



Northwestern Energy ETAC Meeting # 9

2025 MT IRP Planning Cycle

October 29th, 2025



Agenda

Agenda



Introductions/Welcome (5 min)



Updated IRP Schedule (15 min)

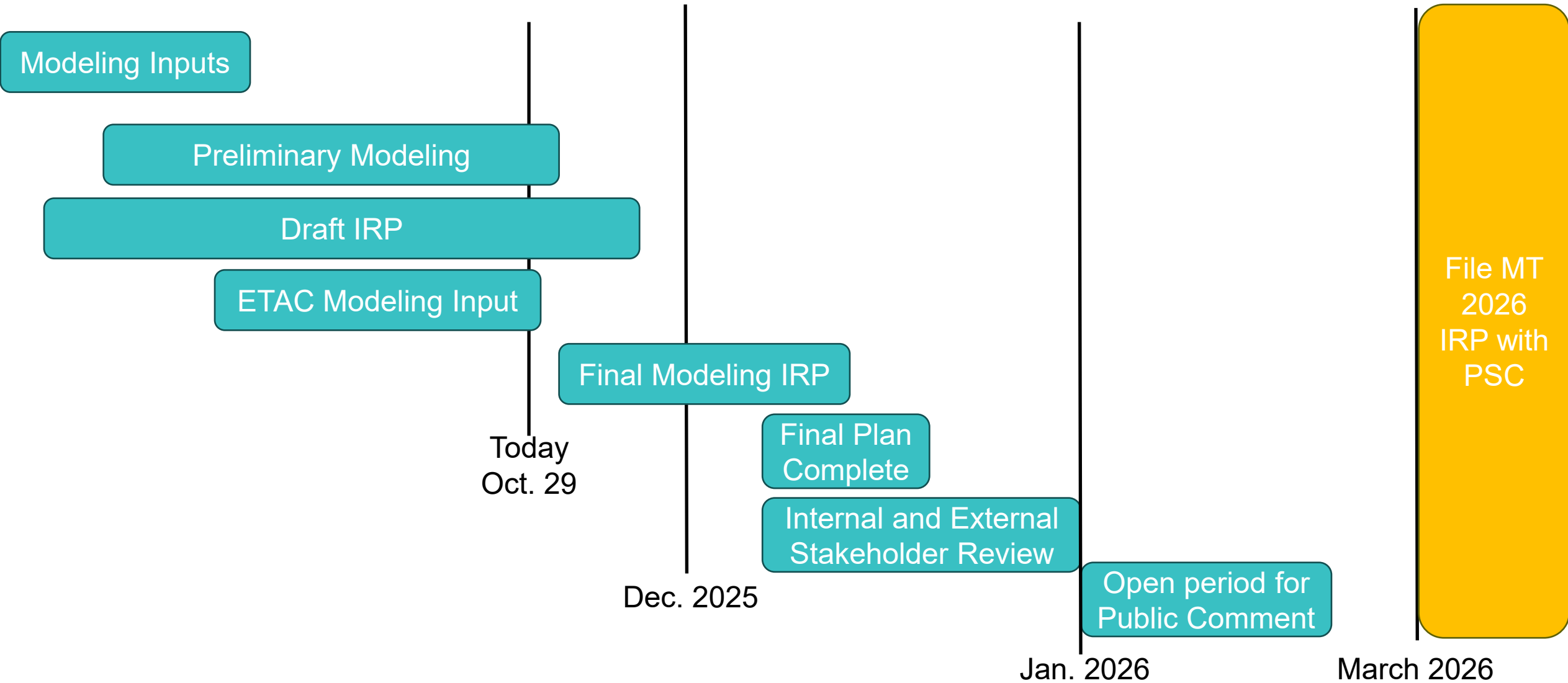


PowerSIMM Finalized ARS Results (80 min)



PowerSIMM Preliminary PCM Results (80 min)

Timeline – High Level (see detailed workplan)





Stakeholder Working Group

Stakeholder Working Group

Meeting Date: 11/10/2025 10:00 AM – 4:00 PM

Location: Butte General Office Building: 11 E Park Street, Butte MT 59701

Participants

Olson, Megan (Meeting Organizer, NWE)

Shafer, Jon (NWE)

Stajcar, Matthew (NWE)

Barnheiser, Quintin (NWE)

Seitz, Brandt (NWE)

Fitzmaurice, Nicholas (MEIC)

Glenn, Evora (City of Missoula)

Morris, Robert (Montana Technological University)

Matson, Gary (Matson's Laboratory)

Unruh, Kyle (RNW)

Goldman, Derek (NWECC)

Leuthold, Jack (Northern Plains)

Mayo, Sheryl (Quantica)



Stakeholder Working Group

- Show Finalized ARS results.
- Show Preliminary PCM results.
- Receive feedback and comments.



IRP Progress Towards Draft Release

(Discussion Item)



PowerSIMM Finalized ARS Results

Scenarios for 2026 MT IRP

- A. Base Case – Colstrip retires December 31, 2042.
- B. Colstrip retires June 30, 2029, according to MATS.
- C. Colstrip complies with MATS using baghouse on July 1, 2030. Colstrip retires December 31, 2042.
- D. Colstrip retires December 31, 2031, according to GHG.
- E. Colstrip retires December 31, 2035.

Sensitivities for 2026 MT IRP

- F. 50% power costs.
- G. 150% power costs.
- H. 50% natural gas costs.
- I. 150% natural gas costs.
- J. 150 MW of additional data center load
- K. 650 MW of additional data center load
- L. 1160 MW of additional data center load
- M. Allow carbon emitting resources after 2035 (PSC request from 2023 IRP)
- N. Only allow carbon free resources to be selected in ARS
- O. Add 370 MW Puget acquisition for retail customers
- P. No 222 MW Avista acquisition
- Q. Add 300 MW of North Plains Connector transmission project
- R. Increase the amount of DSM and NEM in the load forecast

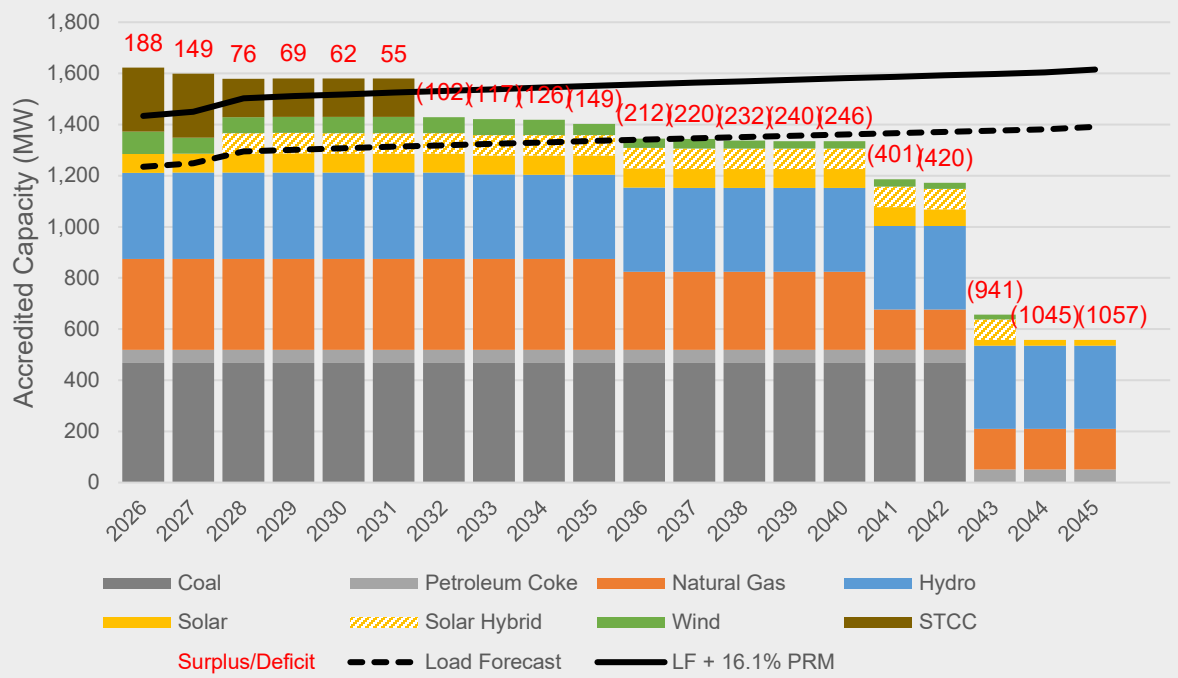
Puget 370 MW Share of Colstrip

- **Updates Since Last Meeting:**

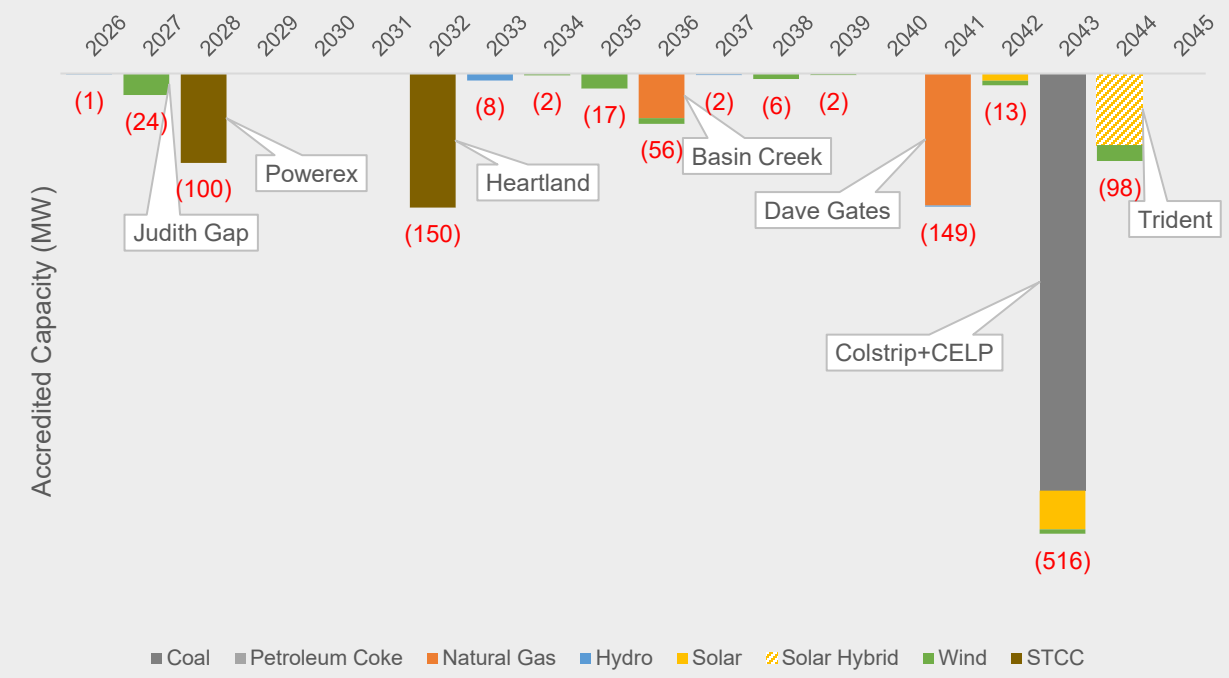
- The Puget Share of Colstrip has been removed from the base case.
- As seen in previous slide, the Puget Share is modeled as a sensitivity to the base case.

Summer Capacity Forecast & Retirements

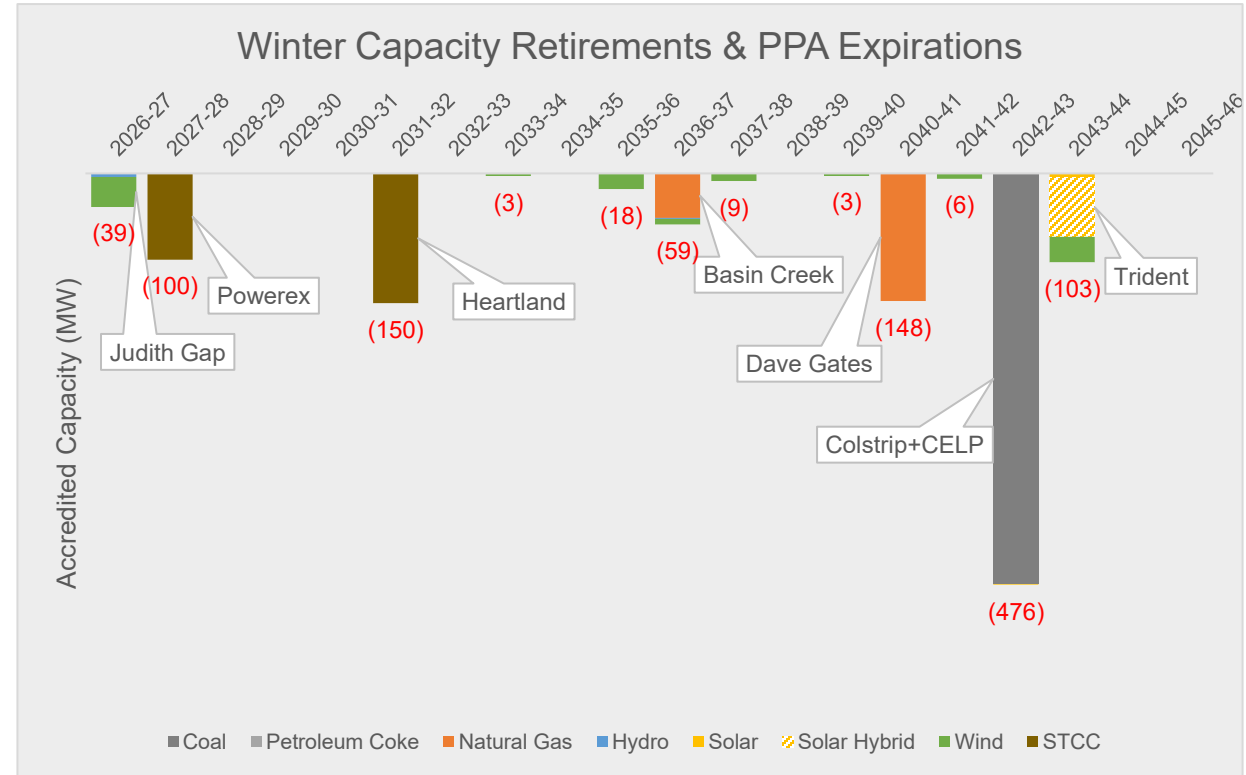
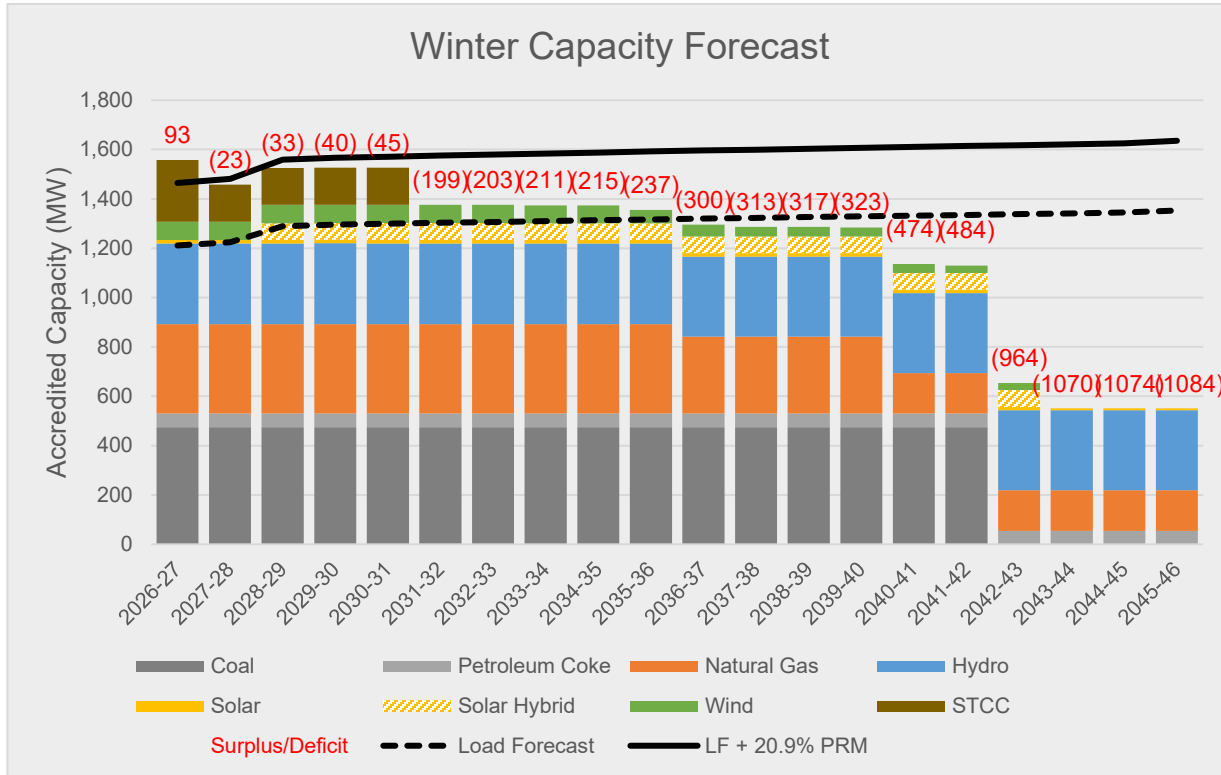
Summer Capacity Forecast



Summer Capacity Retirements & PPA Expirations



Winter Capacity Forecast & Retirements





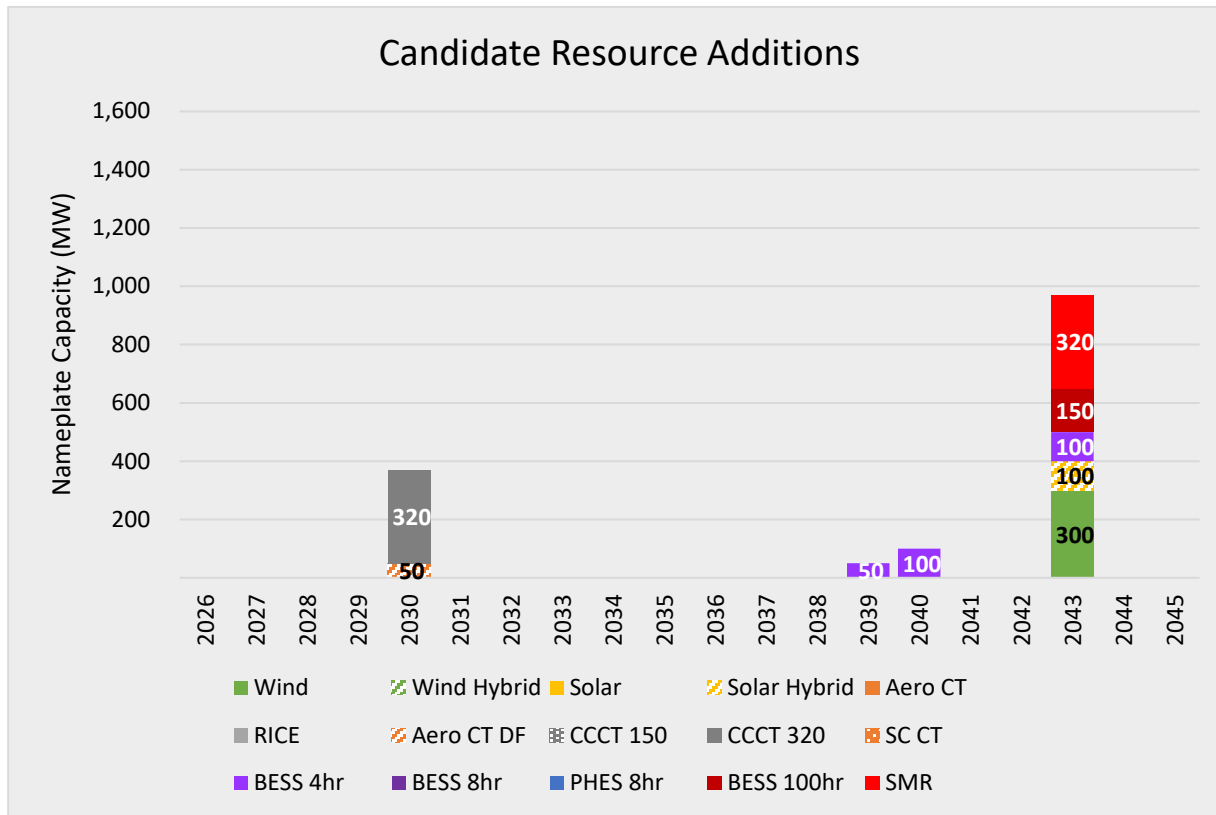
Base Case and Main Scenarios

ARS Modeling Updates Since Last ETAC Meeting

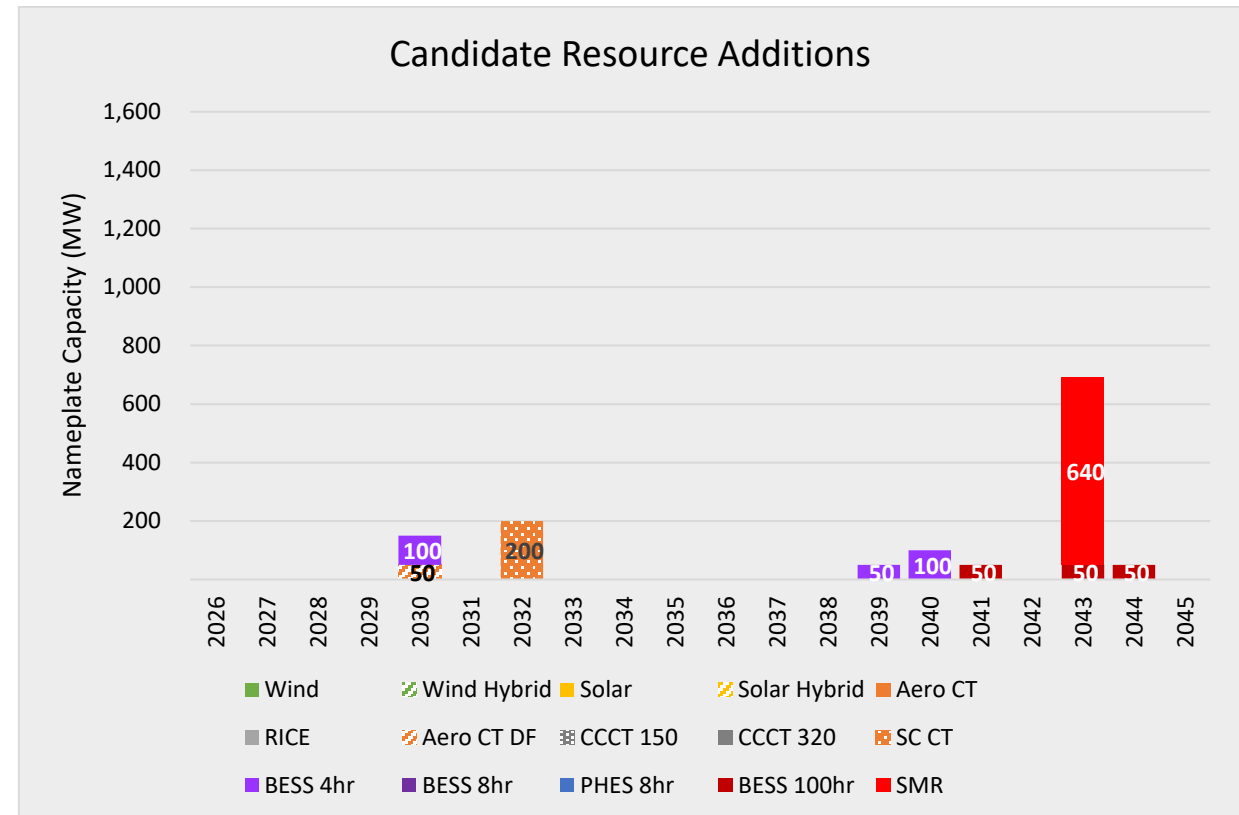
- Fuel infrastructure, i.e. natural gas, and electric interconnection and network upgrade costs are included in the total cost for candidate resources. Before, these costs were going to be included post-processing.
- Long duration energy storage (Form Energy 100h battery) was limited to ~10% of the peak load, or 150 MW. The model heavily favors LDES. Without further reliability and operational analysis, we limited the selection to ensure that too much LDES does not create a reliability issue.
- Implemented an overbuild constraint (see next slide).

