

# **Executing the Clean Electricity Standard**

**May 21, 2013**

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**Presented to the Pembina  
Thought Leaders Forum**

# Agenda

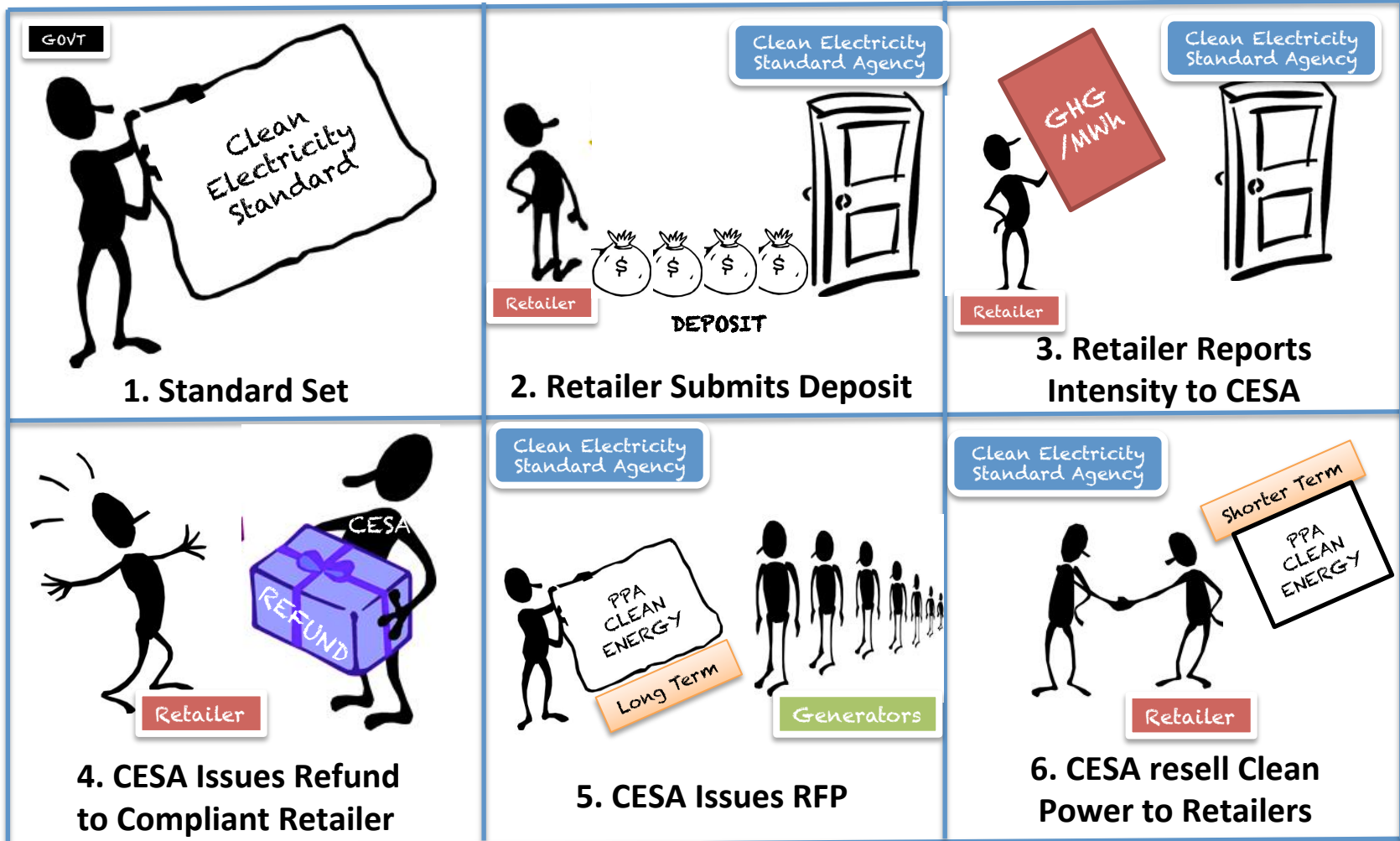
- Following the funds – Deposits and Refunds
- CESA Operation & Mandate
- CESA contracting for Power
- Impact of CES in the Electricity Market and Stakeholders
- The Retailer Perspective

# Clean Electricity Standard Agency - CESA

The deposits from the CES will be managed by the Clean Energy Standard Agency (CESA)

