2025-2044 System & Resource Outlook Update

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Electric System Planning Working Group (ESPWG)

Monday, March 9, 2026

Agenda

- Policy Case Scenario Selection
- Sensitivity Analysis
- Next Steps
- Appendix
  - Detailed capacity expansion scenario results

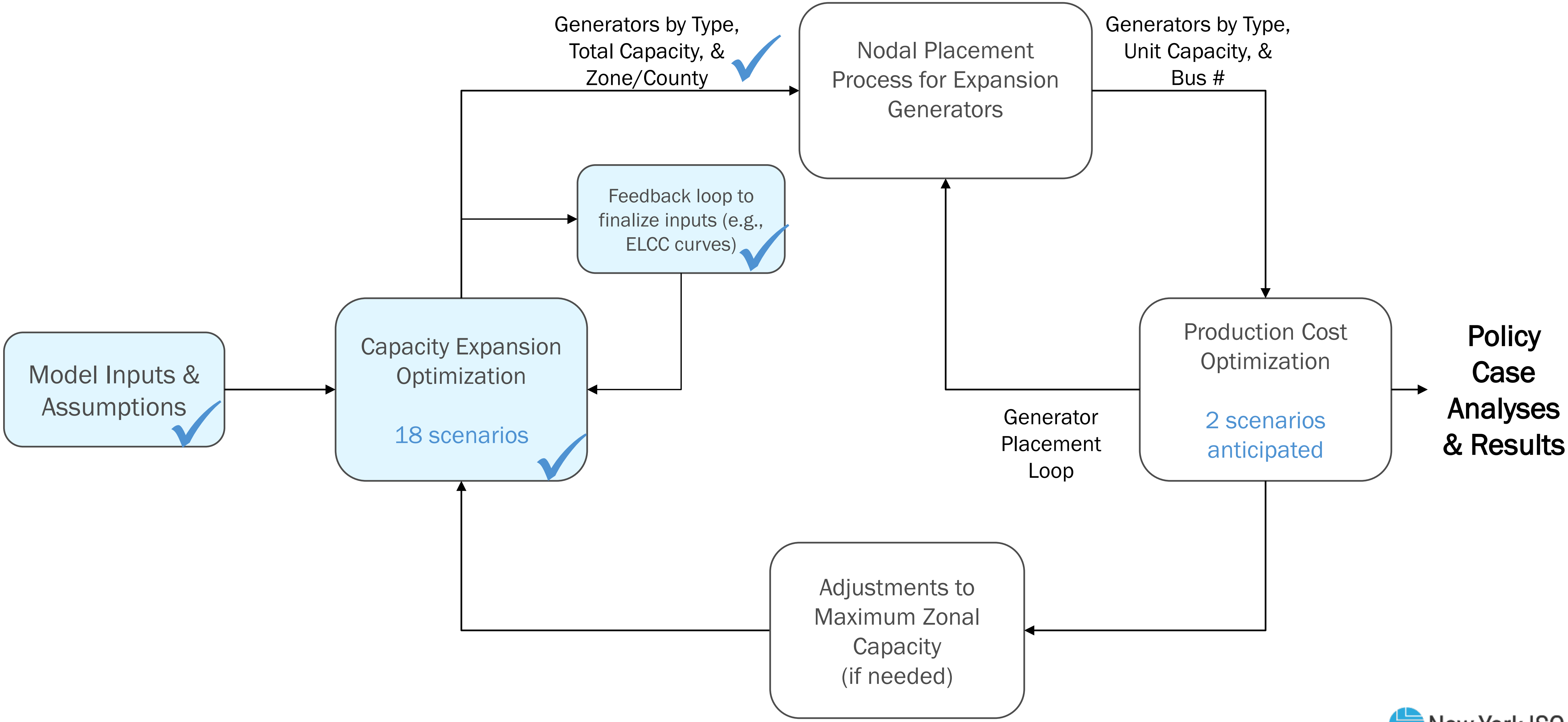
Status of Outlook Scenarios

- Preliminary results for the Outlook cases are included in ESPWG materials
  - Base Case – January 20, 2026 ESPWG
  - Contract Case – February 3, 2026 ESPWG
  - Policy Case – February 19, 2026 ESPWG
- Production cost modeling for the Policy Case will be performed for select scenarios and results will be included in future ESPWG materials

Capacity Expansion Modeling Updates

- The 2025-2044 Outlook capacity expansion scenarios were re-run with updates to more accurately represent the generation contribution expected of the nuclear fleet
  - Generator properties, such as minimum stable level and maintenance outages, were updated for nuclear units
- Overall, the trends are comparable to the previously presented results (within 3% of installed capacity). The primary differences are:
  - Increased capacity factor for the nuclear fleet
  - Decreased amount of new nuclear capacity built
  - Increased amount of dispatchable generation built (e.g., fossil or ESR)
- Updated results for the capacity expansion scenarios, as compared to the February 19, 2026 ESPWG, are included in the appendix of this presentation

