



Permian Basin Load Interconnection Study - Final Update

Ying Li
System Development, Transmission Planning

Regional Planning Group
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Outline

- Recap:
 - Purpose
 - Study Progress Overview and Key Assumptions
- Study Results and Recommendation

Recap: Purpose

- Purpose
 - The primary purpose of the Permian Basin Load Integration Study is to identify transmission upgrades that may be necessary to connect potential local oil and gas loads in the Permian Basin area
 - Some of the transmission upgrades such as long-lead time transmission improvements identified in the study may become RPG projects if submitted
 - ERCOT plans to use the results of the Permian Basin Load Integration Study to endorse Tier 1 or Tier 2 RPG projects if transmission upgrades recommended in the Permian Basin Load Integration Study are submitted for RPG review

Recap: Study Progress Overview

Study Scope Development
(January 2021 RPG)

IHS Load Forecast Data Mapping,
Study Case Development
(January ~ April 2021)

Reliability Studies, Status Updates
(May ~ October 2021)

Review Preliminary Reliability Upgrades,
Costs Estimates of Transmission Upgrades
(July ~ October 2021)

Recap: Key Study Assumptions

- Study Year: 2025 and 2030
- Solar generation resources in the Permian Basin area were assumed to be offline
- IHS load forecast in the Permian Basin area was used in the study

Area	2025 Load (MW)	2030 Load (MW)
Delaware Basin	3,789	4,898
Far West (excluded Delaware Basin)	4,128	4,533
West (included five counties)	532	539
Grand Total	8,450	9,970

Key Findings: Summary of Reliability Upgrades

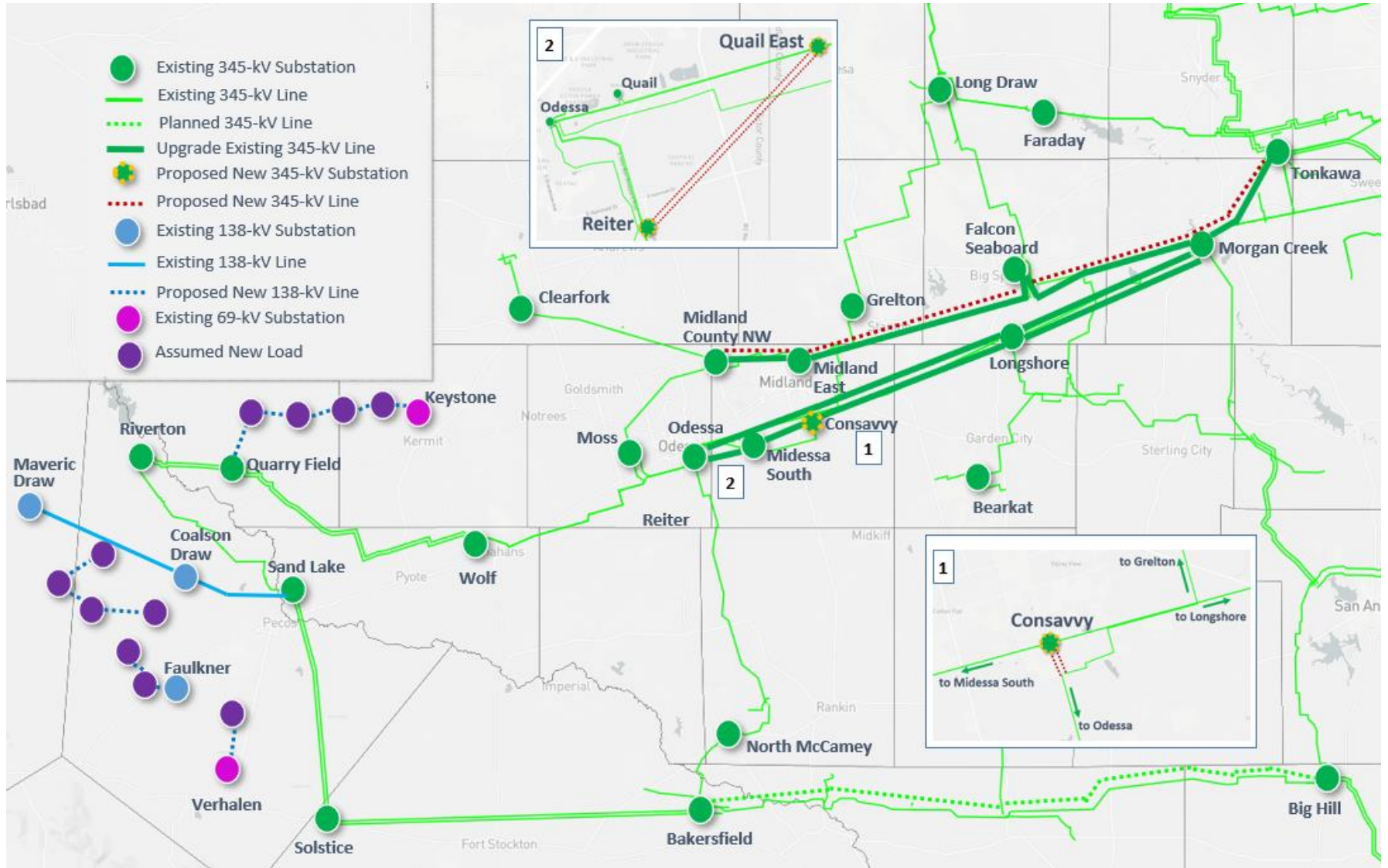
- Reliability upgrades were identified to address the identified reliability criteria violations in the study area
- The following transmission upgrades are considered as preferred projects
 - New load connections in the Delaware Basin area which form a loop
 - Long lead time transmission upgrades (e.g., RPG Tier 1 and Tier 2 projects)
- The following transmission upgrades are considered as placeholder projects and may require further review
 - Transmission upgrades that fall under potential RPG Tier 3 and Tier 4 projects
 - Transmission upgrades in the Big Lake area which is at the border of Permian Basin study area