ARS Results: Scenario A – Base Case

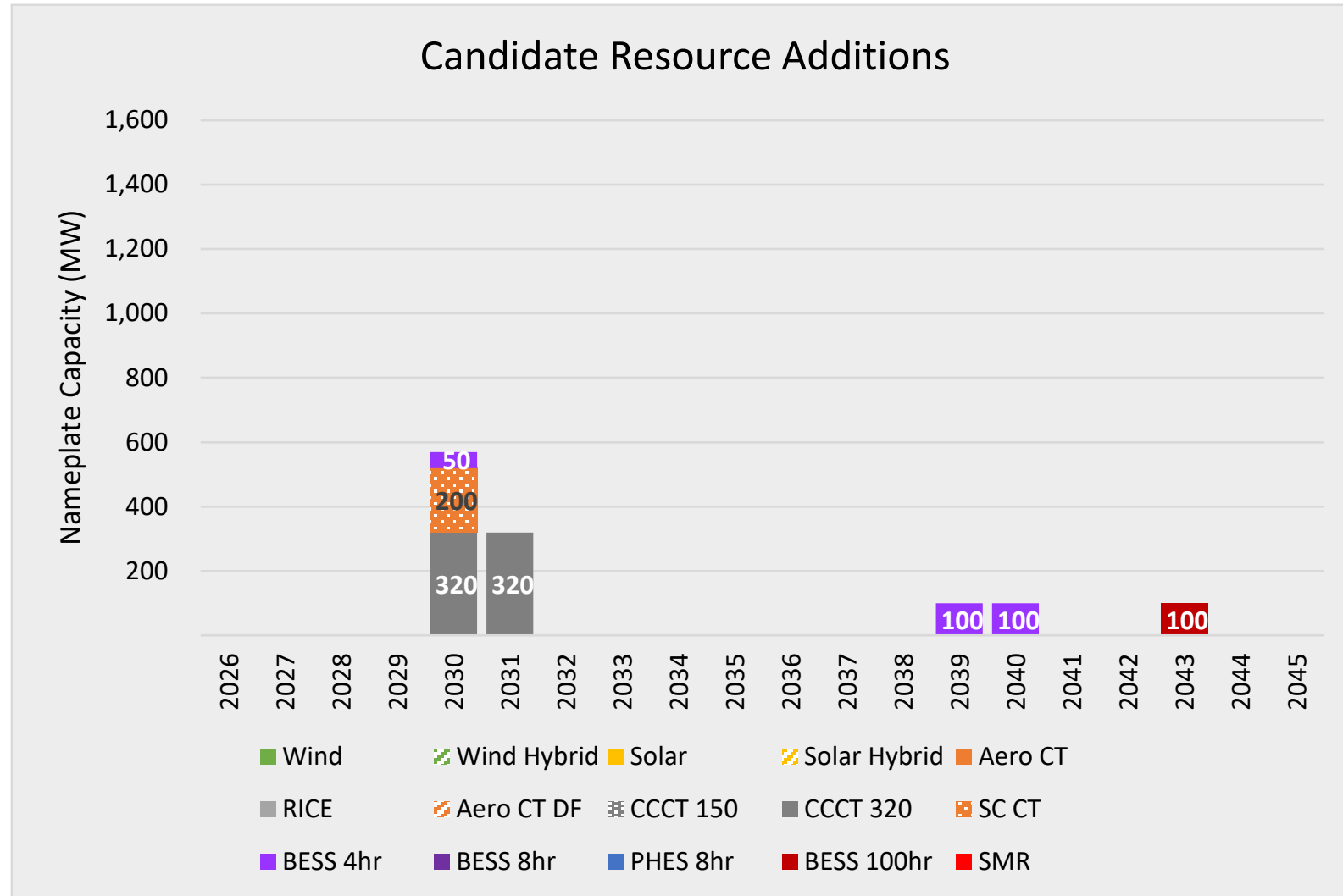
No overbuild constraint



With overbuild constraint above 150 MW threshold



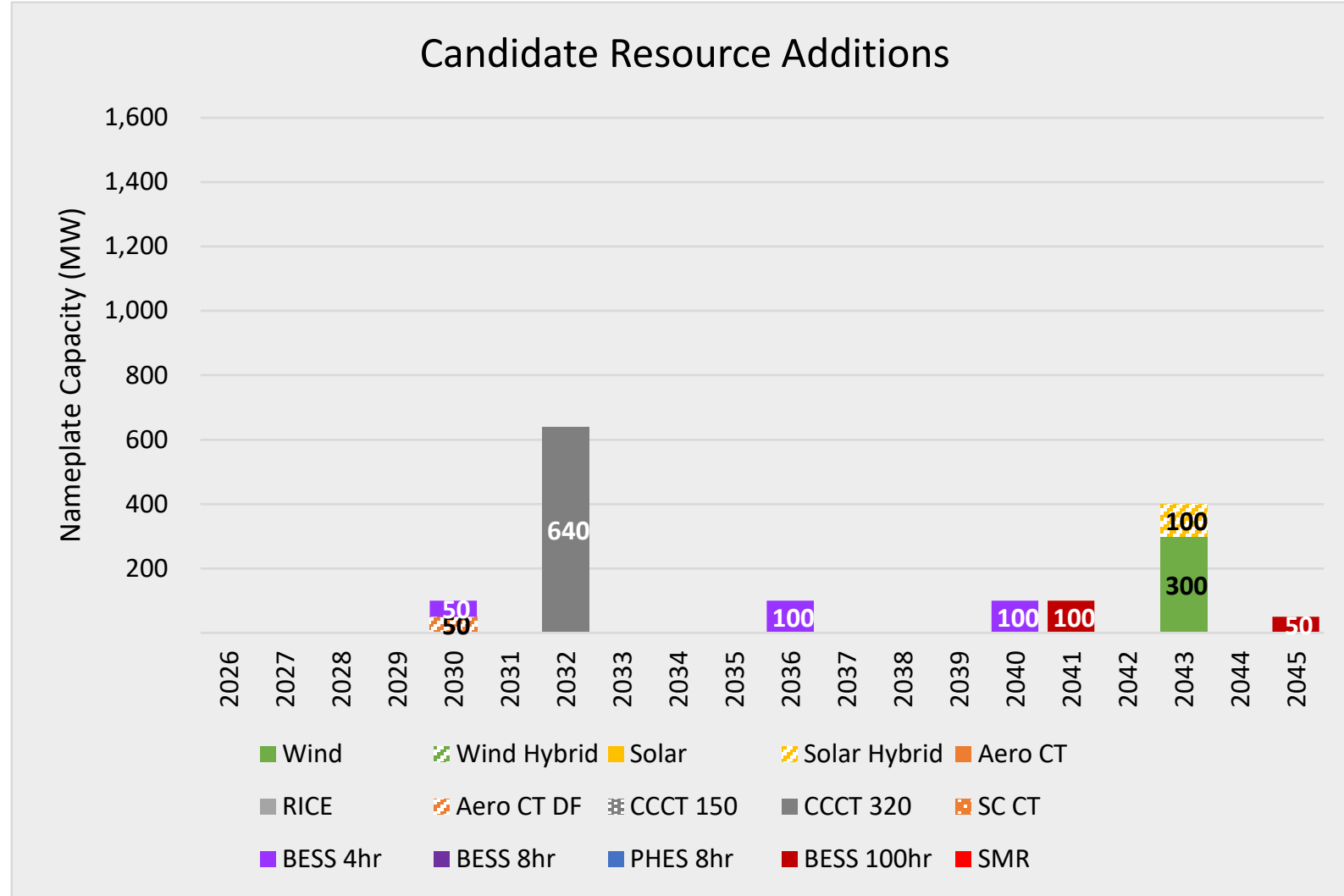
ARS Results: Scenario B – Colstrip Retires to Comply with MATS



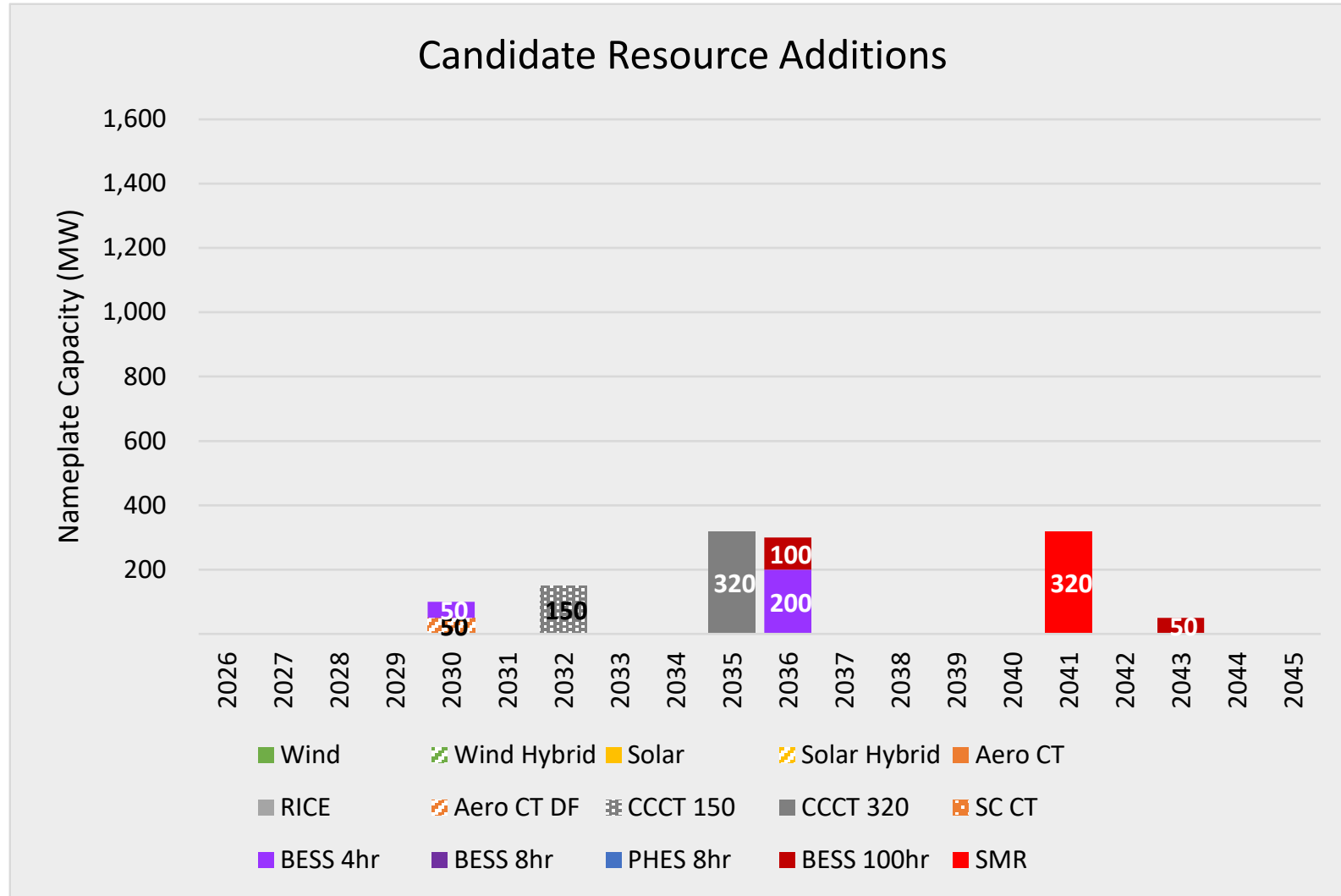
ARS Results: Scenario C – Colstrip Complies with MATS via Baghouse

- No change from Scenario A, Base Case.

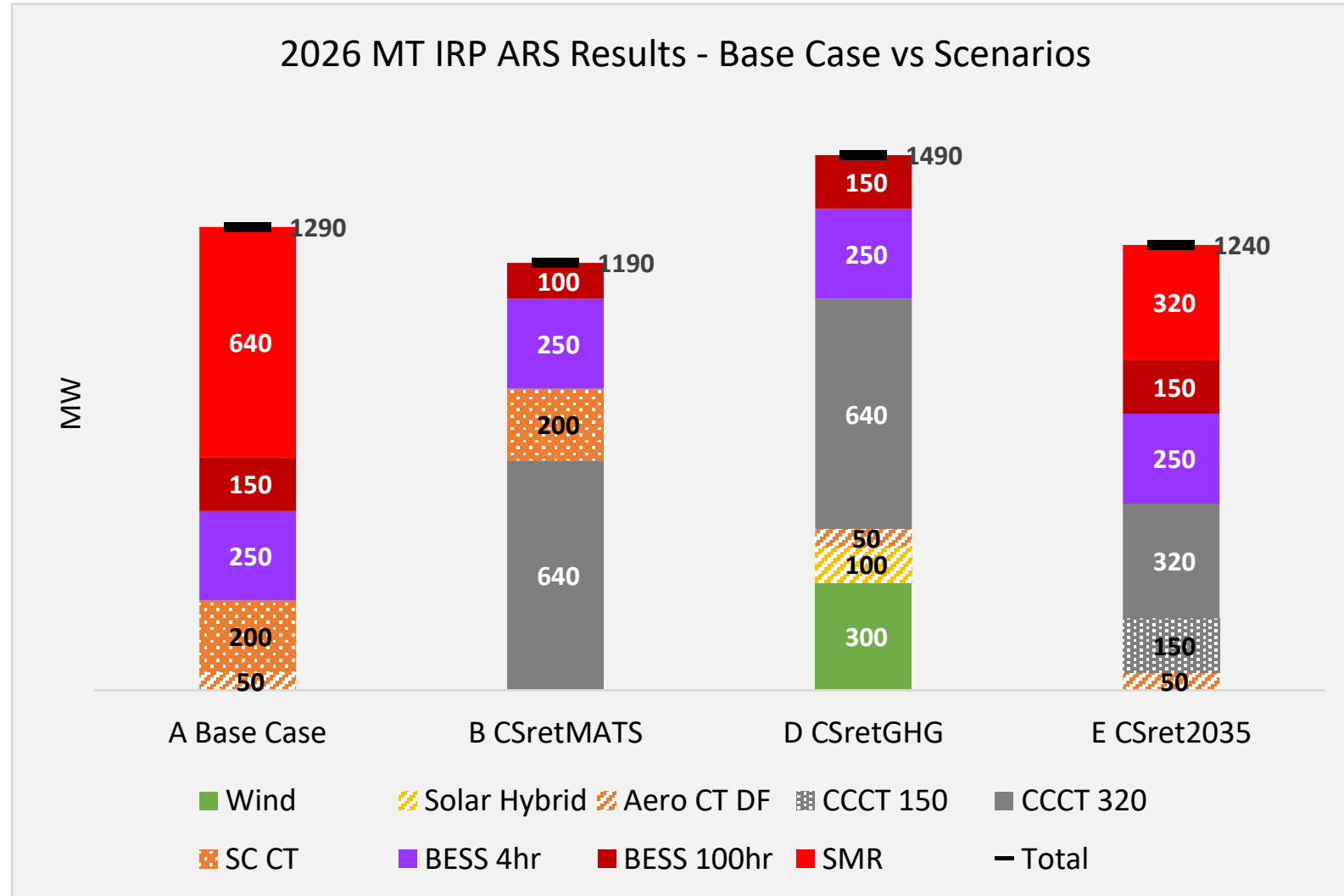
ARS Results: Scenario D – Colstrip Retires to Comply with GHG



ARS Results: Scenario E – Colstrip Retires in 2035



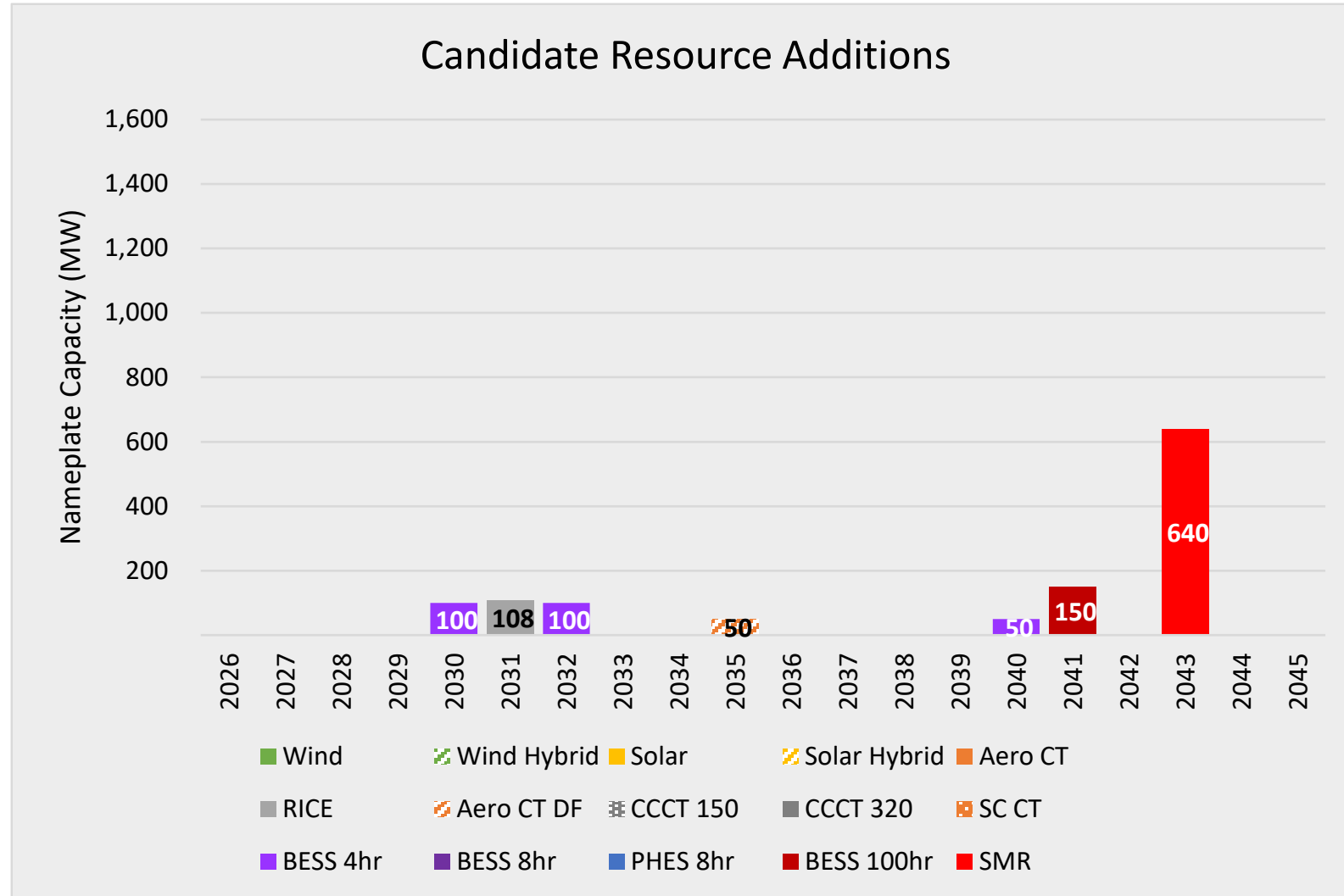
ARS Summary of Base Case and Main Scenarios



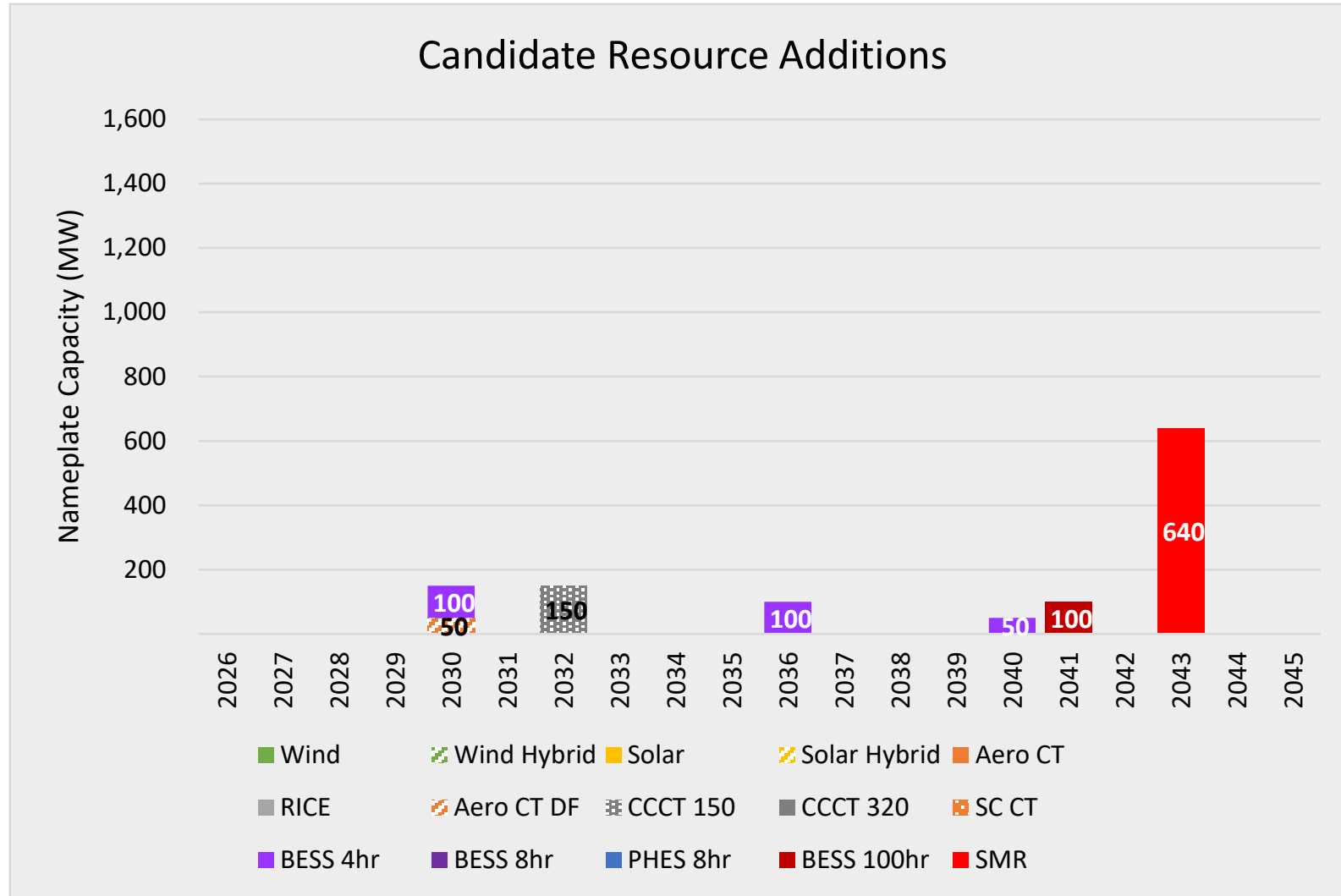


Commodity Sensitivities

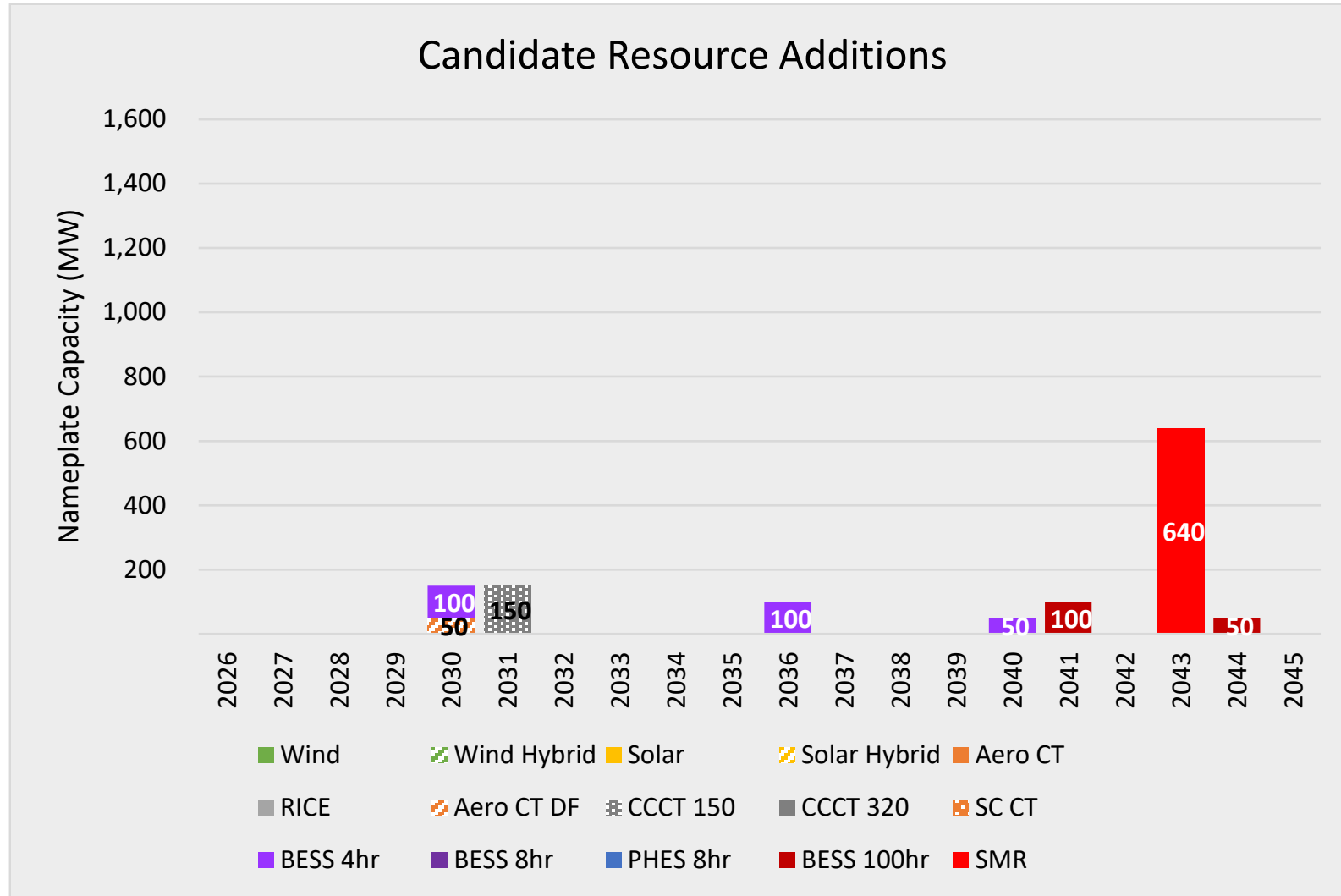
ARS Results: Sensitivity F – Power Price Forecast Reduced by 50%



