Item 9.1: System Planning and Weatherization Update

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Reliability and Markets Committee Meeting

ERCOT Public
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System Planning and Weatherization Update

This Report will include information summaries that cover:

- Transmission Planning
- Modeling
- Resource Adequacy
- Generation Interconnection
- Weatherization
- Appendix
  - Highlights applicable to the particular Board update

Transmission Planning Summary

- As of July 5th, projects in engineering, routing, licensing, and construction total about $9.275 billion.
- As of July 5th, projects energized in 2022 total about $1.523 billion.
  - $2.576 billion energized in all of 2021.
- As of September 1, 2022 ERCOT has endorsed transmission projects totaling $2.253 billion.
  - Total endorsed transmission projects in 2021 equaled $2.498 billion.

Brazos Valley Connection image courtesy of CenterPoint Energy

Elements Submitted for Operational Modeling (Monthly)

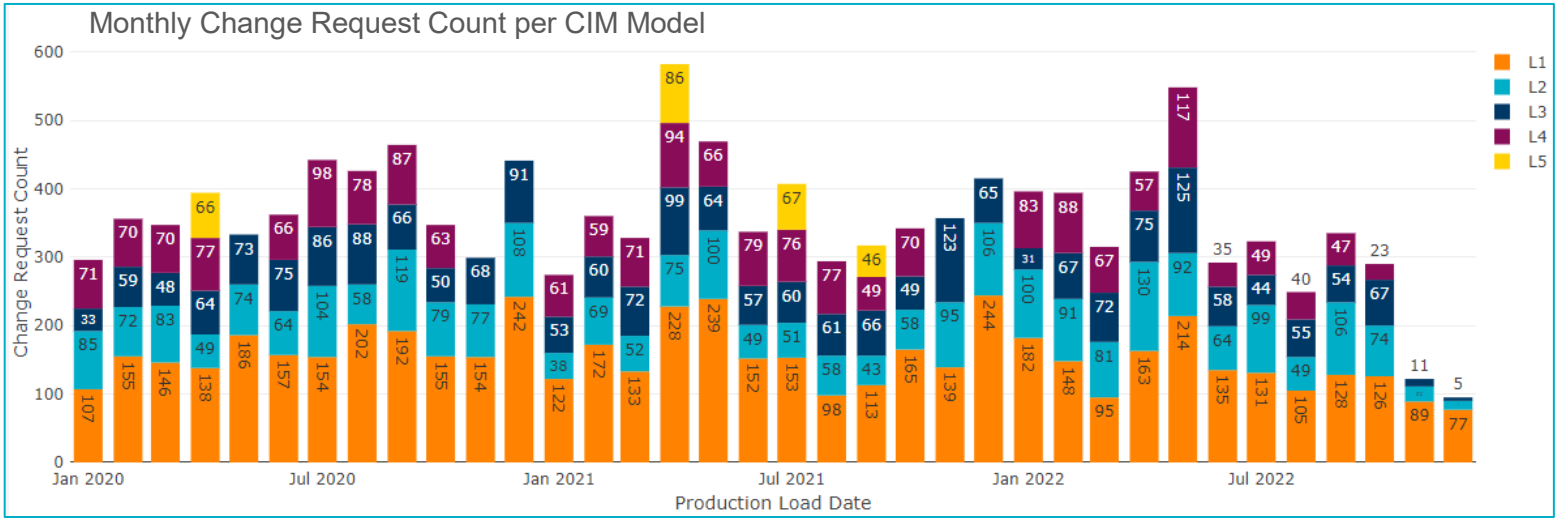
September 2022	October 2022	Rolling Average *Previous 12 Months*

