

# GRU Energy Risk Management Policy

UAB  
August 8, 2019

City Commission  
August 15, 2019

# Policy Objective

- To protect our customers from excessive energy price increases while, at the same time and to the extent possible, minimizing the cost of reliable energy supplies.

# Definitions

- **Hedging** – any action taken to reduce risk.
  - Hedging in commodity futures markets is used to reduce risk of price fluctuations.
- **Hedging Strategy** – a set of financial transactions, forward contracts, and/or physical options designed to hedge risk for a specified amount of underlying commodities.
- **Futures Contract** – a firm contractual purchase or sale of a commodity for a specified volume during a specified month in the future.
- **Option** – a contract between two parties giving the buyer the right, but not the obligation, to purchase a commodity at a given price in exchange for a one-time premium.

# Risk Management Policy

- Establishes the Risk Oversight Committee (ROC), defines its limited authority, and sets responsibilities and guidelines:
  - Guidelines to constrain risk
  - Establishes controls
- Establishes the operational guidelines to develop and implement Hedging Strategies.
- Establishes the criteria for monitoring and reporting.

# Why Do We Need a Risk Management Policy?

- Hedging price risk has a few benefits:
  - Focus on business and logistics rather than predicting or beating the market.
  - Helps to control final costs to the customer.

# Risk Oversight Committee (ROC)

- Consists of 3 members:
  - Chief Operating Officer
  - Chief Financial Officer
  - Energy Supply Officer
- Created in 1996
- Function:
  - Fact-finding and research related to fuel commodities, electric power markets, and associated hedging criteria.
  - Make recommendations to the General Manager for review and approval.

NOTE: All decision-making authority remains with the General Manager.

# ROC Responsibilities

- Each member is tasked with:
  - Maintenance of Energy Risk Management Policy and associated procedures.
  - Review of hedging portfolio performance.
  - Reviewing risk reports provided by The Energy Authority (TEA), GRU Fuels management, and/or energy risk management consultants.
  - Review of potential hedging strategies developed by TEA, GRU Fuels Management, and/or GRU consultants.
  - Ensure documentation of all transactions is in compliance with the risk policy.

# Fuels Management Responsibilities

- Execution of approved hedging strategies.
- Assembly of relevant market data, price forecasts, GRU operating data, analyses, etc. necessary to facilitate a prudent review:
  - Fuel risks to GRU system
  - Electricity risks to GRU system
- Documentation and reporting of hedging decisions.
- Serves as primary interface with TEA financial traders & risk analyses and control personnel.



# Operational Controls

- The General Manager must approve the hedging strategy prior to execution of any transactions.
- The projected volumes, system loads, system generation, scheduled outages, and power purchase forecasts and assumptions must be approved by the ROC:
  - Must be done prior to execution of transactions
  - Can be reviewed and revised at any agreed upon time
- Transactions can only be made as a result of an approved hedging strategy.

# Operational Controls

- All transactions are to be executed through TEA:
  - Policies are governed by TEA Board of Directors
  - GRU's General Manager has a voting position
  - Ensures Counter-party credit
- All individuals with responsibilities under policy will document they have read, understand, and will comply.
- The ROC shall review the fuel and electricity hedging criteria as needed.

# Risk Measurement

- Cash-Flow-at-Risk (CFaR) is used as the primary risk measurement metric:
  - The extent to which future **cash flows** may fall short of expectations as a consequence of changes in market variables.
- The responsibility of the ROC is to recommend appropriate hedging strategies to constrain CFaR.

# Hedging Basics

- The purpose of hedging is to transfer risk:
  - For GRU, it transfers fuel price risk from the customer to the market.
- Hedgers look to transfer risk in the future market.
- Speculators look to take on risk to profit:
  - GRU never takes a speculator's position.
  - GRU never purposefully takes on additional risk above what is already inherent to the market.

