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BROWNSVILLE
PUBLIC UTILITIES BOARD

Power Supply Strategy Workshop

August 3rd, 2023

Open Session

Agenda

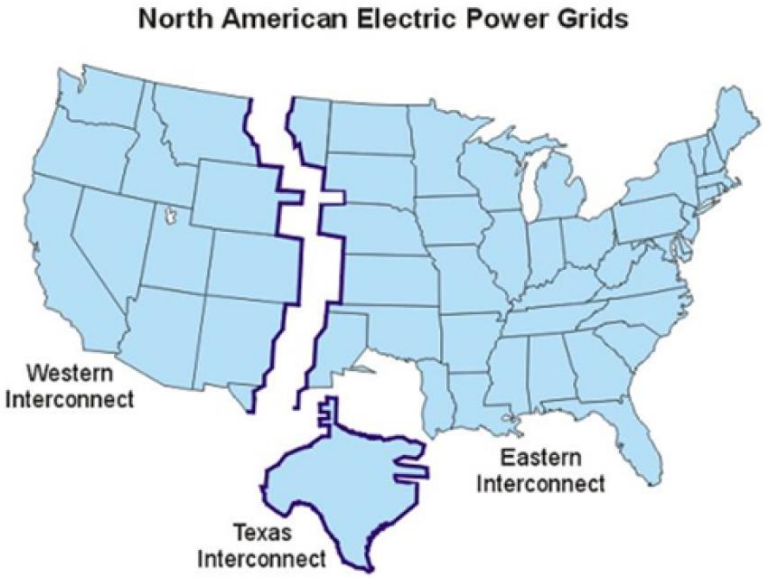
Power Supply Strategy Workshop
Open Session ▪ Introduction ▪ ERCOT Overview ▪ Reliability vs. Economics ▪ Behavior of Market Prices ▪ BPUB Power Supply Strategy
Closed Session ▪ BPUB Peak Load Forecast ▪ Existing Capacity Position and Resource Mix ▪ Resource Options Considered / Analysis Results ▪ Resource Preferences and Plan Refinements ▪ Suggested Next Steps

Introduction

- Consistent with prudent utility practices, BPUB must plan for future power supply resources.
- The purpose of this workshop is to lay the groundwork for future power supply decisions.
- The workshop is informational only. **No Board decisions are requested at this time.**
- Competitively-sensitive portions of the workshop will be held in Closed Session.

ERCOT Overview

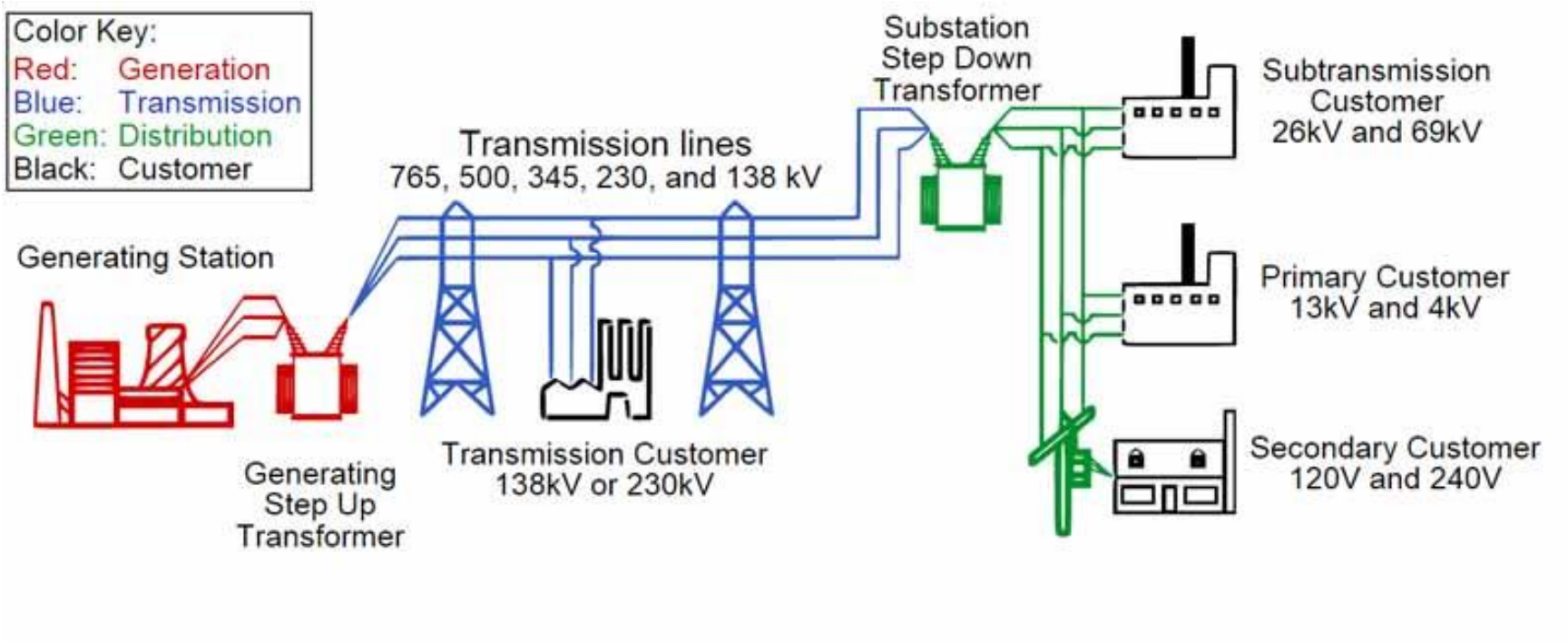
- The U.S. is served by three separately-operated electrical grids.
  - Eastern Interconnection (Plains and East)
  - Western Interconnection (Rocky Mountains and West)
  - ERCOT (Most of Texas)



