7X Energy Frio County Transmission Project – ERCOT Independent Review Update

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Introduction

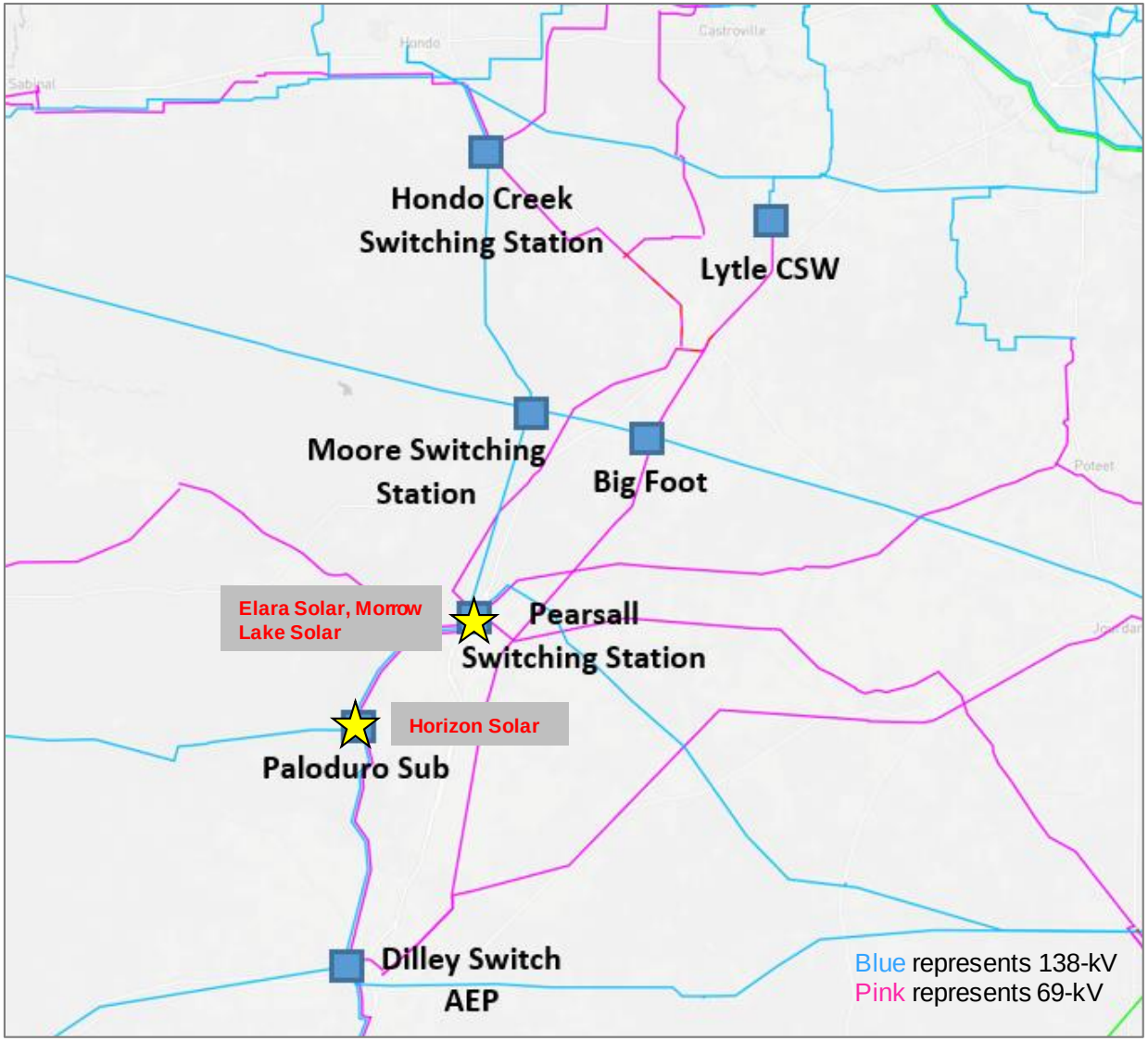
- **7X Energy submitted the Frio County Transmission Project to the Regional Planning Group (RPG) in November, 2019 as an economic-driven project to address the transmission congestion in Frio County associated with the addition of new solar generation facilities in the area**

- **This is a Tier 2 project estimated to cost $23 million (generic cost estimates)**

- **ERCOT presented the scope at the January 2020 RPG meeting**

  http://www.ercot.com/content/wcm/key_documents_lists/189694/7X_Frio_County_Project_Study_Scope_01_21_2020_RPG.PDF

Study Area


Hondo Creek
Switching Station
Lytle CSW
Moore Switching
Station
Big Foot
Elara Solar, Morrow
Lake Solar
Pearsall
Switching Station
Horizon Solar
Paloduro Sub
Dilley Switch
AEP
Blue represents 138-kV
Pink represents 69-kV

