



AEPSC - Corpus North Shore Project – ERCOT Independent Review Status

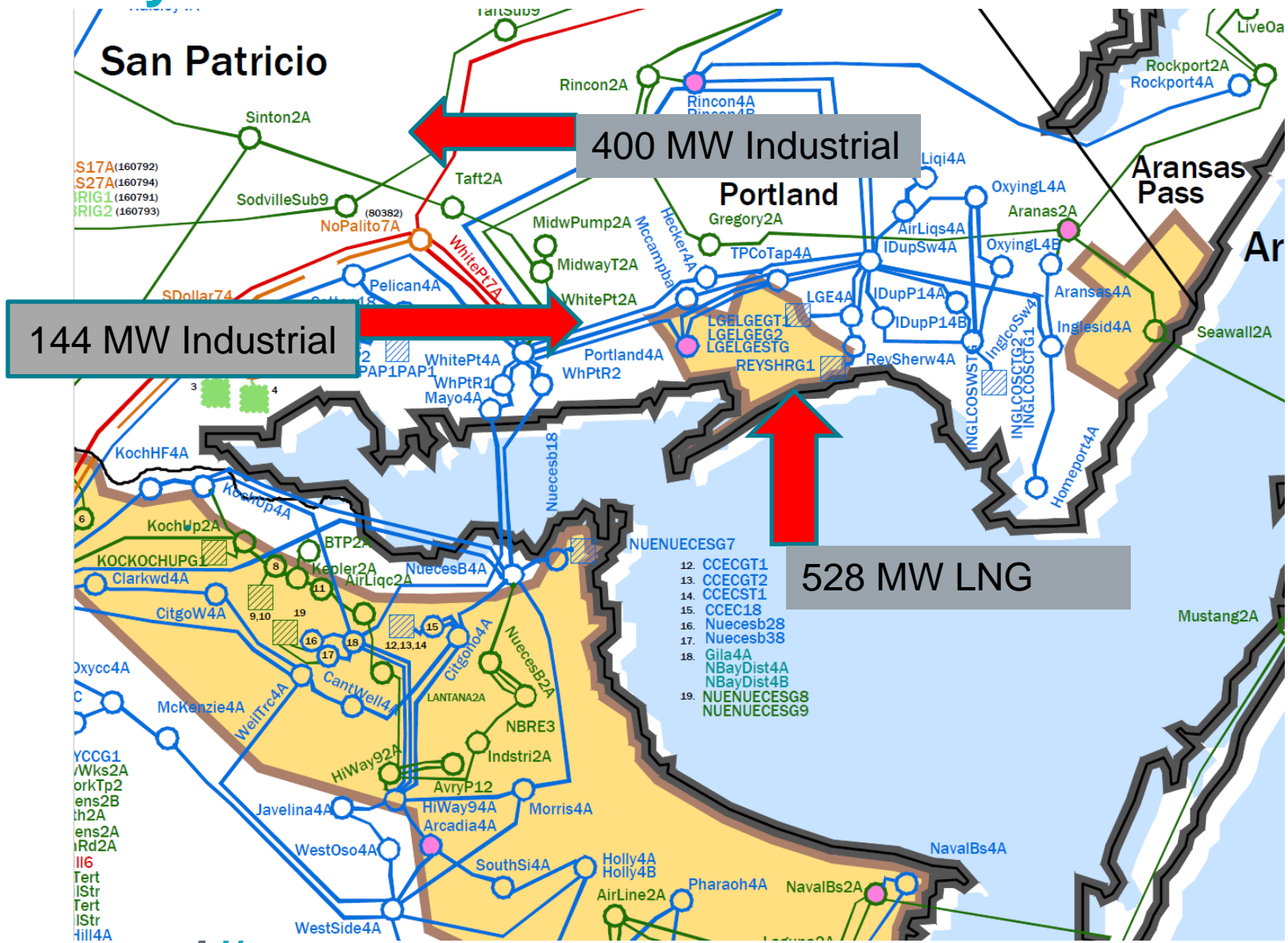
Regional Planning Group
December 17, 2019

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 at \$259.57 million.

- Provide sufficient transmission capacity and address the reliability needs by
 - Adding 345 kV bus work and two 345/138 kV transformers to Resnick substation
 - Adding approximately 44 miles of double-circuit 345 kV transmission lines
 - Reconductoring approximately 1.5 miles of 138 kV transmission lines
- Scope for ERCOT independent review November 2019 RPG:
<http://www.ercot.com/calendar/2019/11/12/165310-RPG>

Study Area



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):

- 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 the 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 Case Violations - Preliminary

	Unsolved Power Flow	Thermal Overloads	Bus Voltage Violation
N-1	0	10 miles 69 kV 32 miles 138 kV	0
(G-1)(N-1)	0	10 miles 69 kV 80 miles 138 kV	32 138 kV Buses
(X-1)(N-1)	0	10 miles 69 kV 34 miles 138 kV	0
Total	0	10 miles 69 kV 80 miles 138 kV	32 138 kV Buses

G-1 Tested: Gregory LGE CC; Nueces Bay CC; Ingleside CC

X-1 345/138 kV Tested: Whitepoint; Lon Hill

Next Steps

- **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 per Protocol Section 3.22.1.3(2)
- Generation sensitivity analysis per Planning Guide Section 3.1.3(4)(a)
- Load scaling sensitivity analysis per Planning Guide Section 3.1.3(4)(b)

- **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

- January 2020

- February 2020

- Complete the ERCOT Independent Review by Q1 2020



Stakeholder Comments Also Welcomed to Sun Wook Kang:
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