Policy Case Simulation Framework

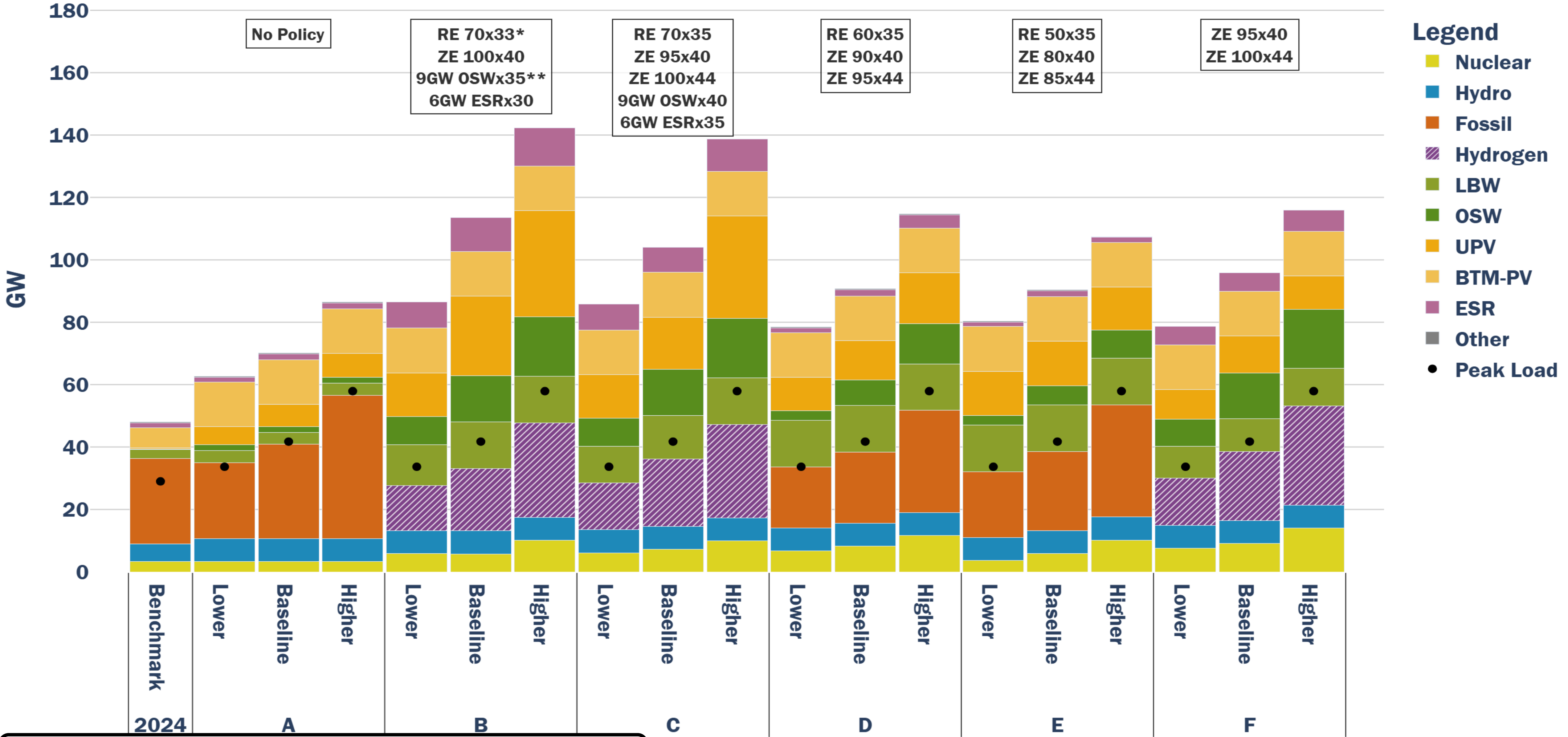


Policy Case Scenario Selection

Policy Case Production Cost Scenarios

- **For this Outlook, NYISO anticipates selecting two scenarios from the capacity expansion model for further analysis in its production cost model to help identify transmission investment opportunities in the Policy Case**
  - See October 20, 2025 and February 19, 2026 ESPWG meeting materials for additional detail
- **Preliminary results for the Policy Case and the NYISO's preliminary recommendation on the selection of scenarios were discussed at the February 19, 2026 ESPWG**
  - Capacity expansion scenario results are included in the appendix

2044 Installed Capacity Summary



*70% Renewable Energy by 2033 is not achievable in B-Higher
**9 GW of OSW by 2035 is not achievable in any B-Scenario

Criteria for Selection

- **In consideration of stakeholder feedback, the key factors for selection of the scenarios for production cost modeling include:**
  - Scenarios with unique resource mixes (i.e., total amount and type of generation capacity)
  - Scenarios with varying degrees of policy achievement
  - Scenarios with unique demand forecasts
- **In selecting scenarios with such differences, NYISO can evaluate transmission expansion opportunities over a range of future outcomes**
  - The Policy Case scenarios will supplement the analyses conducted for the Outlook's Base and Contract Cases

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Scenario Selection

- **In its determination for scenarios to further assess in its production cost model, NYISO selects:**
  - Scenario C-Higher
    - The selected scenario would represent a zero-emissions system by the end of the study period
  - Scenario D-Baseline
    - The selected scenario would represent a scenario with relaxed policy targets during and at the end of the study period (95% zero-emissions by 2044)

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Sensitivity Analysis

Sensitivity Analysis

- **As part of the 2025-2044 Outlook, NYISO will conduct sensitivity analysis to assess key drivers for generation, resource mix, and impacts on projected resource growth**
  - A sensitivity is intended to show the impact on the results of a single targeted assumption change to a reference case

Sensitivity Analysis: Proposal

- Most of this Outlook's sensitivity analysis will be performed on the Policy Case using the capacity expansion model
  - Sensitivities will be performed on the scenarios selected for production cost modeling in the Policy Case
- Targeted sensitivities will be considered for the NYISO's production cost model, as appropriate to the use case and subject to NYISO resourcing
- A preliminary list of proposed sensitivities for this Outlook is included on the following slides for stakeholder consideration

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List of Proposed Sensitivities

Capacity Expansion Model (Policy Case)

- "Copper sheet" analysis
- Annual build constraints for new resources
- Longer lead times for new resources
- Declining build cost for battery storage resources
- Limited new capacity of OSW (e.g., 0 GW)
- Limited new capacity of nuclear (e.g., 5 GW)
- Increased downstate load due to electrification of the ConEd steam system

Additional suggestions from stakeholders?

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List of Proposed Sensitivities

Production Cost Model

- "Copper sheet" analysis (e.g., relaxation of the lower kV system)
- Adjusted net imports from HQ
- Increased natural gas price forecast
- Extreme weather (e.g., "winter cold snap" or "summer heat wave")
  - Note: a limited timeframe (e.g., week or month) would be simulated

Additional suggestions from stakeholders?

Next Steps

Next Steps

- Continue to perform technical analyses for the Base and Contract Cases
  - Includes, but is not limited to, operational analysis and transmission congestion analysis
- Perform production cost simulations for the Policy Case
- Perform sensitivity analysis
- Continue discussions with stakeholders

Questions, Comments, & Feedback?

Email additional feedback related to the 2025-2044 System & Resource Outlook to:
stakeholder_services@nyiso.com with the subject line "System & Resource Outlook"

Study Schedule

2025-2044 Outlook: Study Schedule

Q3 2025	Q4 2025	Q1 2026	Q2 2026

Q3 2025 – Q4 2025

- ✓ Assumptions development
- ✓ Preliminary model development

Q1 2026

Model development & Preliminary results

NOW

Analyses

Q2 2026

Draft report

Final report

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2025-2044 System & Resource Outlook Data Catalog

Report

Report Placeholder

Study Summary

Summary Placeholder

Report Appendices

Draft Appendix: Production Cost Model Benchmark
Draft Appendix: Production Cost Model Assumptions Matrix
Draft Appendix: Capacity Expansion Model Assumptions Matrix

Data Documents

Draft: Forecast Assumptions Data Document

Stakeholder Presentations

December 3, 2024
- 2023-2042 Outlook Lessons Learned

May 21, 2025
- 2025-2044 Outlook Kickoff

July 23, 2025
- 2025-2044 Outlook: Base & Contract Case Preliminary Assumptions

August 21, 2025
- 2025-2044 Outlook: Base & Contract Case Assumptions

September 4, 2025
- 2025-2044 Outlook: Policy Case Preliminary Assumptions

September 25, 2025
- 2025-2044 Outlook: Policy Case Preliminary Assumptions & Final Benchmark Results

October 20, 2025
- 2025-2044 Outlook: Policy Case Assumptions

December 18, 2025
- 2025-2044 Outlook: Status Update

January 20, 2026
- 2025-2044 Outlook: Preliminary Base Case Results

February 3, 2026
- 2025-2044 Outlook: Preliminary Contract Case Results

February 19, 2026
- 2025-2044 Outlook: Preliminary Policy Case Results

2023-2042 System & Resource Outlook Data Catalog
2021-2040 System & Resource Outlook Data Catalog