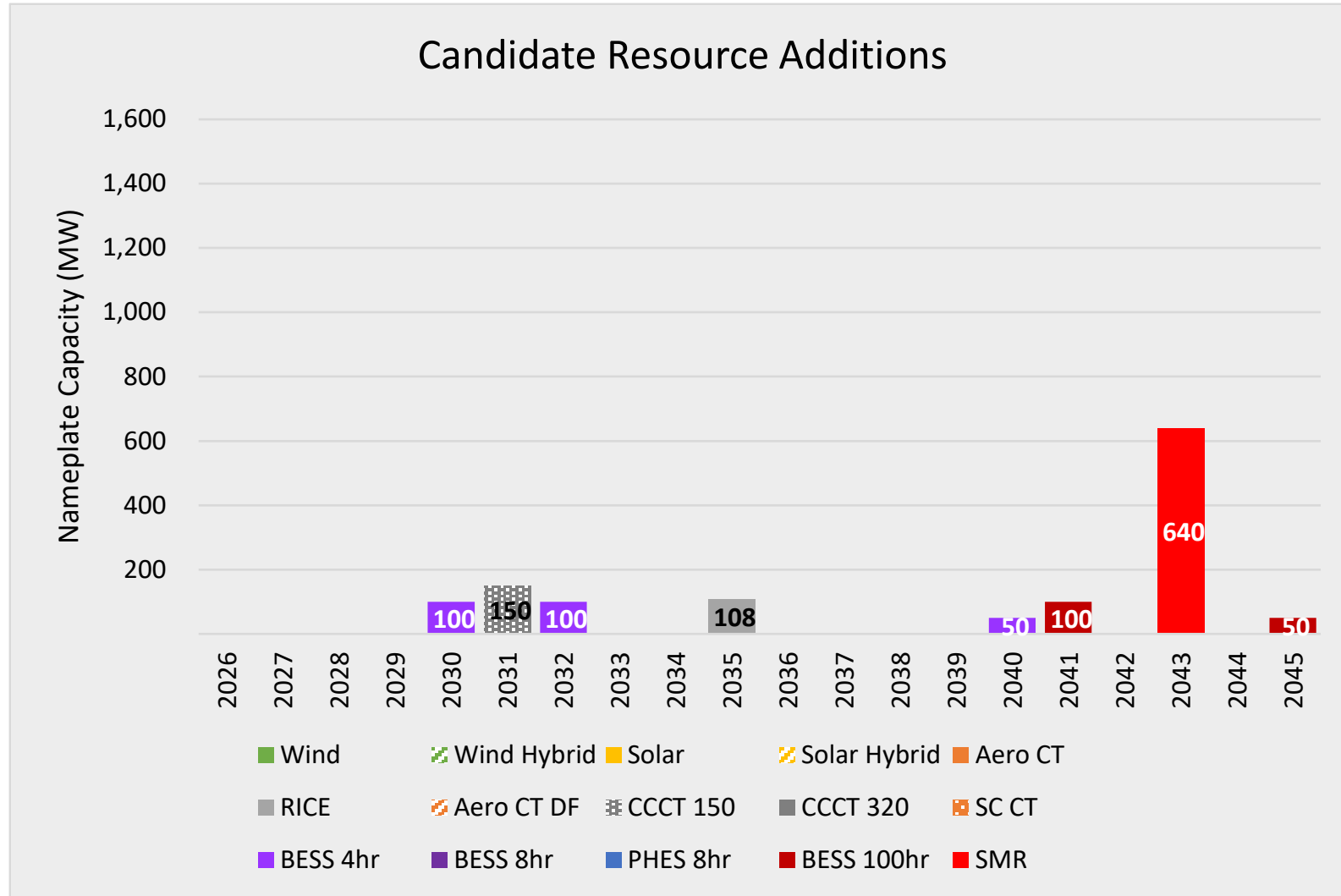
ARS Results: Sensitivity G – Power Price Forecast Increased by 50%



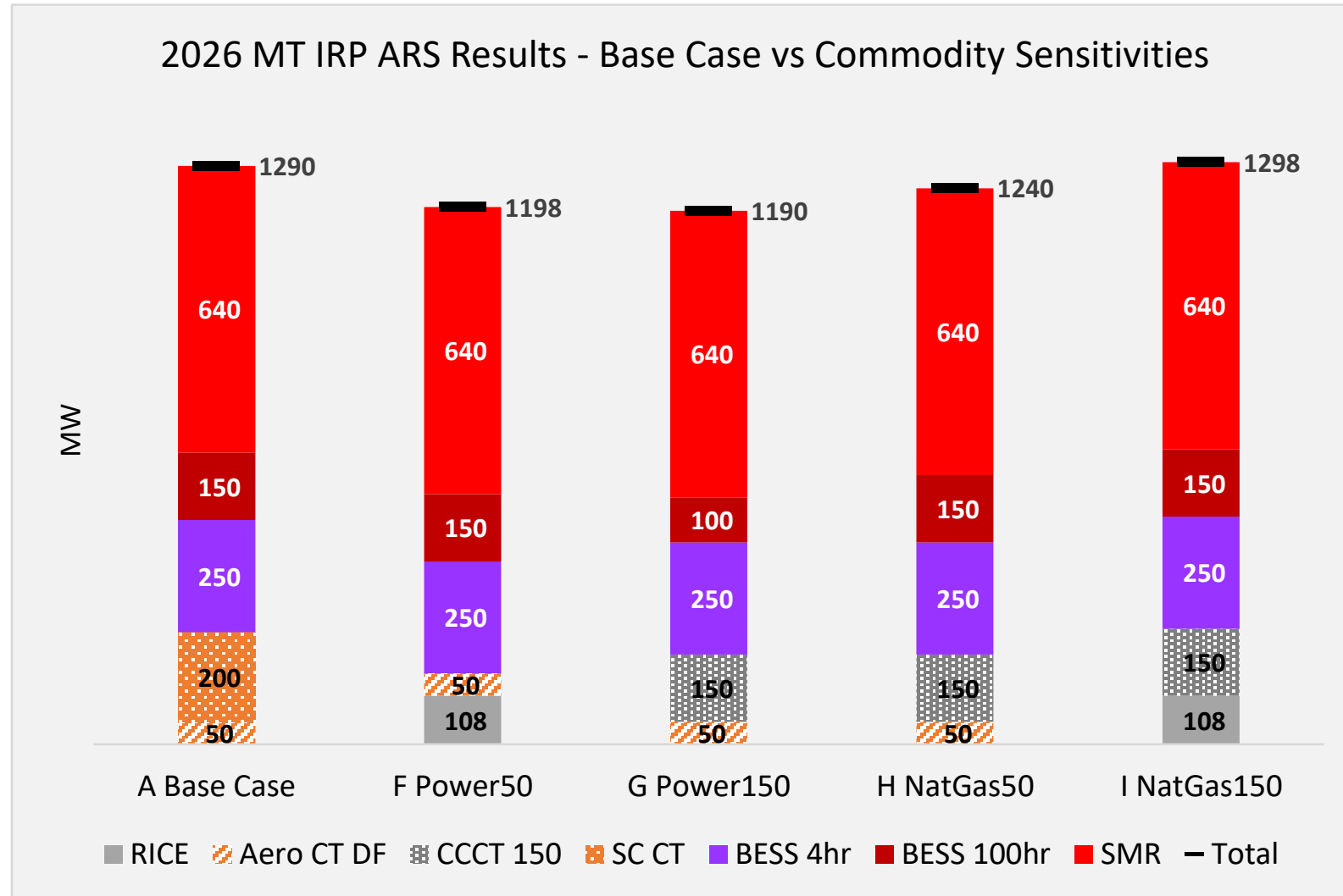
ARS Results: Sensitivity H – Natural Gas Price Forecast Reduced by 50%



ARS Results: Sensitivity I – Natural Gas Price Forecast Increased by 50%



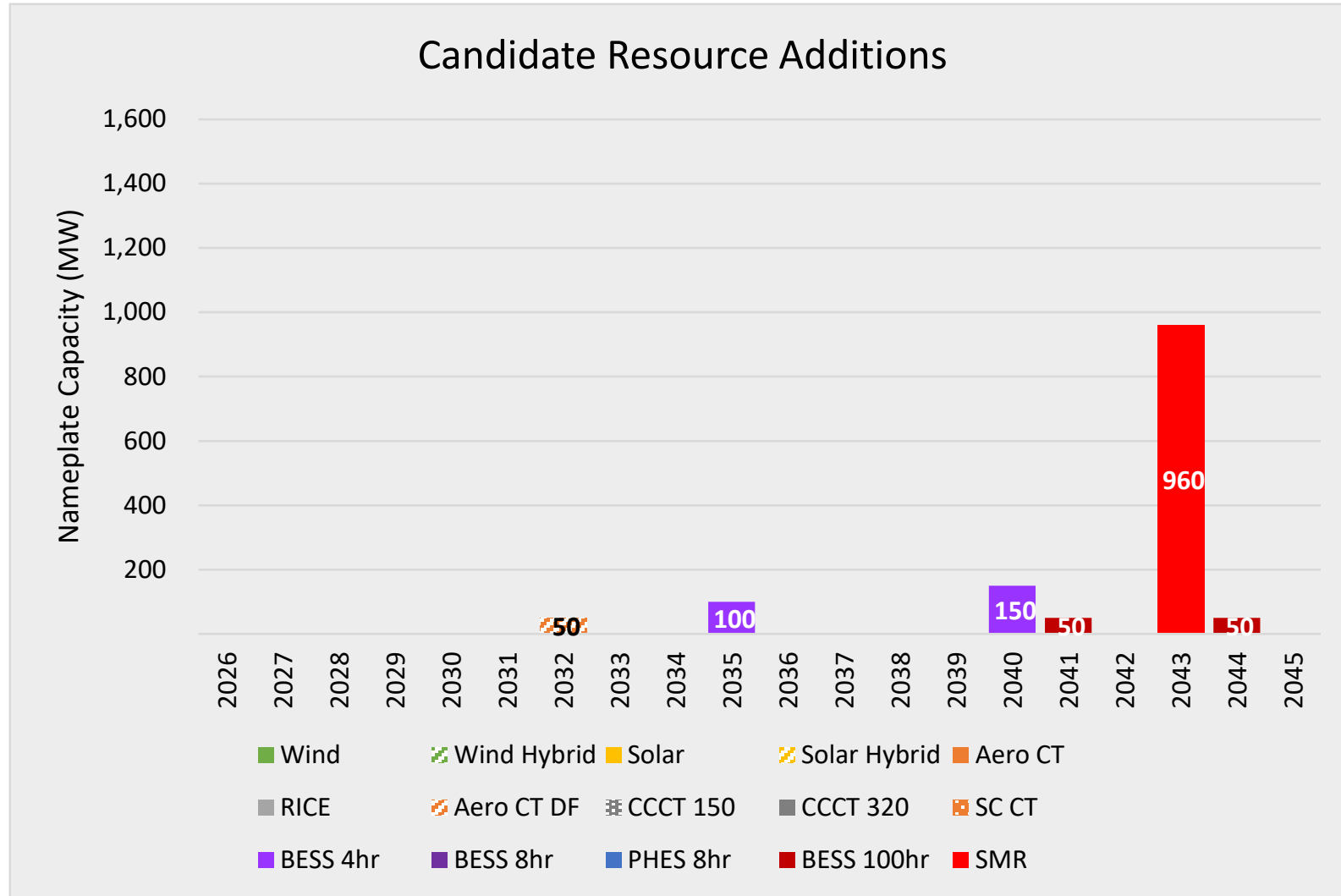
ARS Summary of Commodity Sensitivities



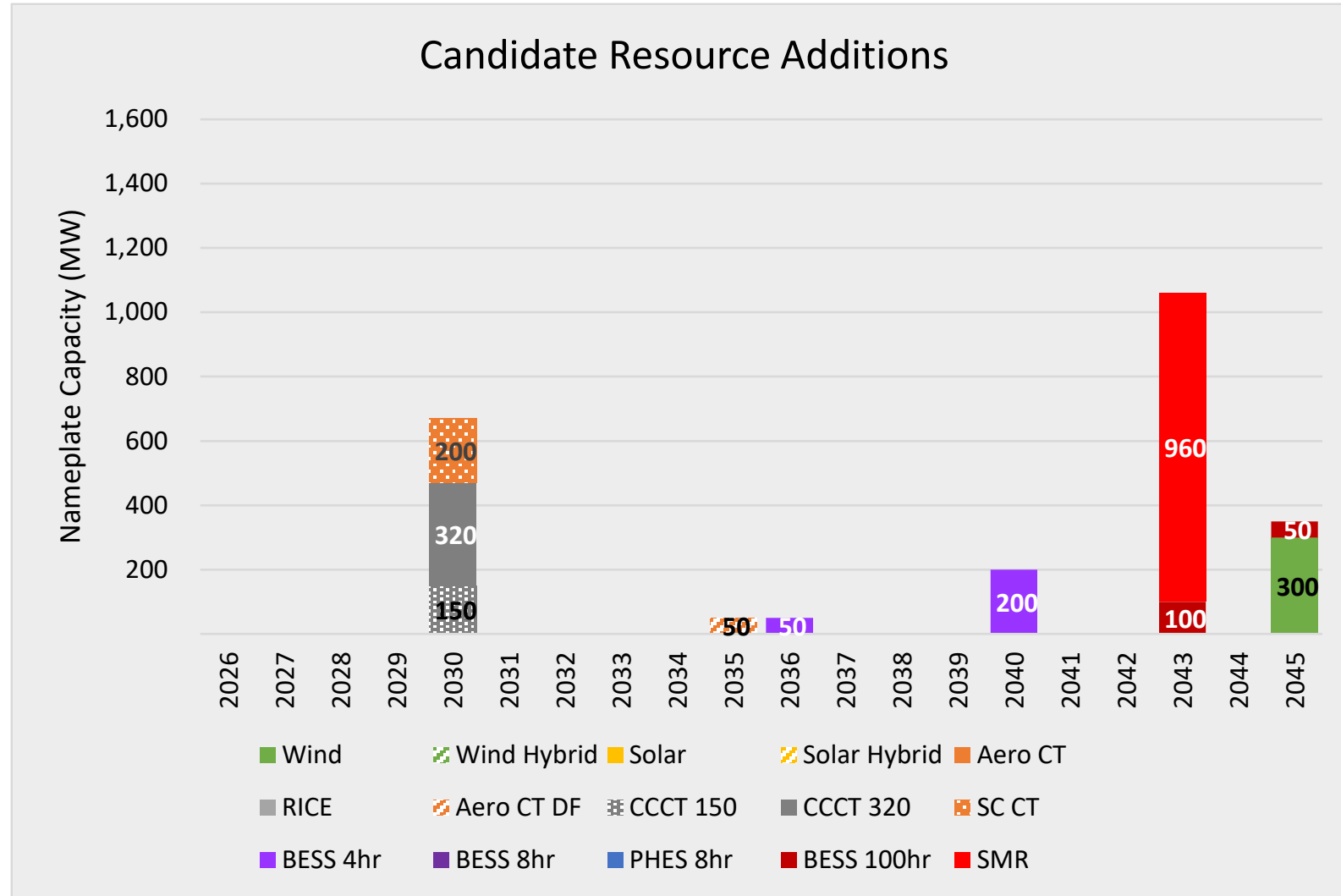


Data Center Sensitivities

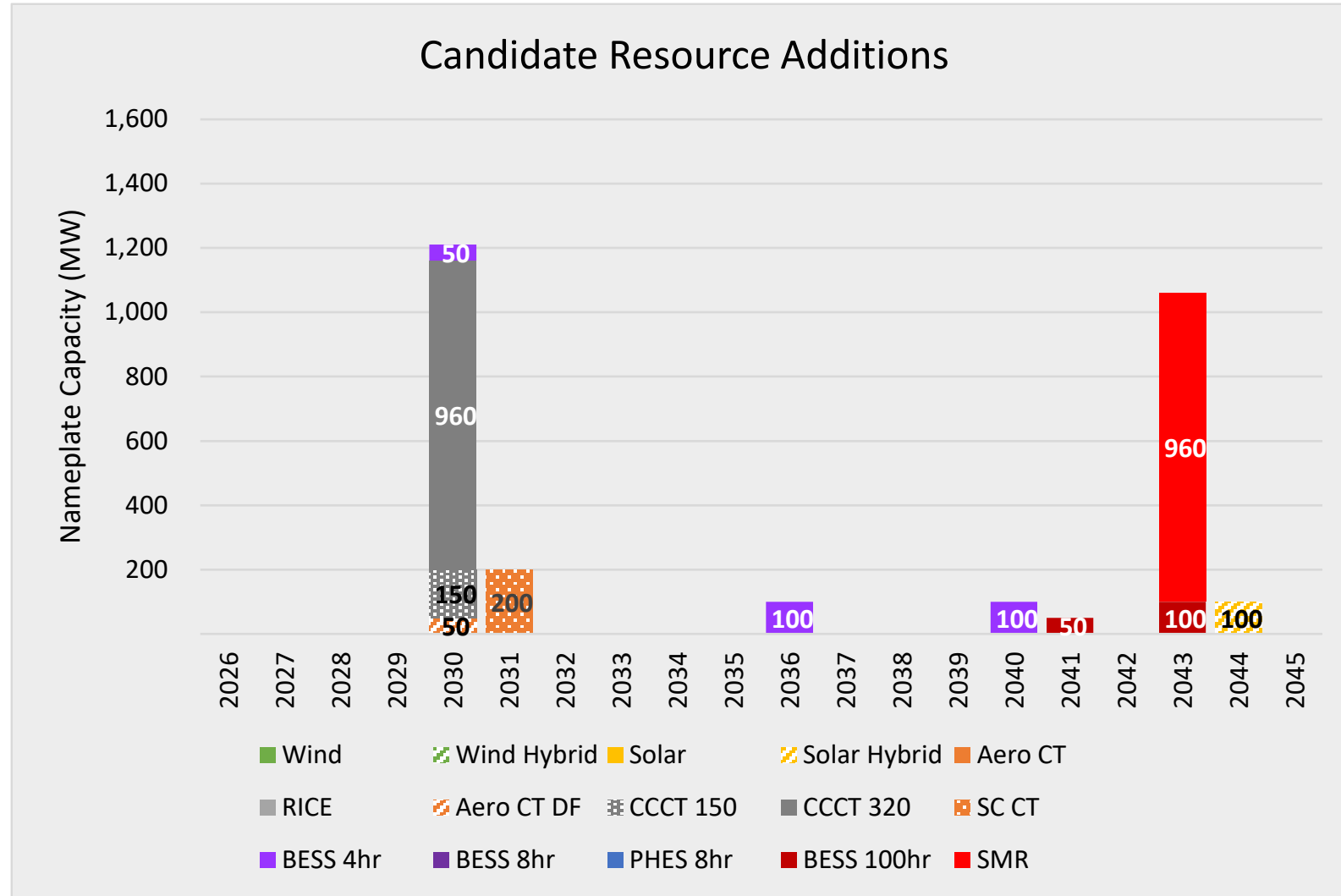
ARS Results: Sensitivity J – Add 150 MW of Data Center Load



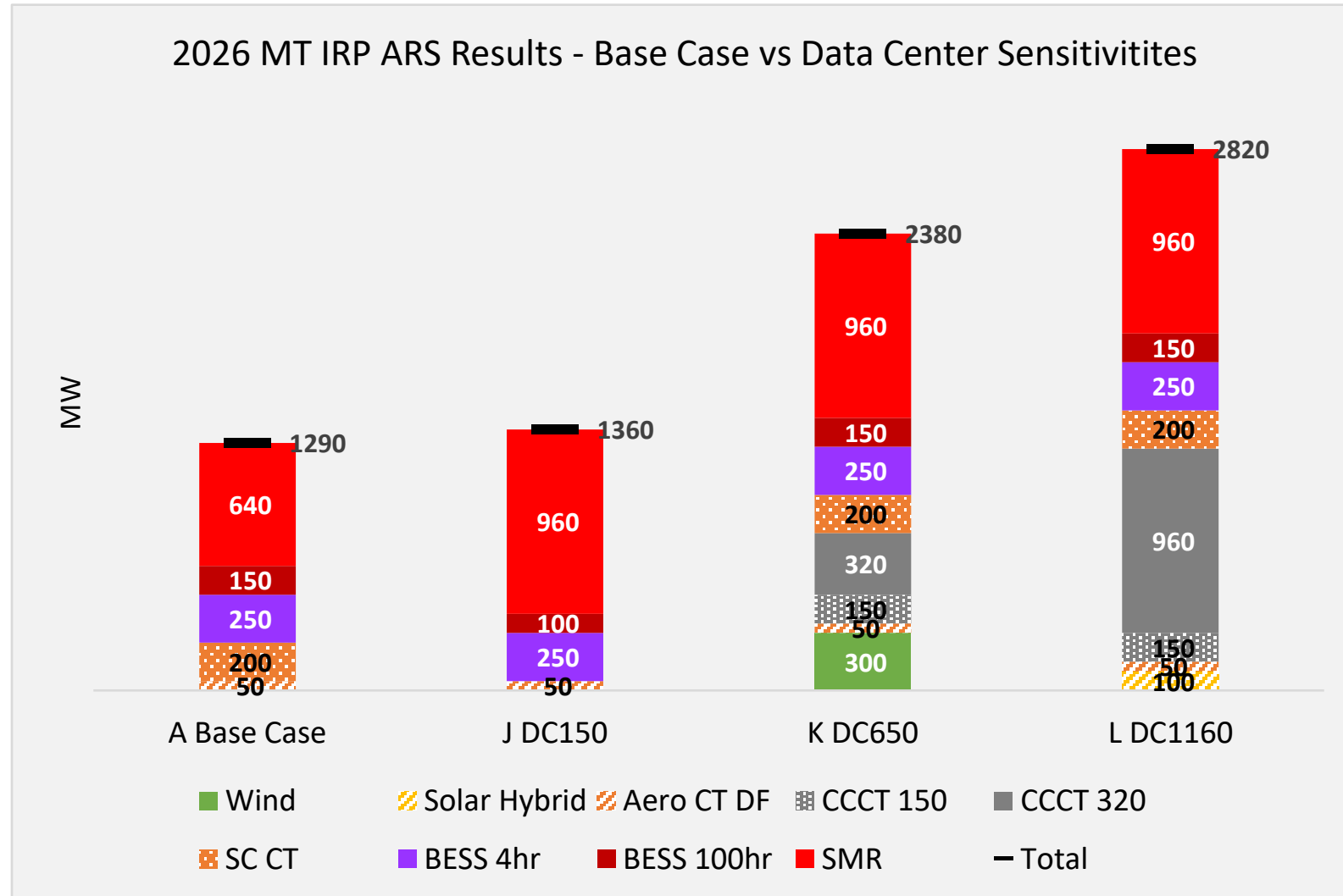
ARS Results: Sensitivity K – Add 650 MW of Data Center Load