# Hedging Basics

- Hedging is considered in relation to approved volumes of fuel:
  - The large majority of hedges put into place are for Natural Gas (NG).
  - NG Volumes are based on projected generation for the time period.
  - NG Volumes must be approved by ROC and serve as the basis for hedging calculations.
  - For example:

Month	Approved Volume (MMBtus)*
September 2019	120,000
October 2019	75,000
November 2019	60,000
December 2019	65,000

\*Volumes are for example purposes only

# Hedging Basics

- Hedging Costs – monetary expenditure to put a hedge in place (option premium, etc.).
- Hedging Volume – underlying volume associated with a hedge.
- For example:
  - 50% hedge with a \$.08/MMBtu premium (Commodity Price - \$2.75/MMBtu)

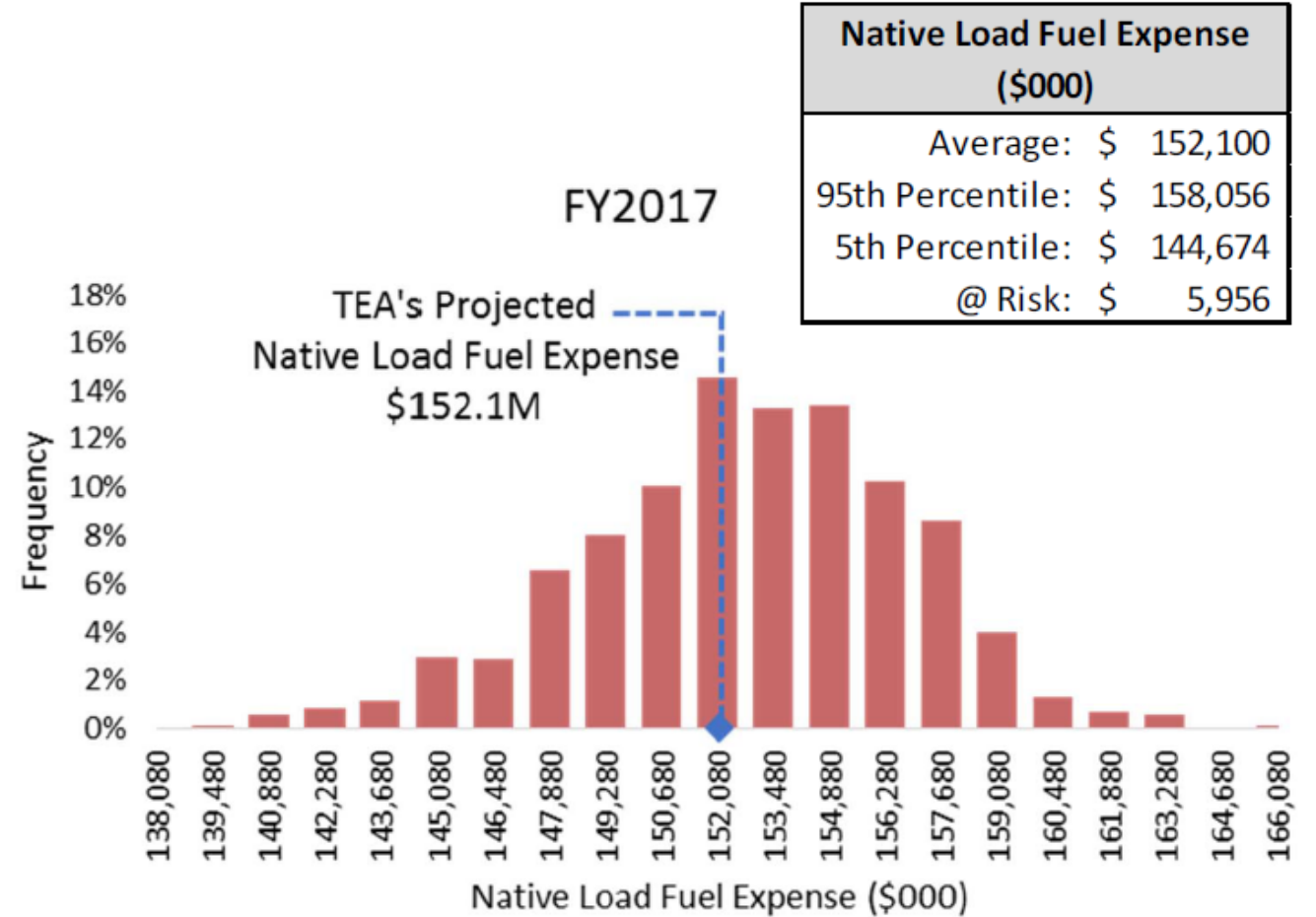
Month	Approved Volume (MMBtus)	Hedging Volume (MMBtus)	Nominal Hedging Percentage	Hedging Costs (\$)	Value Hedged (\$)
September 2019	120,000	60,000	50%	4,800	165,000
October 2019	75,000	37,500	50%	3,000	103,125
November 2019	60,000	30,000	50%	2,400	82,500
December 2019	65,000	32,500	50%	2,600	89,375
<b>TOTAL</b>	<b>320,000</b>	<b>160,000</b>	<b>50%</b>	<b>12,800</b>	<b>440,000</b>