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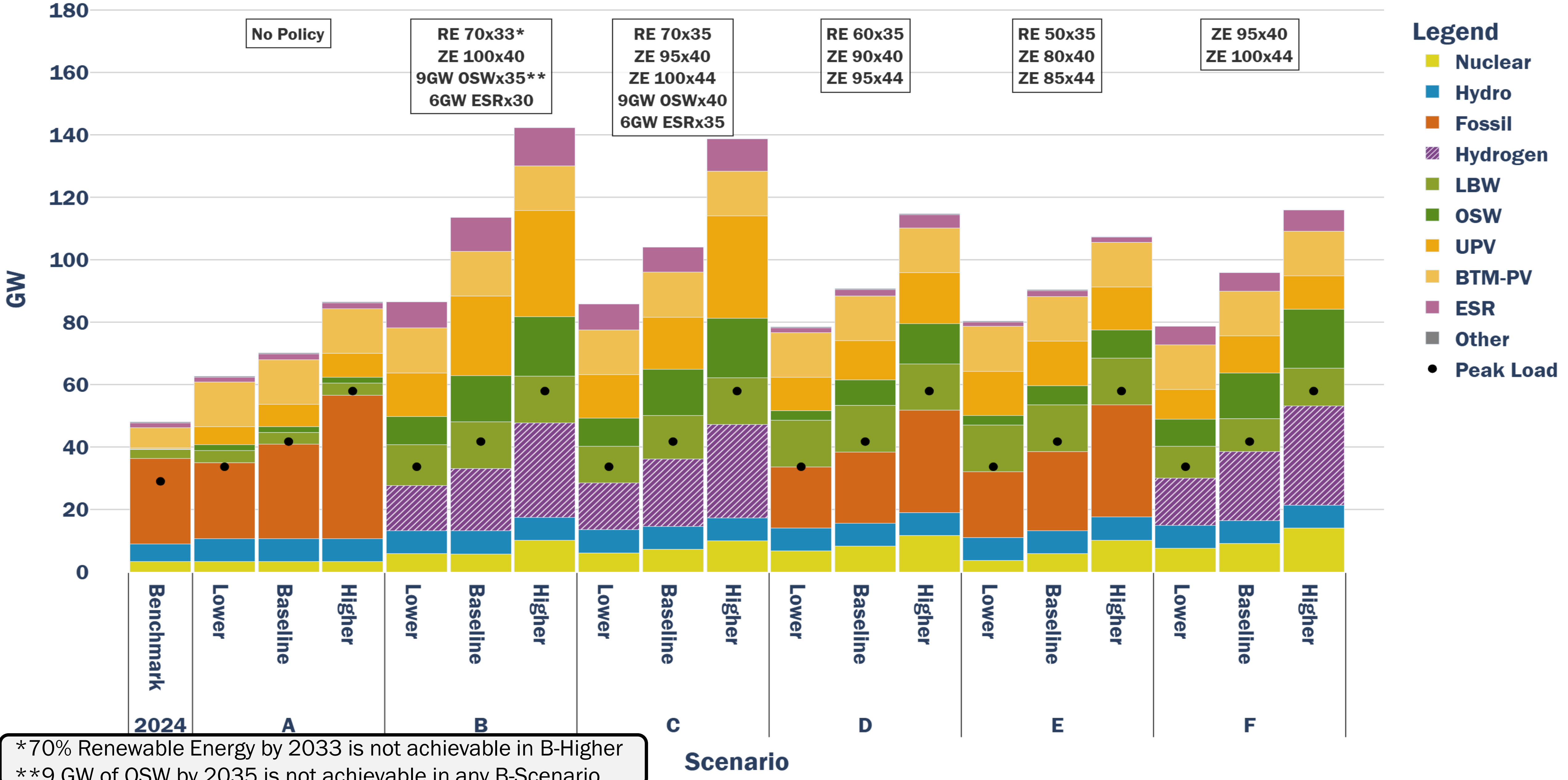
Appendix

2044 Installed Capacity Summary



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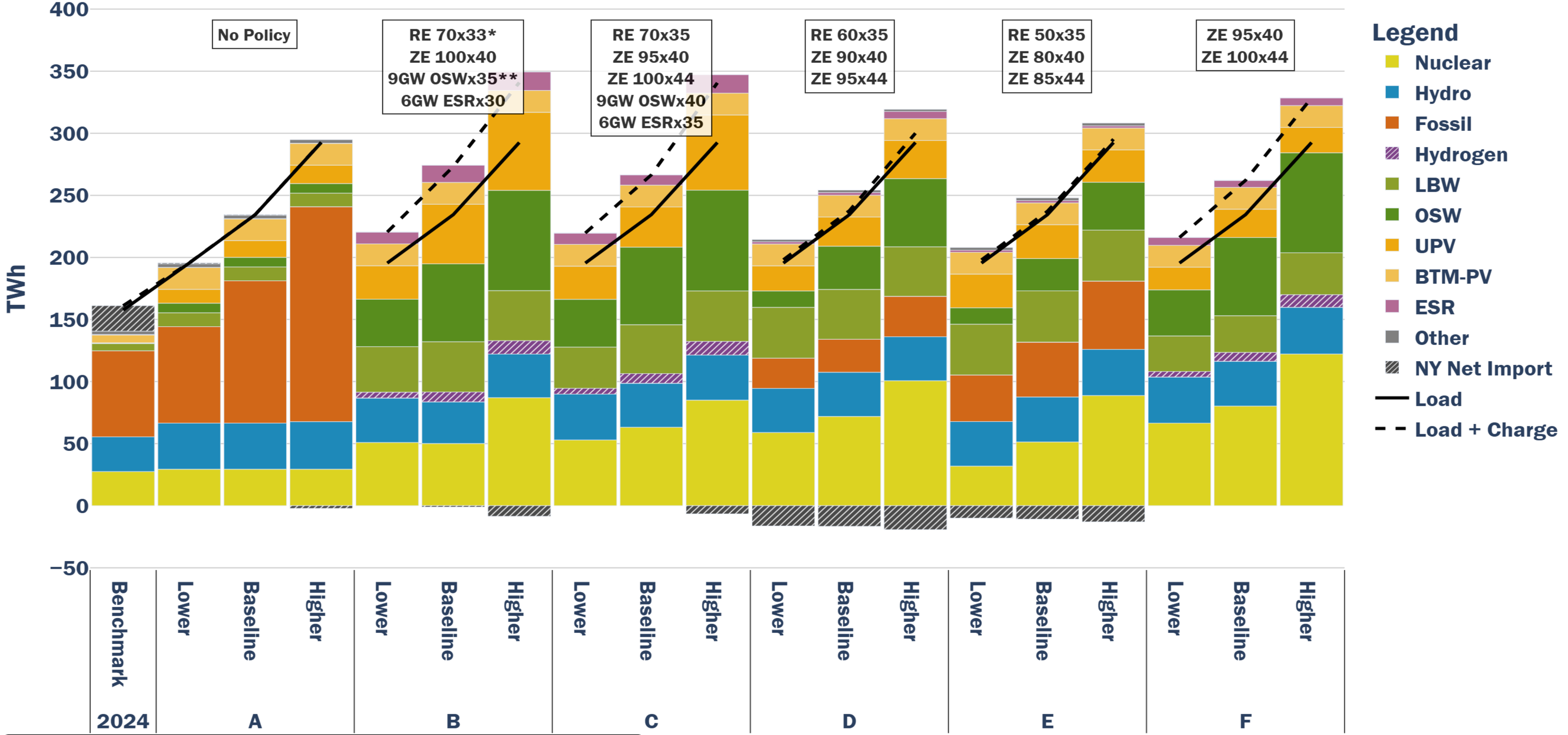
2044 Generation Summary



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Lower Demand Preliminary Results

		2044 Installed Capacity (MW)					
Scenario	2024 Benchmark	A-Lower	B-Lower	C-Lower	D-Lower	E-Lower	F-Lower
Nuclear	3,366	3,326	5,866	6,086	6,754	3,645	7,558
Fossil	27,680	24,249	-	-	19,444	21,053	-
Hydrogen	-	-	14,382	15,030	-	-	15,090
Hydro	5,609	7,361	7,361	7,361	7,361	7,361	7,361
LBW	2,875	3,893	13,109	11,824	14,943	14,900	10,169
OSW	136	1,876	9,000	9,000	3,136	3,136	8,678
UPV	409	5,841	14,076	13,874	10,751	14,204	9,536
BTM-PV	6,415	14,303	14,303	14,303	14,303	14,303	14,303
Storage	1,515	1,465	8,327	8,410	1,465	1,465	6,042
Total	48,004	62,314	86,424	85,887	78,158	80,068	78,736