ARS Results: Sensitivity L – Add 1,160 MW of Data Center Load



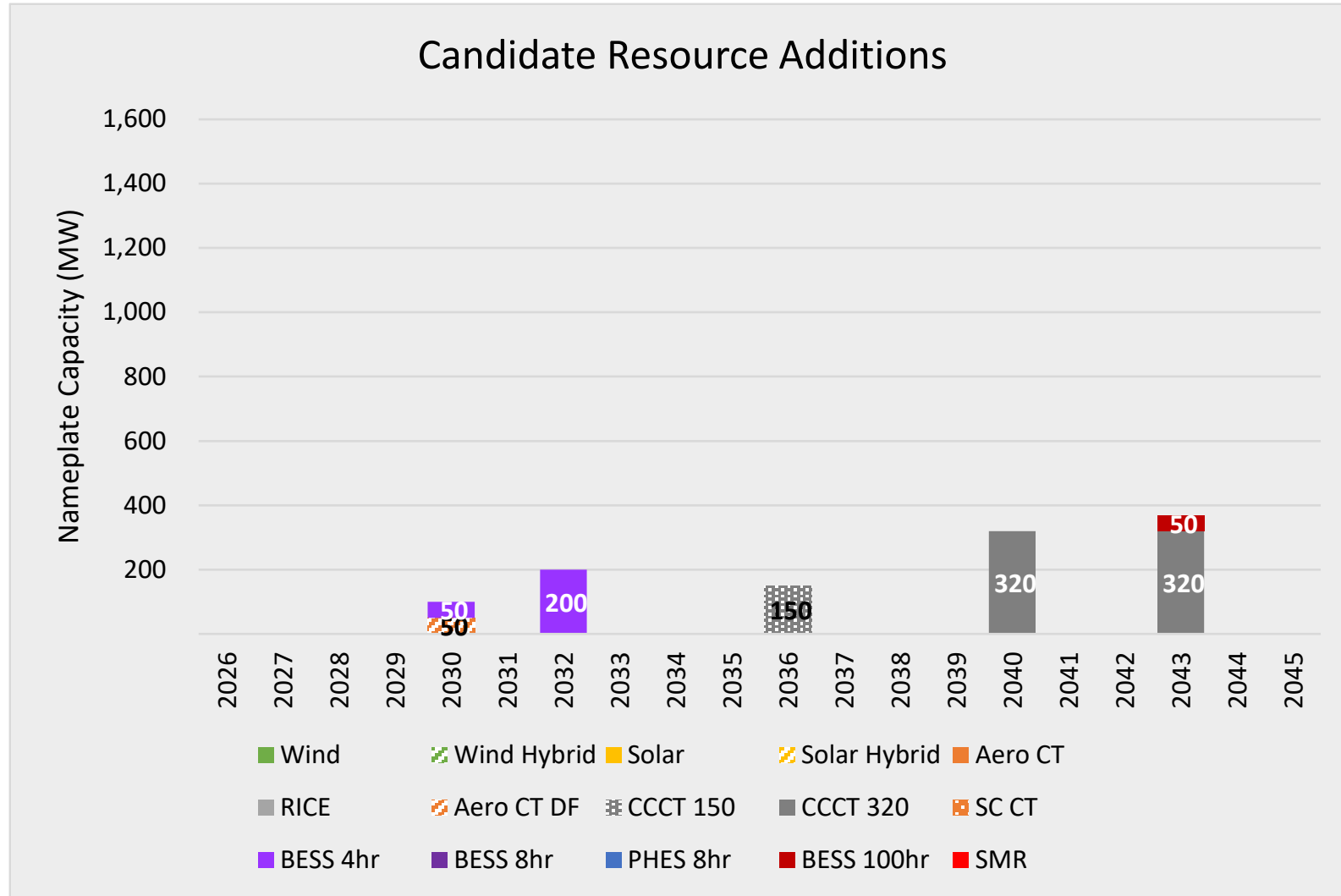
ARS Summary of Data Center Sensitivities



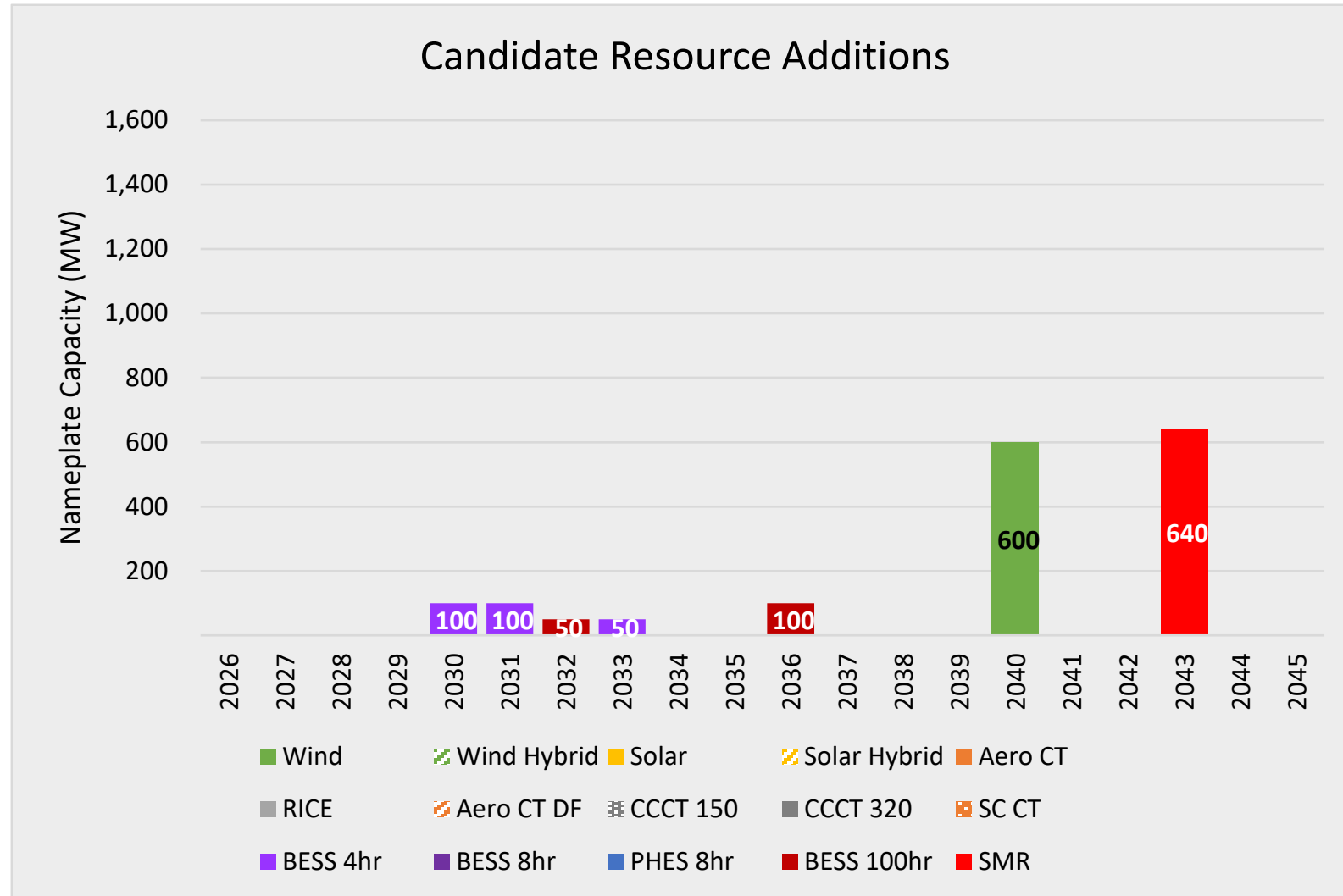


Resource Sensitivities

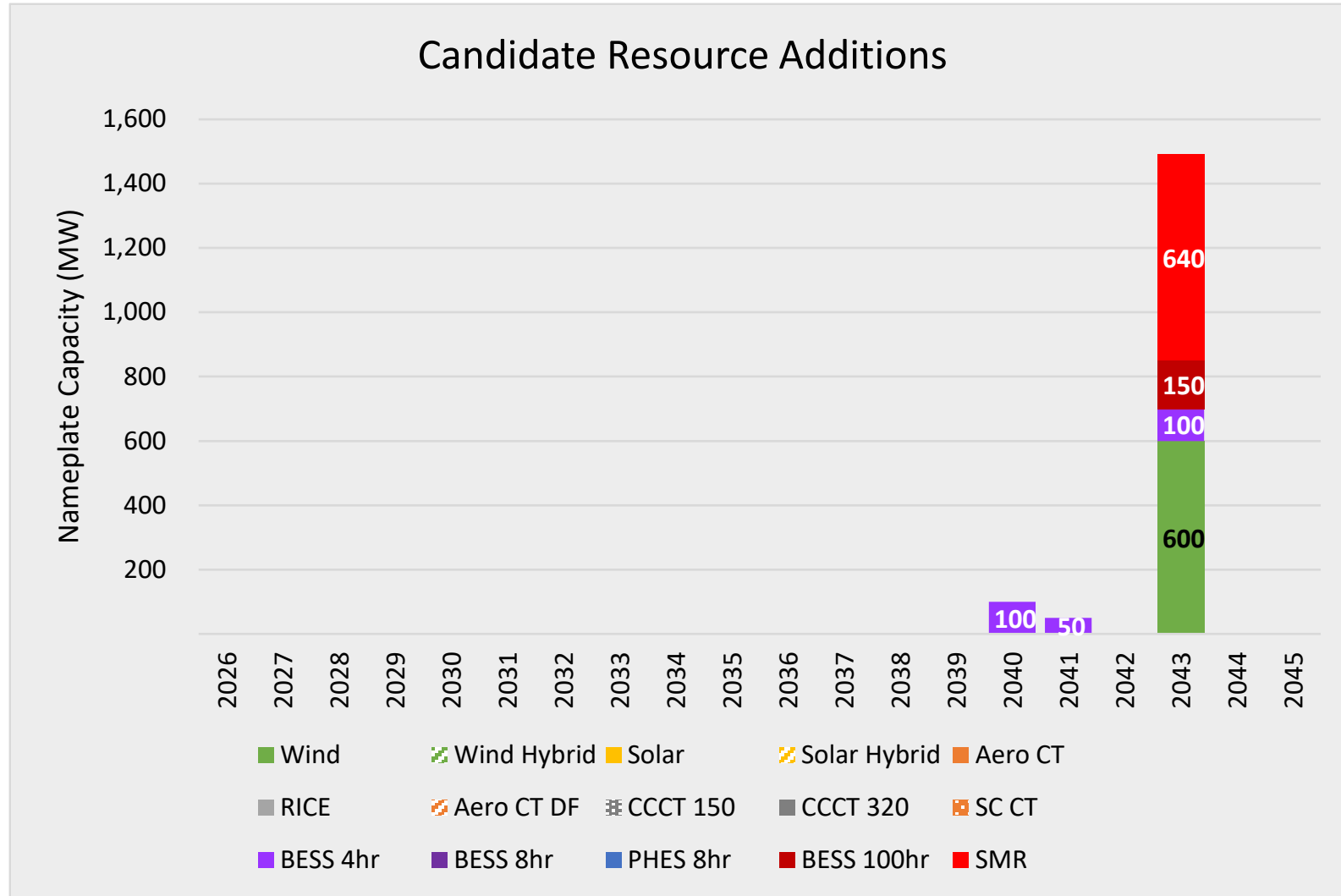
ARS Results: Sensitivity M – No Limitation on Carbon Emitting Resources



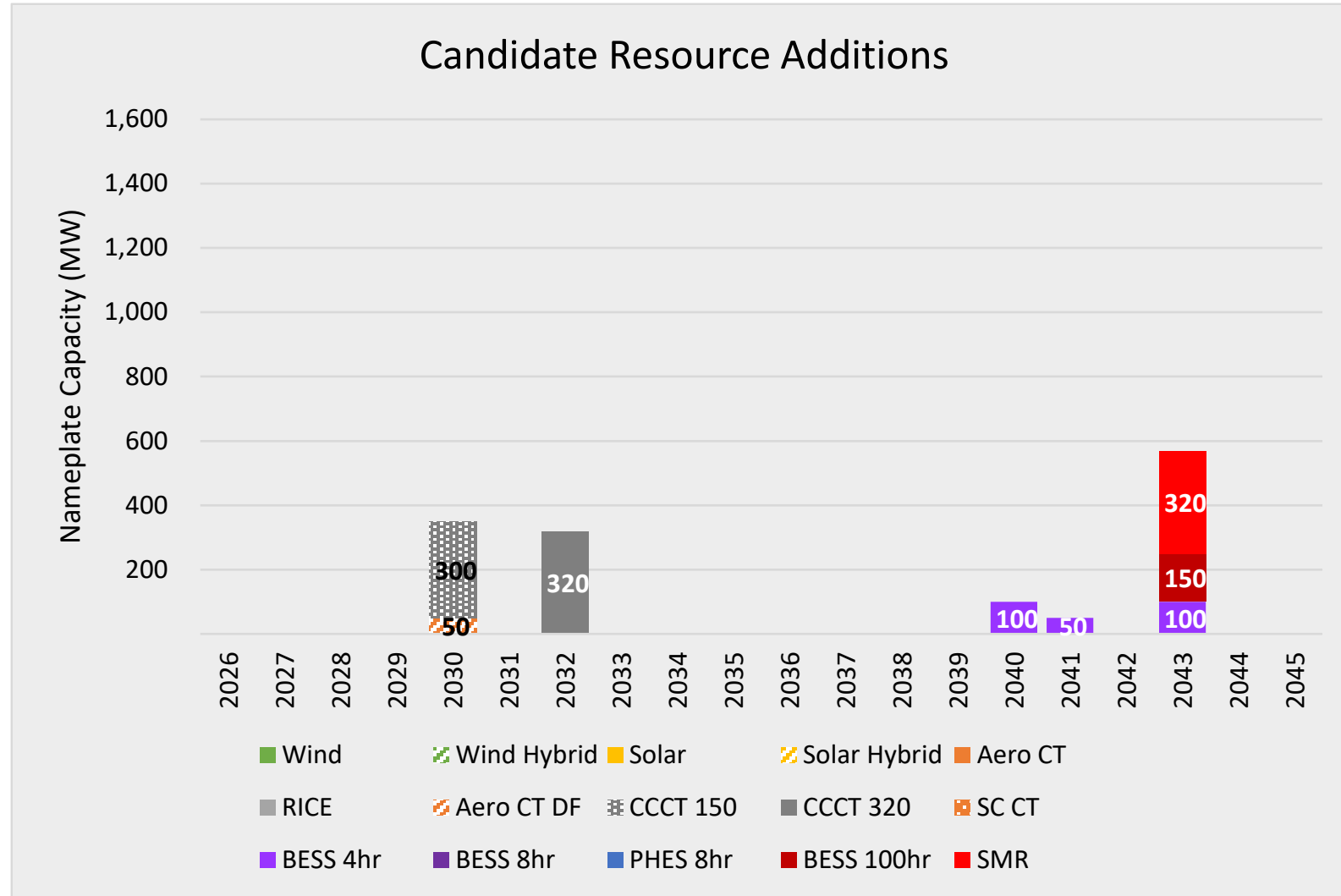
ARS Results: Sensitivity N – Carbon Free Candidate Resources Only



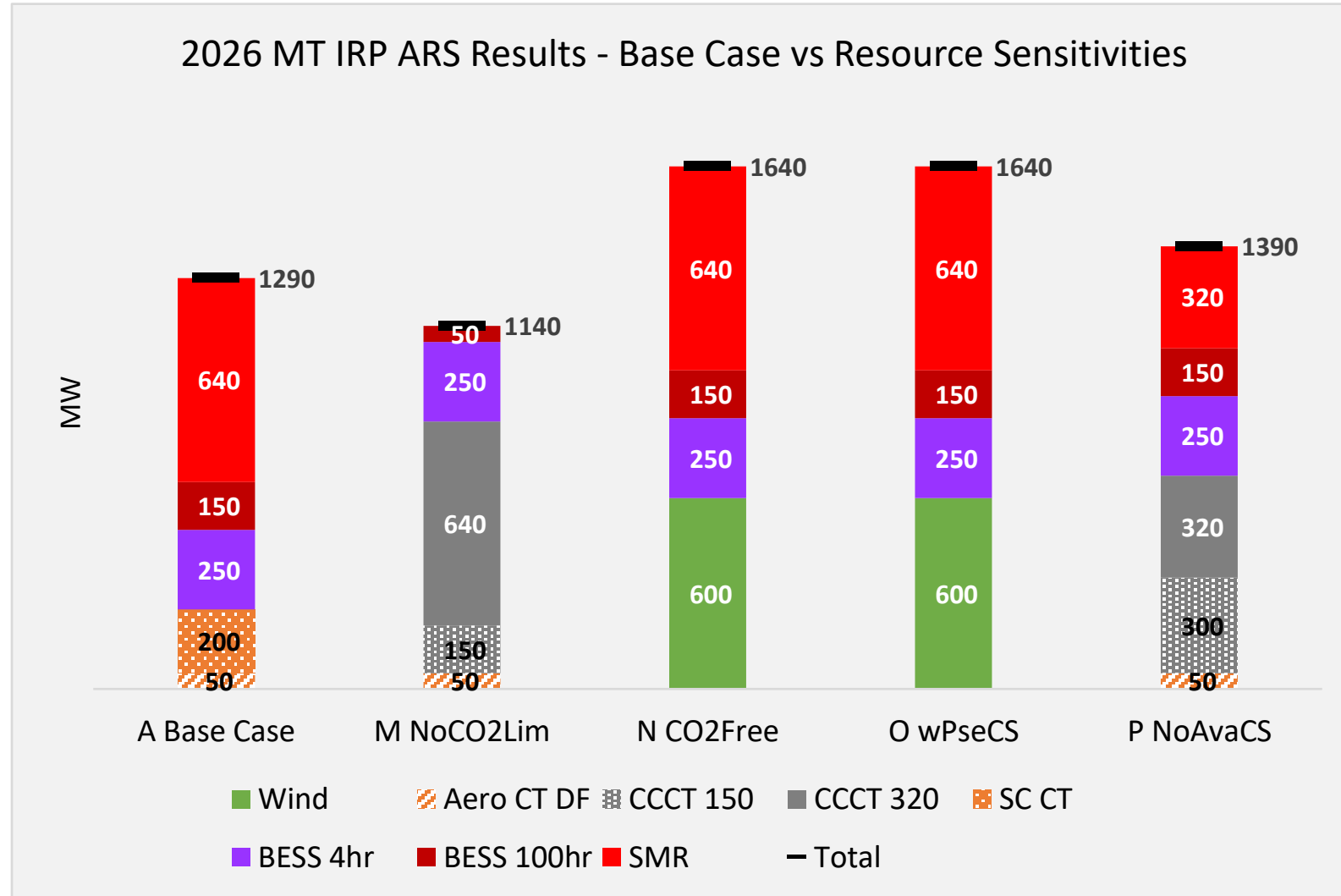
ARS Results: Sensitivity 0 – PSE Colstrip Share is used for Retail Load



ARS Results: Sensitivity P – Avista's Colstrip Shares are not Acquired



ARS Summary of Resource Sensitivities

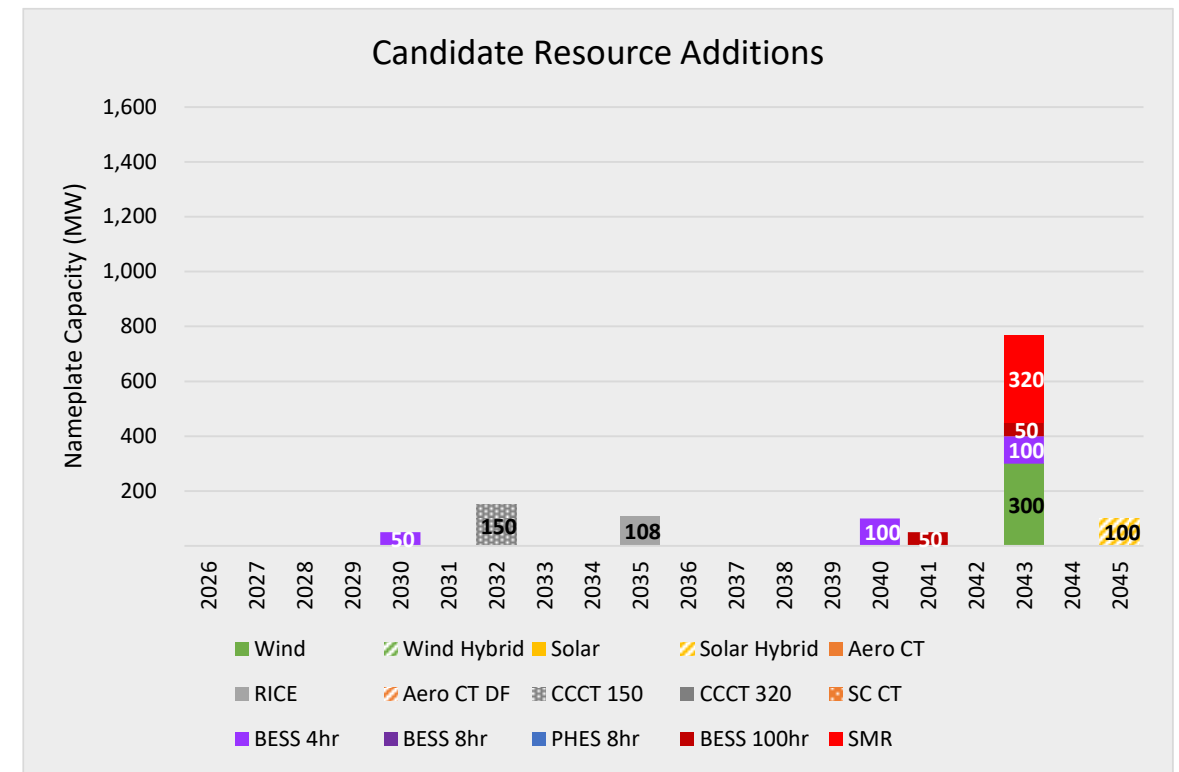
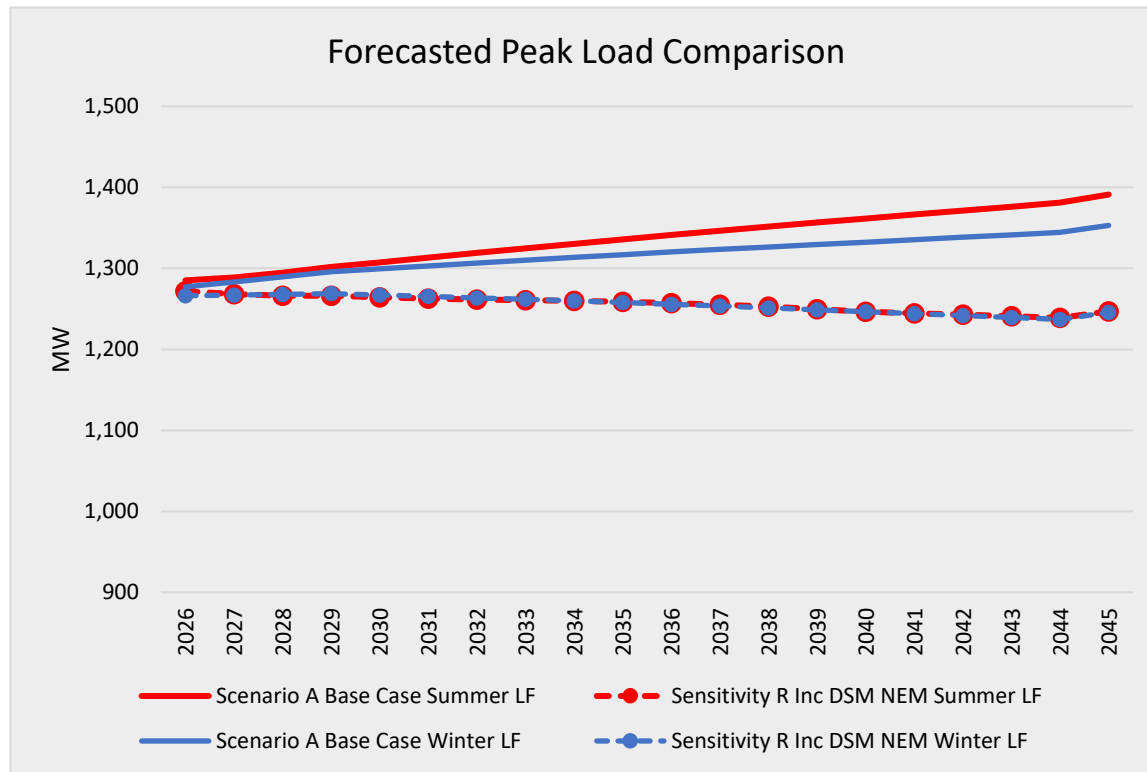




