



**AEPSC - Corpus North Shore Project –  
ERCOT Independent Review Scope**

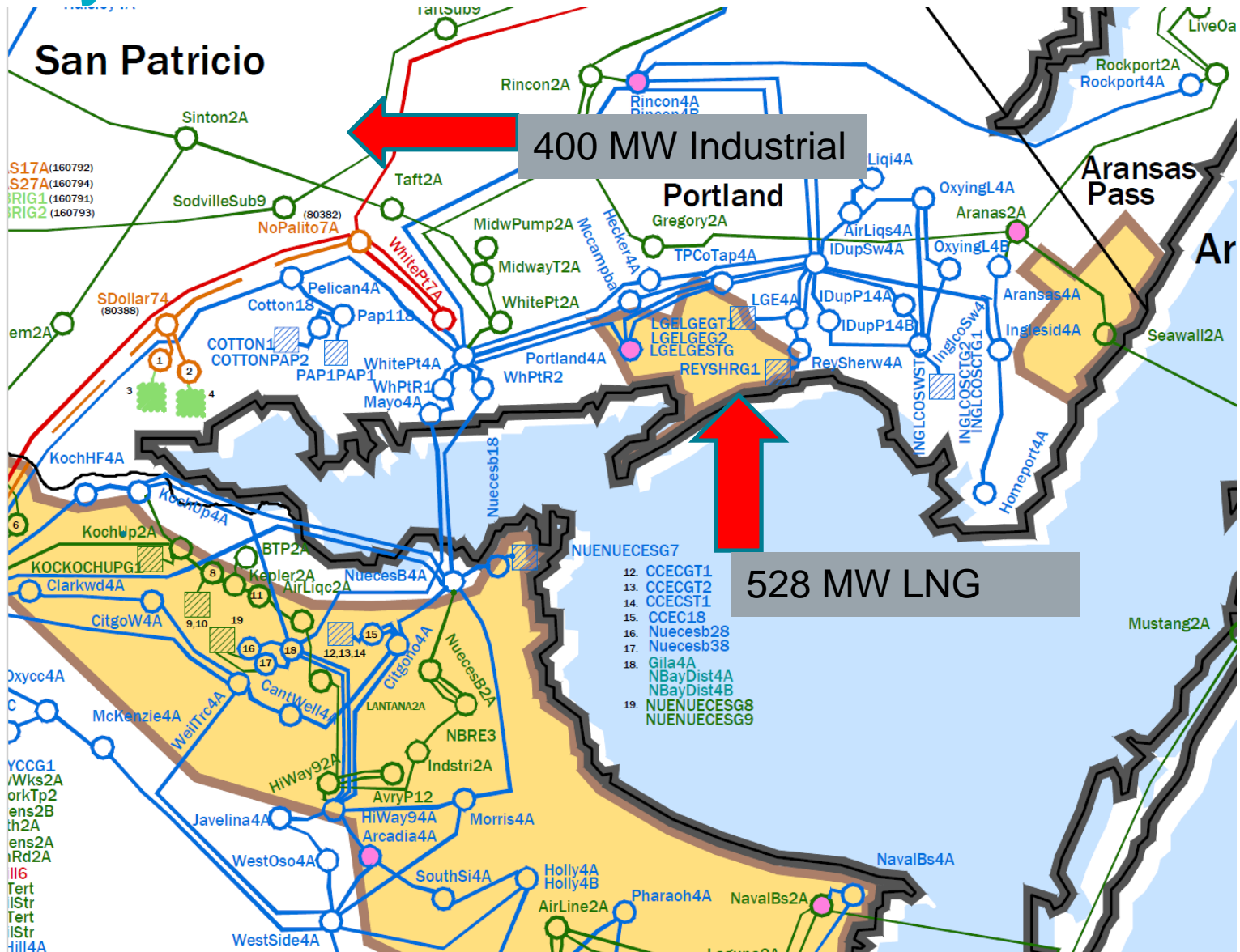
**Regional Planning Group**  
November 12, 2019

# Introduction

**American Electric Power Service Corporation (AEPSC) submitted the Corpus North Shore Transmission Improvement Project for Regional Planning Group review in September 2019. This is a Tier 1 project that is estimated to cost \$260 million.**

- Proposed for 1<sup>st</sup> Quarter of 2024. AEPSC has expressed a need for “critical status designation”
- Addresses industrial (400 MW) and LNG (528MW ) related load forecasts
- Reliability Issues: 14 to 22 transmission line overloads encompassing 96 to 137 circuit miles
- Provide thermal capacity and operational flexibility by
  - Adding 345 kV bus work and two 345/138 kV transformers to Resnick substation
  - Adding 44 miles of double-circuit 345 kV transmission lines
  - Reconductor approximately 1.5 miles 138 kV transmission lines
- This project is currently under ERCOT independent review