Study Assumptions

Study Base Cases

Economic base cases for study years 2021 and 2024 were constructed from the final 2019 Regional Transmission Plan UPLAN cases posted on the MIS on December 23, 2019

Economic Model Input Assumptions

Fuel Cost Forecasts

Monthly gas prices consistent with the 2020 RTP economic assumptions* were used in the analysis

Year	January	February	March	April	May	June	July	August	September	October	November	December
2021	2.81	2.61	2.50	2.56	2.60	2.65	2.55	2.52	2.53	2.63	2.63	2.82
2024	3.16	2.94	2.82	2.88	2.93	2.99	2.87	2.85	2.85	2.97	2.97	3.18

*Source: 2020 AEO: Reference
https://www.eia.gov/outlooks/aeo/index.php

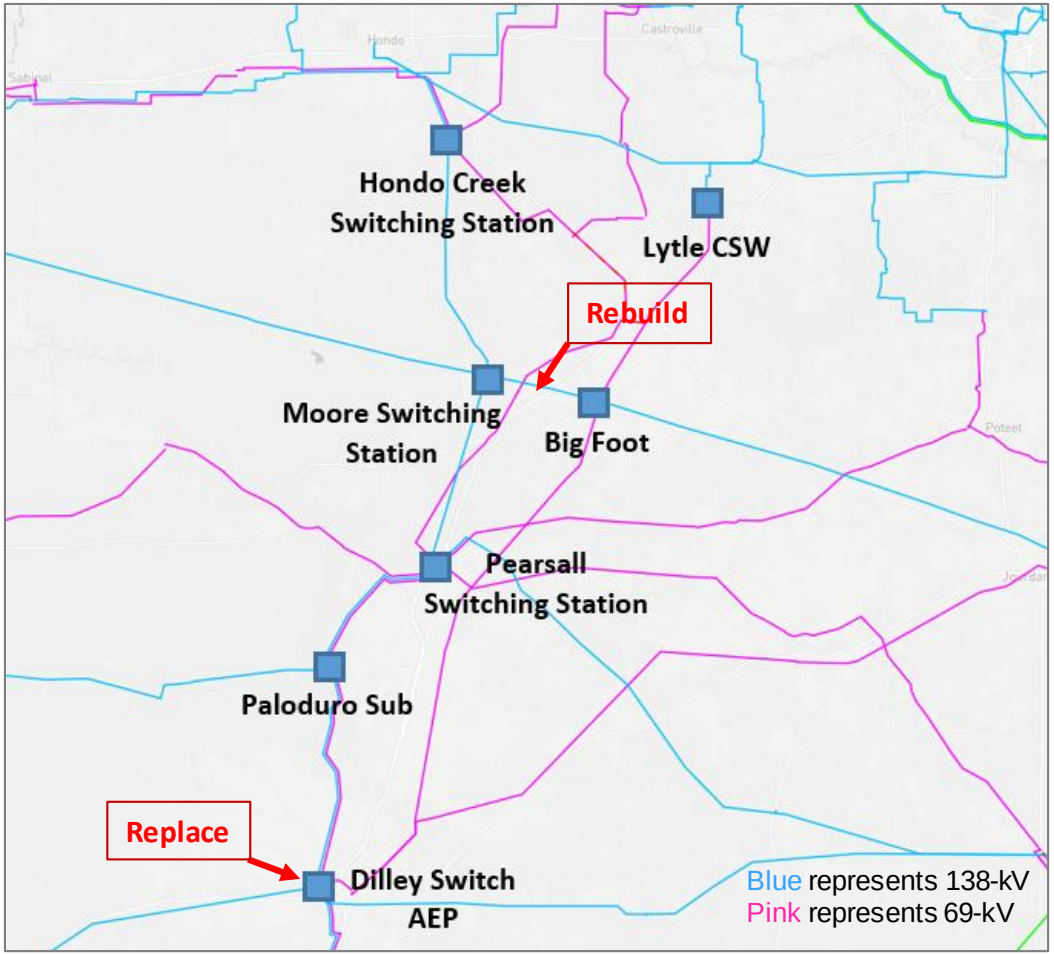
Preliminary Production Cost Simulation Results

- The table shows the congested elements due to the addition of solar generators in Frio County
- Congestion rent is color coded with Red indicating high congestion, Orange indicating medium congestion, and Yellow indicating low congestion

Monitored Line	2021	2024
Moore - Big Foot 138-kV line		
Pearsall - Pearsall Switch 138/69-kV transformer		
Dilley Switch 138/69-kV transformer		
Big Foot 138/69-kV transformer		
Hondo Creek - Moore 138-kV line		
Asherton - Catarina 138-kV line		