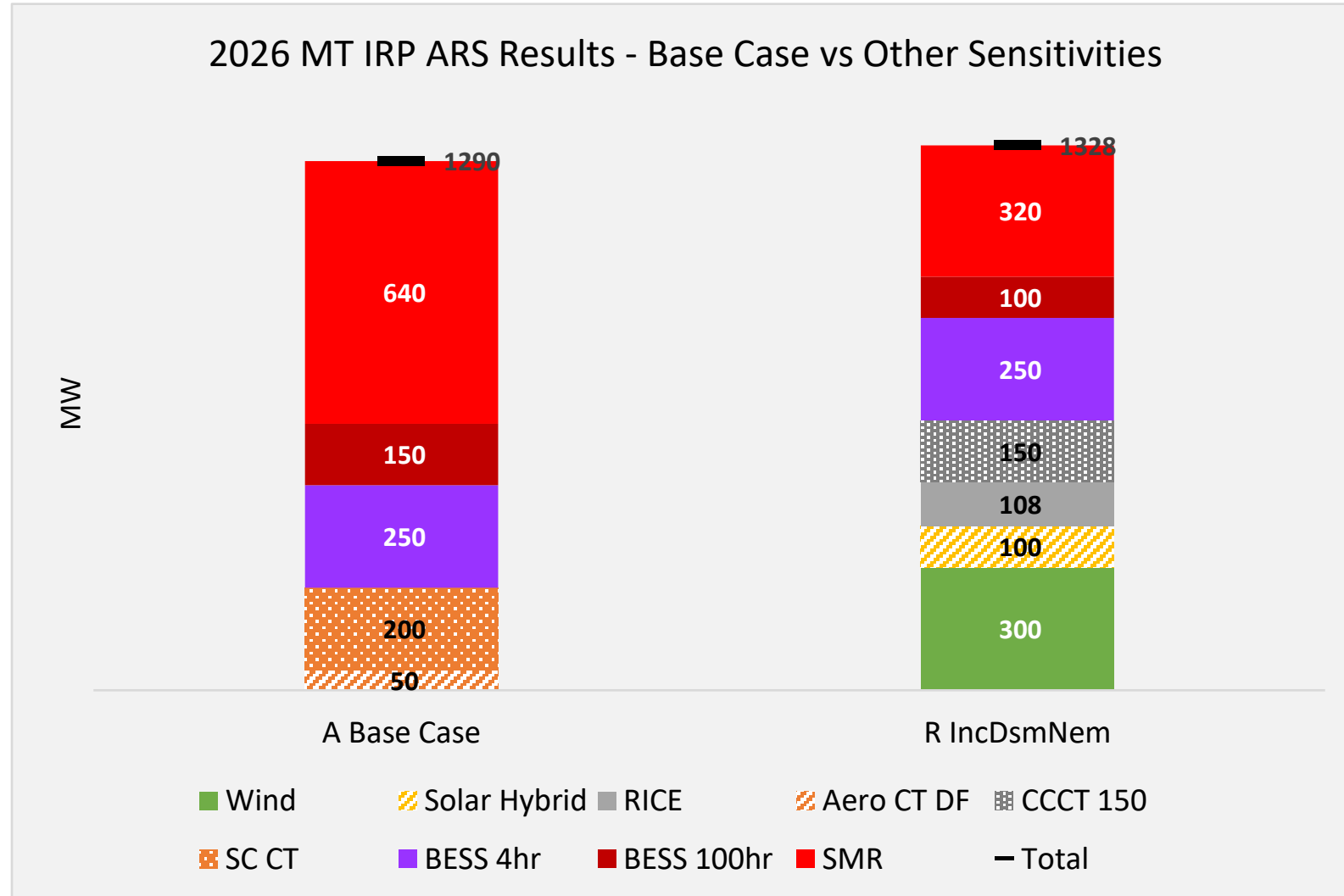
Other Sensitivities

ARS Results: Sensitivity Q – Add 300 MW of NPC Capacity

- No change from Scenario A, Base Case.



ARS Summary of Other Sensitivities



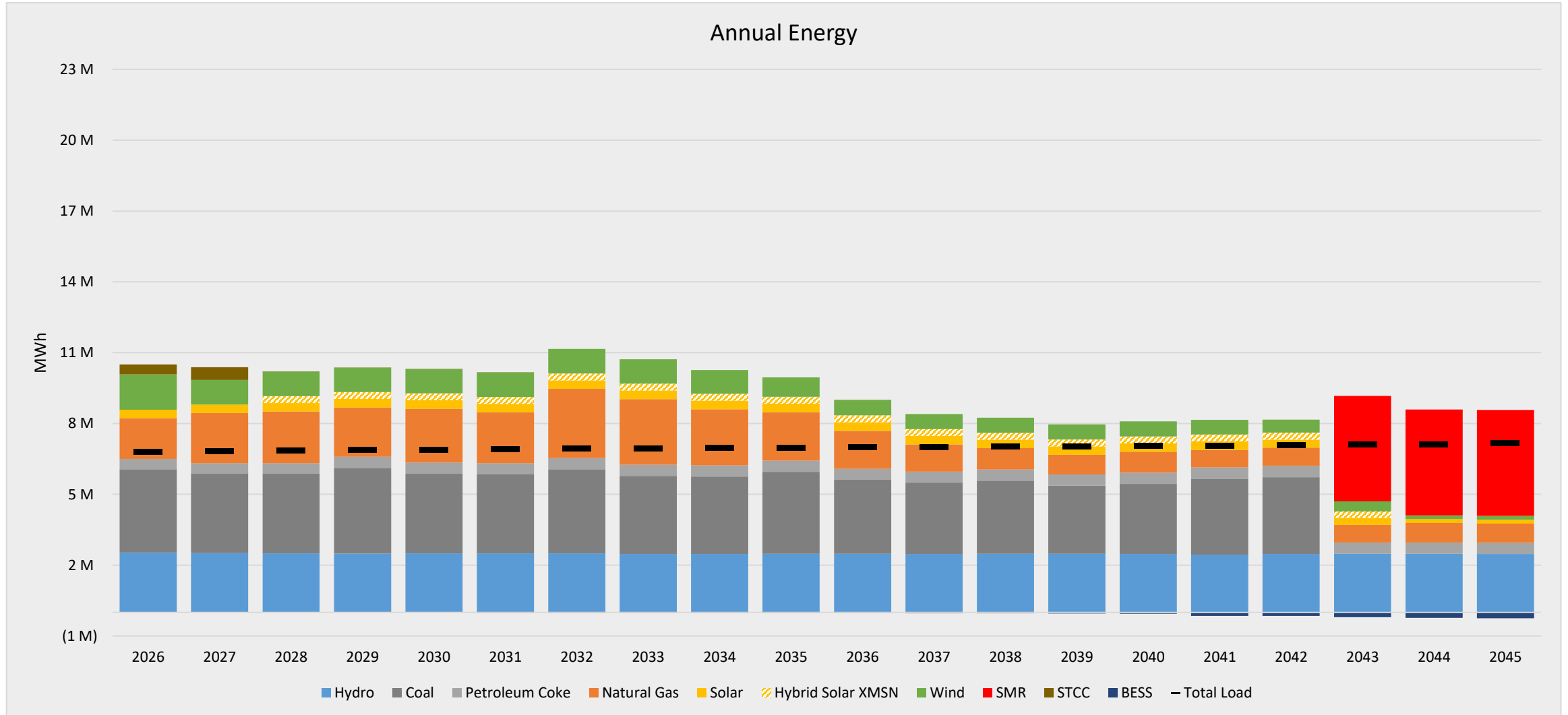


PowerSIMM Preliminary PCM Results

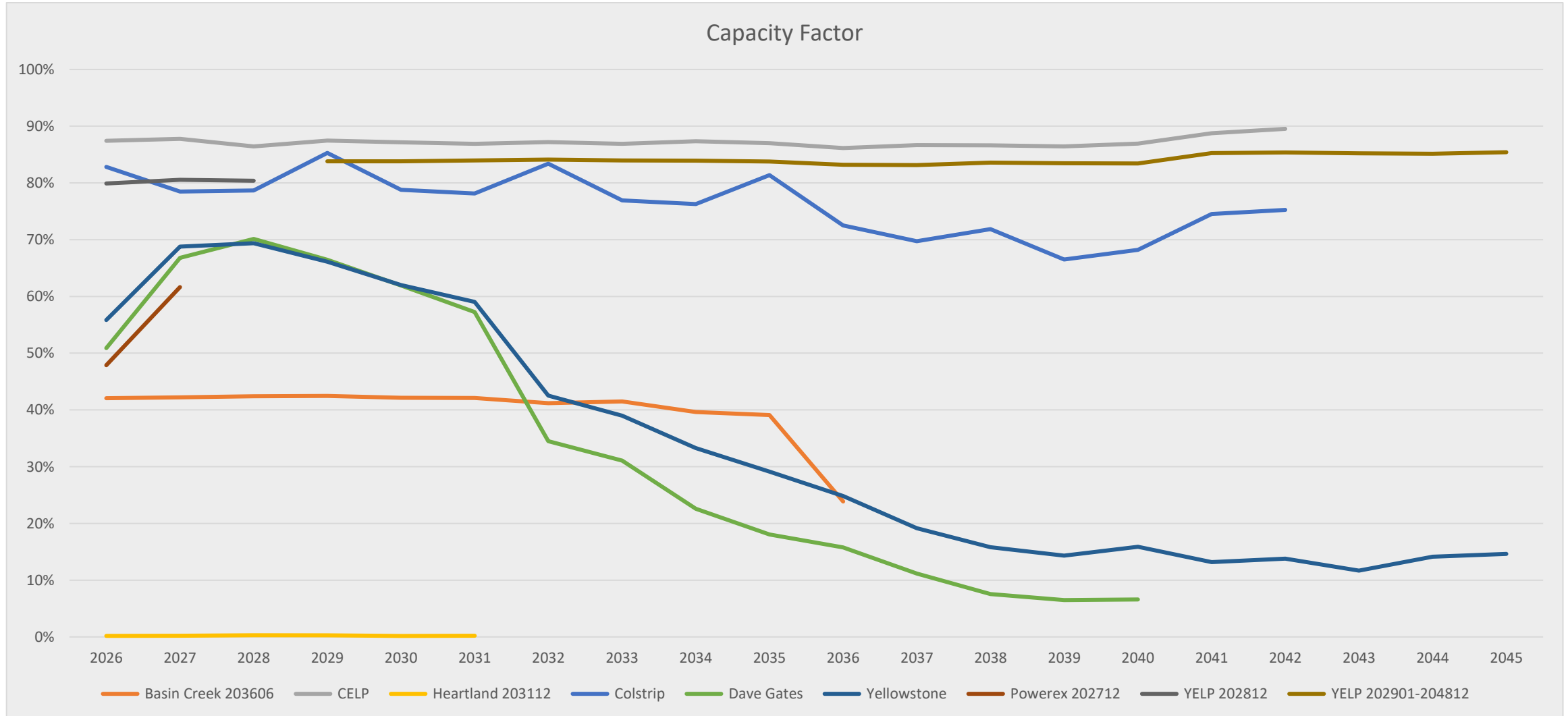


PCM Results: Scenario A – Base Case

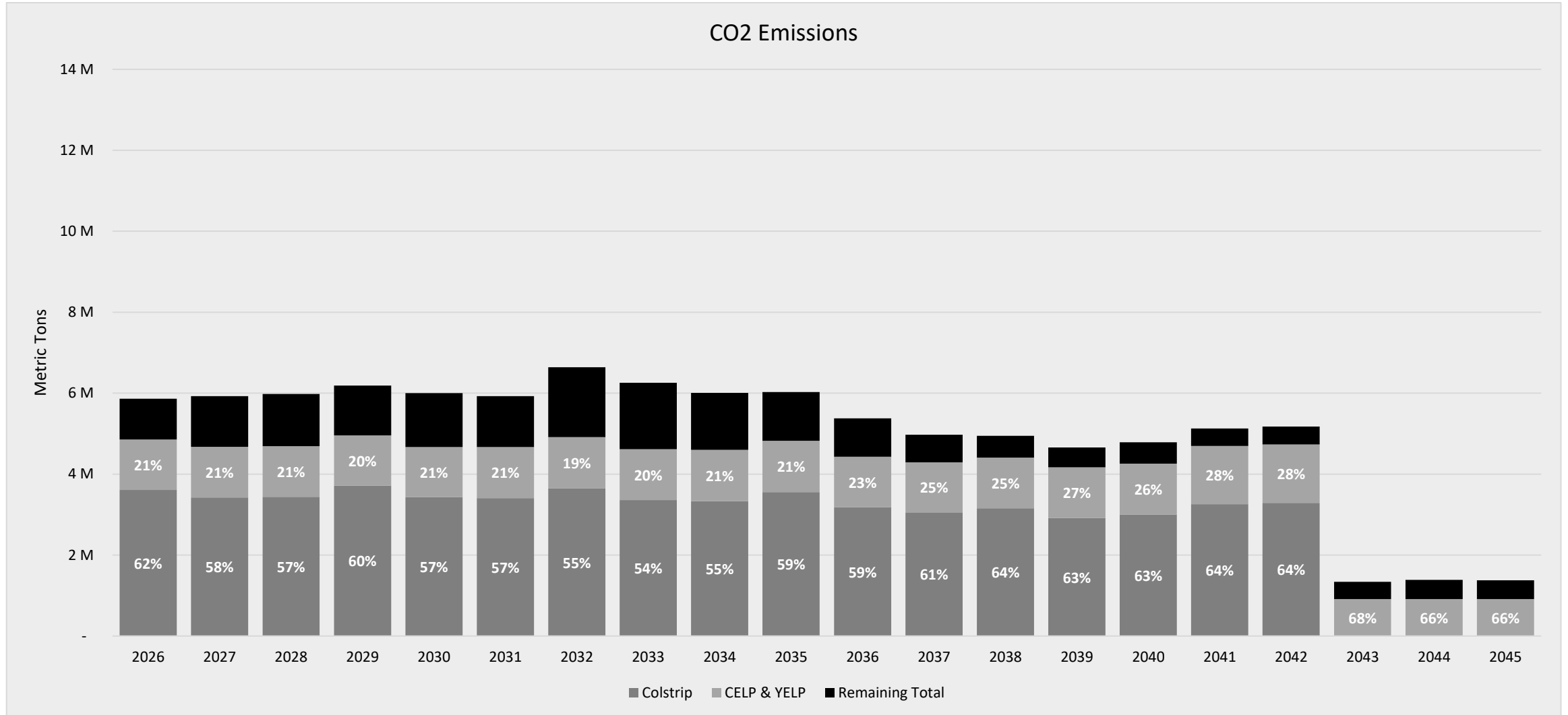
Energy production for PCM results of Scneario A – Base Case.



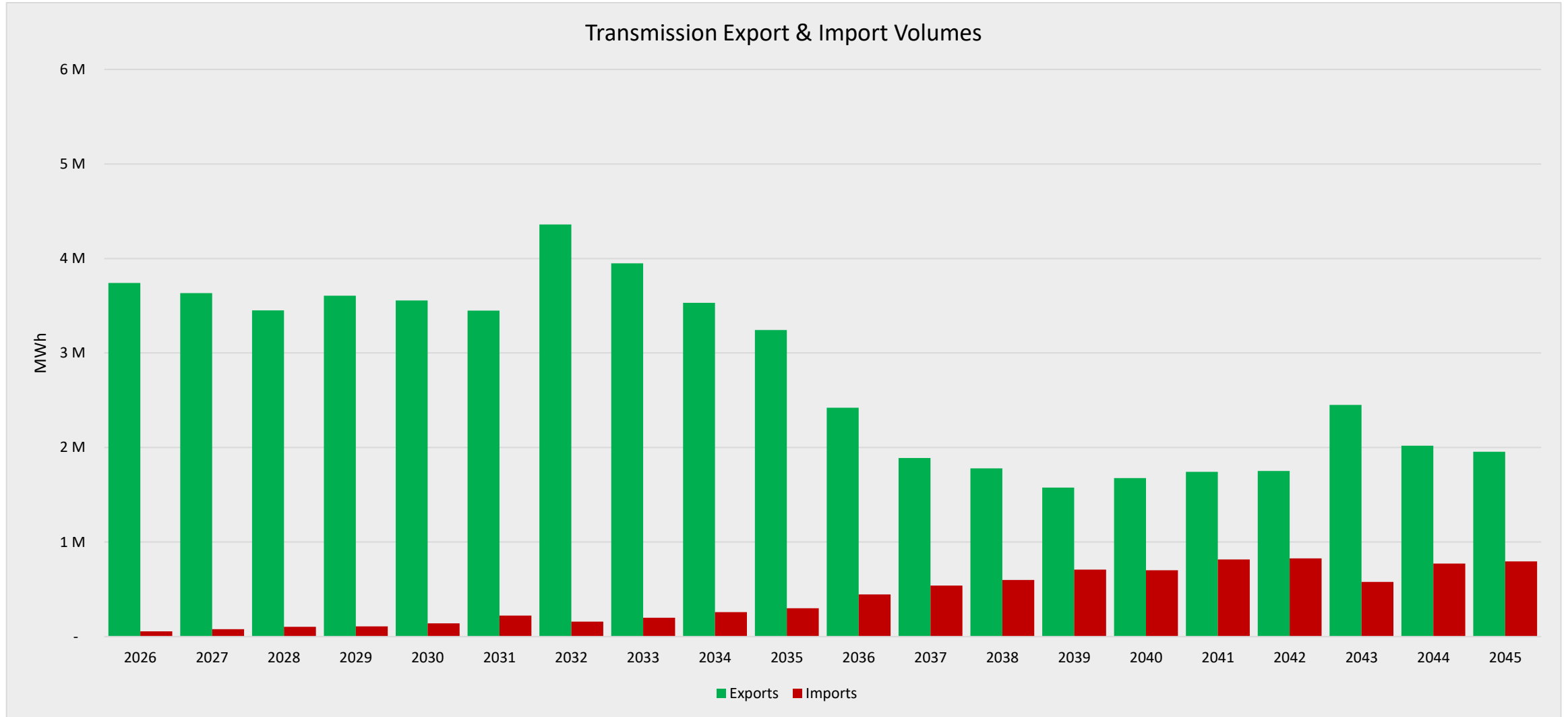
Capacity Factor for PCM results of Scenario A – Base Case.



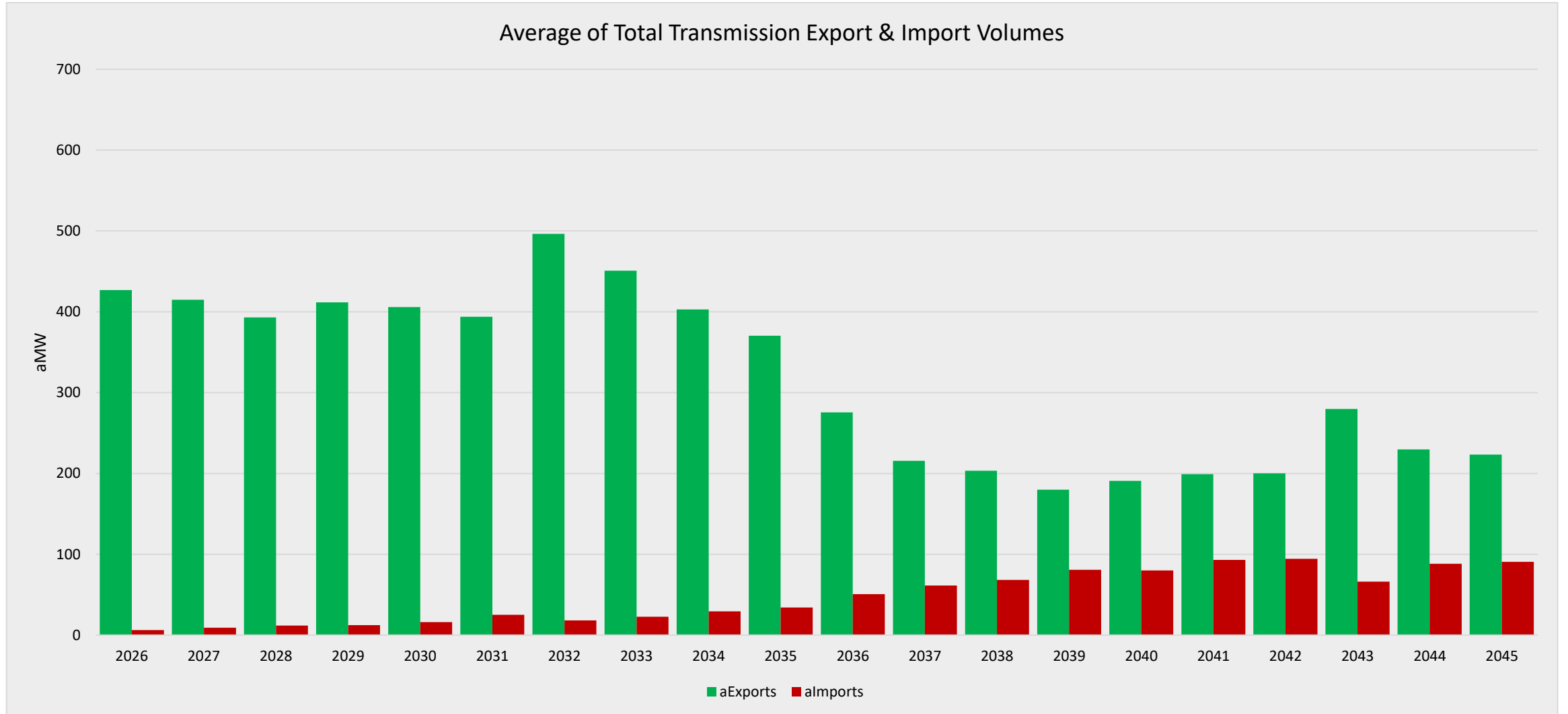
Emissions for PCM results of Scenario A – Base Case.