- Administering the CES system
  - Recommend standards
  - Set deposit and refund rates, upper and lower threshold
  - Collect deposits
  - Review Portfolio Intensity of Retailers
  - Issue refunds
- Revenue neutral over long term
- Under some circumstances, additional role of entering into long term contracts for low emitting generation that is below the standard

# Clean Electricity Standard - Process



Clean Electricity  
Standard Agency



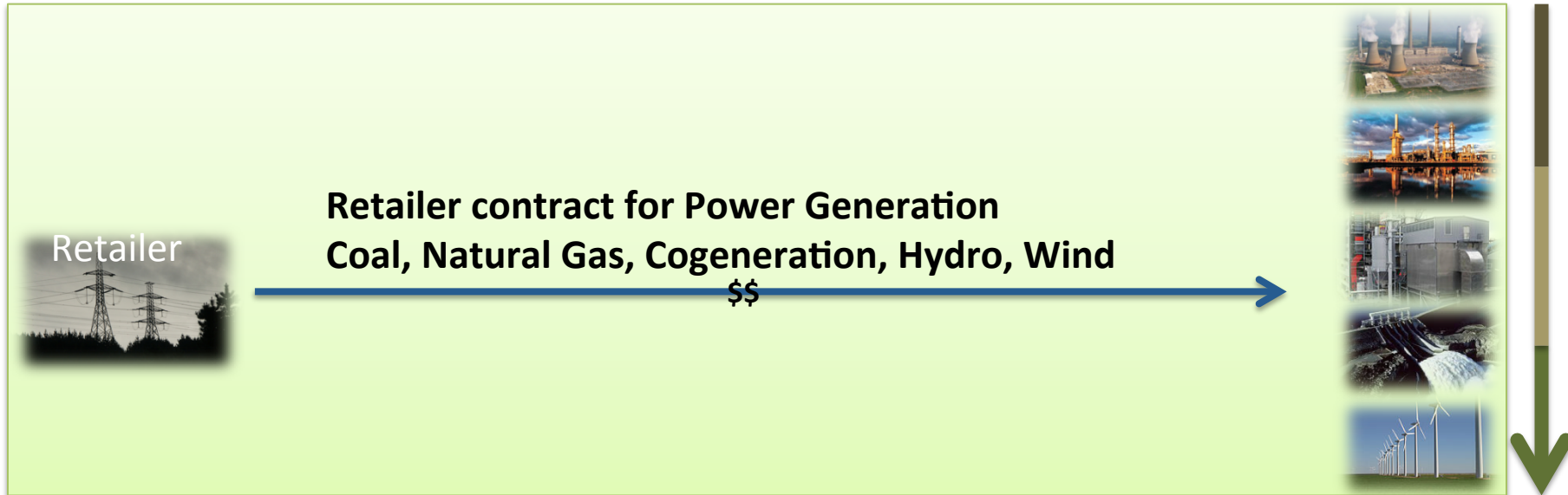
Retailer

# Statements and Deposits

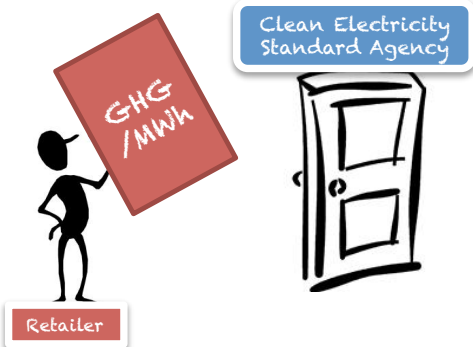
