Managing The Energy Transition: Coordinating Air Quality Policy & Regulation with Grid Reliability

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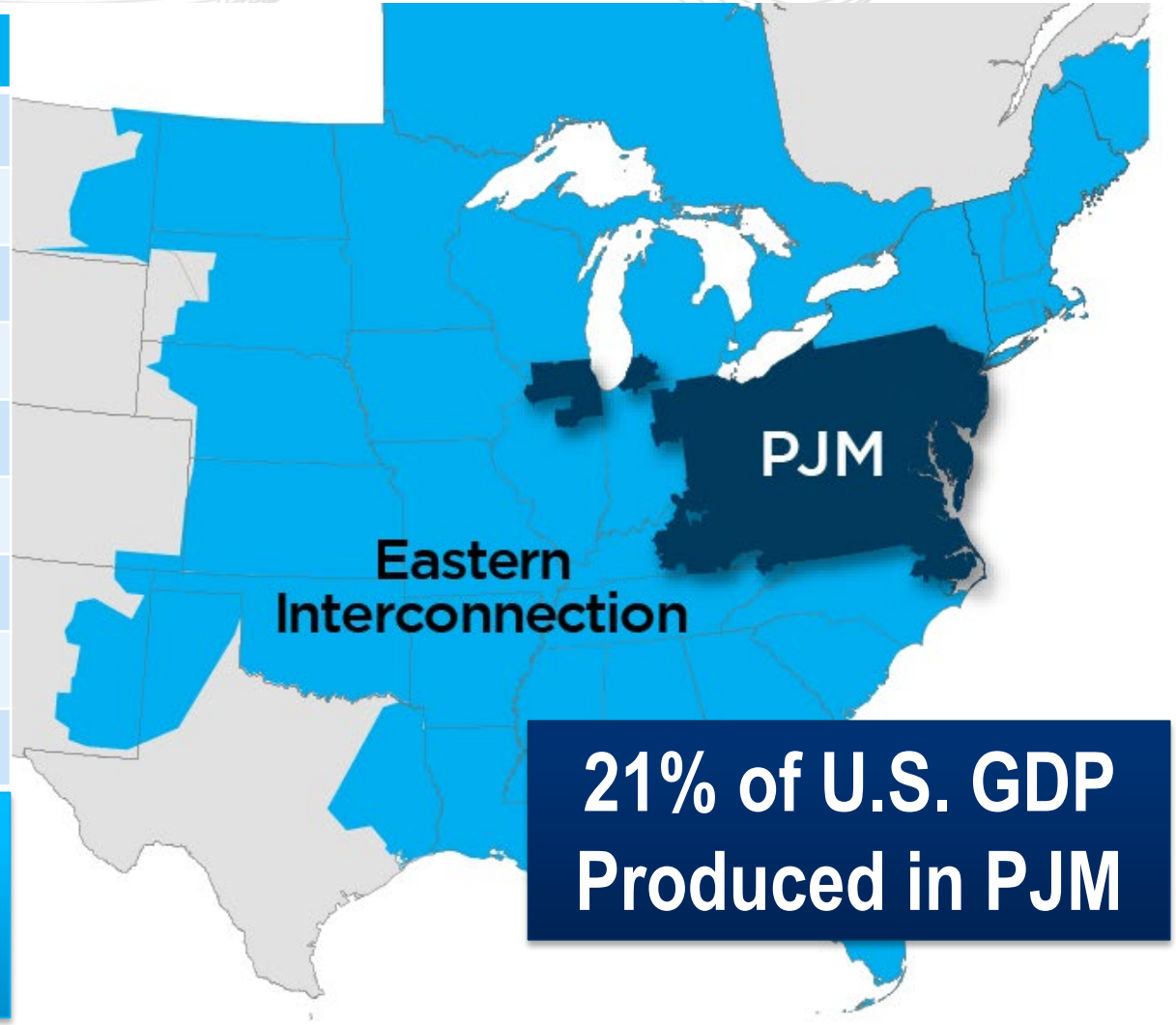
PJM as Part of the Eastern Interconnection