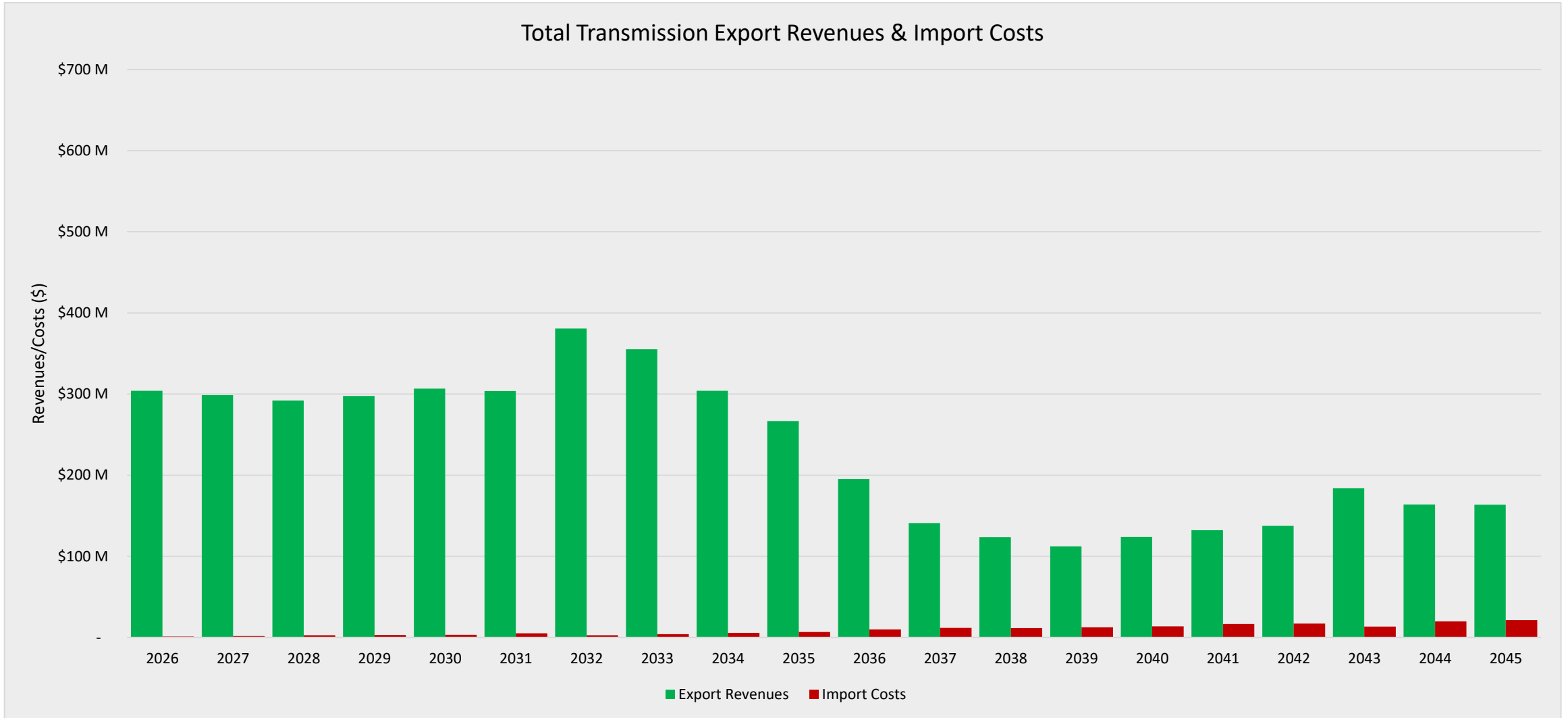
Transmission volumes for PCM results of Scenario A – Base Case



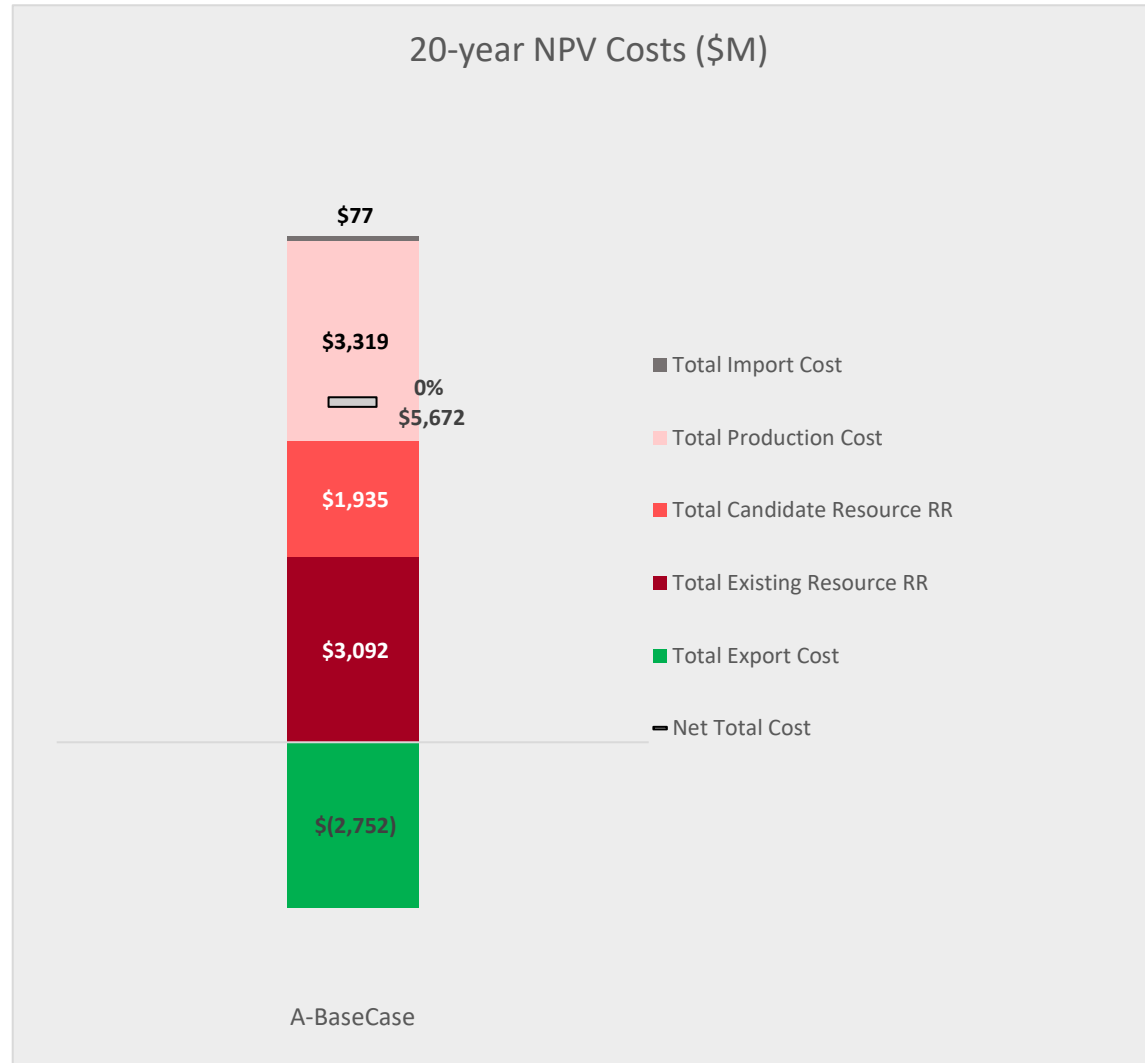
Average transmission usage for PCM results of Scenario A – Base Case



Transmission revenues for PCM results of Scenario A – Base Case.



Total portfolio costs for PCM results of Scenario A – Base Case.



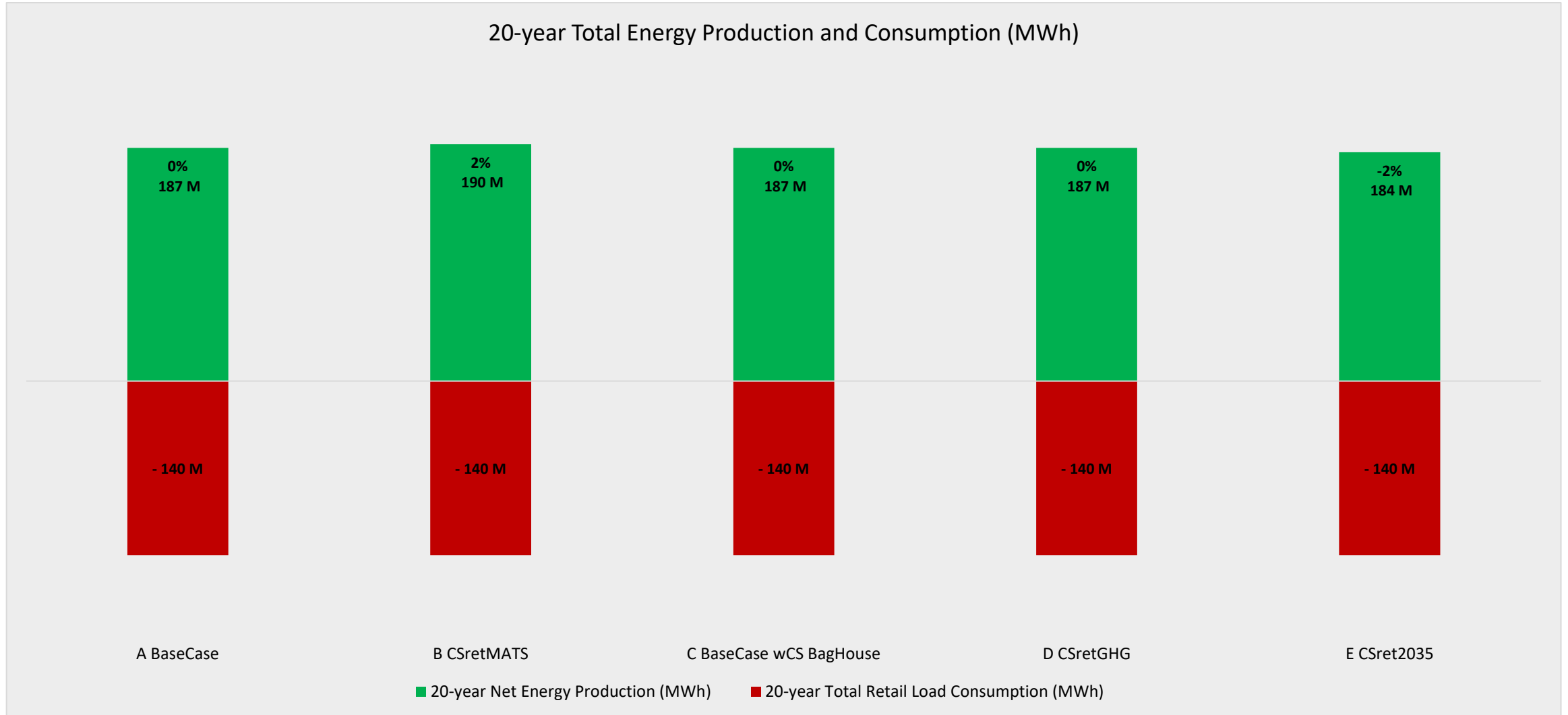


PCM Summary

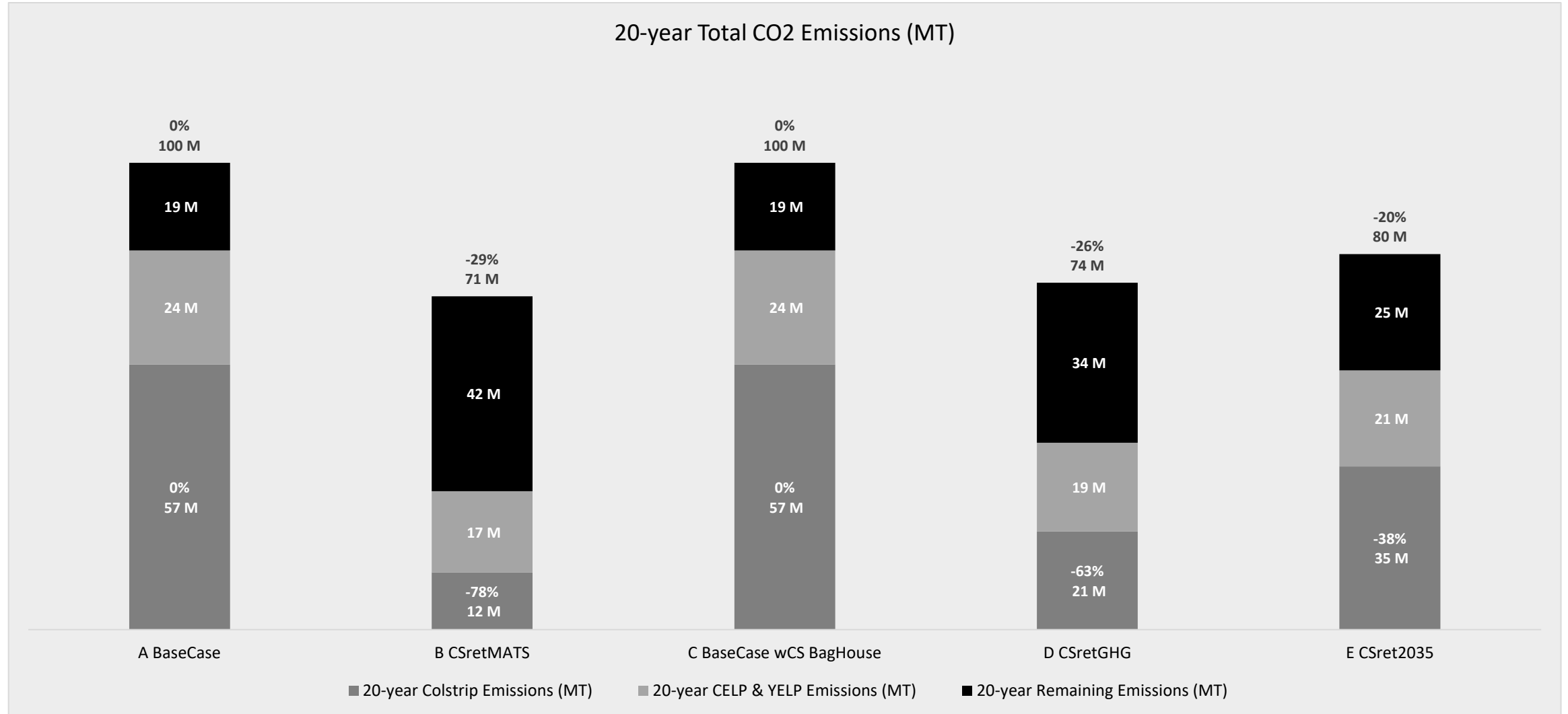


Base Case & Main Scenarios

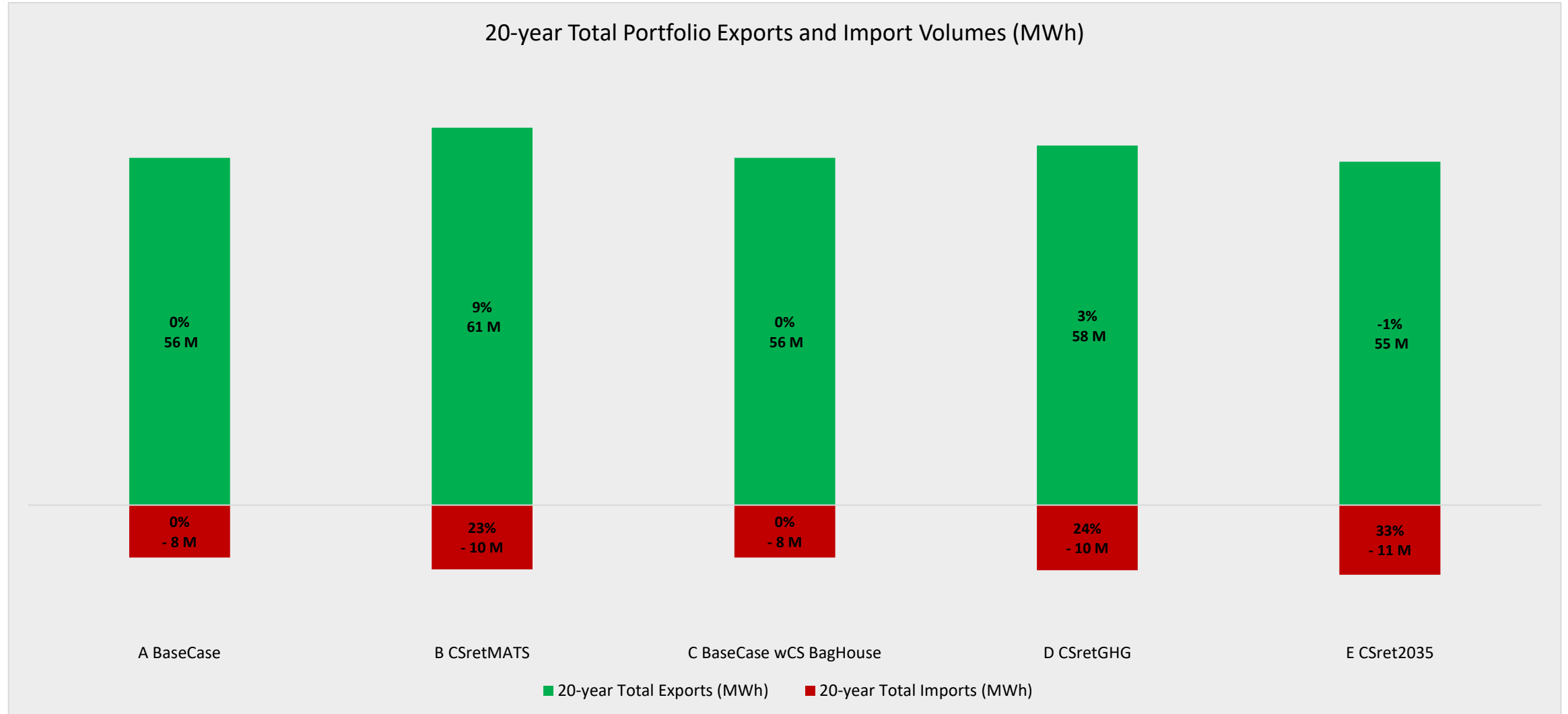
The total energy production of the Base Case and the Main Scenarios relative to the forecasted load.



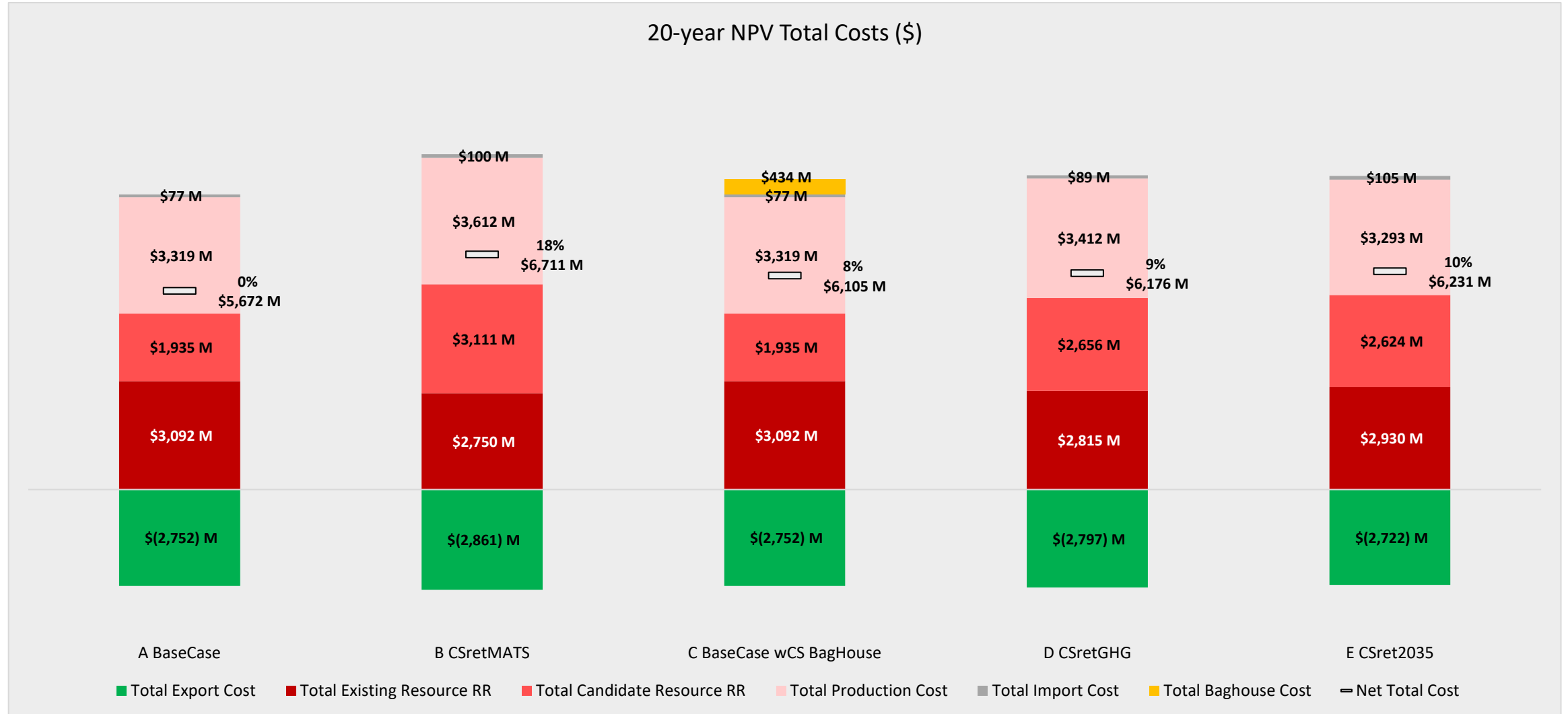
CO2 emissions from the Base Case and the Main Scenarios.



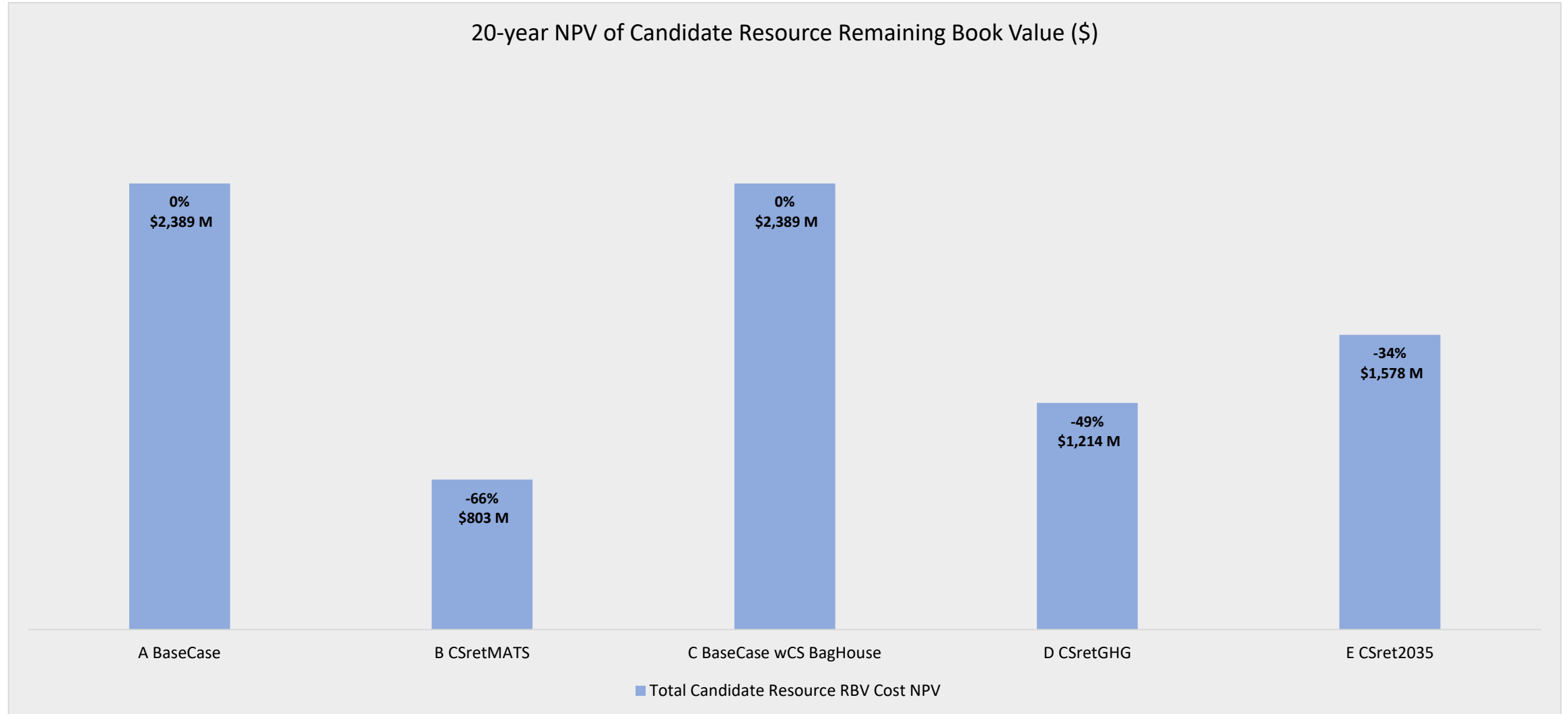
Transmission imports and exports from the Base Case and the Main Scenarios.