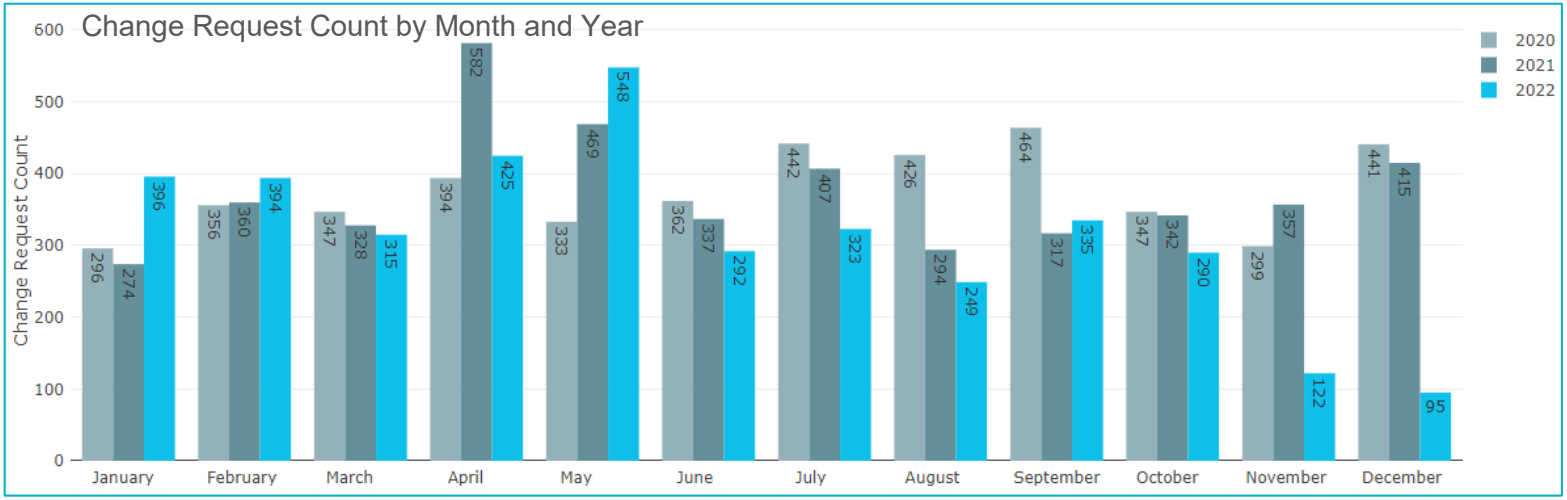
Resources – 18
• 4 Wind
• 2 Solar
• 12 DESR
  • 9 conversions*
	Resources – 11
	• 2 Thermal
	• 2 Solar
	• 7 DESR
	  • 4 conversions*
		Resources – 8
		• 1 Thermal
		• 2 Wind
		• 3 Solar
		• 2 ESRs

Transmission • 11 Transformers • 71 Breakers • 46 Lines	Transmission • 2 Transformers • 34 Breakers • 28 Lines	Transmission • 7 Transformers • 64 Breakers • 13 Lines
Contingencies • 156	Contingencies • 75	Contingencies • 56

