



## **SPP-ERCOT Coordinated Lubbock Integration Study Scope**

**Based On July 19, 2016 PUCT Request  
(Docket No. 45633)**

November 15, 2016

# Studies Requested – Included in Coordinated Scope

- ✓ **Reliability & Economic impact on ERCOT and SPP**
- ✓ **Analysis of avoided and new projects**
- ✓ **Cost and reliability impact on System Operations**
  - ✓ SPP & ERCOT Committing to Qualitative assessment
- ✓ **Impact on Ancillary Services**
  - ✓ SPP & ERCOT Committing to Qualitative assessment
- ✓ **Impact on Congestion Revenue Rights**
  - ✓ SPP & ERCOT Committing to Qualitative assessment
- ✓ **Sub synchronous resonance impact and associated costs**
- ✓ **Evaluation of LP&L generation as synchronous condensers**

# PUCT Study Requests – Excluded from Coordinated Scope

## Impact on Customer Classes

- ERCOT to provide average LMP impact for all substations

## Ensure comingling will not occur

- LP&L to provide independent engineering certification

# Assumptions and Methodology

- ❑ **To accomplish the PUCT request, SPP and ERCOT will perform separate, but coordinated studies**
- ❑ **The assumptions and methodologies used by SPP and ERCOT will be as consistent as reasonably possible**
  - it is understood that market and regulatory differences may prevent absolute consistency

# Reliability & Analysis of Avoided/New Projects

## Assumptions

### SPP will use 2021 Summer Peak

- From 2017 Integrated Transmission Planning Near-Term (ITPN)
- Generator assumptions per ITP Manual Section 3.3.1.2

### ERCOT will use 2021 Summer Peak

- From 2016 RTP West-Far-West case with North loads adjusted to include in study region
- Generator assumptions per Planning Guide Section 6.9

# Reliability & Analysis Avoided/New Projects

## Assumptions (Cont.)

- Identical LP&L Transmission, Generation and Load models**
- Consistent LP&L Low-Load Assumptions for:**
  - SPP 2021 Light Load From 2017 Integrated Transmission Planning Near-Term (ITPN)
  - ERCOT 2019 High Wind Light Load from previous Lubbock Integration Study
- Consistent North and East DC tie Import/Export**

# Economic impact on ERCOT and SPP

## Assumptions

### ❑ SPP will use 2020 and 2025 Production Cost models

- From 2017 Integrated Transmission Planning (ITP10) 10 Year
- Generator assumptions per ITP Manual Section 3.3.1.2

### ❑ ERCOT will use 2020 and 2025 Production Cost models

- From 2016 RTP & LTSA
- Generator assumptions per Planning Guide Section 6.9

# Economic impact on ERCOT and SPP

## Assumptions (Cont.)

Both ERCOT and SPP will use the following assumptions:

- Load profiles based on LP&L Business as Usual Load forecast
- Wind and Solar profiles based on 2006 weather
- Wind and Solar set \$0 marginal Cost
- Golden Spread Electric Cooperative Antelope/Elk switchable unit status will be consistent
- Same natural gas price forecast
- Consistent North and East DC flows



# Sub-Synchronous Resonance Impact & Costs

Using the 2021 Summer Peak Reliability Case, ERCOT will evaluate the following:

- Topology check
- Based on results of (1) Frequency Scan
- Based on results of (2) detailed SSR
- Cost impact based on results of all of the above

# LP&L Generators as Synchronous Condensers

**ERCOT will perform the following analysis:**

- System Strength analysis – Weighted Short Circuit Ratio,**
  - impact to the Panhandle export limit of converting some or all of LP&L's retiring generators to synchronous condensers.
  
- Production Cost Impact**

# Timeline

- ❑ **SPP and ERCOT to file a joint report to PUCT by 2<sup>nd</sup> Quarter 2017**
- ❑ **The detailed SPP-ERCOT Coordinated Lubbock Integration Study Scope is available on the following RPG meeting link - Nov. 15**
- ❑ <http://www.ercot.com/calendar/2016/11/15/77749-RPG>