Key Statistics	
Member companies	1,060+
Millions of people served	65
Peak load in megawatts	165,563
Megawatts of generating capacity	185,442
Miles of transmission lines	85,103
2020 gigawatt hours of annual energy	782,683
Generation sources	1,436
Square miles of territory	368,906
States served	13 + DC

- 26% of generation in Eastern Interconnection
- 25% of load in Eastern Interconnection
- 20% of transmission assets in Eastern Interconnection



21% of U.S. GDP Produced in PJM

As of 2/2022

PJM – Primary Focus

Reliability
- Grid operations
- Supply/demand balance
- Transmission monitoring

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Regional Planning
- 15-year outlook

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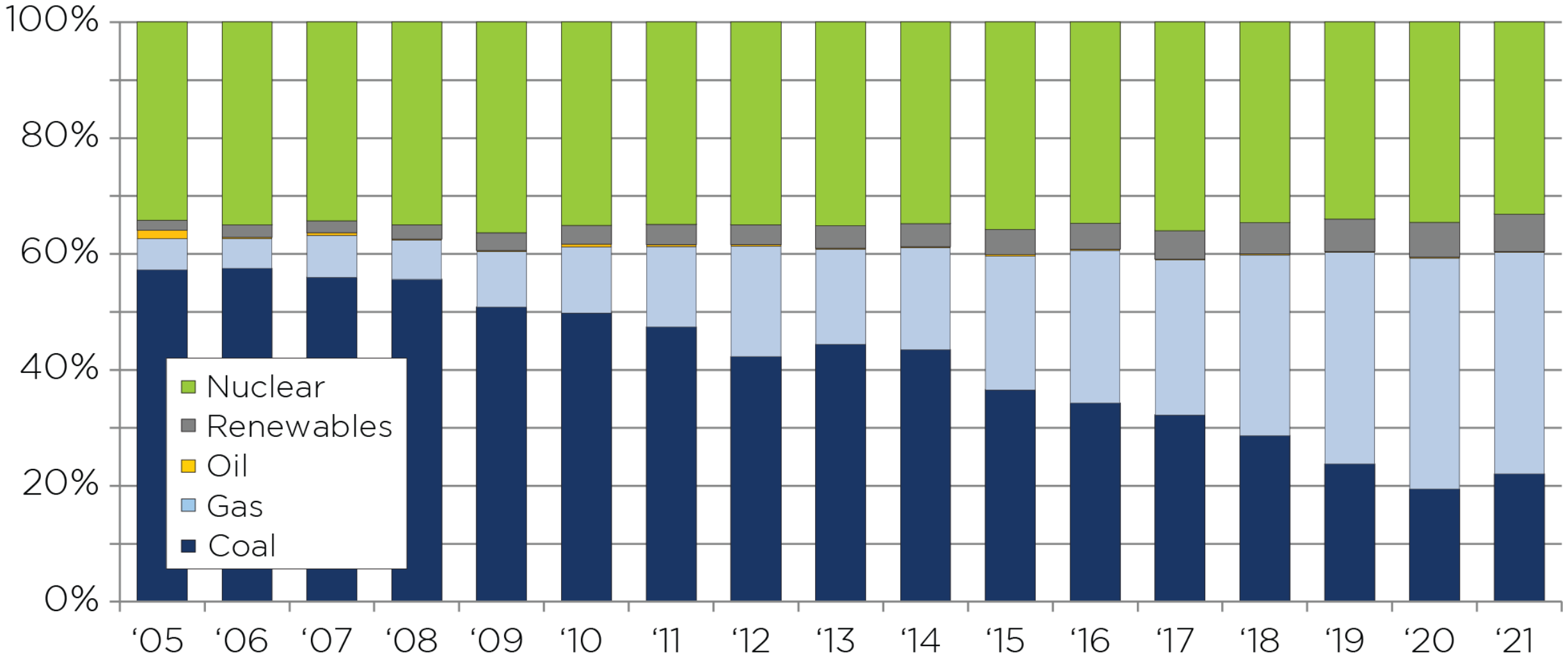
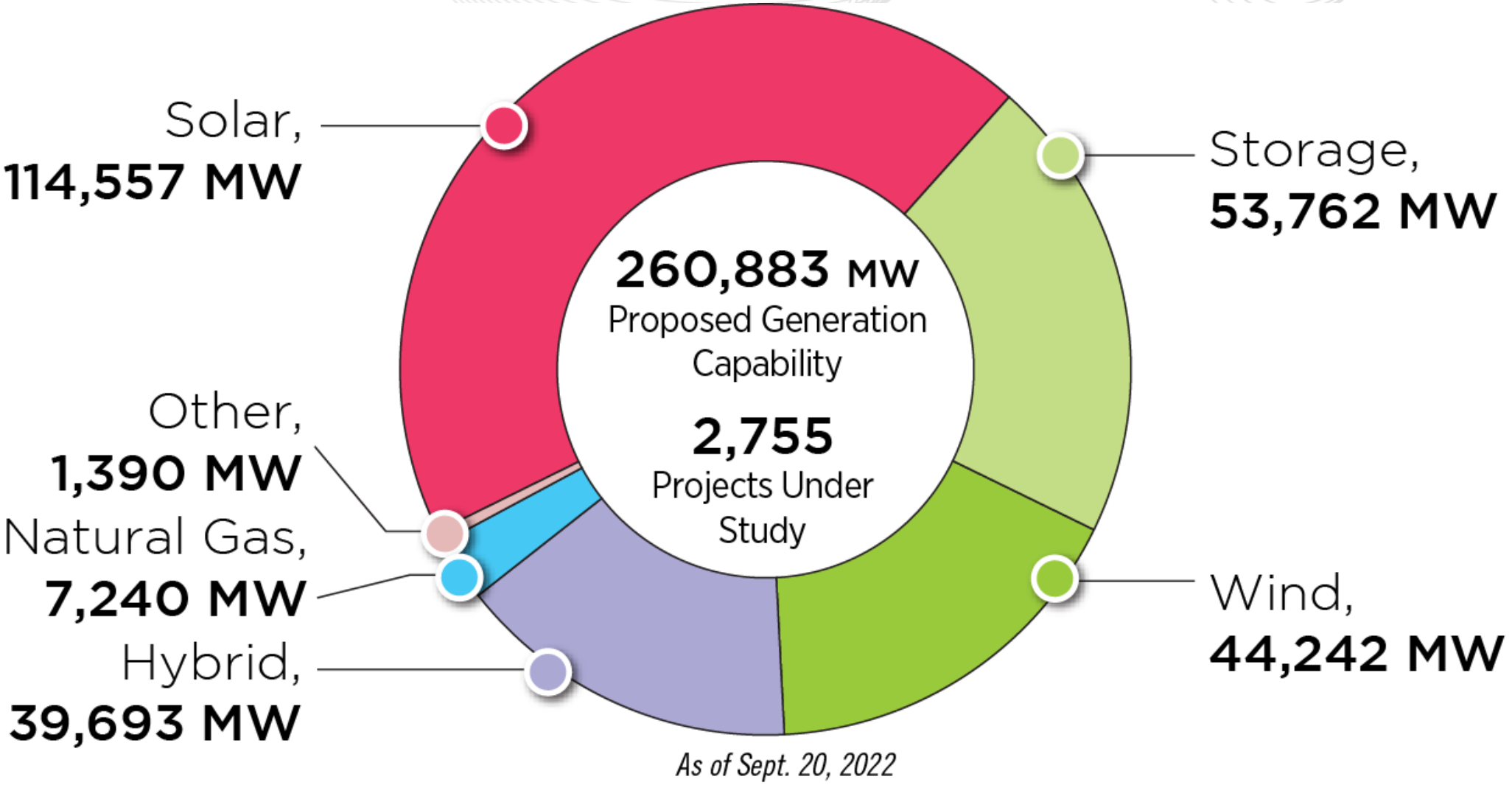
Market Operation
- Energy
- Capacity
- Ancillary services