Baseline Demand Preliminary Results

		2044 Installed Capacity (MW)					
Scenario	2024 Benchmark	A-Baseline	B-Baseline	C-Baseline	D-Baseline	E-Baseline	F-Baseline
Nuclear	3,366	3,326	5,773	7,222	8,243	5,870	9,135
Fossil	27,680	30,154	-	-	22,817	25,336	-
Hydrogen	-	-	19,999	21,516	-	-	22,067
Hydro	5,609	7,361	7,361	7,361	7,361	7,361	7,361
LBW	2,875	3,893	14,943	14,053	14,943	14,943	10,463
OSW	136	1,876	14,826	14,666	8,124	6,094	14,764
UPV	409	7,033	25,438	16,836	12,638	14,261	11,861
BTM-PV	6,415	14,303	14,303	14,303	14,303	14,303	14,303
Storage	1,515	1,860	10,836	8,033	1,938	1,860	5,964
Total	48,004	69,806	113,479	103,990	90,367	90,029	95,918

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Higher Demand Preliminary Results

	2044 Installed Capacity (MW)						
Scenario	2024 Benchmark	A-Higher	B-Higher	C-Higher	D-Higher	E-Higher	F-Higher
Nuclear	3,366	3,326	10,121	9,920	11,579	10,168	13,996
Fossil	27,680	45,847	-	-	32,777	36,030	-
Hydrogen	-	-	30,194	29,953	-	-	31,817
Hydro	5,609	7,361	7,361	7,361	7,361	7,361	7,361
LBW	2,875	3,893	14,943	14,943	14,943	14,943	12,007
OSW	136	1,876	19,077	19,077	12,844	9,004	18,907
UPV	409	7,723	34,123	32,764	16,420	13,697	10,689
BTM-PV	6,415	14,303	14,303	14,303	14,303	14,303	14,303
Storage	1,515	1,888	12,202	10,401	4,211	1,676	6,847
Total	48,004	86,217	142,324	138,722	114,438	107,183	115,926

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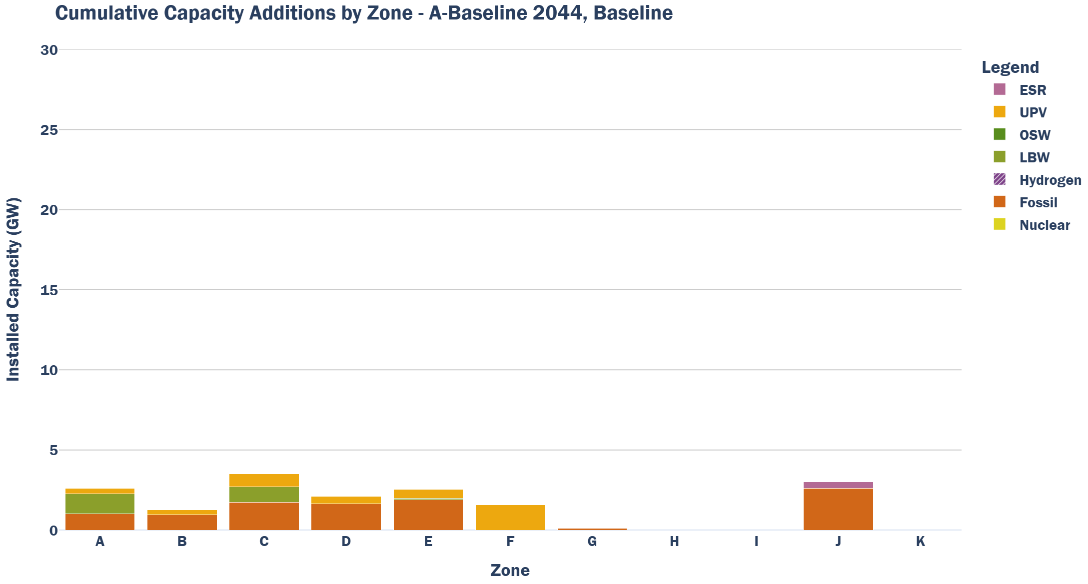
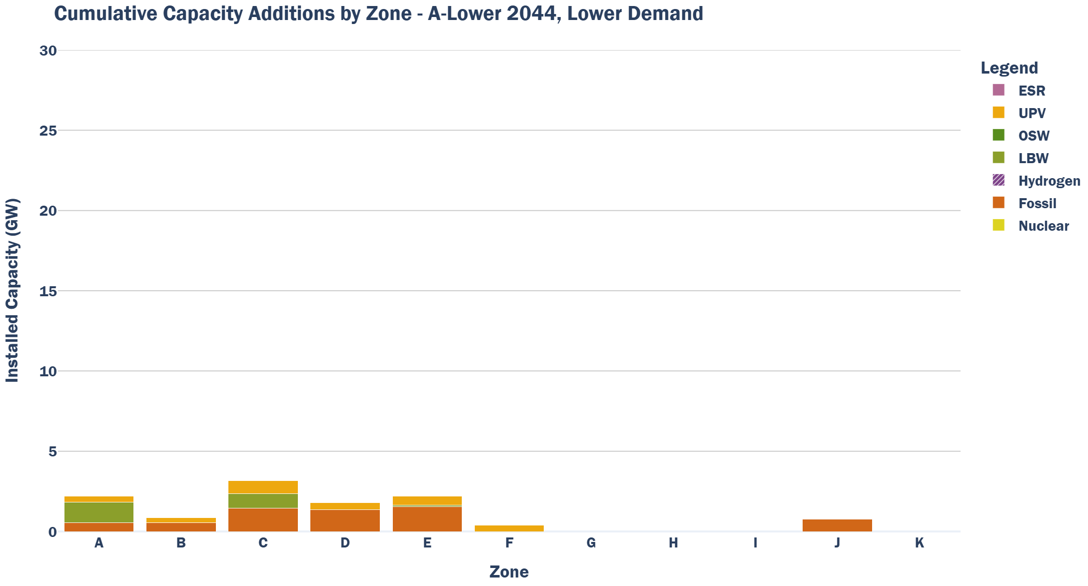
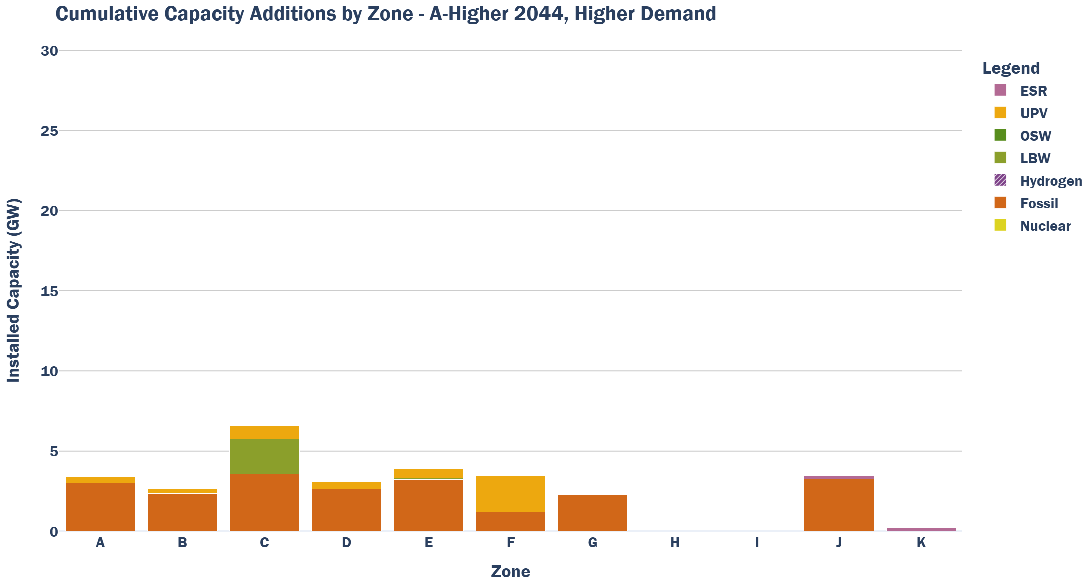
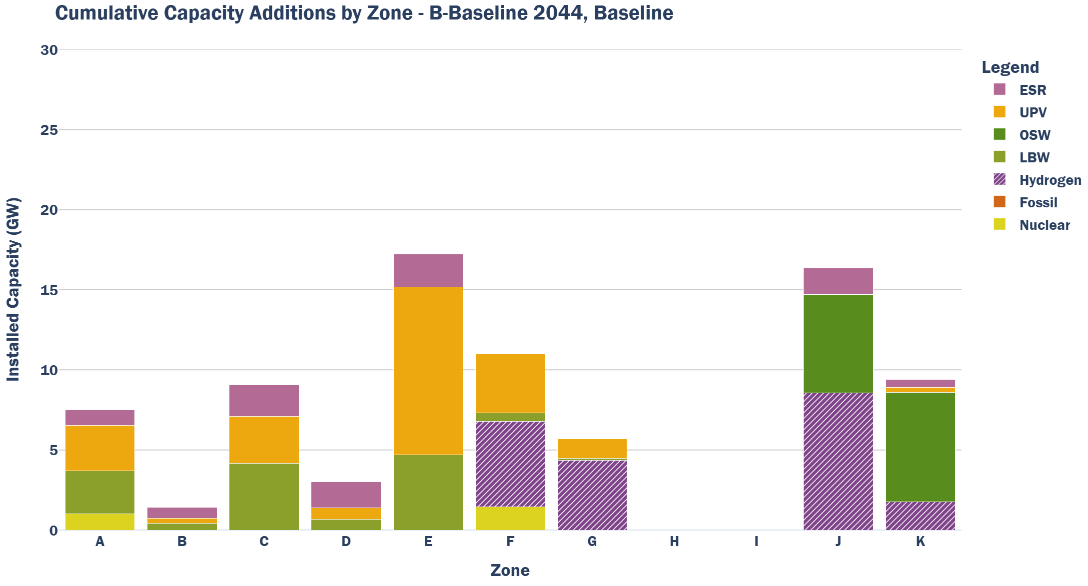
Scenario A: Zonal Capacity Additions