* Removing distribution modeling of pre-moratorium DESRs

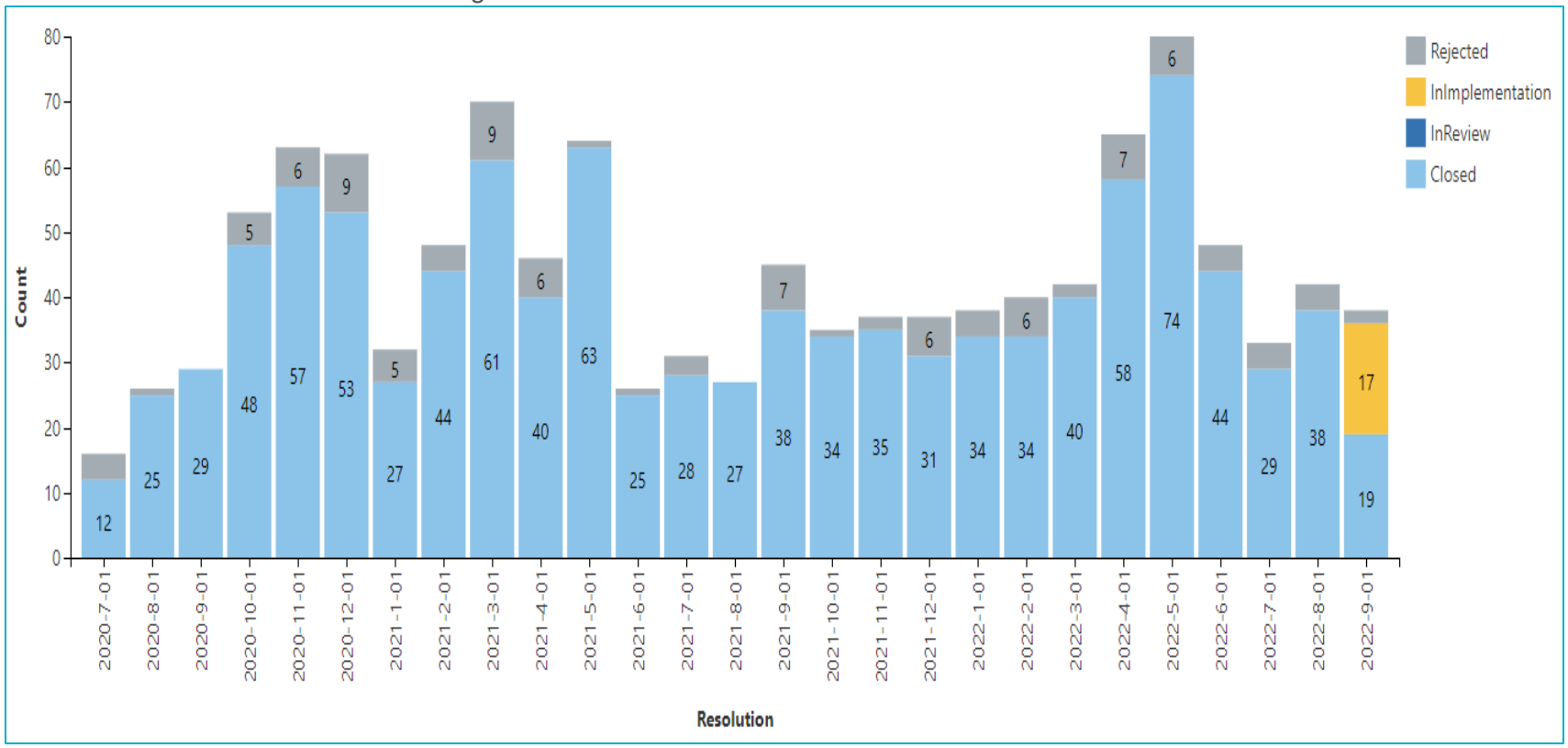
Changes Submitted for Operational Modeling





Notice for Operational Model Changes

Downstream Production Changes Per Month



Seasonal Assessment of Resource Adequacy (SARA) Report Modifications

- Increase release frequency from seasonal to monthly (releases made approx. 90 days prior to the forecast month)
  - Example: Comparison of the Fall 2022 SARA line items with those from an October-only sample report

	Base Scenario			Most Extreme Scenario		
	Fall 2022 SARA	October-Only SARA	Difference	Fall 2022 SARA	October-Only SARA	Difference
Peak Load Forecast*	64,928	64,928	-	70,129	70,129	-
Wind	13,701	13,290	(411)	173	239	66
Solar**	8,779	8,779	-	8,779	8,779	-
Total Resources	93,492	93,081	(411)	79,964	80,030	66
Planned Outages	4,404	4,821	417	4,404	4,821	417
Unplanned Outages	11,681	10,314	(1,367)	16,109	15,281	(828)
Total Outages	16,085	15,135	(950)	20,513	20,102	(411)
Capacity Available for Operating Reserves (After deployment of all EEA resources for the Most Extreme Scenario, 3,301 MW)	12,479	13,018	539	(7,377)	(6,900)	477

* No change for fall vs. October-only reports due to the seasonal peak load occurring in October.

