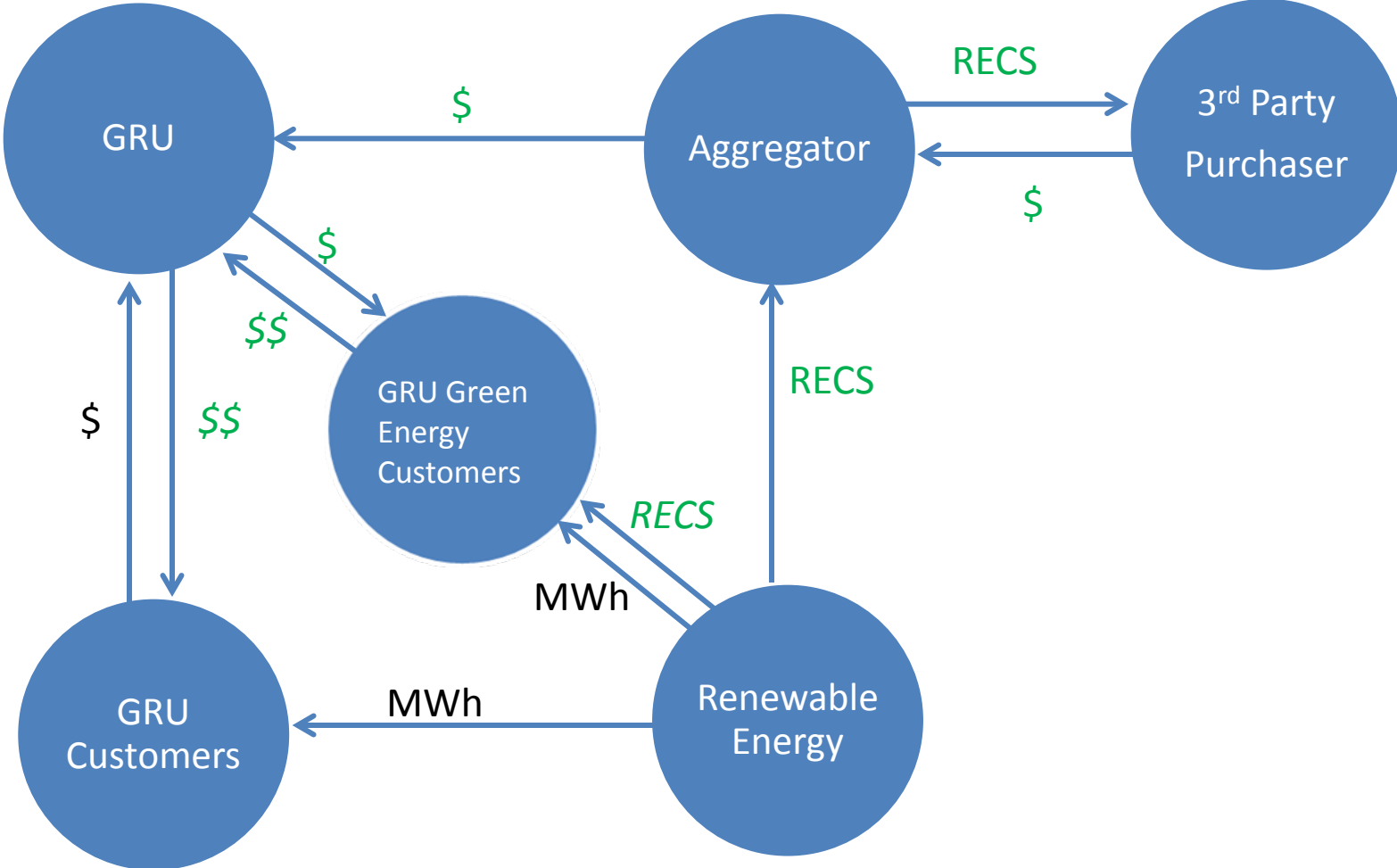
- EPA uses the social cost of carbon to estimate the climate benefits of rulemakings.

Average Emission Rates (Tons CO2/MWH)				
Natural Gas	0.5675			
Coal	1.1245			
EPA's Social Cost of CO2 (per Ton)	2015	2020	2025	
Low	\$12	\$13	\$15	
Mean	\$57	\$66	\$73	
High	\$116	\$137	\$153	
Additional Cost CO2 (per MWh)	Natural Gas	Coal	70% NG/30% Coal	
2015				
	Low	\$6.81	\$13.49	\$8.82
	Mean	\$32.35	\$64.10	\$41.87
	High	\$65.83	\$130.44	\$85.21

Adding Optional Green Pricing Programs

- Optional green energy sales programs can add value by:
 - Meeting a customer want/need (i.e. mandated green energy purchases, sustainable building certification credits, environmental stewardship)
 - Collecting additional revenue from premium priced REC sales to voluntary customers
 - Lowering rate pressure

Model for Adding Optional Green Energy Programs



Program Design Considerations

- Establish minimum contribution levels (kWh blocks)
- Establish short-term (1 year or less) pricing terms in order to react to changing market conditions
- Longer term options matched to actual renewable production costs (green energy not RECs)
- Appropriately priced premiums

Program Design Considerations

Design Type	PROS		CONS	
	Customer	Utility	Customer	Utility
Contribution	Environmental Stewardship, RECs for Certifications	Revenue, Lower Rate Pressure	Cost, Price Uncertainty	Historic Low Participation, Opportunity Cost of Sold RECs
FA Replacement	Fixed Cost Option, Hedge Against Future FA Increases	Higher Revenue, Customer Hedging Option	High Initial Cost, Risk	Price a Barrier to Participate? Risk

Questions?

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