PCM results for the Base Case and the Main Scenarios



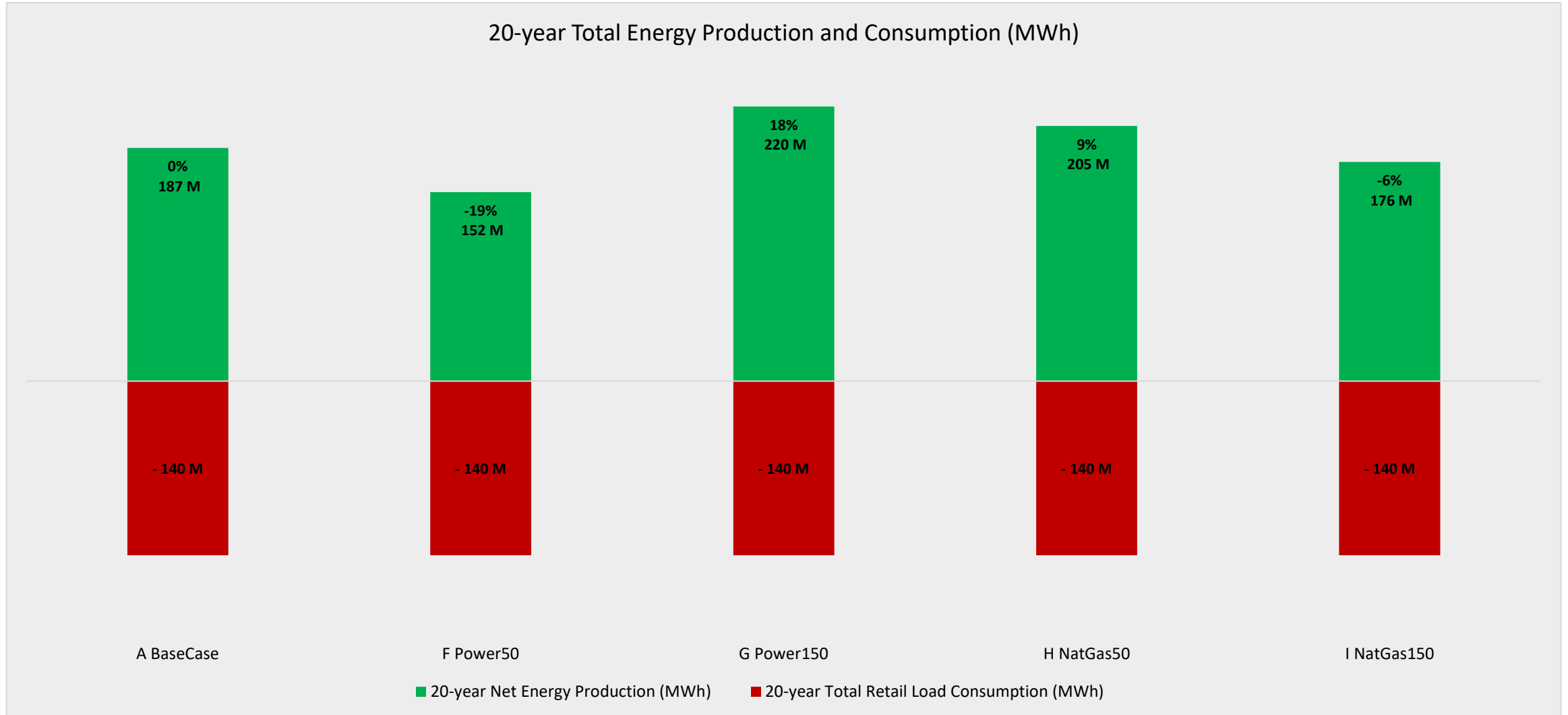
Remaining book value for candidate resources in the Base Case and the Main Scenarios.



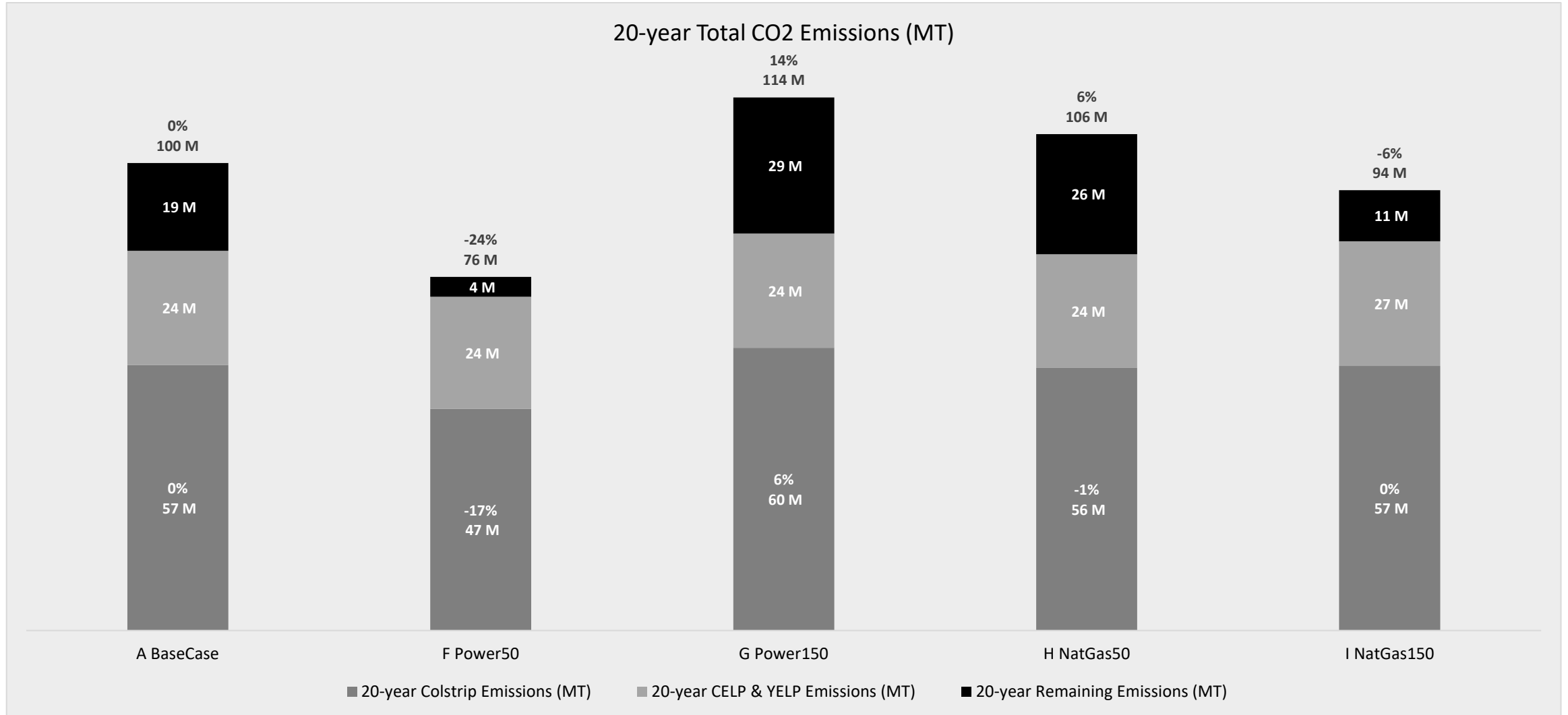


Base Case & Commodity Sensitivities

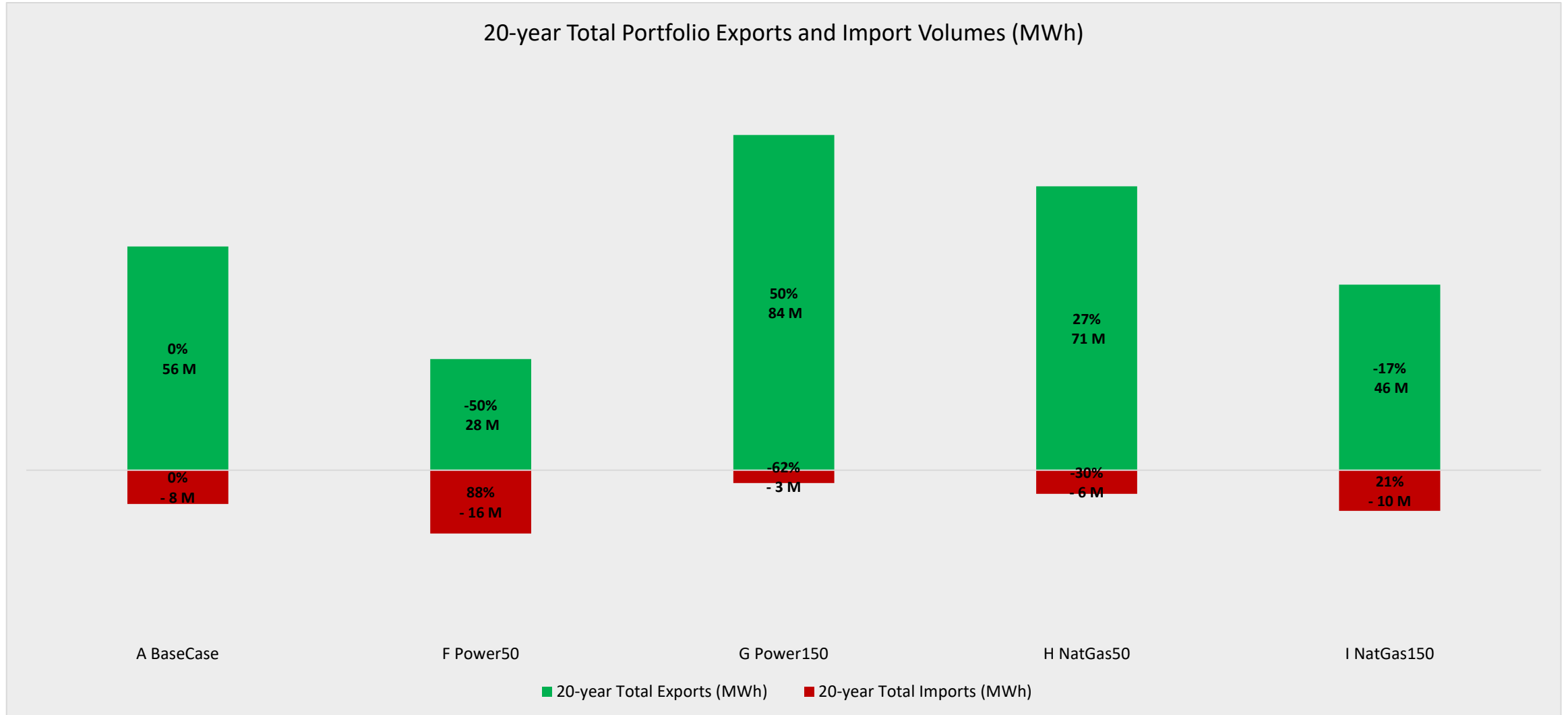
The total energy production of the Base Case and Commodity Sensitivities relative to the forecasted load.



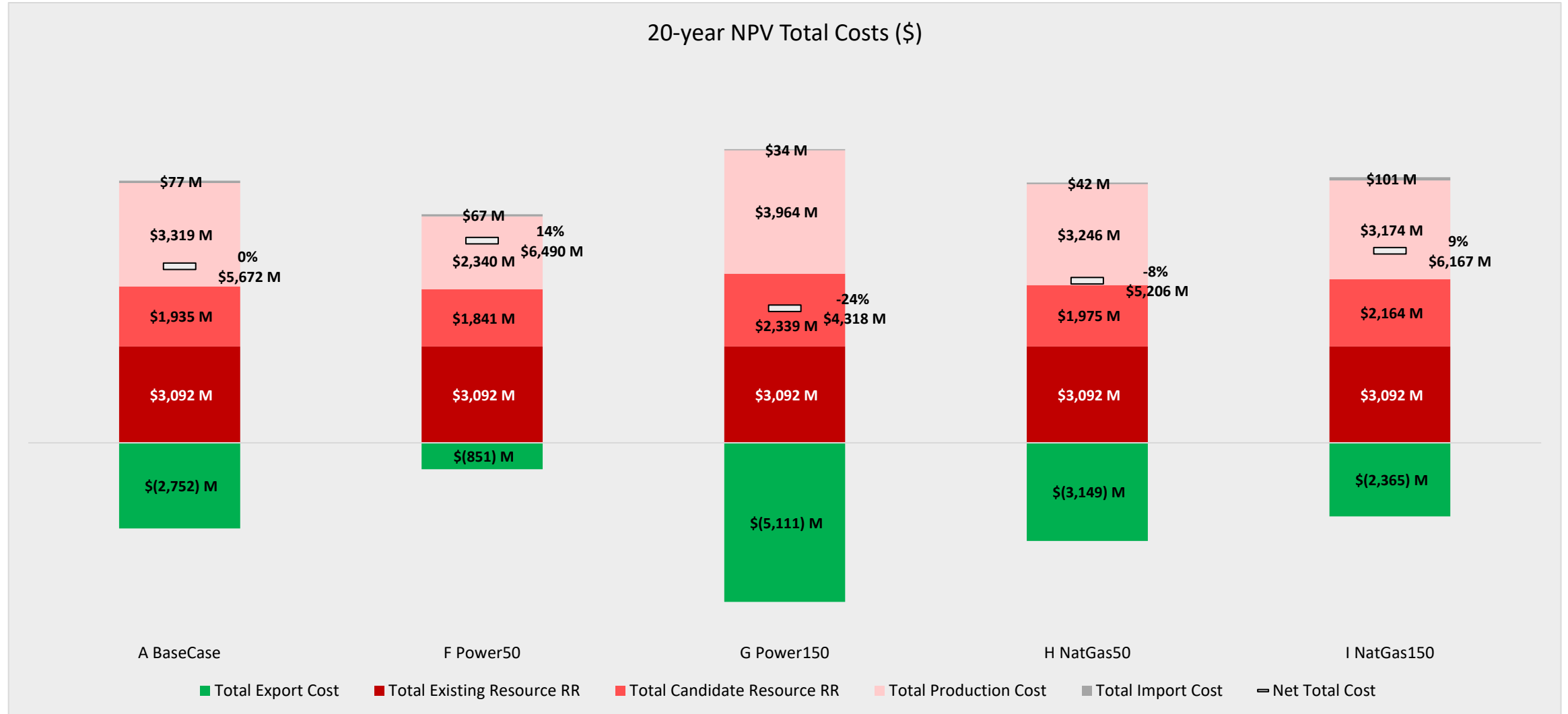
Carbon emissions from the Base Case and Commodity Sensitivities.



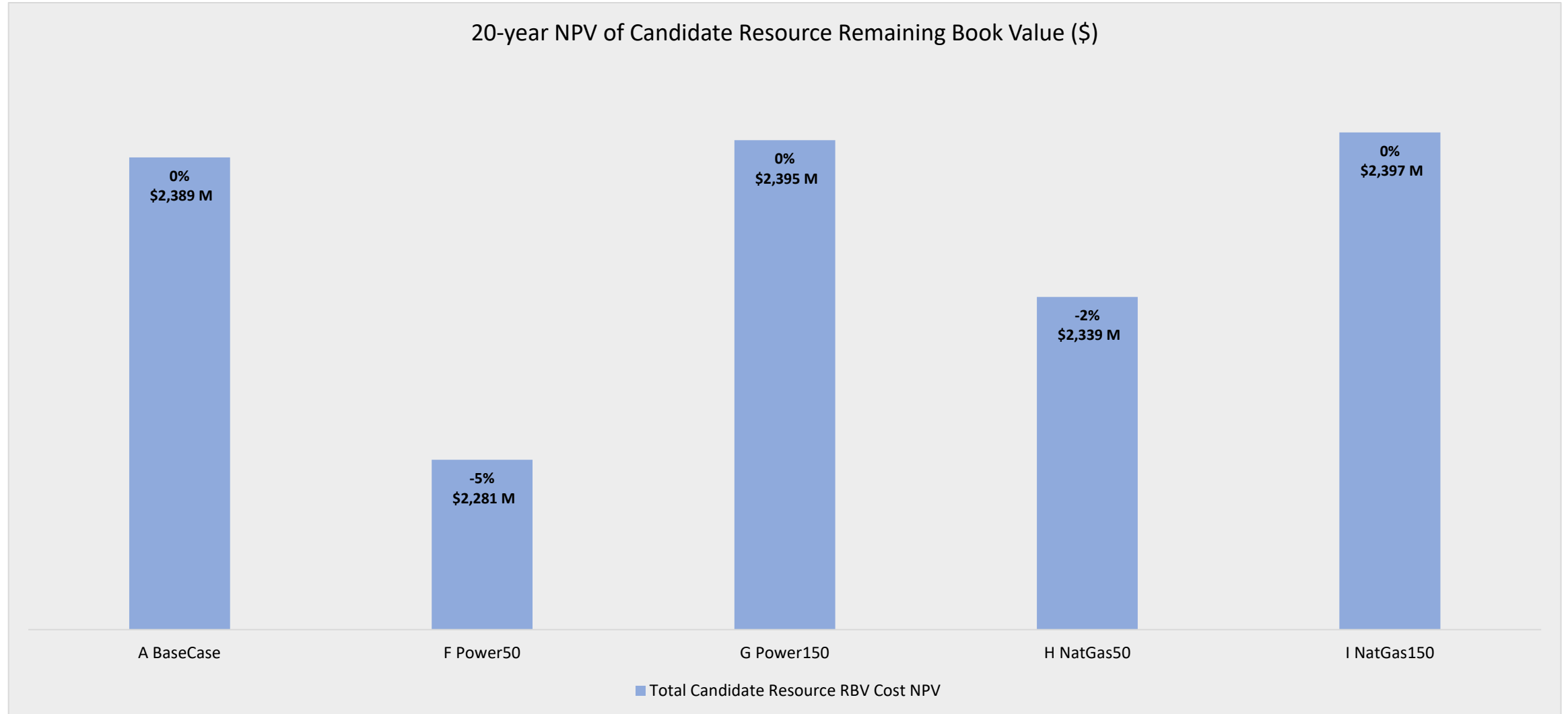
Transmission imports and exports from the Base Case and Commodity Sensitivities.



PCM results for the Base Case and Commodity Sensitivities.



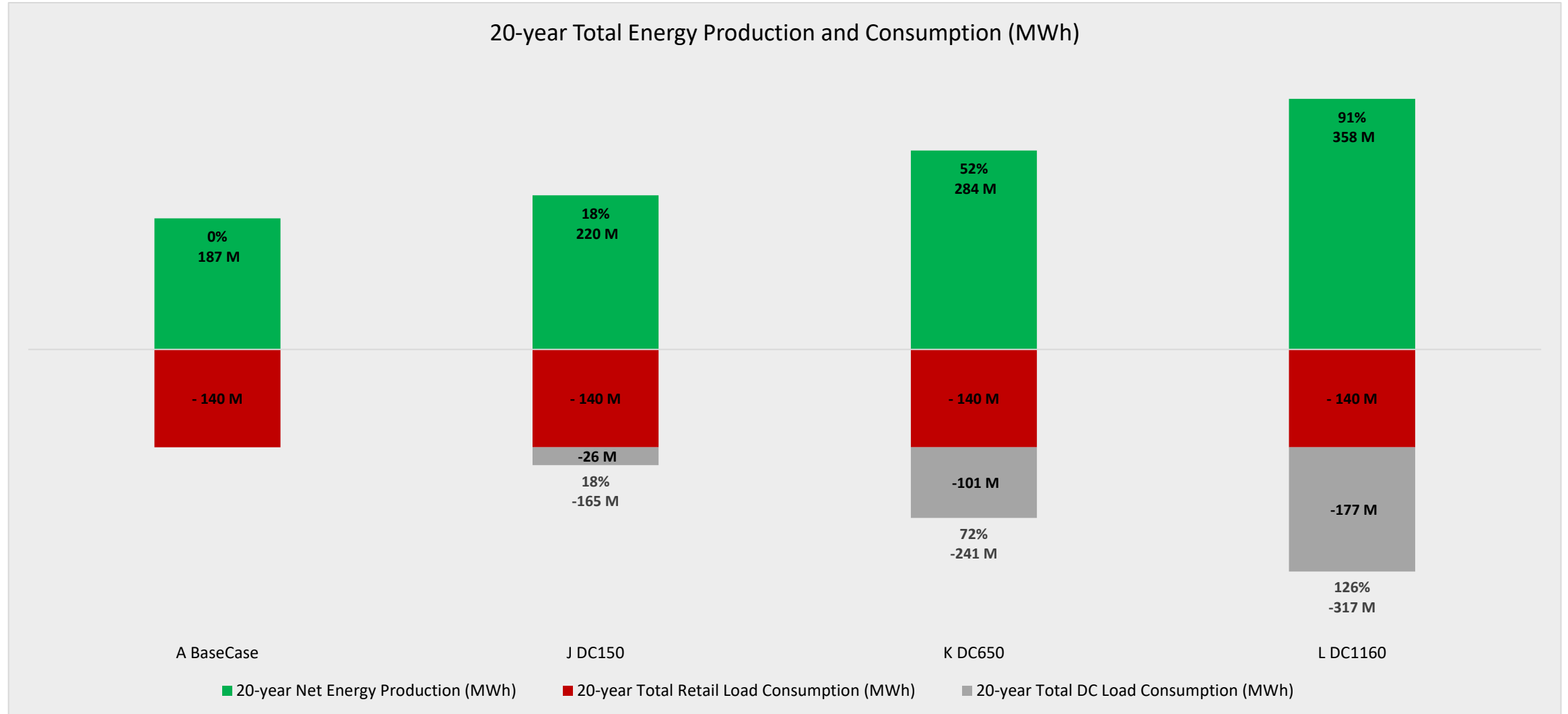
Remaining book value for candidate resources in the Base Case and Commodity Sensitivities.



