



# **2019 RTP Update**

**September 17, 2019**

# Agenda

- 2019 RTP Sensitivity Study
- 2019 RTP Status Update

# 2019 RTP Sensitivity Study Assumption and Methodology

- Sensitivity analysis will be performed on:
  - summer peak base cases for 2021 (year 2) and 2024 (year 5)
  - off-peak case for 2022 (year 3)
- All assumptions and performance criteria will be held consistent with the 2019 RTP scope and process document

# 2019 RTP Sensitivity Study Scenario

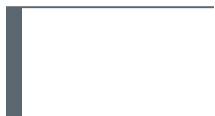
- ERCOT plans to include the following sensitivity studies in 2019 RTP
  - No wind and no hydro sensitivity for summer peak conditions
  - High wind and low load sensitivity for off peak conditions

# 2019 RTP Sensitivity Scenario Specifications

Condition	Region	Variable	Study years
Summer peak	All regions	Dispatch: Wind and Hydro units in the study region will be modeled offline	2021, 2024
Off-peak	All regions	Dispatch and Demand: Wind generation dispatch is increased with a moderate change in system wide demand to simulate HWLL conditions	2022

# 2019 RTP Status Update

- 2019 RTP N-1 analysis results have been posted on MIS:  
<https://mis.ercot.com/pps/tibco/mis/Pages/Grid+Information/RegionalPlanning>
- Transmission Planning Assessment department is currently working on the G-1+N-1 and X-1+N-1 analysis



# Appendix

# 2019 RTP Sensitivity Study

- The purpose of the sensitivity study is to study the impact of varying one or more of the system conditions as listed in R 2.4.3 of NERC TPL-001-4 reliability standards
- Requirement 2.4.3 of NERC Standard TPL-001-4 states:
  - For each of the studies described in Requirement R2, Parts 2.4.1 and 2.4.2, sensitivity case(s) shall be utilized to demonstrate the impact of changes to the basic assumptions used in the model. To accomplish this, the sensitivity analysis in the Planning Assessment must vary one or more of the following conditions by a sufficient amount to stress the System within a range of credible conditions that demonstrate a measurable change in performance:
    - Load level, Load forecast, or dynamic Load model assumptions.
    - Expected transfers.
    - Expected in service dates of new or modified Transmission Facilities.
    - Reactive resource capability.
    - Generation additions, retirements, or other dispatch scenarios.



# Assumptions

## No Wind No Hydro for Summer Peak Cases

- The following table summarizes the approximate MW of wind and hydro generation being turned off resulting from the sensitivity

Year	Wind (MW) in RTP Cases				Hydro (MW) in RTP Cases			
	EC	NNC	WFW	SSC	EC	NNC	WFW	SSC
2021	21	588	564	1341	0	108	110	236
2024	21	588	576	1341	0	108	110	236

# Preliminary Assumptions High Wind Low Load for Off Peak Case

## Wind

- Historical data were used to identify the top 20 hours with high wind and low load. The highest hourly capacity factor for each wind region among those hours is used to determine the uncurtailed dispatch level of all the wind generators in that wind region. The preliminary hourly capacity factors for each wind region are as follows:
  - PANHANDLE: 94.1%
  - SOUTH: 95.4%
  - COASTAL: 94.0%
  - WEST: 83.6%
  - NORTH: 89.5%
- Applying the hourly capacity factor obtained above, the uncurtailed wind capacity is approximately 25,214 MW
- Panhandle and Lobo GTC will be monitored

# Preliminary Assumptions High Wind Low Load for Off Peak Case

## Load

- The load level was determined by reviewing historical load levels during the top 20 high wind and low load hours
- The following table summarizes the approximate demand resulting from the sensitivity

Year	2019 RTP Min Case Load (MW)	2019 RTP HWLL Case Load (MW)
2022	36,311	37,159