Key Findings: Preferred and Placeholder Transmission Upgrades

Reliability Upgrades	Unit	Project Consideration
New 345-kV Line	~ 295 miles	Preferred
Existing 345-kV Line Upgrade	~ 211 miles	Preferred
New 345-kV Substation	4	Preferred
New 345/138-kV Transformer	7	Preferred
New 138-kV Line	~ 128 miles	Preferred
Existing 138-kV Line Upgrade	~ 449 miles	Placeholder
69-kV line to 138-kV Conversion	~ 313 miles	Placeholder
Reactive Support Need	~ 400 MVAR	Placeholder

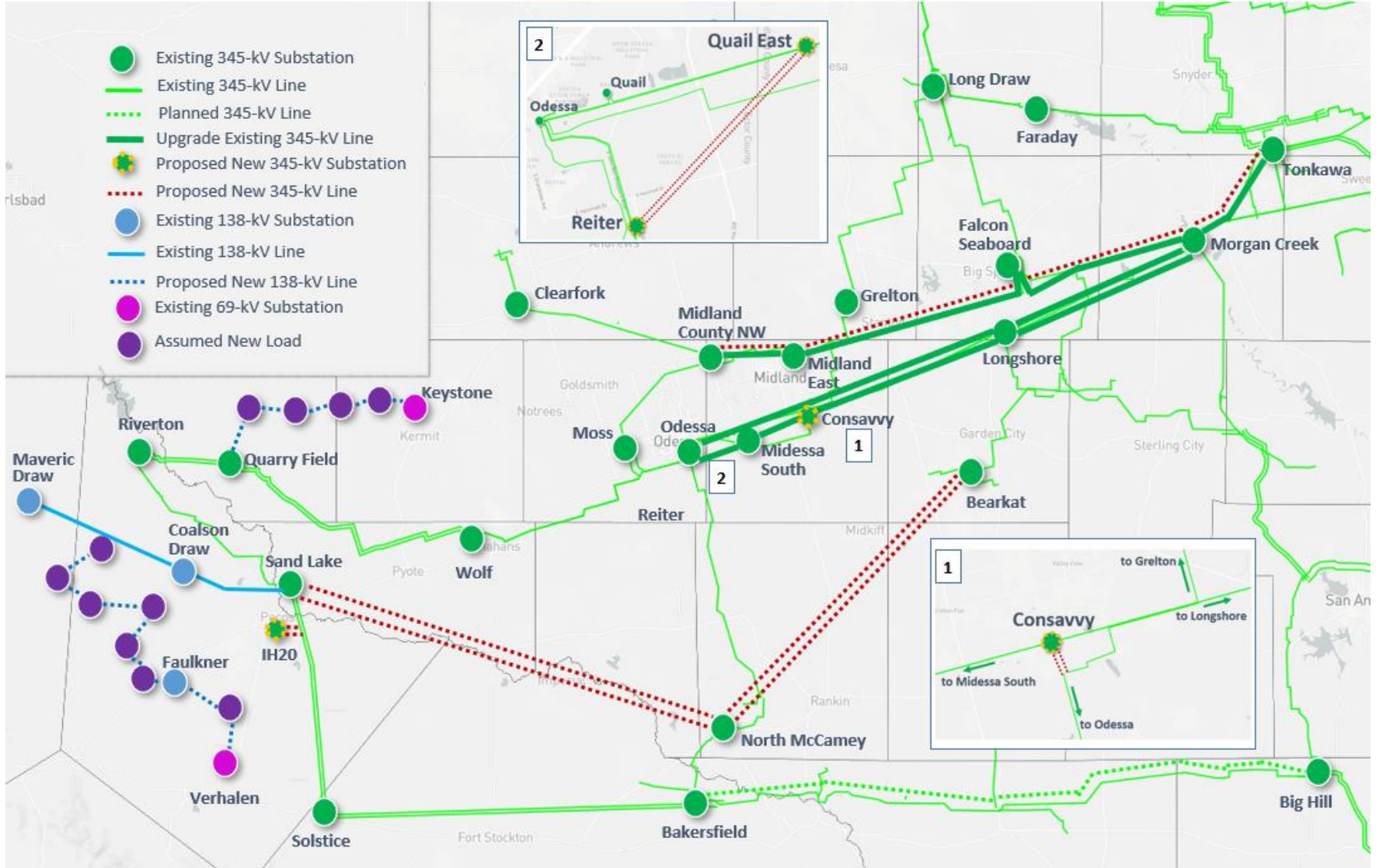
- The total cost of the preferred transmission upgrades is estimated to be approximately \$1.5 Billion

Preferred Reliability Upgrades – 2025



(See Appendix for more detailed map with all transmission upgrades)

Preferred Reliability Upgrades - 2030



(See Appendix for more detailed map with all transmission upgrades)