- ERCOT
  - Responsible for power supply adequacy.
  - Coordinates the dispatch of power plants across the grid.
  - Manages the market for buying and selling power at wholesale.
  - Is responsible for ensuring generation resources are sufficient to support load on a minute-by-minute basis.
  - Determines load shed orders to protect the overall system if resources are temporarily insufficient to serve load.

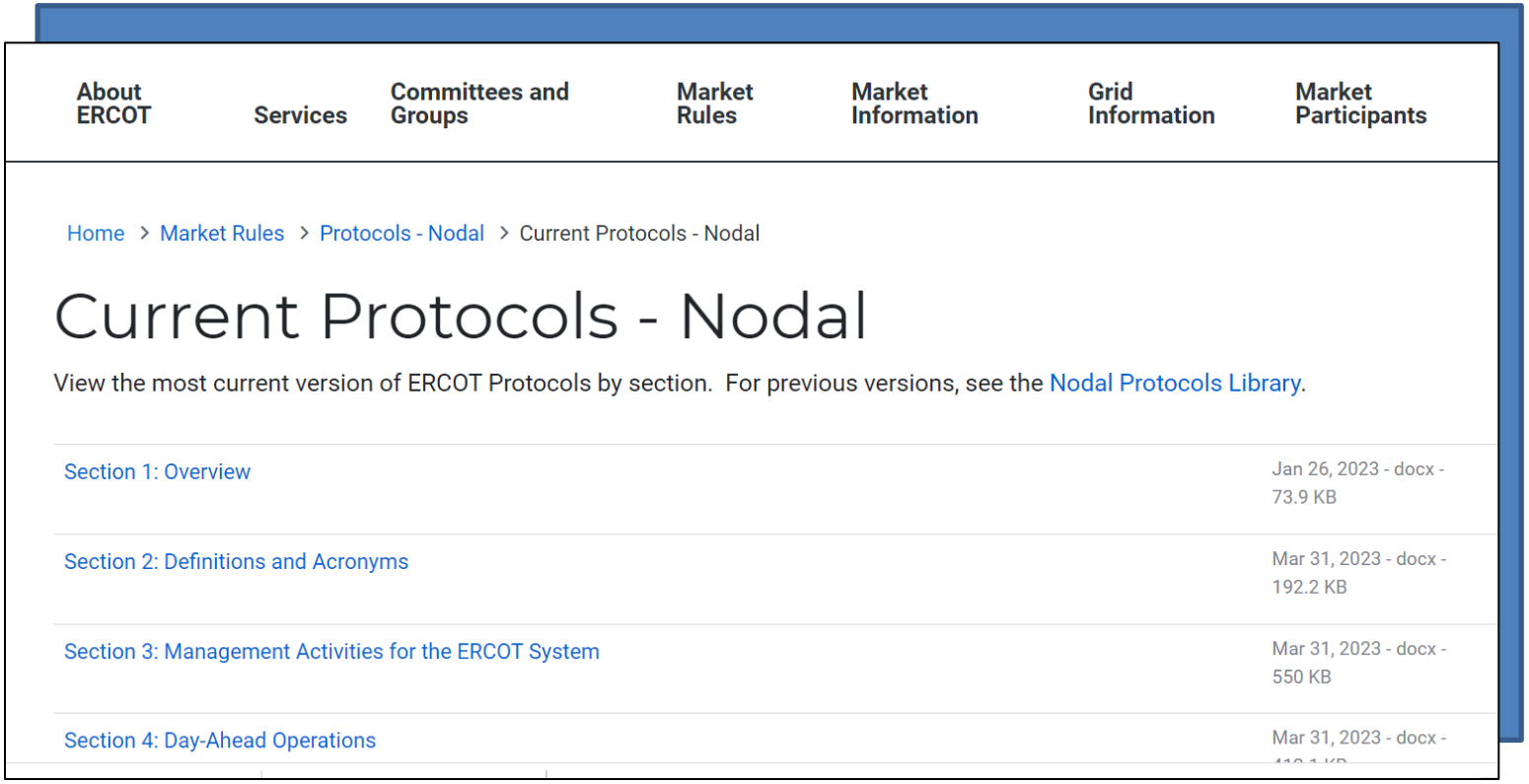
ERCOT Overview

How does the grid work?



