



# **■ Presentation for DOE Quadrennial Energy Review**

## **Bulk Power Generation and Transmission**

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## Dow in Texas

Employees: +7,000

Payroll: +\$850MM

Years in Operation: 75

Facilities: Freeport (Texas Ops), Houston, Bayport, Deer Park, La Porte, Lone Star, Seadrift, Texas City, and 3<sup>rd</sup> Party plants

Texas Operations in Freeport is Dow's largest integrated manufacturing site, and the largest single company chemical complex in the world.

The site has more than 65 production plants that manufacture over **40 percent** of Dow products sold in the U.S. and **20 percent** sold globally.

# Dow's Texas Power Pool

Demand :~ 1300 Mws

additional 500 Mws by 2017

Supply: ~1000 Mws generated

Purchase 200 to 400 Mws

Generating/consuming locations:

- Freeport, Seadrift, Texas City
- 13 - Consuming locations

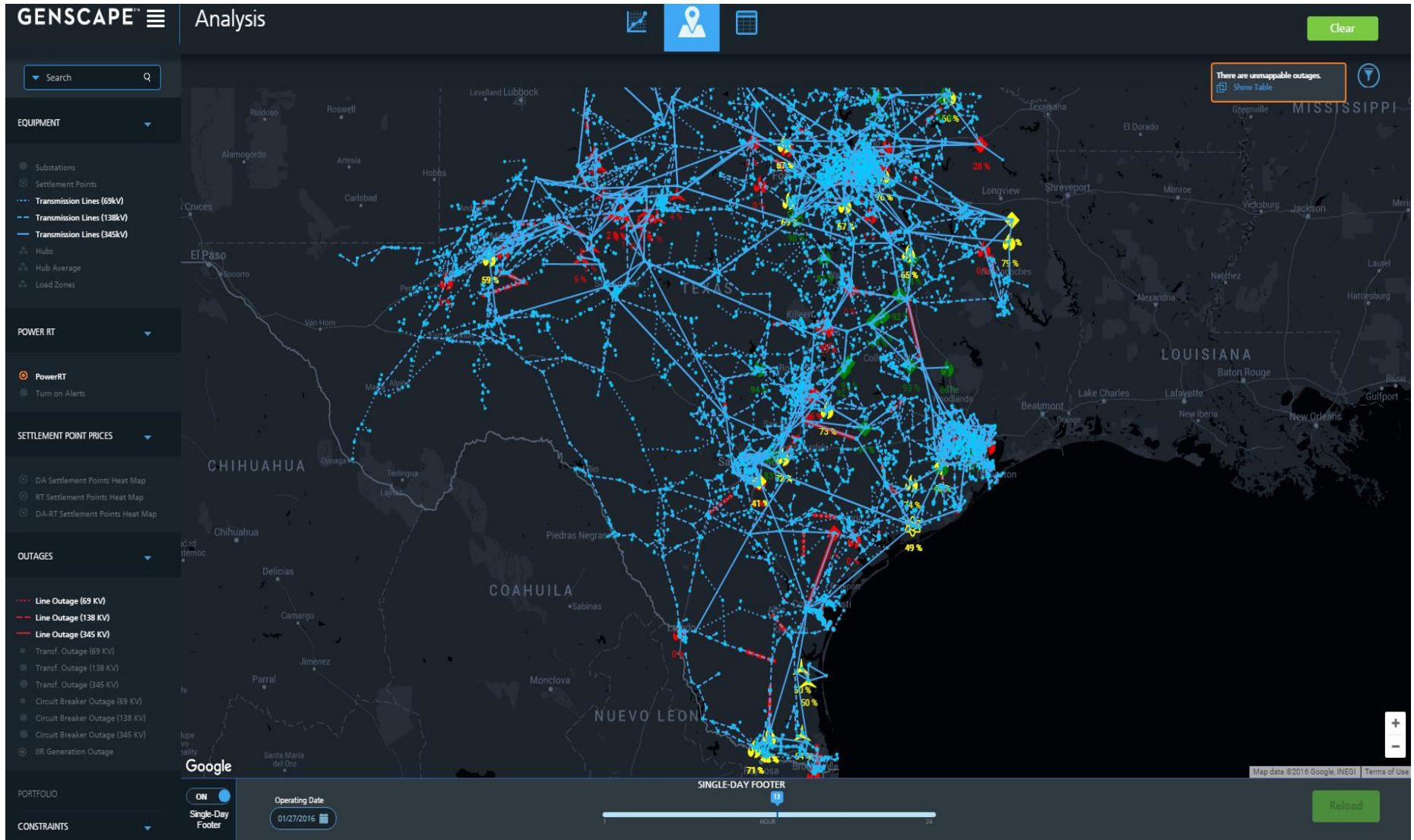


Innovative Opportunities

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# Slide provided by Genscape – Nodal Market Insight platform



Blue lines: Transmission Grid

Red lines: Lines that are congested or at outages – in RealTime

Yellow and Red icons/dots: Power plant RealTime production output from Genscape proprietary monitors



# Transmission

- **Transmission Impacts:**
  - Industrial's need dependable, clean power
  - Changes in generation mix is resulting in noise in the system
  - Grid failures impact industrial users different than residential
- **Transmission Planning:**
  - Need a replacement for the “consumer impact test” in Texas
  - Beneficiaries pays
  - Transmission rates are approaching the wholesale cost of power
  - Need to have a robust rate review process

# Generation

- **Behind the Fence Generation**
- **Changes in regulations and markets are increasing barriers to new generation**
  - Public Utility Regulatory Policies Act and the Energy Policy Act of 2005 (“PURPA”) are under attack by utilities and legislators
  - Most wholesale markets require behind the fence generators to follow dispatch, we are steam first power second
  - NERC and Regional Transmission Organizations / Independent System Operators (“RTO/ISO”) protocols do not account for how we have to operate generation
- **Generation Planning**
  - Provide regulatory and market stability
  - How do we integrate variable generation into the mix

## DOE Ask

- **Behind the Fence Generation:**
  - Be engaged in defending PURPA
  - Support exemption process to Utility standards (NERC) that are not always workable when applied to industrial generation
  - Improve coordination and planning between Regional Transmission Operators, Transmission Distribution Service Providers and behind the fence generation
- **System Generation:**
  - Be engage in legislative and regulatory items that significantly impact generation mix in an area
  - Research solutions to maintain quality of grid power with changes in generation mix
- **Transmission:**
  - Improve Transmission planning process by looking at impact on consumers
  - Improve quality of power delivered
- **CIP and Reporting:**
  - Consolidate (DOE, DHS, EIA, FERC, NERC, BLS, TRE, SERC, TWIC etc.)