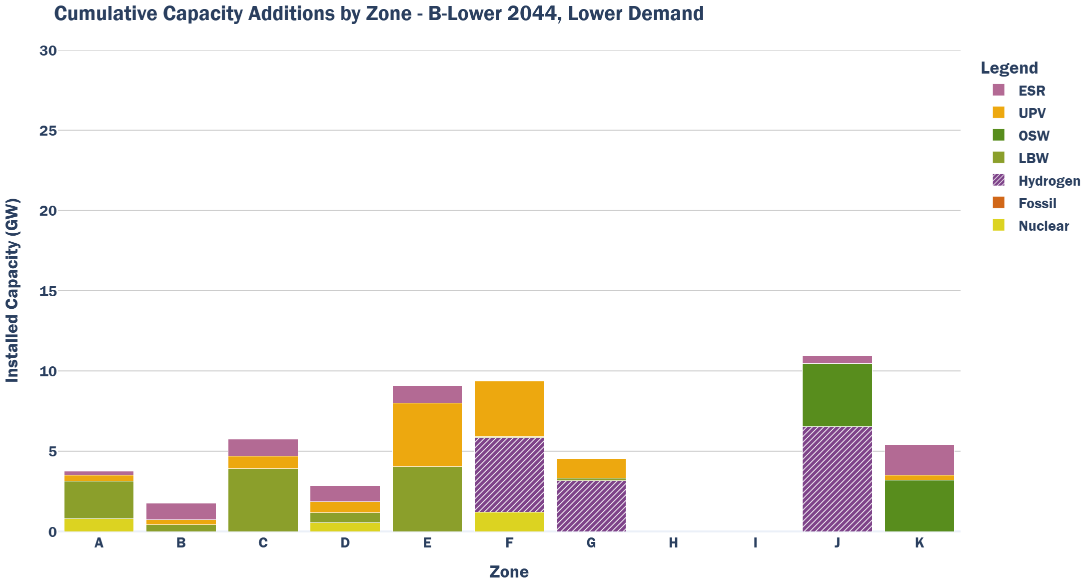


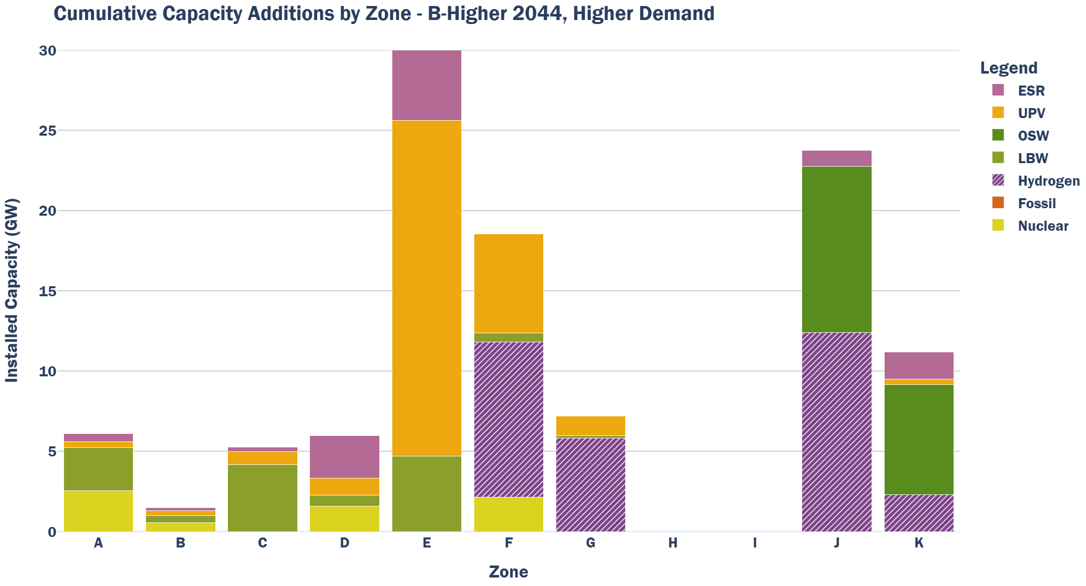




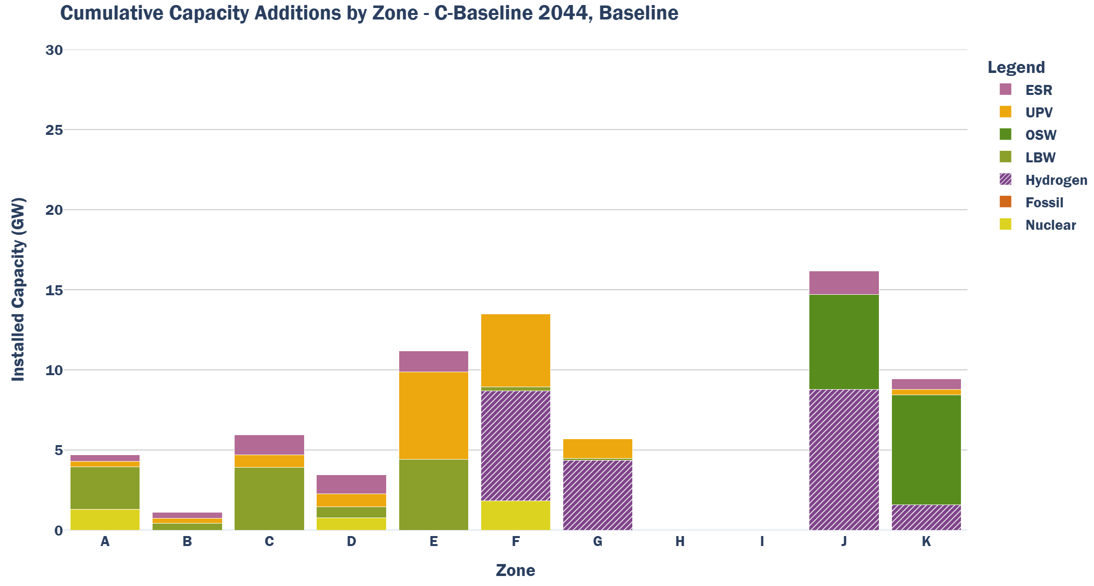
Scenario B: Zonal Capacity Additions

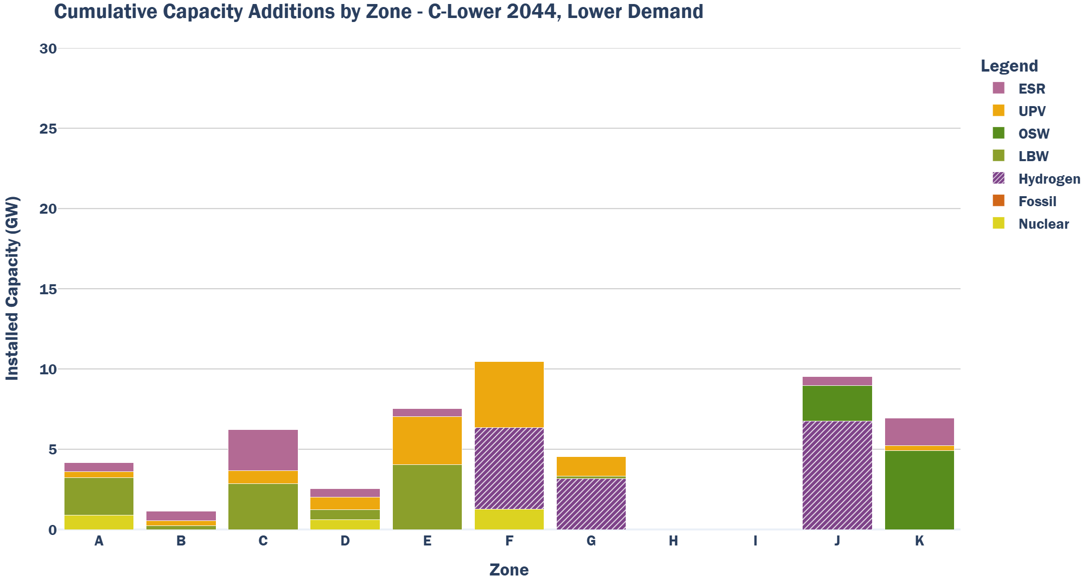


