



**ONCOR Nacogdoches Southeast Switch –  
Redland Switch-Lufkin Switch 345-kV Loop  
Project – ERCOT Independent Review  
Scope**

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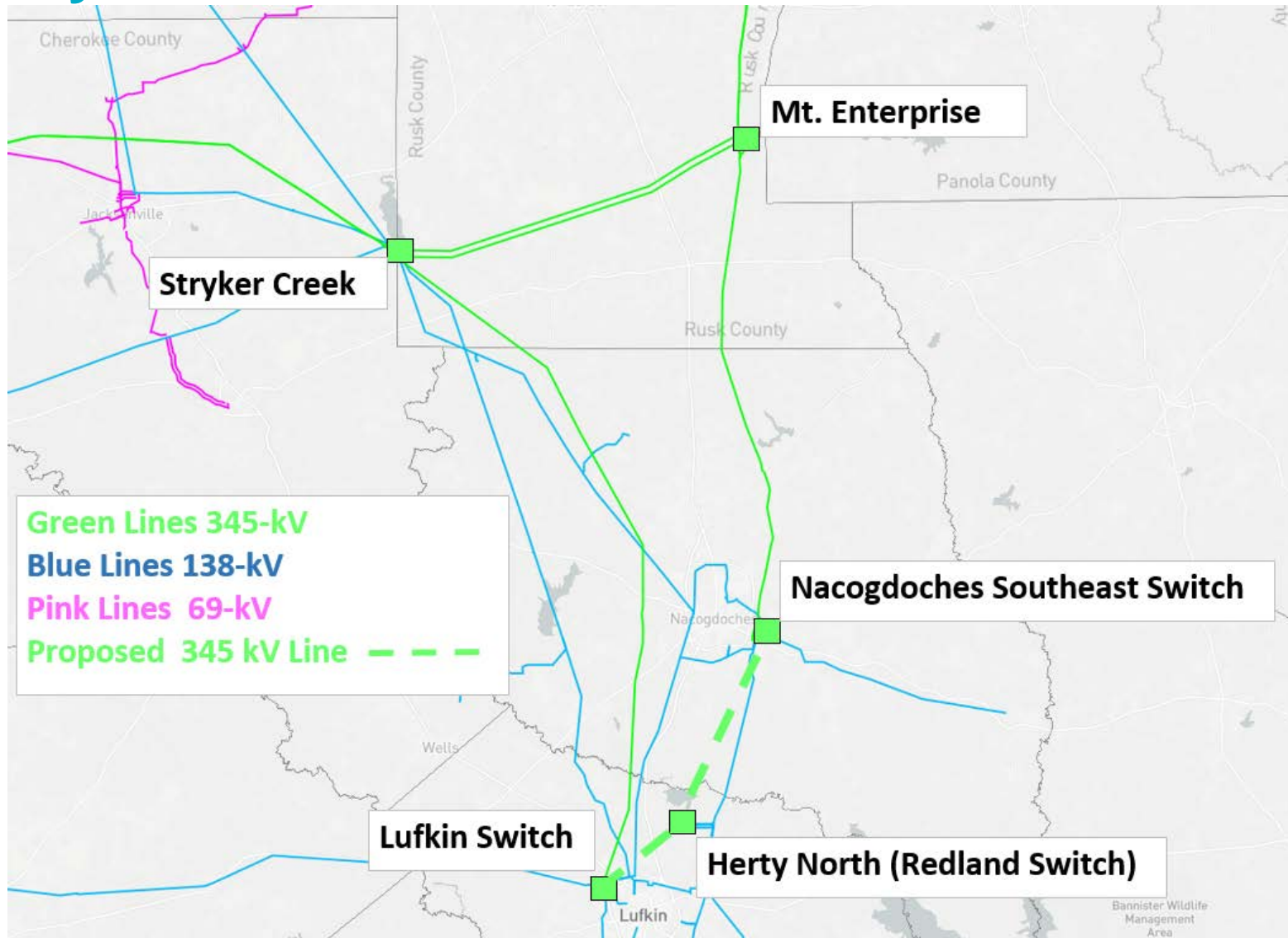
**Regional Planning Group**  
December 15, 2020

# Introduction

**Oncor submitted the Nacogdoches Southeast Switch – Redland Switch - Lufkin Switch 345-kV Loop Project for Regional Planning Group review in October 2020. This is a Tier 2 project that is estimated to cost \$71 million.**

- Proposed for Summer 2023, or sooner, in-service date.
- Addresses thermal violations, load growth, improves dynamic performance and operational flexibility
- Provide thermal capacity and operational flexibility by
  - Adding 345-kV bus work and one 345/138-kV Herty North (Redland) substation
  - Adding 13 miles of 345-kV transmission Nacogdoches to Redland
  - Adding 10 miles of 345-kV transmission Redland to Lufkin
- This project is currently under ERCOT independent review

# Study Area



# Study Assumptions

- **Study Base Cases**

- Steady-state cases will be constructed from the following 2020 Regional Transmission Plan case posted on the MIS on October 16, 2020:
  - 2020RTP\_2023\_SUM\_EC\_10162020
- Study Region: ERCOT East Weather Zone

# Study Assumptions

- **Transmission Updates**

- Transmission projects expected to be in-service within the study area by 2023 were reviewed and none were added to the base case
- Transmission projects that served as placeholders to Oncor's Nacogdoches Southeast Switch – Redland Switch –Lufkin Switch 345 kV Loop Project were removed:
  - Redland Switch 345/138-kV Autotransformer
  - 345-kV Line from Nacogdoches Southeast - Redland
  - 345-kV line from Lufkin Switch to Redland Switch

# Study Assumptions

- **Loads**

- Loads in the study area will be reviewed and updated as needed
- Loads outside of East 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 Commercial Operation Date before the study year in the East Weather Zone at the time of study (November 2020 GIS report posted on December 1) were added to the study case

Name	Fuel Type	MW Capacity
Lily Solar	Solar	148
Vision Solar 1	Solar	129
Kellam Solar	Storage	60
Lily Storage	Solar	52
Delilah Solar 1	Solar	250
Delilah Solar 1B	Solar	250

- **Generation Retirement**

- Retired/mothballed units in or near the study region were reviewed and none were added nor removed but maybe updated with forthcoming information

# Study Assumptions - Miscellaneous

- **Renewables**

- Wind, solar and storage units will be dispatched consistent with 2020 RTP assumptions

- **Reserves**

- Load outside of East and Coast weather zones will be adjusted to maintain the reserve requirement the same as the 2020 RTP assumptions



# 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 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
    - Planned maintenance outage
    - Dynamic stability impact
    - SSR vulnerability assessment
- **Congestion Analysis**
  - Congestion analysis may be performed to ensure that the identified transmission upgrades do not result in new congestion within the study area

# Deliverables

- **Tentative Timeline**

- Status updates will be provided at future RPG meetings
- Final recommendation – March 2021



Stakeholder Comments Also Welcomed to Sun Wook Kang:  
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