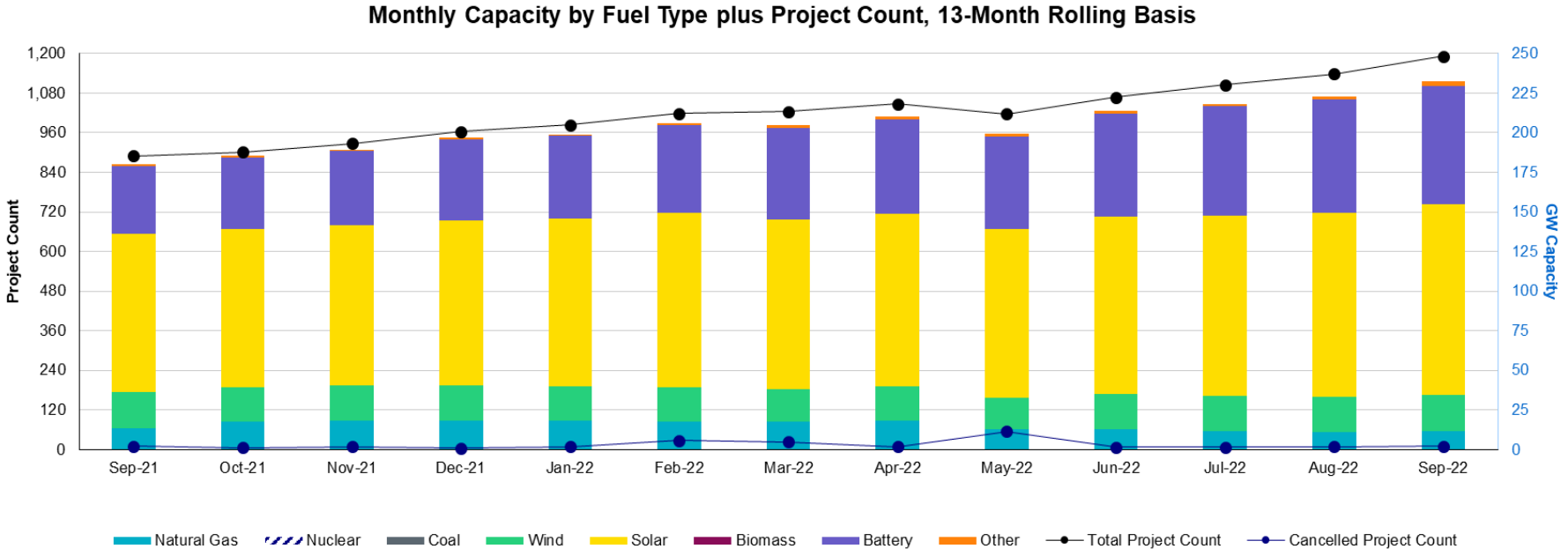
** No change for fall vs. October-only reports due to the solar peak capacity availability occurring in October. The Most Extreme Scenario assumes typical solar generation during the peak demand hour.

- Provide information for multiple hours of the peak demand day—as opposed to just the peak demand hour—to better account for reserve risks from renewables
- Incorporate probability information to indicate the risk of occurrence for different forecasted operating reserve outcomes

Proposed Capacity Demand and Reserve (CDR) Report Modifications (subject to PUCT approval)