Next Step

- ERCOT plans to complete the report and post it in November

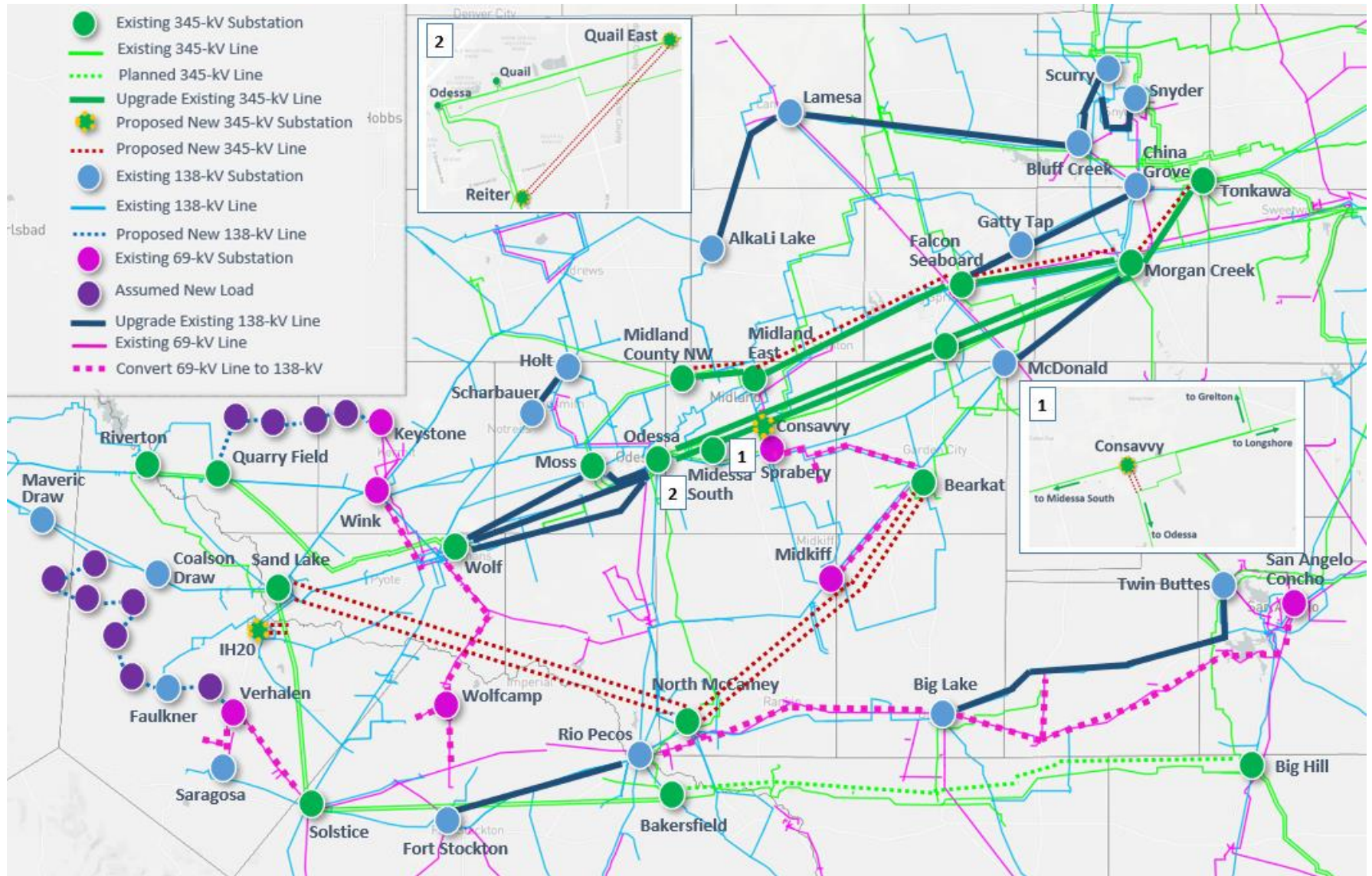


Stakeholder Comments Also Welcomed to Sun Wook Kang:
SunWook.Kang@ercot.com

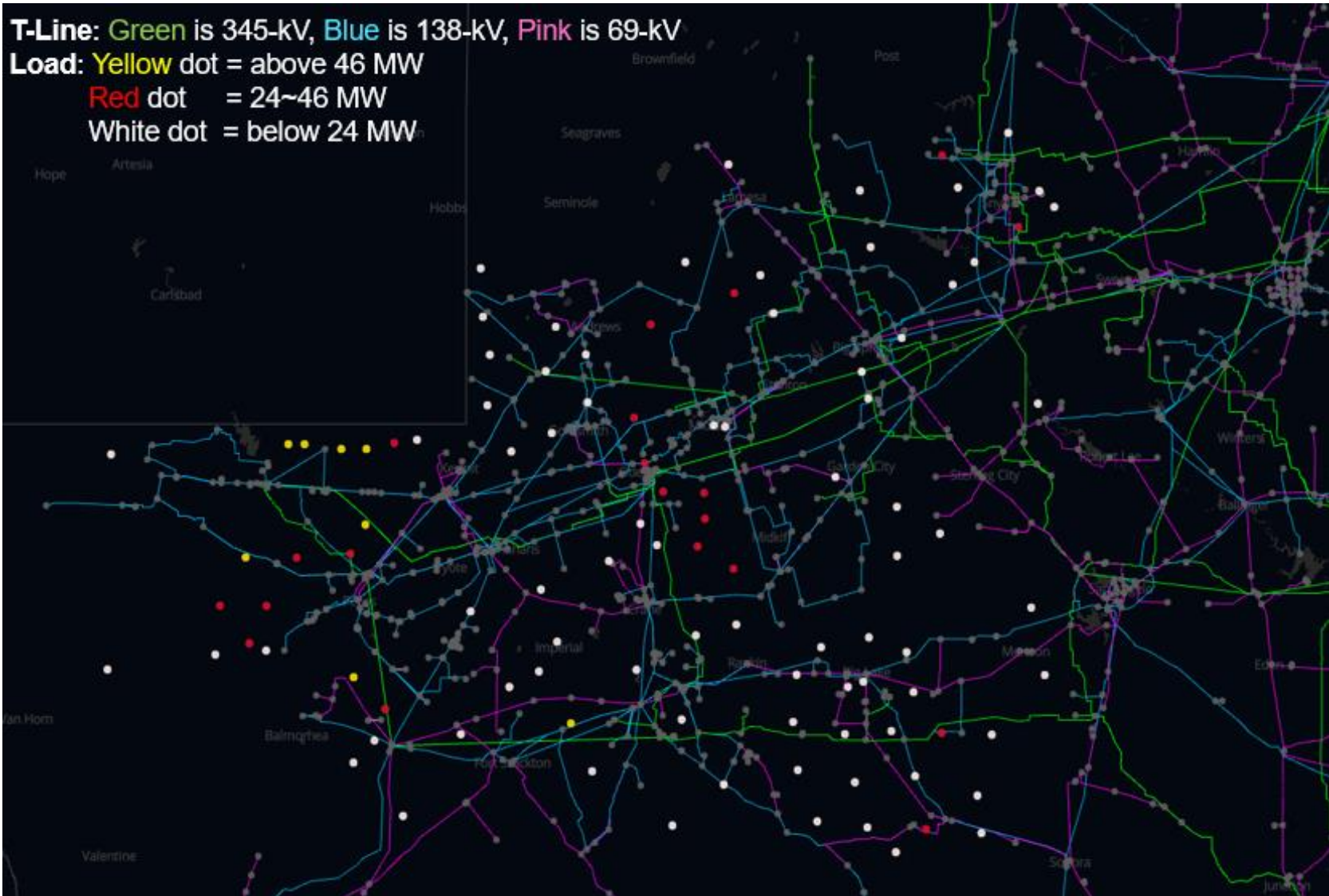
Appendix - Status Updates

- ERCOT provided status updates at the previous RPG meetings
 - Permian Basin Area Improvement Updates at the December 2020 RPG meeting
http://www.ercot.com/content/wcm/key_documents_lists/189757/Permian_Basin_Area_Improvement_Updates_-_Dec2020RPG.PDF
 - Permian Basin Load Interconnection Study Scope at the January 2021 RPG meeting
http://www.ercot.com/content/wcm/key_documents_lists/213837/Permian_Basin_Load_Interconnection_Study_Scope_-_Jan2021RPG.pdf
 - Permian Basin Load Interconnection Study Status Update at the April 2021 RPG meeting
http://www.ercot.com/content/wcm/key_documents_lists/213851/Permian_Basin_Load_Interconnection_Status_Update_-_April2021RPG.pdf
 - Permian Basin Load Interconnection Study Status Update at the June 2021 RPG meeting
http://www.ercot.com/content/wcm/key_documents_lists/213859/Permian_Basin_Load_Interconnection_Status_Update_-_June2021RPG.pdf
 - Permian Basin Load Interconnection Study Status Update at the August 2021 RPG meeting
http://www.ercot.com/content/wcm/key_documents_lists/213867/Permian_Basin_Load_Interconnection_Study_-_Status_Update_-_Aug2021RPG.pdf

Appendix - All Reliability Upgrades for 2030



Appendix - Map of New Loads (Year 2025)



Appendix - Map of New Loads (Year 2030)