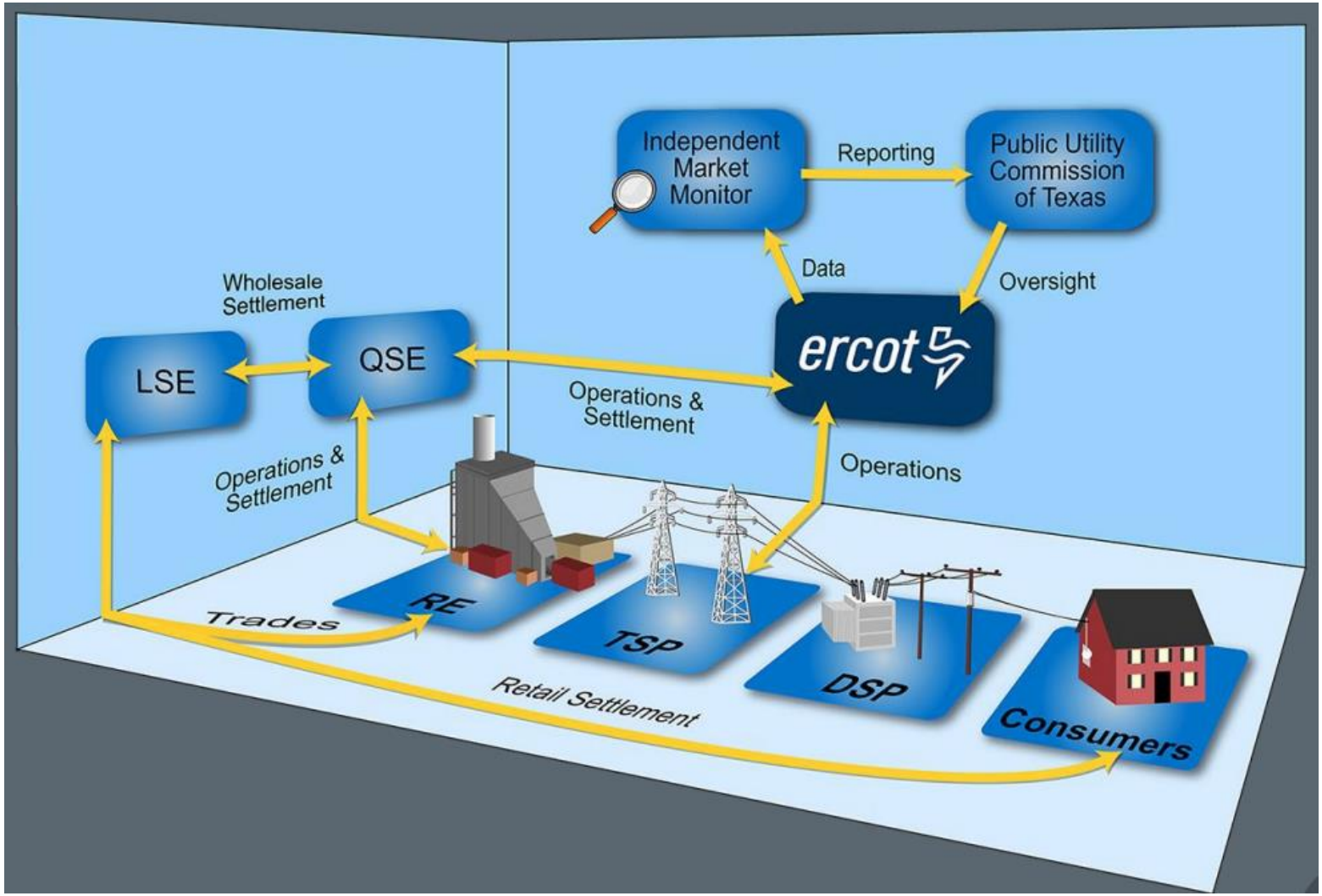
ERCOT Overview

- ERCOT physical operations, market operations, and cost allocations are governed by extensive ***protocols***.



ERCOT Overview

ERCOT is complex and involves multiple layers of entities.

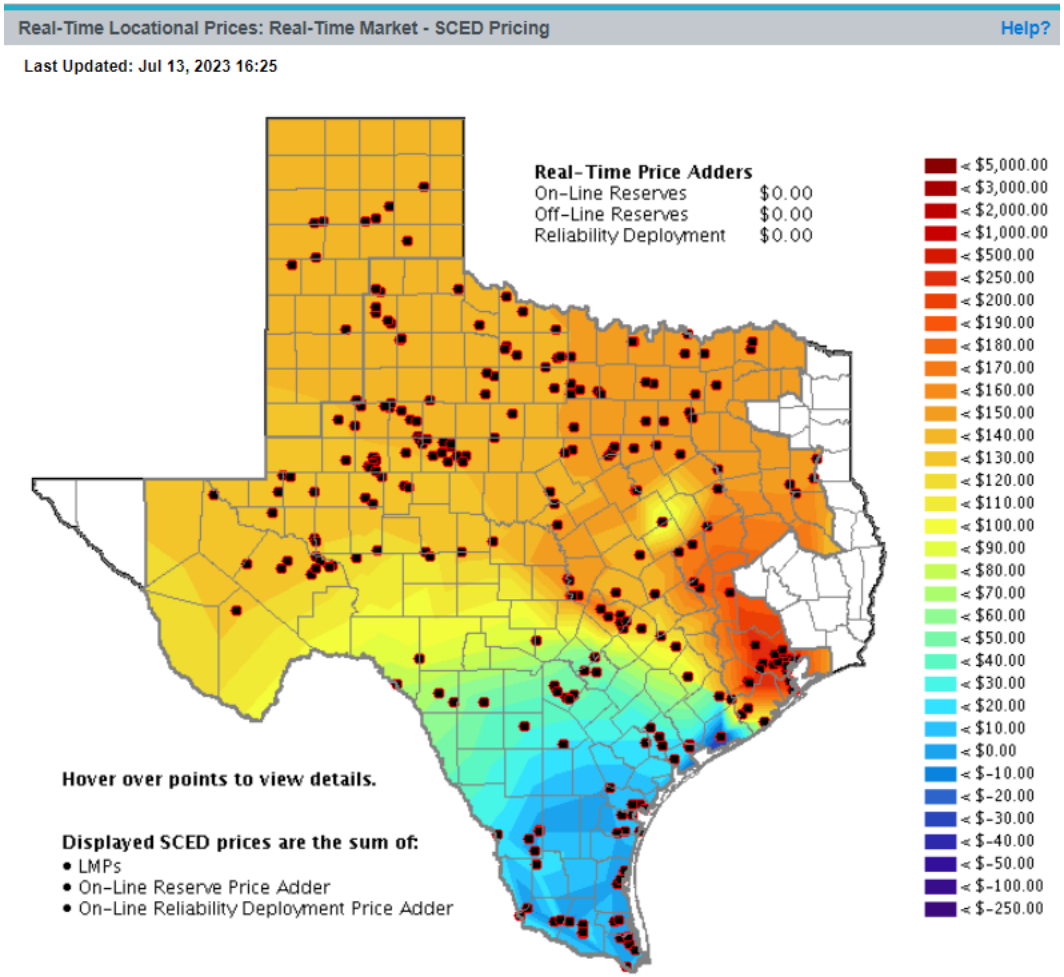


Reliability vs. Economics

- While reliability benefits can occur in limited circumstances (e.g., in transmission-constrained locations and relating to distribution system limits, the choice of having physical local resources is primarily an ***economic*** choice.
  - Hedge against power price risk
  - Hedge against ancillary service cost risk
- <u>However, this may not always be the case</u>. ERCOT could change its operating protocols.
- It is prudent to maintain some level of local generation.

