



**Lower Rio Grande Valley Transmission
Expansion Project -
ERCOT Independent Review**

July 16, 2019
RPG

Current Status

- ❑ STEC Lower Rio Grande Valley (LRGV) Transmission Expansion Project was submitted for RPG review to accommodate potential LNG load. This Tier 1 project (\$511.4 million) is currently under RPG study mode.
- ❑ An update of dynamic analysis for the AEPSC LRGV Import Transmission Project was presented to RPG on May 14, 2019.
http://www.ercot.com/content/wcm/key_documents_lists/165286/AEPCS_LRGV_Import_Update_May2019-RPG_Final.pdf
- ❑ As mentioned at the May 2019 RPG meeting, ERCOT will combine STEC's RPG project with AEPSC LRGV Import Transmission Project into one ERCOT Independent Review (EIR) for the Valley area.
- ❑ Further update from STEC indicated that 405 MW Annova LNG load has not met the need for the financial security of the necessary upgrades.

Study Assumptions (Steady-State)

❑ Steady Region

- South Weather zone in ERCOT system, focusing on the LRGV area

❑ Steady-State Base Case

- Final 2018 RTP 2024 South/South Central (SSC) summer peak case is updated to construct the study case.

<https://mis.ercot.com/misapp/GetReports.do?reportTypeId=15126>

Study Assumptions

□ Generation Update

- The following generators that met Planning Guide Section 6.9 for inclusion in the planning models at the time of the study are added to the case based on GIS published in May, 2019 as <http://mis.ercot.com/misapp/GetReports.do?reportTypeId=15933&reportTitle=GIS%20Report&showHTMLView=&mimicKey>

GINR	Project Name	Fuel	COD	MW Capacity
16INR0081	Mesteno Windpower	WIND	03/01/2020	201.6
17INR0037	Palmas Altas Wind	WIND	01/10/2020	144.9
18INR0014	Karankawa Wind	WIND	12/31/2019	206.64
18INR0035	CityVict	GAS	11/01/2019	100
19INR0045	Rayos Del Sol	SOLAR	12/31/2020	150
19INR0053	Hidalgo II Wind	WIND	11/15/2019	51
19INR0074	Karankawa 2 Wind	WIND	12/31/2019	101
19INR0112	Cranel Wind	WIND	12/31/2019	220
20INR0042	Chalupa Wind	WIND	12/21/2020	174

TOTAL = 1349.14 MW

- The new solar and wind generators in the table are dispatched consistent with the 2019 RTP methodology.

Study Assumptions

- The following units are turned off to be consistent with the 2019 RTP.

Name of Unit	MW Capacity
Gibbons Creek	470
Decker G1	315
Decker G2	420
Oklaunion	650

Load Update

- Load in the study weather zone is adjusted to be consistent with the 2019 RTP case “2019RTP_2024_SUM_SSC_03152019” posted on MIS.
 - Load in the Valley area is adjusted further to 3,005 MW (Year 2024) based on the area load forecasted for this EIR.
 - Then, 405 MW of Annova LNG is added for study.
- 2800 MW of reserve is maintained for the study case.

Study Assumptions

□ Transmission Update

- The following new transmission lines are added as placeholders to accommodate the Annova LNG load (405 MW) as part of the load interconnection.
 - A new Highway_511 - Annova 138 kV line (11 miles)
 - A new Annova - Waterport 138 kV line (12 miles)
 - A new Highway_511 - Waterport 138 kV line (1.52 miles)

□ DC Tie

- DC tie dispatches remained same as in the 2018 RTP case.
 - Railroad DC tie: 300 MW export
 - Laredo DC tie: 100 MW export
 - Eagle Pass DC tie: 33 MW export

Study Methodology

❑ Base Scenario

- Valley Load (3,005 MW) + LNG (405 MW)

❑ Sensitivity Scenarios

- Base scenario + 840 MW load (Valley)
- Base scenario + 840 MW load (Valley) + 900 MW (Corpus)

❑ Congestion Analysis

- Congestion analysis may be performed based on the potential transmission upgrades to ensure that the identified transmission upgrades do not result in new congestion within the study area.

Study Methodology

□ Contingencies

- NERC TPL-001-4 and ERCOT Planning Criteria (http://www.ercot.com/content/wcm/current_guides/53526/04-070118.doc):
 - Normal system condition (P0)
 - N-1 conditions (P1, P2-1, P7)
 - P2-2 to 2-4, 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 normal conditions
 - Use Rate B for emergency conditions
- Voltage: Monitor all buses 69 kV and above in the study region
 - Voltages exceeding their pre-contingency and post-contingency limits
 - Voltage deviations exceeding 8% on non-radial load buses

Preliminary Results of Steady-State Reliability Analysis

- ❑ Without LNG, found no reliability issues at the projected Y2024 Valley load
- ❑ Base scenario (3,005 MW Valley load + 405 MW LNG load):
 - total 103.24 miles of 138 kV lines are overloaded
 - total 4 transformers are overloaded

Contingency	Thermal Overload (Line)	Thermal Overload (Transformer)	Voltage Violation
P0	No	No	No
N-1 (P1, P2-1, P7)	Yes	Yes	No
X-1 (La Palma, Palmito, Rio Hondo, & Stewart) + N-1	Yes	Yes	No
G-1 (North Edinburg, Duke & Silas Ray) + N-1	Yes	Yes	No
P2-2 to P2-4, P4, P5	Yes	Yes	No

Findings and Preliminary Observations

- ❑ Without LNG, found no reliability concerns (steady state and dynamic stability) at the projected Valley load in 2024.
- ❑ With 405 MW LNG load be included in the Valley in 2024, reliability issues, both steady state and dynamic stability, are identified.
- ❑ Currently, there is no confirmed LNG load in the Valley area. In accordance with Protocol Section 3.11.4.9(3), ERCOT will not issue the independent review recommending a project to meet needs identified for the LNG load until a customer meets the agreement, notice to proceed and financial security requirements.
- ❑ ERCOT will continue analysis to identify the system needs in the LRGV area with respect to the potential LNG load and provide an update to RPG in the future.



Stakeholder Comments Also Welcomed Through:

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