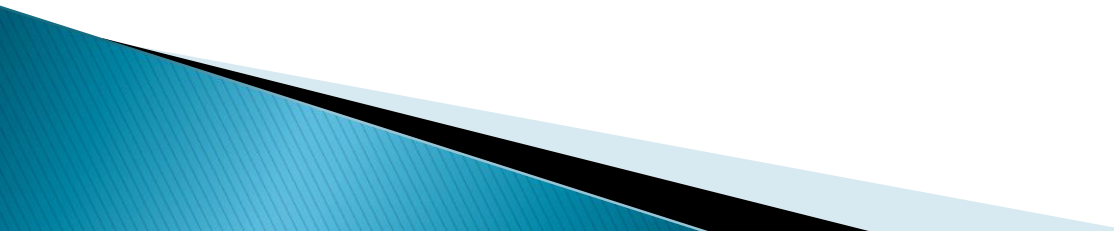


# Subzonal Dispatch: A Transmission Support Service

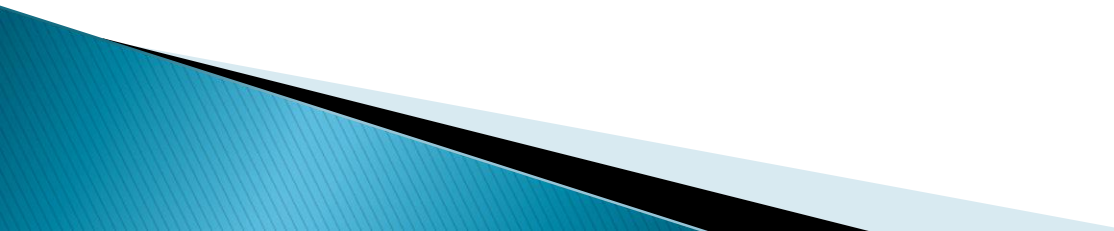
PJM DRS

August 30, 2011

# Issue

- ▶ From a Demand Response participant's perspective, Emergency dispatch of DR in regions more granular than an LDA places the participant at a competitive disadvantage relative to other loads and DR participants.
  - ▶ Subzonal Dispatch treatment of Demand Response that does not recognize the incentives for DR participation can discourage DR registration in affected regions.
- 

# Overview

- ▶ DR and Generation Incentives differ
  - ▶ DR and Generation are impacted differently by constraints
  - ▶ Sub-Zonal emergency dispatch of DR provides uncompensated Transmission Support from DR
  - ▶ What are the options?
- 

# Incentives Differ

- ▶ DR generally will not curtail for high prices
  - \$1000/MWh offer cap is less than incremental cost
  - Industry studies indicated incremental costs upwards to \$20k/MWh
- ▶ Participation based on cost offsets
- ▶ Penalty avoidance is primary performance driver
- ▶ Generation sees high prices as an opportunity
- ▶ Participation is primary business
- ▶ LMP Clearing price revenue is primary performance driver

Demand Response

Generation

# Constraints (Subzones) impact DR and Generation differently

- ▶ A performing DR resources loses money with each event
  - Exception – customers with Incremental costs less than \$1000/MWh
  - Caution – A single customer's incremental costs can vary significantly from day to day.
- ▶ A performing generator enhances profits with each Emergency event.