Changing Energy Mix

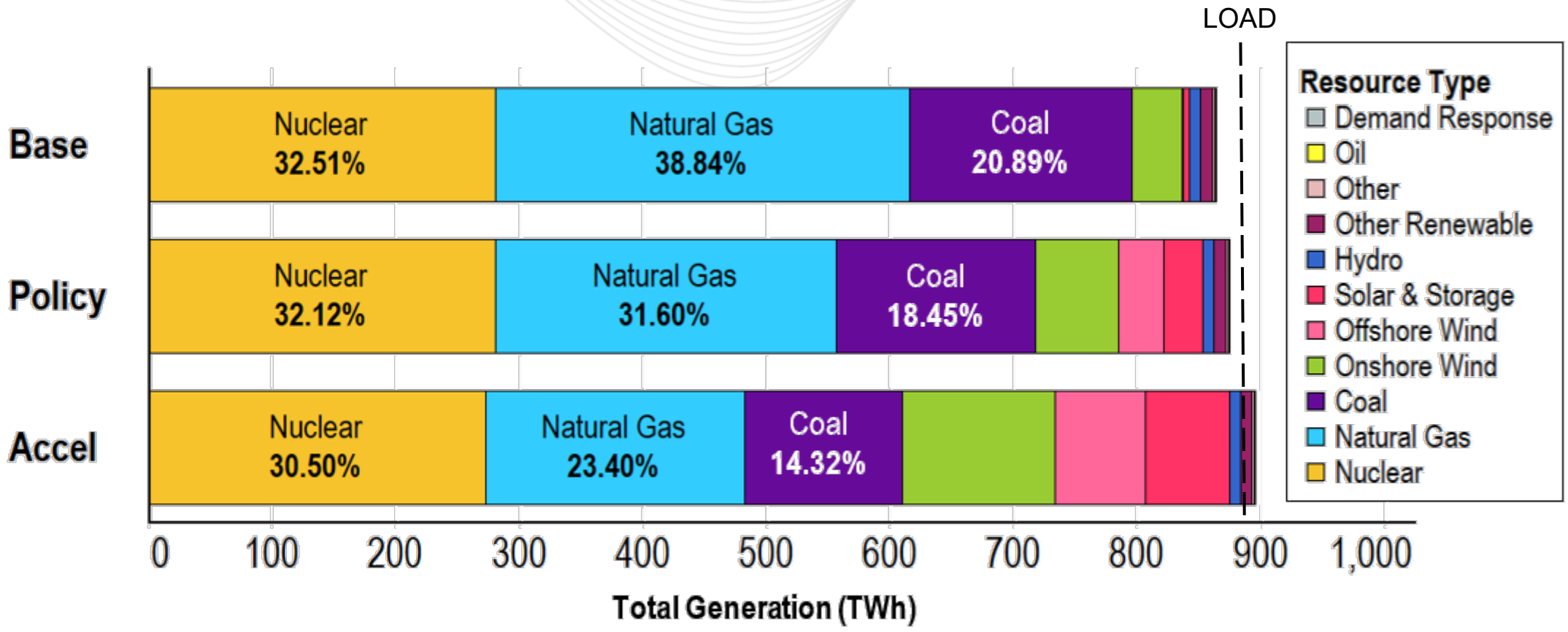


Current Interconnection Queue

As of Sept. 20, 2022

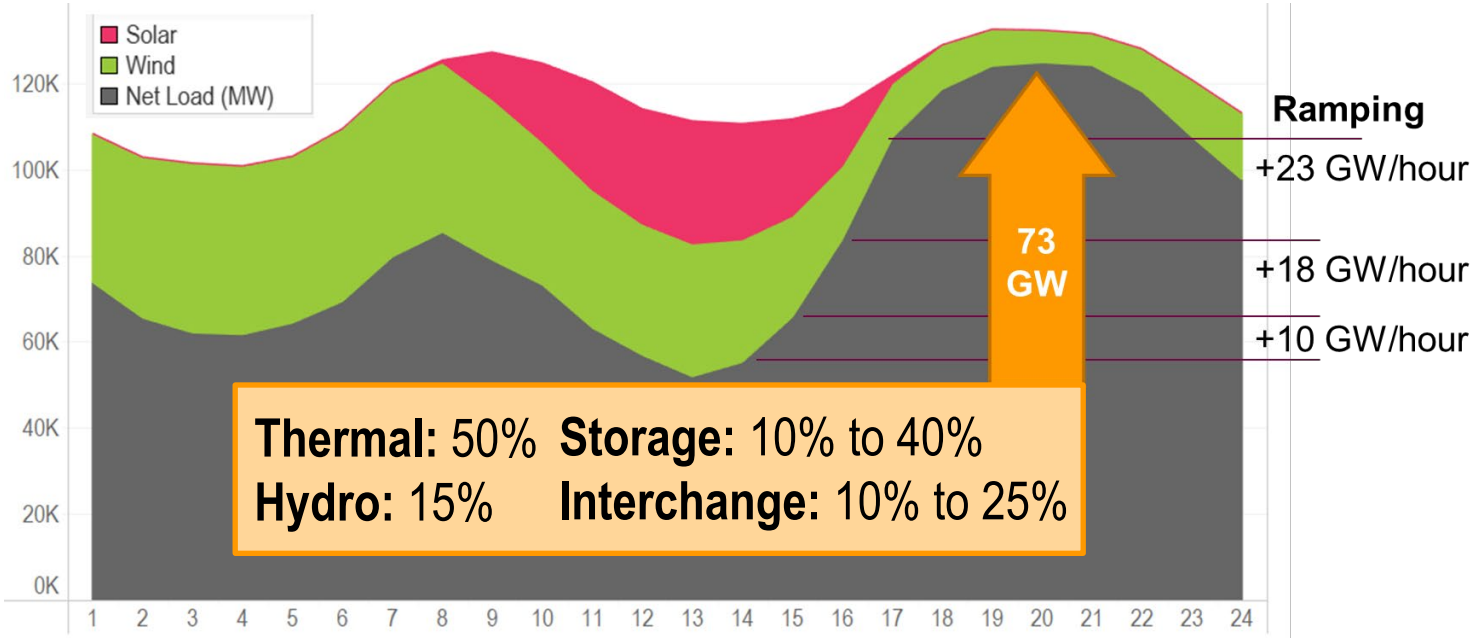


Recent Studies Highlight Concerns



Focus Area No. 4

The Integration of Renewable Resources Increases the Need for Balancing Resources To Meet Forecasted Ramping Requirements & Increases the Operational Flexibility Needs in Winter.



* Peak ramping in Winter

KEY INDICATORS

- Ramping: 50% Load, 50% Renewables
- 90th percentile > 10 GW/hour
- Peak ramping > 20 GW/hour
- Winter season has the highest ramps (adverse alignment with load)

Expanding Studies

Summer and Winter Seasonal Studies	• High level study evaluating summer and winter conditions
Six Month Out Study	• Study of transmission system six months in the future using submitted outage data
Long Range Study *	• Similar to the Six Month Out Study, but looking farther into the future
System Voltage Study *	• Evaluation to identify potential system voltage violations on the transmission system

Note: Long Range Study and System Voltage Studies are new reliability studies being developed specifically for this situation

Shared Responsibility for Reliability