## 2. Retailer Submits Deposit



# Retailer Contracts for Power



**Alternatively Retailer can purchase from the Pool.**



# Year End Portfolio Intensity Calculation

## 3. Retailer Reports Intensity to CESA

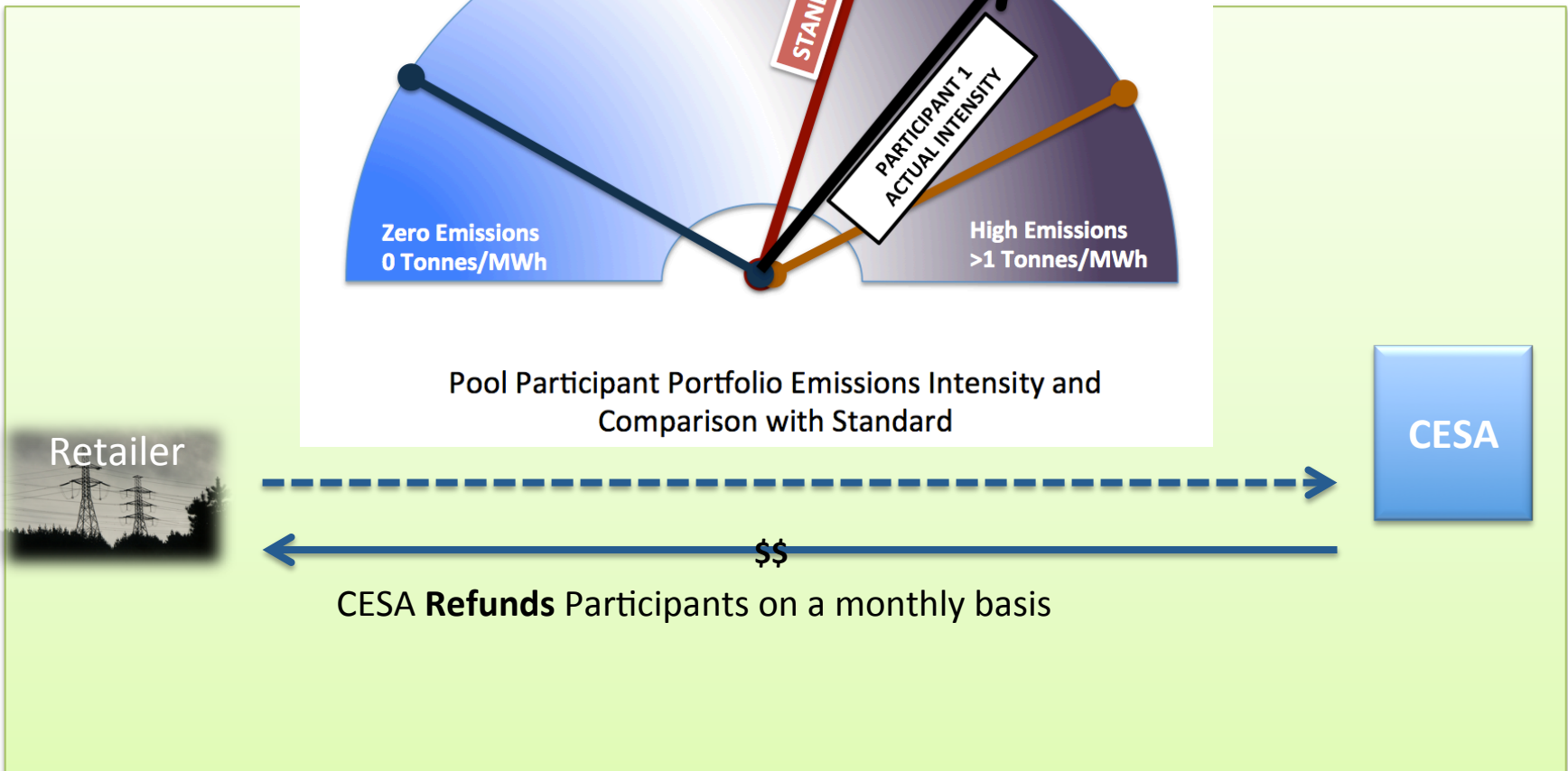
Retailers calculate Portfolio Intensity and  
Retailers show CESA contracts at year-end  
Production records and AESO statements provided for  
confirmation  
CESA confirms Portfolio Intensity





# Refund Calculation

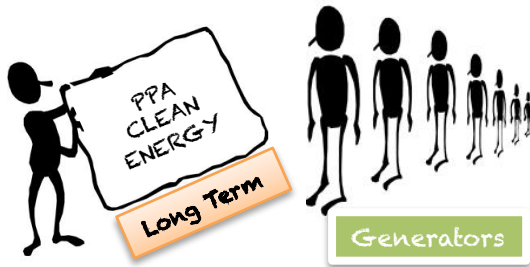
## 4. CESA Issues Refund to Compliant Retailer