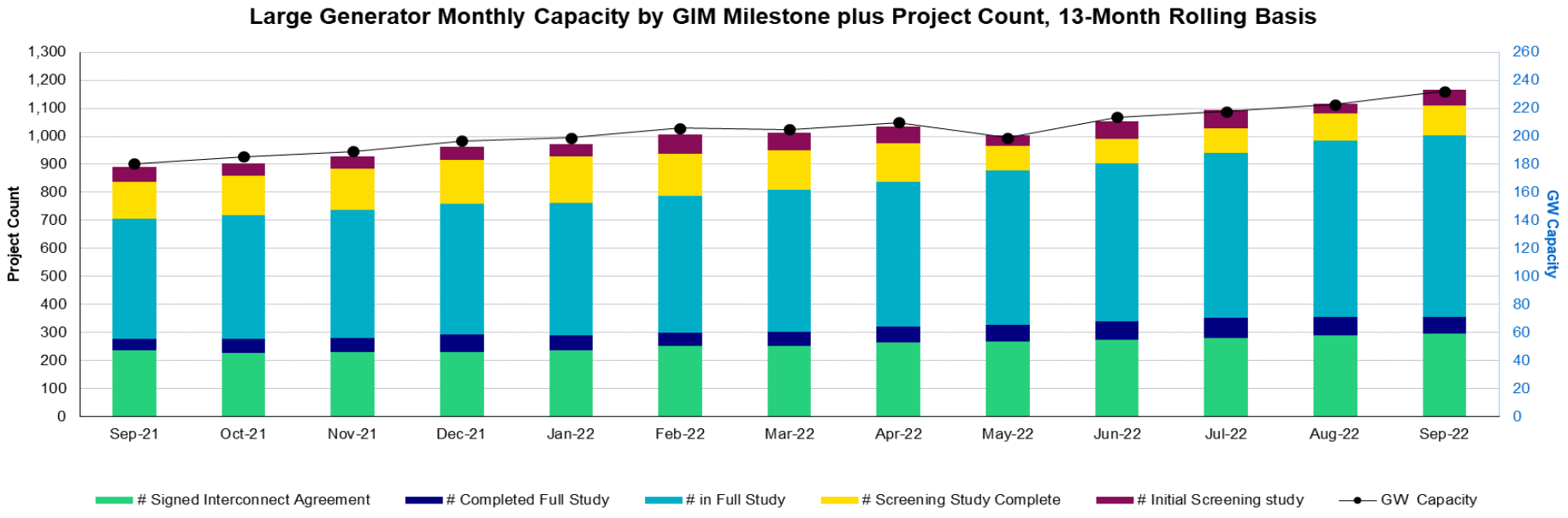
- Increase release frequency from twice-a-year to quarterly
- Provide forecast information for multiple hours of the peak demand day
- Expand the CDR to include additional resource adequacy risk measures, such as expected energy (MWh) shortages and indicators of the ability of dispatchable resources to cover extreme renewable generation ramps
- Switch to the Effective Load Carrying Capability (ELCC) method to determine the expected capacity contribution of wind, solar and energy storage during the hours with the highest capacity shortage risk
- Include a derating for thermal resources to account for historical average unplanned outages
- Include Reserve Margin scenarios based on alternative peak demand and resource capacity assumptions
- Incorporate reporting of Large Loads
- Reconstitute the CDR into a main report with a link to a dynamic dashboard with data visualization tools and access to supporting data tables

Future Generation Interconnection Projects by Fuel Type



- The decrease in capacity in May appears to have been temporary
- Largest increases continue to be in Solar and Battery
- Number of projects is almost 1,200

Future Generation Interconnection Projects by Status



- Largest increase is in the “in Full Study” category
- As the number of projects increase, the size of the projects decrease.
  - See Appendix

Weatherization and Inspection Update Oct 2022

- Performed 449 total weatherization inspections since December 2, 2021
- Weatherization Inspector hiring process underway
- Weatherization inspection contractor selection underway
- ERCOT-sponsored weatherization workshops have been scheduled
  - Generation Entities Tuesday 10/25/2022
  - Transmission Entities Thursday 10/27/2022
- Developing winter and summer checklists for generation resources and TSPs
- Developing a risk-based methodology for selecting TSP facilities for inspection
- Phase II of PUCT Weather Emergency Preparedness rule adopted at open meeting on September 29, 2022

Appendix

Generation Interconnection Trend

- Average Generator Size (MW) — Number of Generators in system —