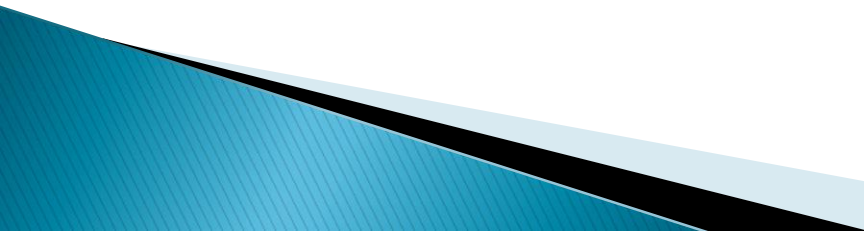
Demand Response

Generation

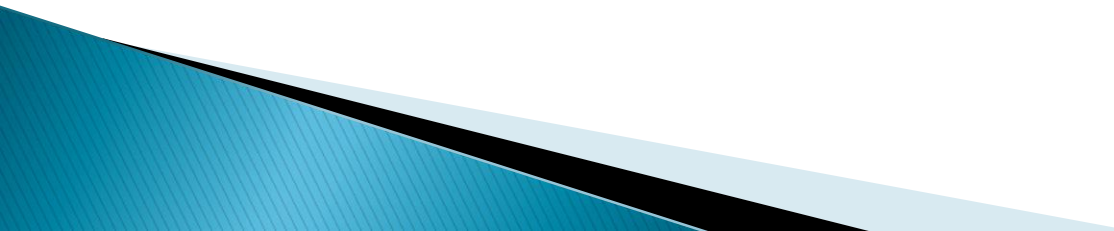
# Subzonal Dispatch Impacts on DR

- ▶ DR participants within subzone experience lower quality service than DR participants outside the Subzone.
  - All DR providers receive the same LDA standby price, BUT
  - Only DR participants within Subzone experience the losses created by emergency dispatch.

# Subzonal dispatch is Transmission Support

- ▶ Standby compensation for DR is modeled as if all generation within an LDA is deliverable within the LDA
  - ▶ Therefore, Subzonal Dispatch occurs when transmission is not as robust as transmission planning processes anticipated.
  - ▶ DR participants offer DR within an LDA but is dispatched within a more valuable Subzone. (Bait and switch?)
  - ▶ Subzonal Dispatch of DR can be characterized as supporting Transmission.
- 

# Comparability with other Loads

- ▶ DR, unlike generation, pays for transmission service.
  - ▶ DR that is subject to Subzonal Dispatch in effect experiences reduced transmission service compared to non dispatched loads
  - ▶ DR that is dispatched by Subzones provides a Transmission Support Service that is uncompensated.
- 



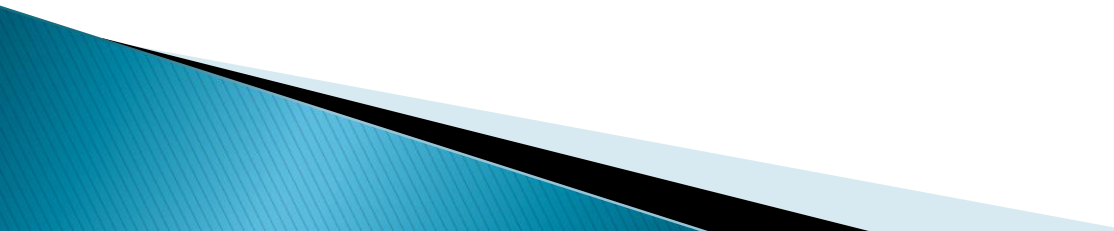
# What about Generation Comparability?

- ▶ Potential DR losses when dispatched are limited by event limits.
- ▶ DR pays for transmission service
- ▶ DR is harmed by Subzone dispatch
- ▶ Generation Losses do not occur because incremental costs are exceeded by market prices.
- ▶ Generation does not pay for transmission
- ▶ Generation benefits from Subzone dispatch

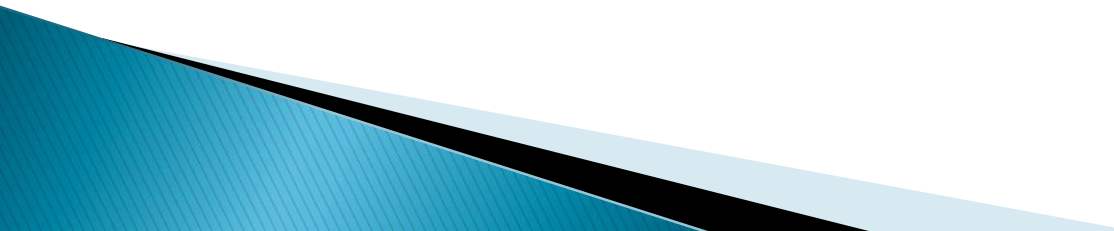
Demand Response

Generation

# Options

- ▶ Incentive compensation for response to sub zone events
  - ▶ Voluntary Response
  - ▶ Other
- 

# Supporters

- ▶ ClearChoice
  - ▶ EnergyConnect
  - ▶ EnerNOC
  - ▶ Viridity
- 

# Questions?