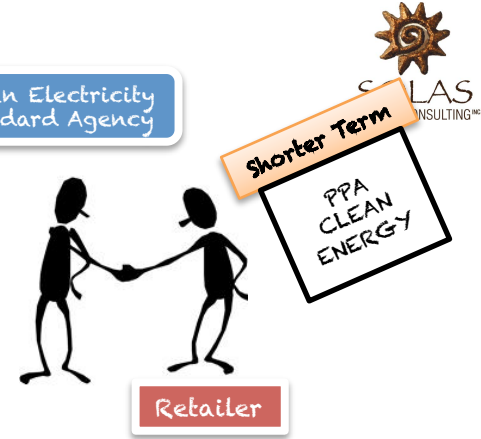
# CESA Funding

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Standard Agency

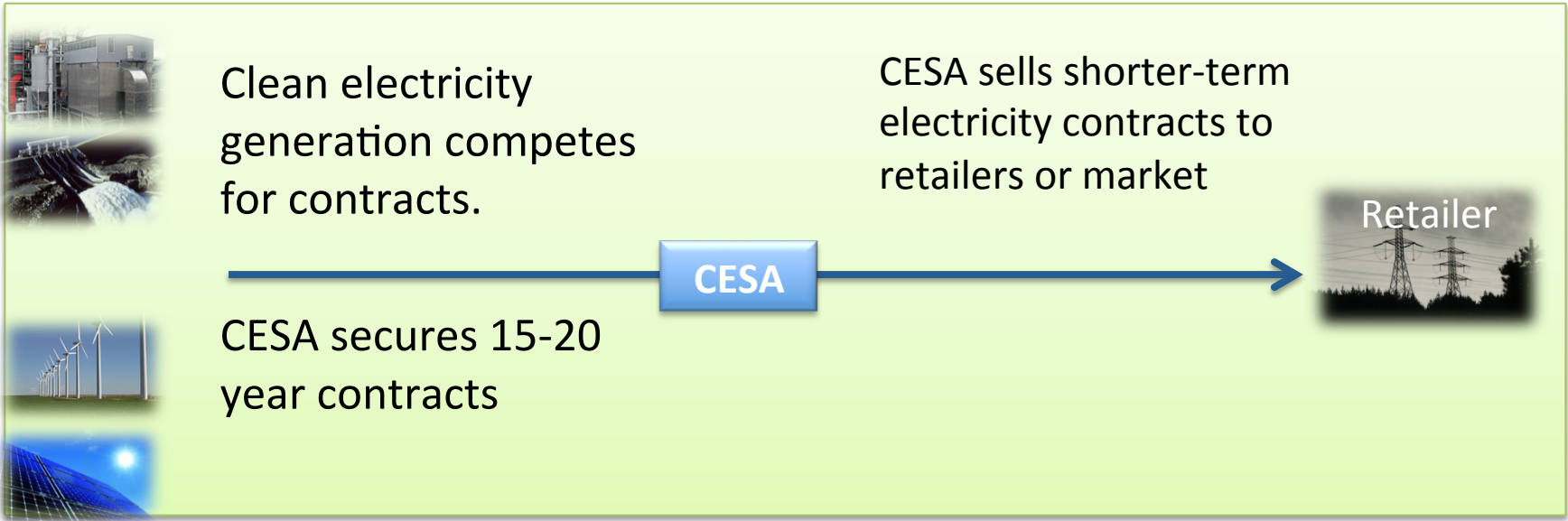


5. CESA Issues RFP

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6. CESA resell Clean  
Power to Retailers



# CESA Operations

- Collect deposit from retailers, via AESO's tariff, for every MWh of electricity purchased from the Power Pool
- Review portfolio intensity of Retailers
- Refund retailers for portfolio intensity. Measured by contracted power, production and default deemed grid intensity.
- Ensure deposit and refund are set to reduce the long term GHG intensity of electricity generation in Alberta
- Put in place rules to manage information, cash flow, working capital, credit, etc.
  - Implementation details will likely not be prescribed in legislation

# CESA Mandate

- Provide recommendations to Minister based on historical and forecast mix of generation types and respective GHG intensity
- Report to industry annually on estimated future deposit and refund prices and volumes
- Monitor Retailer contracts and report to Minister on potential need for additional contracts
- Comply with FEOC and limit administrative and financial burdens on Alberta's retailers
- If markets do not respond with adequate contracts for Retailers, procure long-term low GHG intensity generation and sell shorter-term financial contracts to retailers

# Fit with Alberta Electricity Market

- Wholesale Market
  - No change, should increase transactions and liquidity
- NGX Forward Market
  - Growth opportunities
- Regulated Rate Option (RRO)
  - More supply options
- Competitive Retailers (i.e. “GreenMax”)
  - More demand for green products