# Limits and Criteria for Fuel and Electricity

- Future Commodity Volumes:
  - No hedging commitment allowed above 100% of agreed upon volumes for a given future month.
  - Anything above 75% of agreed upon volumes is considered an exception.
    - Must be explicitly authorized by the General Manager.
  - No transaction that increases CFaR can be executed without explicit approval of the General Manager.

# Constraining Risk

- Goal – keep risk (CFaR) below an acceptable level.
- ROC can set/adjust that level based on market conditions.
- Hedging is the tool used to constrain risk.





# Bringing It All Together - LDC

Natural Gas Potential Hedge Pricing Summary								
Month	Market Price	Incremental 10% LDC Hedge	Incremental 20% LDC Hedge	Incremental 30% LDC Hedge	Incremental 40% LDC Hedge	Incremental 50% LDC Hedge	Call Strike Price	Option Premium
Jul-19	\$2.38	2	3	4	6	7	\$2.90	(\$0.0008)
Aug-19	\$2.38	2	3	4	6	7	\$2.90	(\$0.005)
Sep-19	\$2.37	2	4	4	6	8	\$2.90	(\$0.012)
Oct-19	\$2.43	1	3	5	6	8	\$2.95	(\$0.020)
Nov-19	\$2.52	1	3	5	6	8	\$3.05	(\$0.043)
Dec-19	\$2.71	1	3	4	6	7	\$3.25	(\$0.086)

Remainder Cal 2019	Natural Gas Cost (\$/MMBtu)						
	Market Price	Existing Financial Positions	Proposed Financial Positions				
			10% Hedge	20% Hedge	30% Hedge	40% Hedge	50% Hedge
Average Gas Cost	\$2.478	\$2.478	\$2.478	\$2.478	\$2.478	\$2.479	\$2.479
95th Percentile Gas Cost	\$2.958	\$2.958	\$2.952	\$2.940	\$2.931	\$2.921	\$2.911
95th Percentile Gas Cost at Risk	\$0.48	\$0.48	\$0.474	\$0.462	\$0.453	\$0.442	\$0.432

# Accounting, Monitoring, and Reporting

- **Governmental Accounting Standards Board (GASB):**
  - GASB is a private non-governmental organization that creates accounting reporting standards, or generally accepted accounting principles (GAAP), for state and local governments in the United States.
  - All fuel and financial-related derivative instruments are in accordance with GASB Statement No. 53.

# In Conclusion

- Risk Oversight Committee (ROC) is tasked with evaluating and making recommendations to the GM to manage commodity price risk.
- The General Manager must approve any transactions before execution.
- Risk is measured primarily by Cash-Flow-at-Risk (CFaR).
- The ROC has the goal to constrain CFaR.
- Can recommend to hedge up to 75% of approved volume in a future month.



Questions?

**GRU**<sup>SM</sup>  
More than Energy