# Study Area



- 12. CCECGT1
- 13. CCECGT2
- 14. CCECT1
- 15. CCEC18
- 16. Nuecesb28
- 17. Nuecesb38
- 18. Gila4A
- 19. NBayDist4A
- 20. NBayDist4B
- 21. NUENUECESG8
- 22. NUENUECESG9



# Study Assumptions

- **Study Base Cases**

- Steady-state cases will be constructed from the following preliminary final 2019 Regional Transmission Plan case posted on the MIS on October 2, 2019:
  - 2019RTP\_2024\_SUM\_SSC\_10012019
- Study Region: ERCOT South Weather Zone

# Study Assumptions

- **Transmission Updates**

- Transmission Projects expected to be in-service within the study area by 2024 were added to the base case. The following Tier 4 projects were added:
  - Whitepoint Area Improvements (TPIT 50950): Whitepoint to Rincon reconductor 1026 ACCC
  - Whitepoint: Add Series Reactors (TPIT 50952)
  - Gibbs substation (TPIT 48750)
- Transmission Projects that served as placeholders to AEPSC Corpus North Shore Project were removed:
  - Resnik 345 kV
  - Two 345 kV lines from Grissom to Angstrom
  - 345 kV line from Angstrom to Resnik
  - 345 kV line from Resnik to Whitepoint
  - 345 kV line from Angstrom to Whitepoint
  - Two 345/138 kV autos at Resnik

# Study Assumptions

- **Loads**

- Loads in the study area with signed contracts will be modeled in the study case
- Loads outside of South, South Central and Coast weather zones will be adjusted as necessary for power balance

# Study Assumptions

- **Generation Updates**

- **New Generation Addition**

- Generator additions that meet Planning Guide Section 6.9(1) requirements with COD before the study year in the South weather zone at the time of study (September 2019 GIS report posted on October 1) were added to the study case

INR	Project Name	Capacity (MW)	Projected COD
17INR0025	Reloj Del Sol Wind	202	10/31/2020
17INR0035	Las Majadas Wind	272.8	10/01/2020
19INR0073	Shakes Solar	206	06/24/2020
20INR0088	West Raymond (El Trueno) Wind	239.8	12/15/2020
20INR0272	RIO NOGALES AGP UPGRADE CT3	19	04/20/2020
21INR0261	Horizon Solar	204.09	12/31/2021
21INR0276	Elara Solar	178	04/01/2021

- **Generation Retirement**

- Retired/mothballed coal and natural gas units in or near the study region that were not reflected in the 2019 RTP cases were removed from the study case
      - AMOCOOIL\_AMOCO\_5
      - Gibbons Creek G1

# Study Assumptions - Miscellaneous

- **Renewables**

- South weather zone wind and solar will be dispatched consistent with 2019 RTP
- The wind and solar dispatch level in other weather zones will remain the same as the 2019 RTP assumptions

- **Reserves**

- Load outside of South, South Central and Coast weather zones will be adjusted to make up for the 2800 MW reserve



# Contingencies and Criteria

- **Contingencies for Study Region**

- NERC TPL-001-4 and ERCOT Planning Criteria ([http://www.ercot.com/content/wcm/current\\_guides/53526/04\\_050115.doc](http://www.ercot.com/content/wcm/current_guides/53526/04_050115.doc)):

- Normal system condition (P0)
- N-1 conditions (P1, P2-1, P7)
- P2, P4, and P5 (EHV only)
- X-1 + N-1 (X-1 represents 345/138 kV transformer outage)
- G-1 + N-1 (G-1 represents generator outage)

- **Criteria**

- Thermal

- Monitor all transmission lines and transformers in study region
- Use Rate A for pre-contingency conditions
- Use Rate B for post-contingency conditions

- Voltages

- Monitor all busses 60 kV and above in the study region
- Voltages exceeding their pre-contingency and post-contingency limits
- Voltage deviations exceeding 8% on non-radial load busses

# Study Procedure

- **Need Analysis**
  - The reliability analysis will be performed to identify the need to serve the projected Corpus North Shore load using the study base case
- **Project Evaluation**
  - Project alternatives will be tested to satisfy the NERC and ERCOT reliability requirements
  - ERCOT may also perform the following studies
    - Corpus North Shore Import limits to account for “known prospective” (potential) load
    - Planned maintenance outage
    - Brownsville area LNG load impact
    - Dynamic stability impact
    - SSR vulnerability assessment
- **Congestion Analysis**
  - Congestion analysis will be performed to ensure that the identified transmission upgrades do not result in new congestion within the study area

# Deliverables

- **Tentative Timeline**

- Status updates

- December 2019

- January 2020

- February 2020

- Final recommendation – March 2020



Stakeholder Comments Also Welcomed to Sun Wook Kang:  
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