 ERCOT Market Education

Resource 301

Module 1: Overview of Resources in the ERCOT Market
• Restrooms
• Refreshments
• Attendance sheet
• Questions

Please silence smart phones & other electronics
Course Introduction
Upon completion of this course, you should be able to:

• Summarize how ERCOT utilizes Resources to meet reliability goals

• Delineate the responsibilities of Resource Entities and Qualified Scheduling Entities in managing Resources

• Explain how Resource constraints are formed and predict how they impact market solutions

• Compare and contrast how Resources are utilized in Day-Ahead and Real-Time Operations

• Illustrate financial outcomes of the markets and evaluate strategies for offering resources.
This presentation provides a general overview of the Texas Nodal Market and is not intended to be a substitute for the ERCOT Protocols, as amended from time to time. If any conflict exists between this presentation and the ERCOT Protocols, the ERCOT Protocols shall control in all respects.

For more information, please visit:

http://www.ercot.com/mktrules/nprotocols/
Modules in this course include:

1. Overview of Resources in the ERCOT Market
2. Resource Requirements
3. Resources in the Day-Ahead Market
4. Resources and Reliability Unit Commitment
5. Resources in Real-Time Operations
Module 1

Overview of Resources in the ERCOT Market
A Few Definitions

Resource

- Generation Resource
- Load Resource
- Energy Storage Resource
• Capable of producing energy
• Capable of providing Ancillary Service

Two Types:
• Distribution Generation Resource (<60kV)
• Transmission Generation Resource (>60kV)
A Few Definitions

Resource

- Generation Resource
- Load Resource
- Energy Storage Resource
Load Resource

- Capable of curtailing Demand
- Capable of providing Ancillary Service

Two Types:
- Non-Controllable Load Resource
- Controllable Load Resource (CLR)
A Few Definitions

**Resource**
- Generation Resource
- Load Resource
- Energy Storage Resource
Energy Storage Resource (ESR)

- Energy Storage System
- Capable of providing Energy
- Capable of providing Ancillary Service

Keep track of developments at http://www.ercot.com/committee/bestf
A Few Definitions

Other Facilities

- Wholesale Storage Load
- Settlement Only Generator
- Private Use Network
The Big Picture

Wholesale Storage Load must be metered separately from all other facilities.

Wholesale Storage Load is the energy used for charging the Energy Storage Resource.

Other Load

Energy Storage Resource

CLR

Other Generation

ERCOT-Pollled Settlement (EPS) Meter
Wholesale Storage Load

- Settled at Resource Node
- Settled separately from other generation and load
- Exempt from Load Ratio Share charges and payments

Storage output

- Treated as wholesale energy sale
- Settled like any other generation
- May be netted with other load
Limited to the following technologies

- Batteries
- Flywheels
- Compressed air energy storage (CAES)
- Pumped hydro-electric power
- Electro chemical capacitors
- Thermal energy storage from turbine inlet chilling
A Few Definitions

Other Facilities

- Wholesale Storage Load
- Settlement Only Generator
- Private Use Network
Settlement Only Generator (SOG)

- Settled for energy provided
- Cannot provide Ancillary Services
- Not dispatched by ERCOT

Three Types:
- Settlement Only Distribution Generator
- Settlement Only Transmission Generator
- Settlement Only Transmission Self-Generator
A Few Definitions

Other Facilities

- Wholesale Storage Load
- Settlement Only Generator
- Private Use Network
**Private Use Network (PUN)**

**Private Use Network** - An electric network connected to the ERCOT Transmission Grid that contains Load that is not directly metered by ERCOT.
A Private Use Network may contain any of the following:

- Generation Resource
- Load Resource
- Settlement Only Generator
- Wholesale Storage Load
What’s wrong with this statement?

Class Exercise

Generators connected at a distribution voltage may only register as a Settlement Only Generator.


All Resources may qualify to provide Ancillary Services Absolutely nothing is wrong!

A Settlement Only Generator (SOG) is not dispatched by ERCOT and is only allowed to be connected at a distribution voltage.

A Generator in a Private Use Network (PUN) is automatically a Settlement Only Generator.

To receive Wholesale Storage Load treatment, an Energy Storage Resource must be metered separately from all other Resources at a site.

Facilities
You’ve learned about ...

- The Market Role in Reliability Operations
- ERCOT Market Pricing
- Resource Types in the ERCOT Market
Module Conclusion