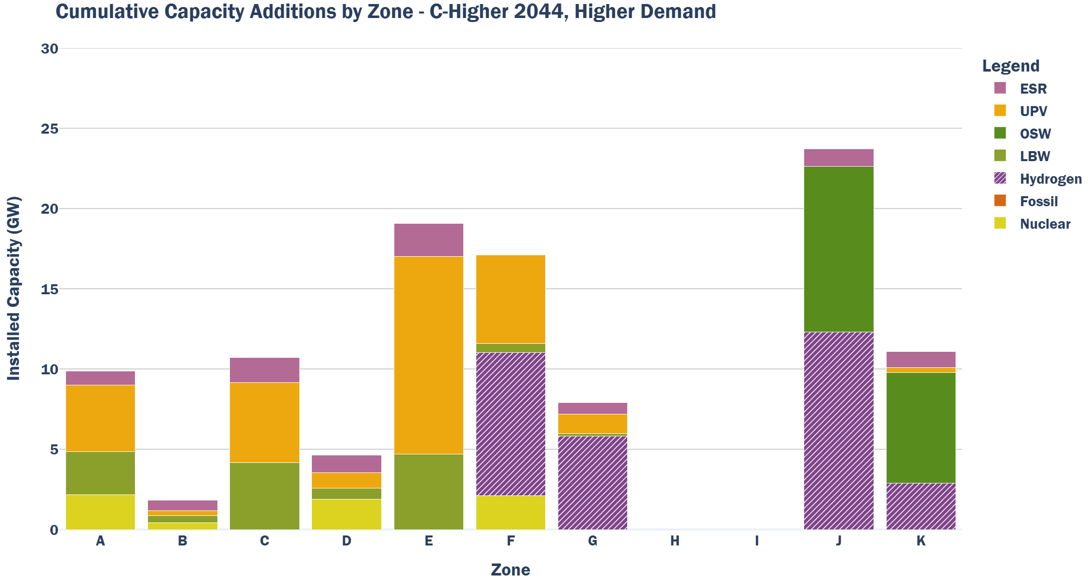




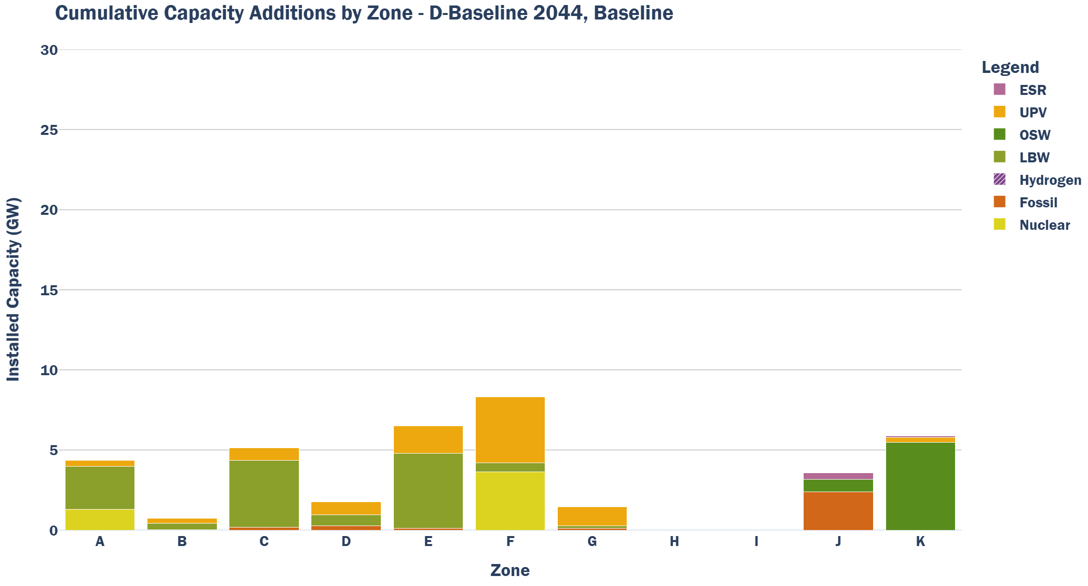
Scenario C: Zonal Capacity Additions

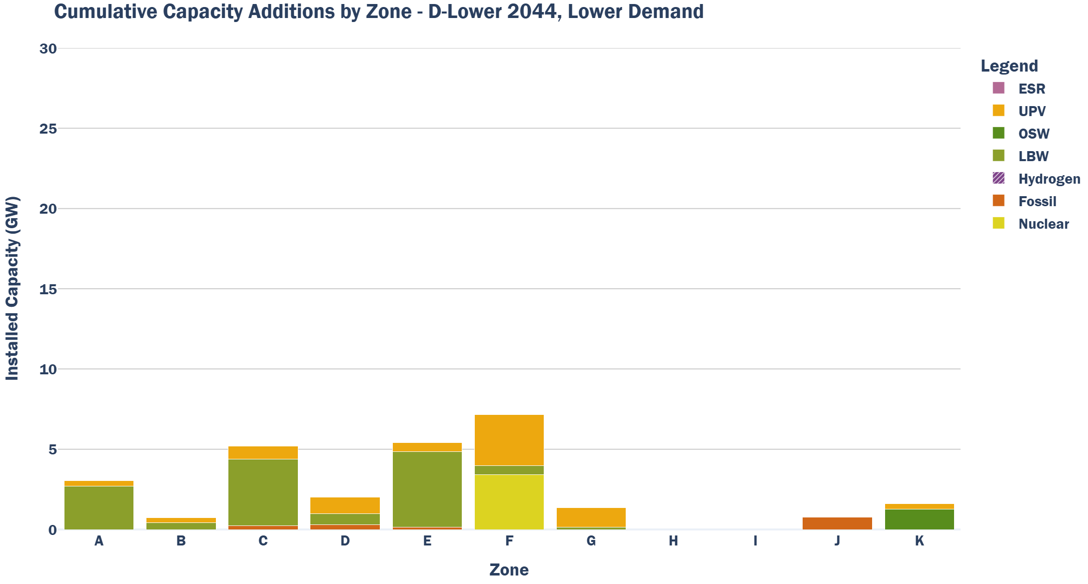


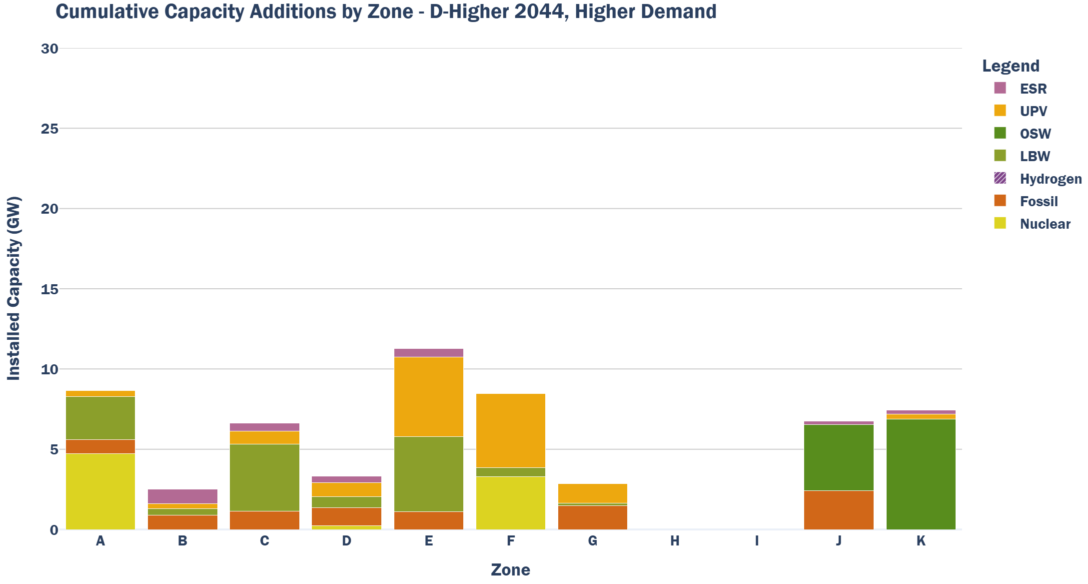