Market Prices

- ERCOT prices are defined by nodes and zones.

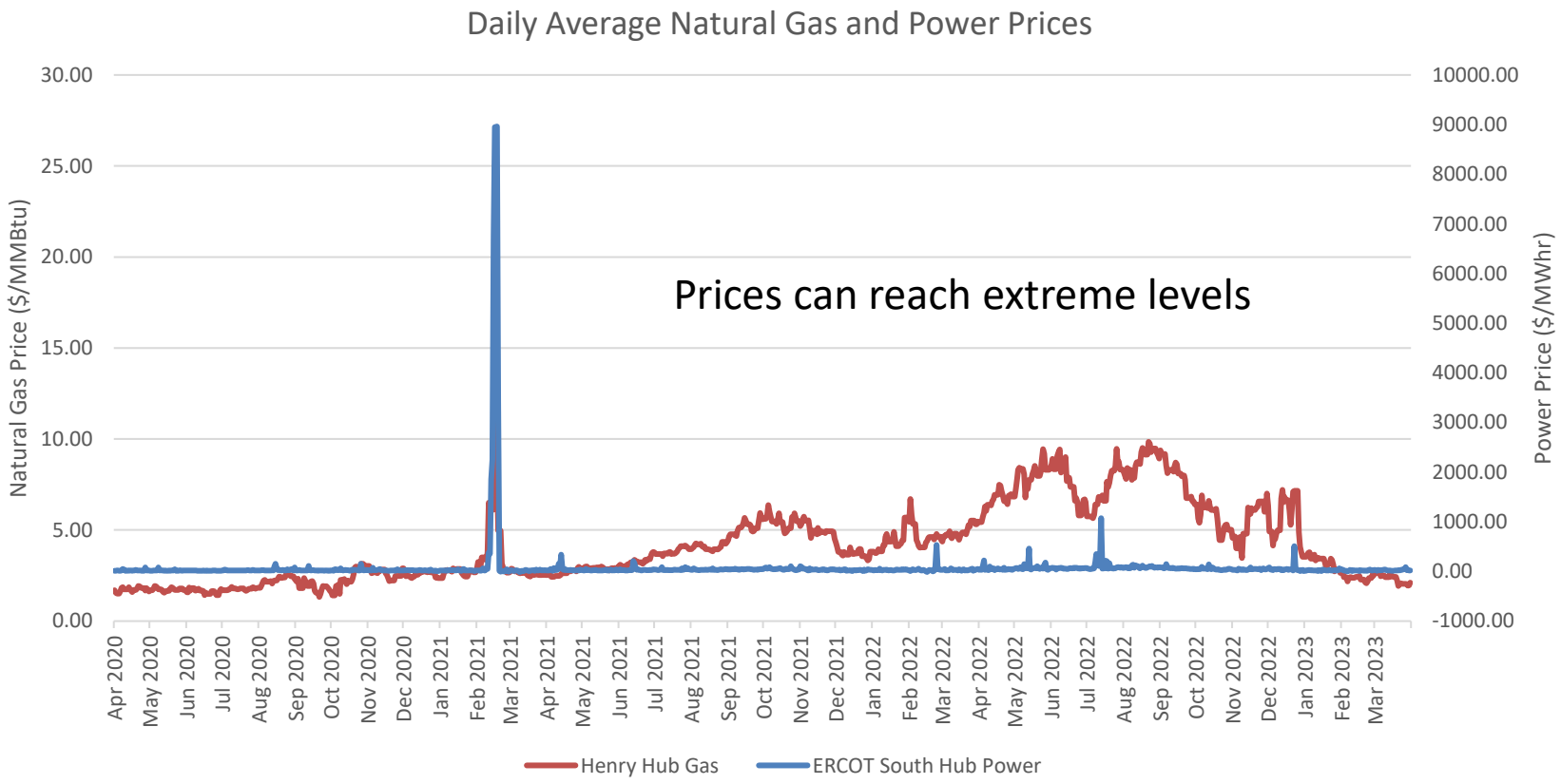


A separate price exists at each generator **node** (represented by dots on map).