# Stakeholders

- Generators
  - No change, comply with SGER
  - Expect market participants will seek contracts with new and existing generators
  - Opportunity to compete for Long Term CESA contracts
- Retailers
  - Deposit and refund, financial incentive to reduce electricity portfolio emissions intensity
  - Contract for low emitting generating technology
  - May introduce more retailers
  - Minor administrative requirements
- Government – Set CES targets
- Marketers – Adapt and contract
- Consumers
  - Potential for retail to pass through some deposit/refund to consumers
  - Expect more robust retail market -> reduced costs
  - Do not expect power pool prices to be materially affected

# Retailer Perspective

## Steps

- Pay Deposit (Sunk Cost)
- Evaluate cost of contracting clean electricity with the refund available
- Contract low emitting generation directly from generators or through CESA
- Receive refund based on GHG intensity
- More robust retail market will provide growth opportunities

# Anticipated Results

- GHG Grid Intensity Reduction in Alberta
- Increased customer choice for Alberta consumers
- Expanded wholesale electricity contracts & Retail markets



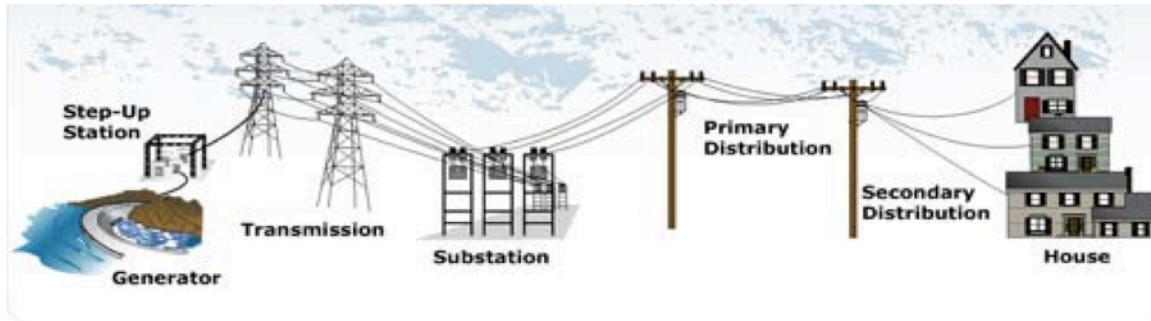
A glowing compact fluorescent light bulb (CFL) stands upright in a field of green grass. The bulb is white and has a spiral shape. It is illuminated from within, casting a soft glow. The grass is vibrant green and appears to be blowing in the wind. The background is a bright, clear sky.

# **Clean Electricity Standard**

## **Appendix**

**May 14, 2013**





# Electricity Market in Alberta – Transmission & Distribution



# CES – Retailer Examples

<b>CED (\$/MWh)</b>	<b>\$4.00</b>
CER (\$/tonne)	\$16.67
Deemed Intensity (t/MWh)	0.90
Upper Threshold (t/MWh)	0.89
Clean Energy Standard (t/MWh)	0.65
Lower Threshold (t/MWh)	0.40
Grid Avg. Intensity (t/MWh)	0.78

	<b>Generation Intensity (tonnes/MWh)</b>	<b>Difference from Upper Threshold (tonnes/MWh)</b>	<b>Refund (\$/MWh)</b>
Combined Cycle	0.46	0.43	\$7.00
Cogeneration	0.40	0.49	\$8.00
Zero Emitting Generation	-	0.89	\$15.00

	<b>Annual Purchases</b>	<b>CED</b>	<b>Combined Cycle Contracts</b>	<b>Cogeneration Contracts</b>	<b>Zero Emitting Generation Contracts</b>	<b>Non-Contracted Generation</b>	<b>RETAILER PORTFOLIO EMISSIONS INTENSITY</b>	<b>Refund</b>	<b>Refund</b>	<b>Net CESA</b>
	<b>(million MWh)</b>	<b>(\$ million)</b>	<b>(million MWh)</b>	<b>(million MWh)</b>	<b>(million MWh)</b>			<b>(\$/MWh)</b>	<b>(\$ millions)</b>	
Retailer A	26	\$104	1			25	0.88	\$ 0.12	-\$3	\$101
Retailer B	15	\$60	1	5		9	0.70	\$ 3.10	-\$47	\$14
Retailer C	10	\$40		5		5	0.65	\$ 4.00	-\$40	\$0
Retailer D	5	\$20			5	0	-	\$ 8.17	-\$41	-\$21
	56	\$224	2	10	5	39			-\$130	\$94