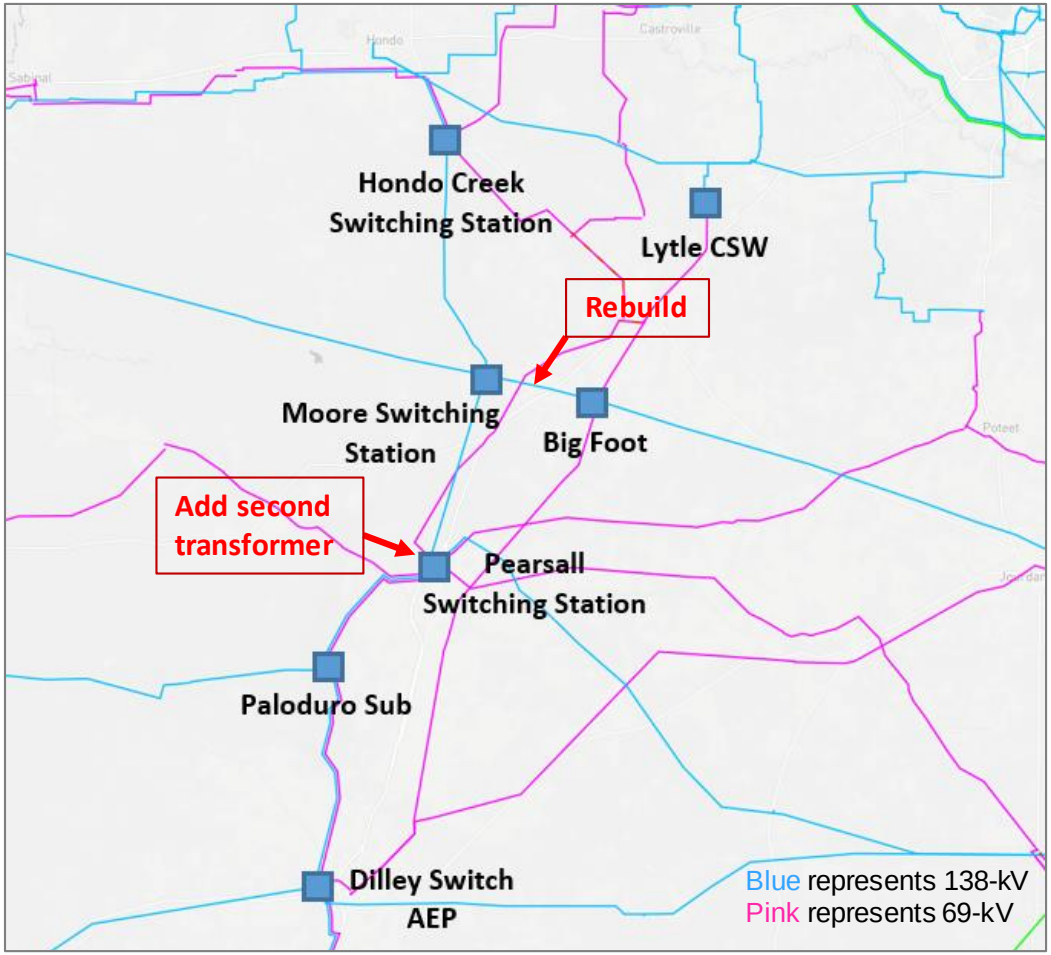
Transmission Upgrade Options

- **Option 1** – Rebuild Moore – Big Foot 138-kV line and replace AEP-owned 138/69-kV transformer at Dilley Substation



Transmission Upgrade Options

- **Option 2** – Rebuild Moore – Big Foot 138-kV line and add a second 138/69-kV transformer at Pearsall Substation



Economic Criteria

- The analysis will use the ERCOT economic planning criteria outlined in Section 3.11.2 (5) of the current Nodal Protocols consistent with the 2019 RTP study

  http://www.ercot.com/mktrules/nprotocols/current

- ERCOT will use 14% as the first-year revenue requirement

  http://www.ercot.com/content/wcm/key_documents_lists/138702/FinancialAssumptions_EconomicCriteria.pdf

Next Steps

- System-wide production cost simulations will be performed for each of the transmission upgrade options considered for study years 2021 and 2024 using UPLAN

- Production cost savings and cost estimates of transmission upgrades provided by TSPs will be used to evaluate the economic benefit of each transmission upgrade option

Deliverables

- **Tentative Timeline**
  - Status update – March RPG
  - Final recommendation – Q2 2020

Stakeholder Comments Also Welcomed to Sun Wook Kang:
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