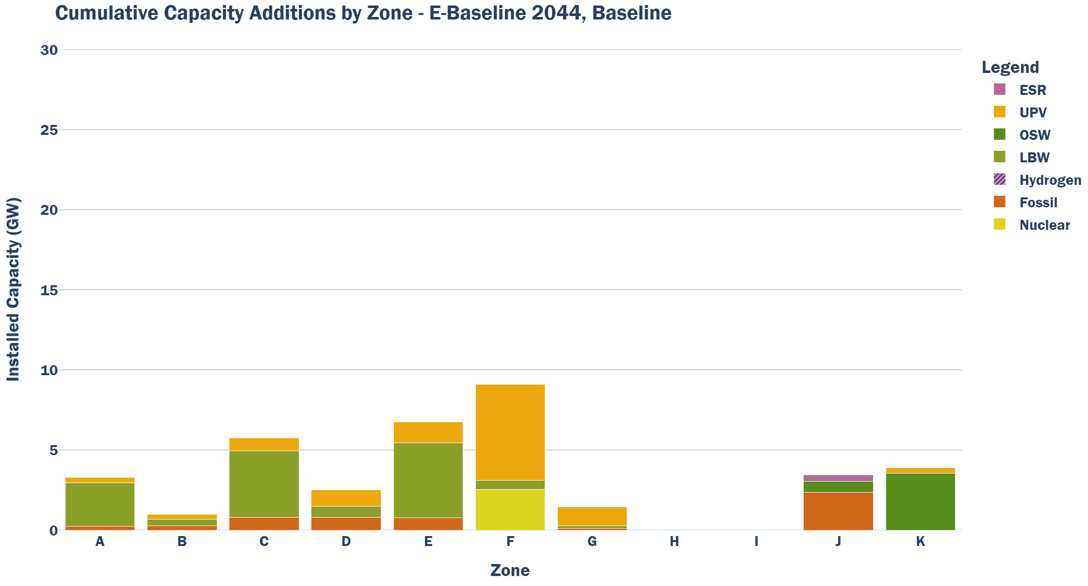
Scenario D: Zonal Capacity Additions

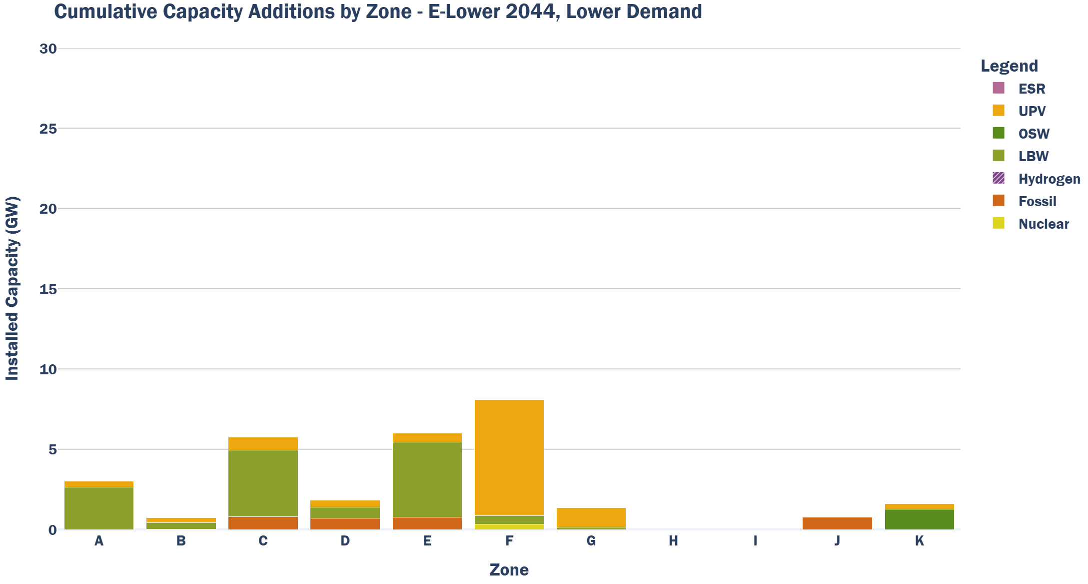


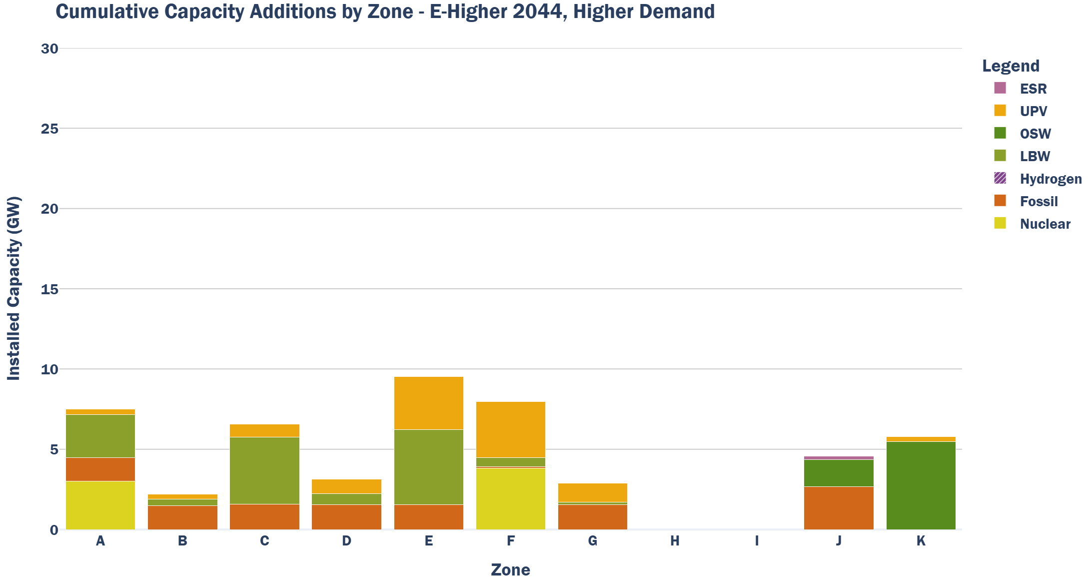




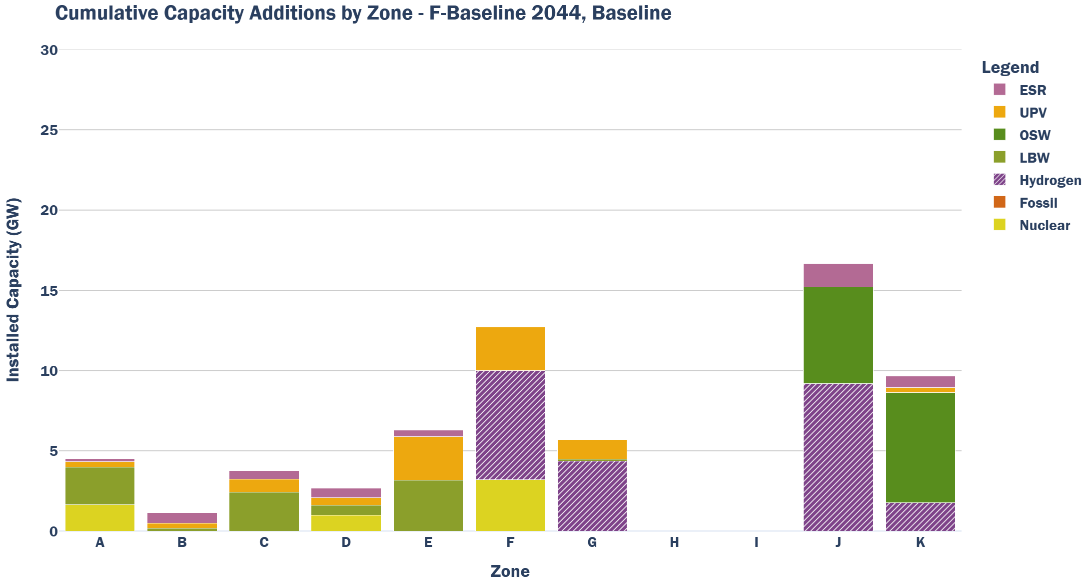
Scenario E: Zonal Capacity Additions