Transmission limits cause prices to differ across ERCOT depending on conditions.

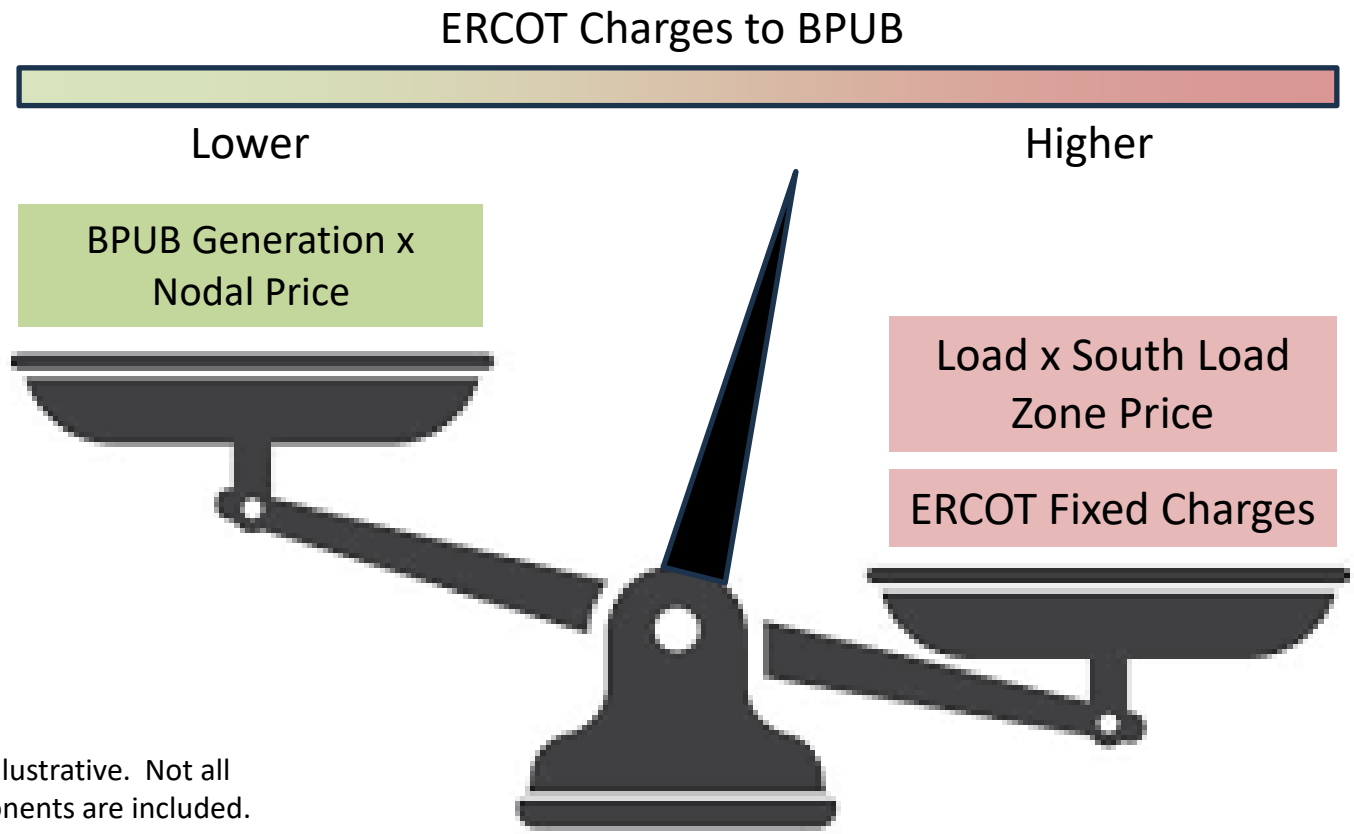
Market Prices

- Daily Average Natural Gas and Power Prices



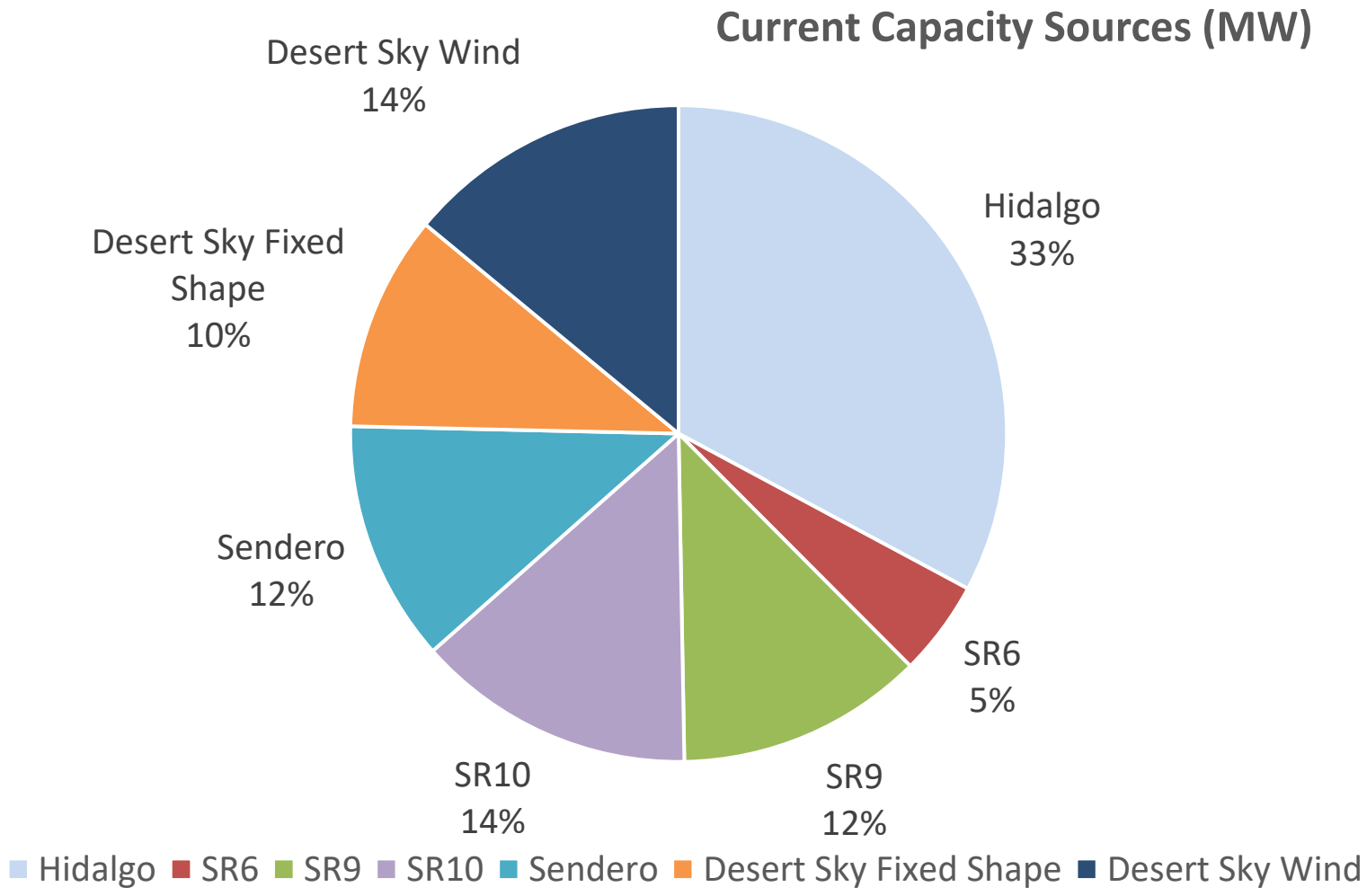
Market Prices

- How do prices impact BPUB?



Graphic is illustrative. Not all cost components are included.

BPUB Power Supply Strategy



BPUB Power Supply Strategy

- Management workshops conducted in Q4 2022 led to the following resource strategy priorities:
  1. Avoid risky investments (e.g. “right-size” resources).
  2. Give preference to resources having costs that can be effectively hedged.
  3. Reduce exposure to potential natural gas supply disruptions.
  4. Give preference to resources that help shield BPUB from potentially increasing ancillary service costs and anticipated new ERCOT protocols and charges.
  5. Allow time for new technology costs to fall in accordance with prevailing expectations and possibly pursue multi-utility project.

Questions & Answers

- Discussion