



Assessment of the Valley Region – Status Update

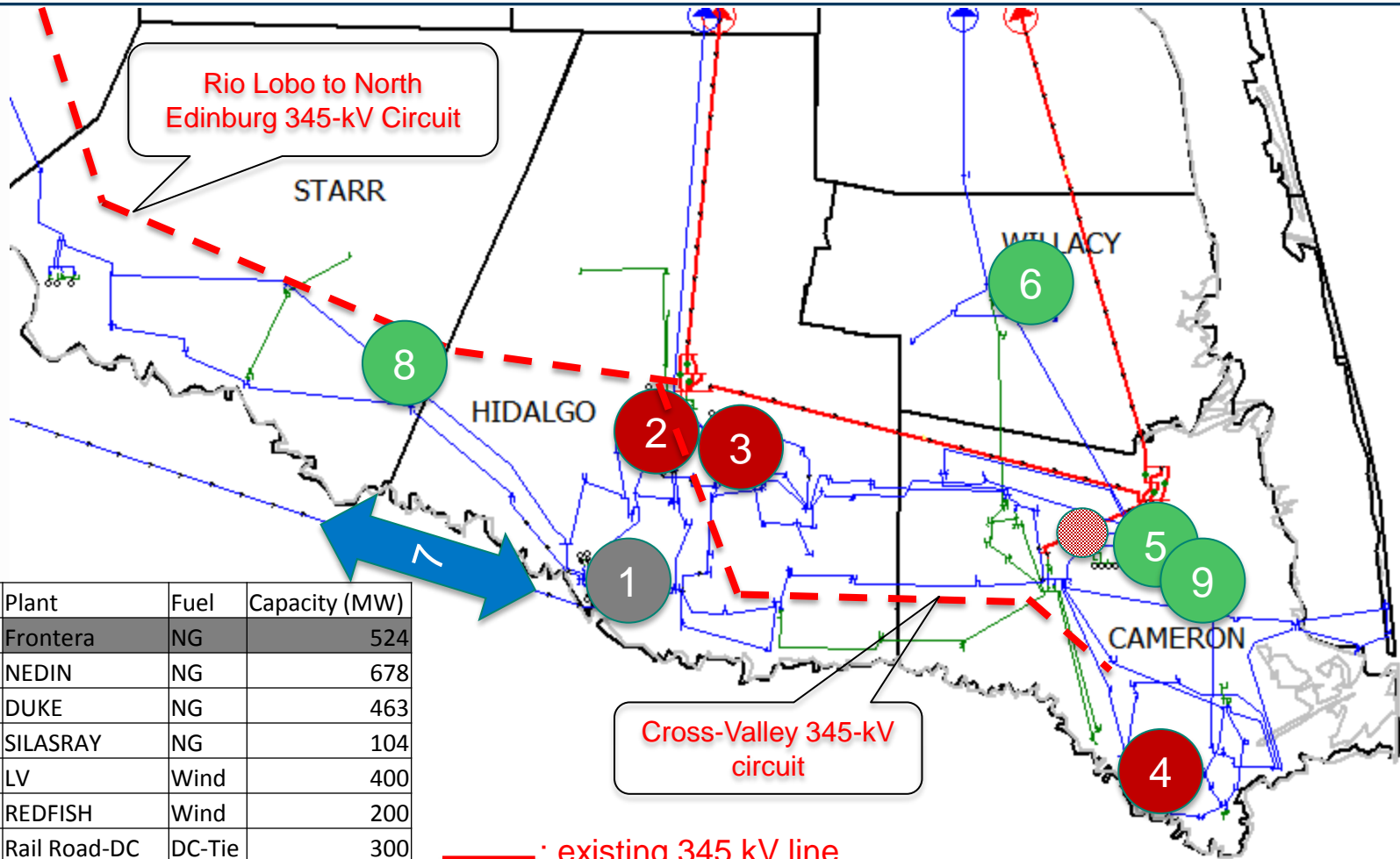
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ERCOT RPG



Valley Topology Overview - 2016



#	Plant	Fuel	Capacity (MW)
1	Frontera	NG	524
2	NEDIN	NG	678
3	DUKE	NG	463
4	SILASRAY	NG	104
5	LV	Wind	400
6	REDFISH	Wind	200
7	Rail Road-DC	DC-Tie	300
8	LV III/V/IV	Wind	600
9	Cameron Wind	Wind	165

——— : existing 345 kV line
- - - : new 345 kV line (under construction, in service in 2016)

1245
1365
300
780

Gas
Wind
DC-Tie
Future (IA) Gas Gen



Assessments for the Valley in 2014

- [Overview of Electric Reliability Issues in the Lower Rio Grande Valley](#)
 - Addressing Valley reliability challenge
- [Review of Frontera Facility](#)
 - An evaluation of a plan to export power to Mexico from the Frontera Facility in the Lower Rio Grande Valley

Findings in the 2014 Assessments

- Without the Frontera Facility, there would be increased potential for rotating outages and transmission instability in some scenarios and reduced operational flexibility during construction of the new transmission facilities, which are critical to future reliability.
 - Frontera agreed to remain partially available in the ERCOT market until the new 345 kV lines are energized in the Valley in 2016. The new lines are expected to meet the reliability needs for the area through 2016. ERCOT has developed mitigation measures for the area until the new lines are energized.
 - Additional system upgrades (transmission and/or generation) will likely be required to reliably serve Valley load growth after 2016.

Purpose and Study Condition

- To evaluate the need for additional improvements and how quickly those improvements will be needed to keep up with growth in the region.
- Load levels in the study case for the Valley region
 - 2750 MW and 2900 MW (based on 2014 RTP load forecast for year 2018 and 2020)
- Notable study base case conditions:
 - No Frontera Plant
 - Lobo-North Edinburg and Cross Valley 345 kV lines are in service

Study Scope

- **Base Case: 2018 DWG Summer Peak Flat Start**
 - Includes all generation projects in the Valley Region that meet Planning Guide Section 6.9 requirements
 - Wind generation output is dispatched at 10% of the rated capacity.
 - DC export: 300 MW for N-1 and 0 MW for N-1-1
- **Reliability Criteria:**
 - ERCOT Planning Guide and NERC TPL-001-4
- **Sensitivity analysis with future new generation in Valley**
 - One natural gas power plant (~780 MW) (with signed interconnection agreement only)
 - ERCOT in consultation with Valley TSPs may include additional sensitivity tests (like gen and/or load) if needed.

Preliminary Findings

- Based on existing Valley generation resources,
 - Additional Valley import path(s) may be required if Valley load exceeds ~2800 MW to prevent thermal overload and voltage instability inside the Valley under the following contingencies
 - G-1-G-1 (two combined cycle trains)
 - G-1-L-1 (one combined cycle train and one 345 kV circuit)
 - New dynamic reactive support is also required to meet the new TPL-001-4 G-1-G-1 requirement
 - Several transmission upgrades inside the Valley may be required
- New generation may defer the need for some of these transmission upgrades
- ERCOT will continue the assessment and evaluate transmission improvement options