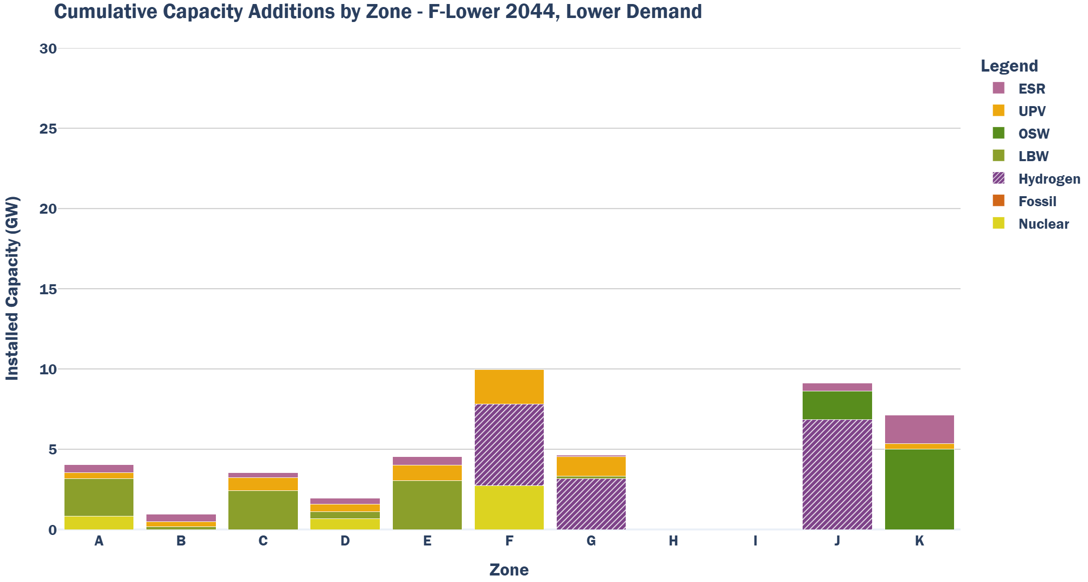


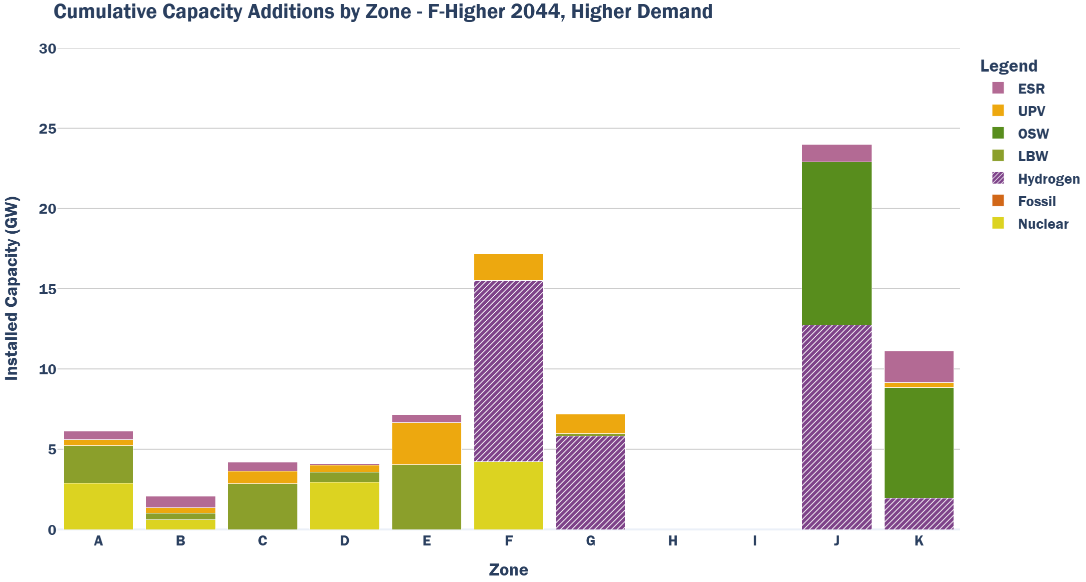




Scenario F: Zonal Capacity Additions







Preliminary Capacity Expansion Results: 20-Year Aggregate CO_2 Emissions