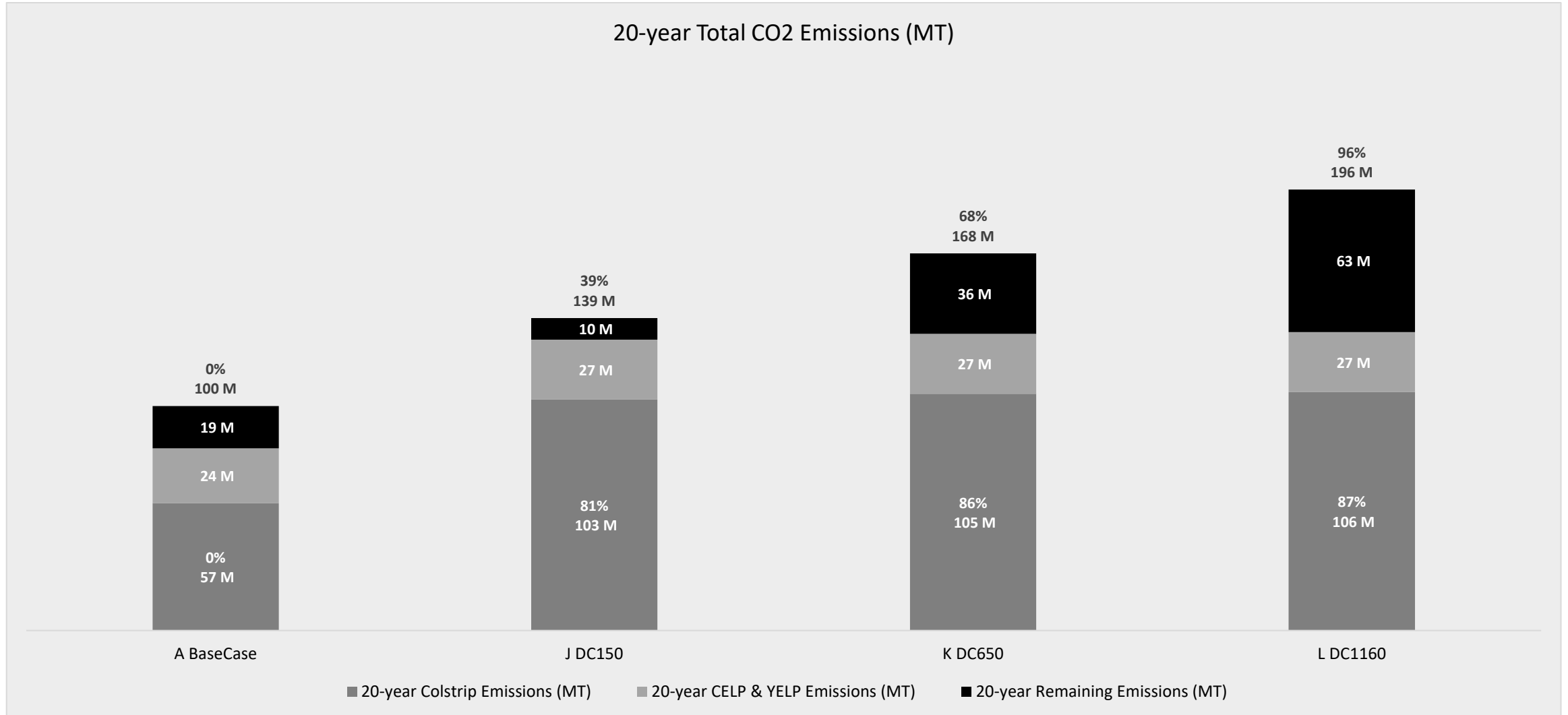


Base Case & Data Center Sensitivities

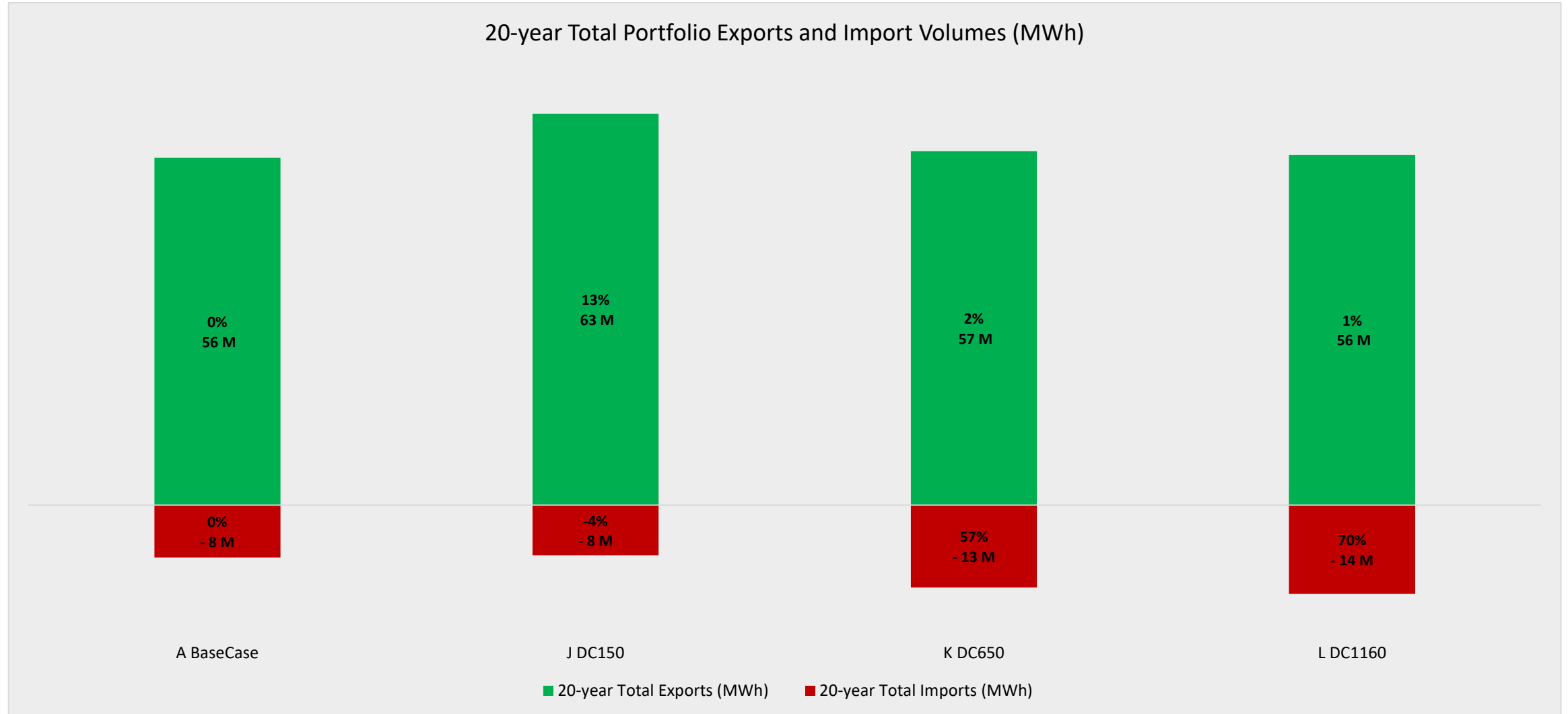
The total energy production of the Base Case and the Data Center Sensitivities relative to the forecasted load.



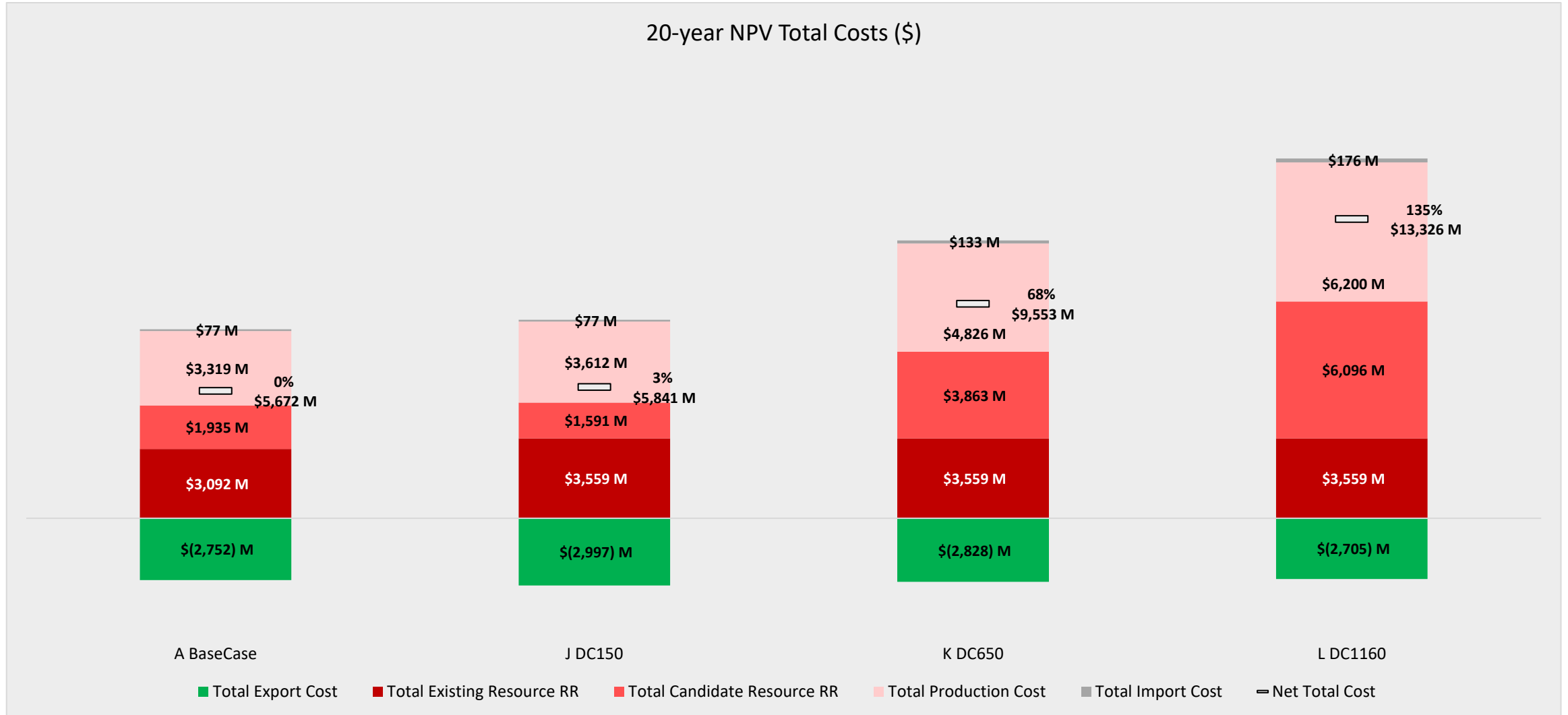
Carbon emissions from the Base Case and the Data Center Sensitivities.



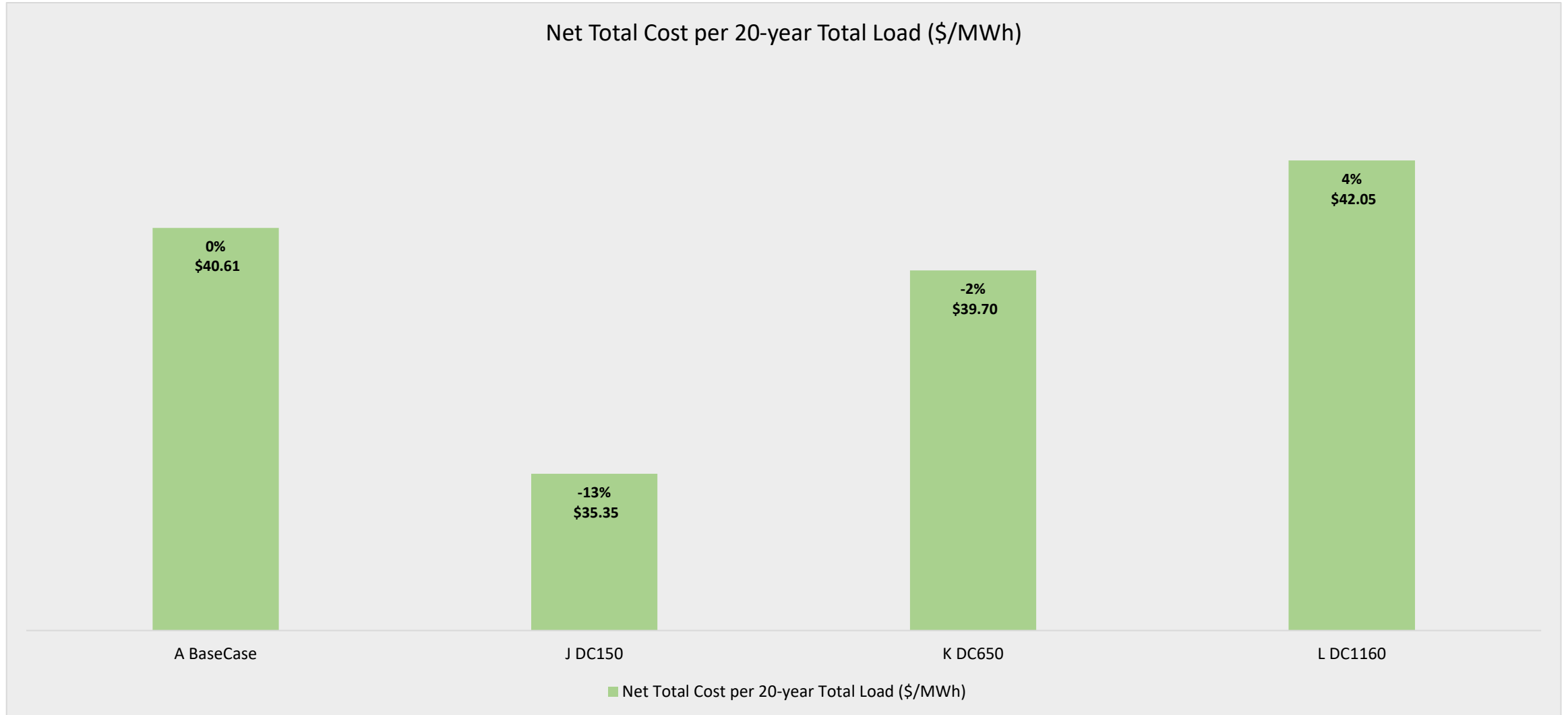
Transmission imports and exports from the Base Case and the Data Center Sensitivities.



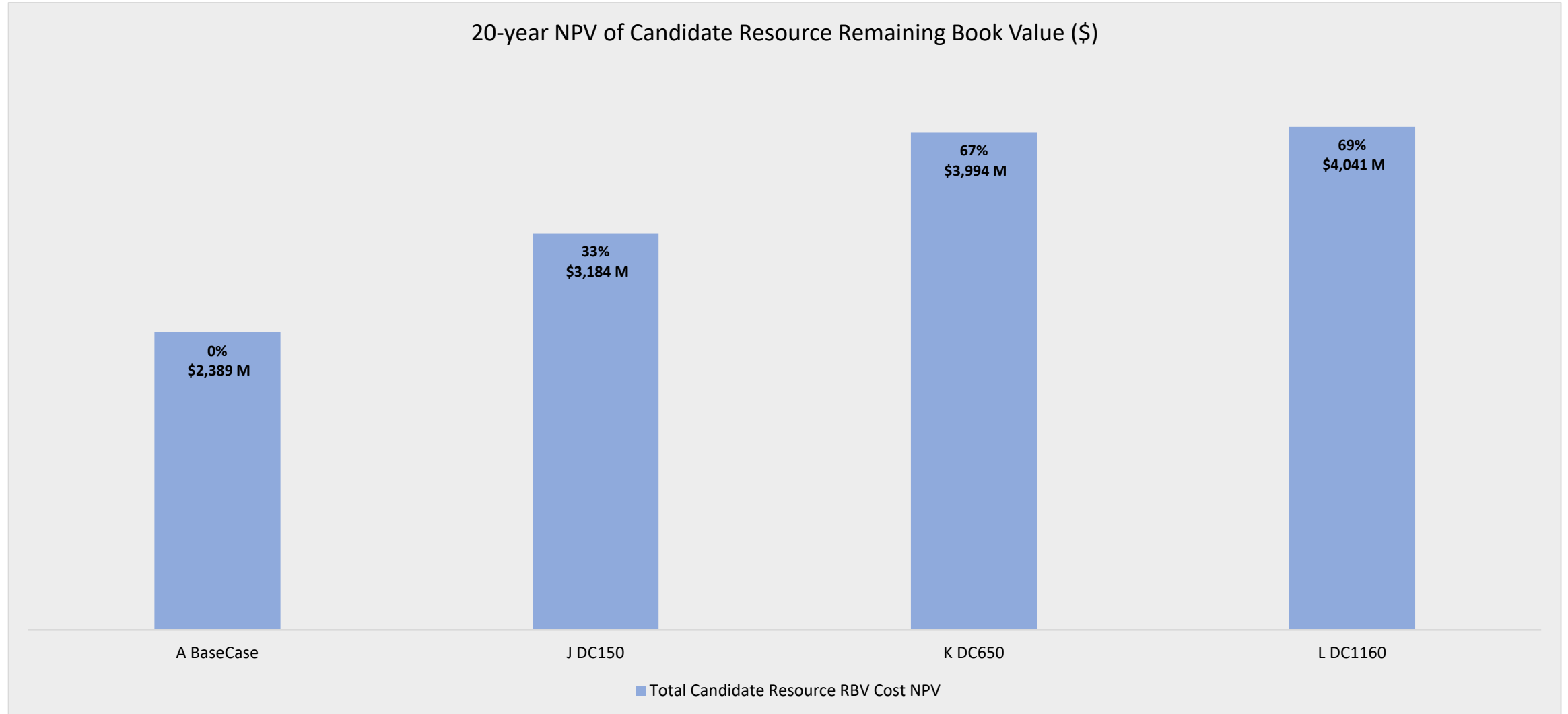
PCM results for the Base Case and Data Center Sensitivities.



PCM results for the Base Case and Data Center Sensitivities represented as the 20-year NPV total cost per total 20-year total load.



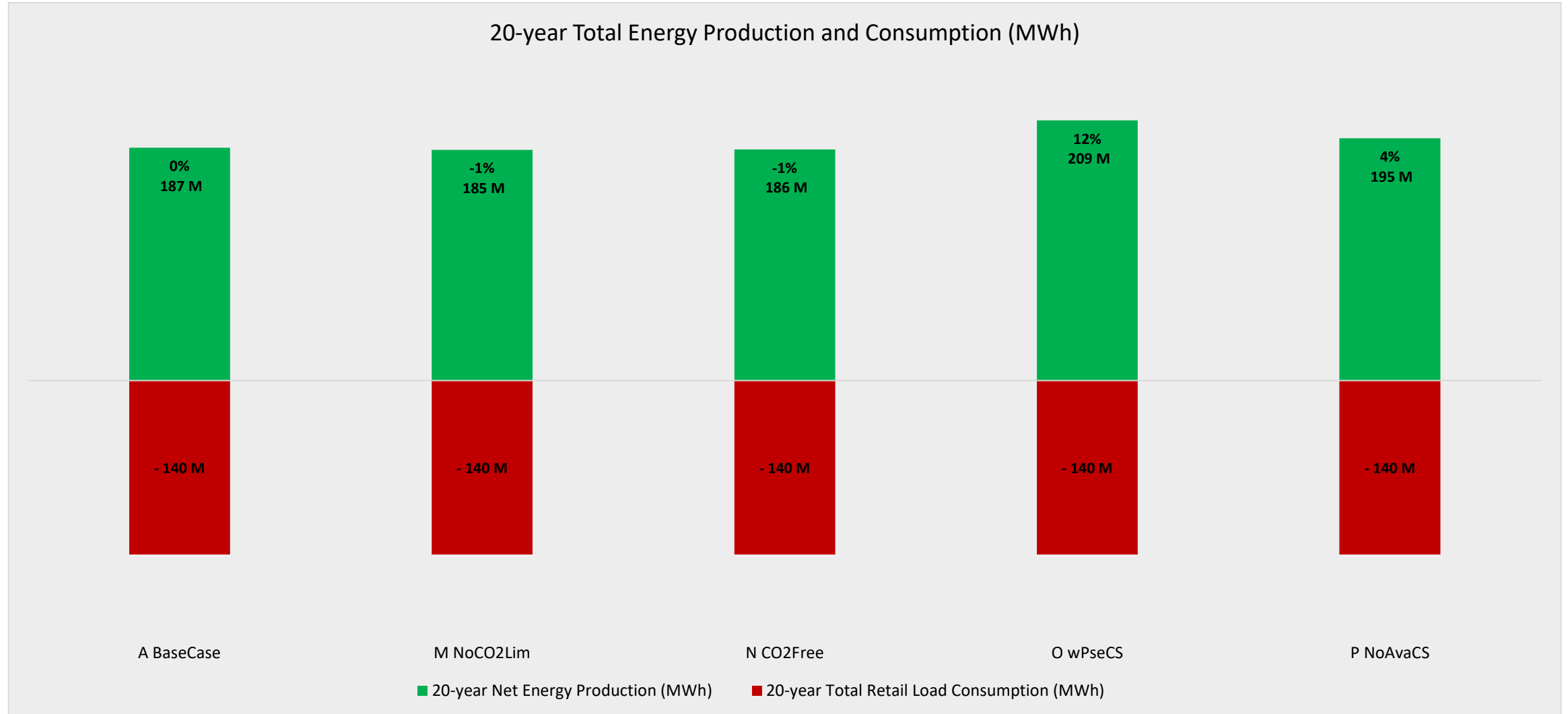
Remaining book value for candidate resources in the Base Case and Data Center Sensitivities.



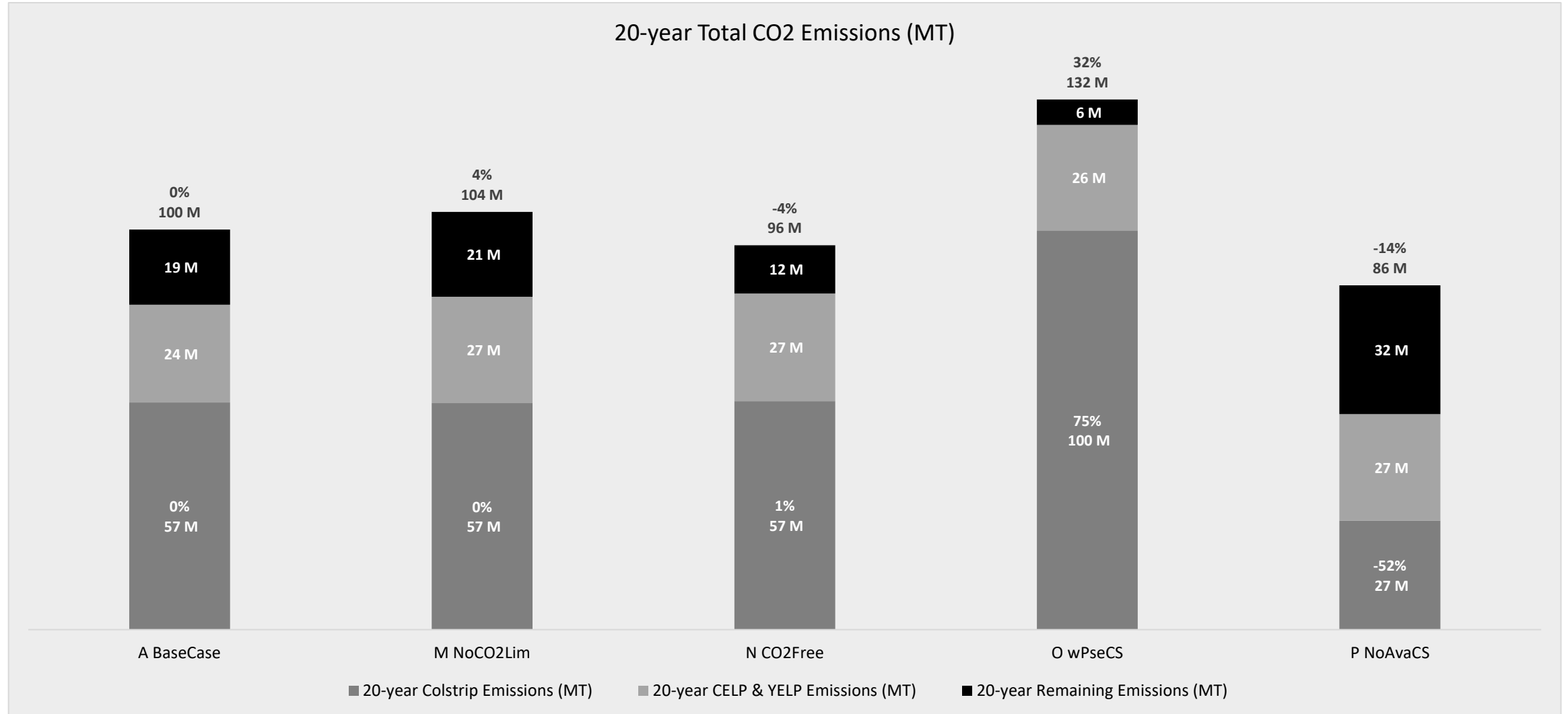


Base Case & Resource Sensitivities

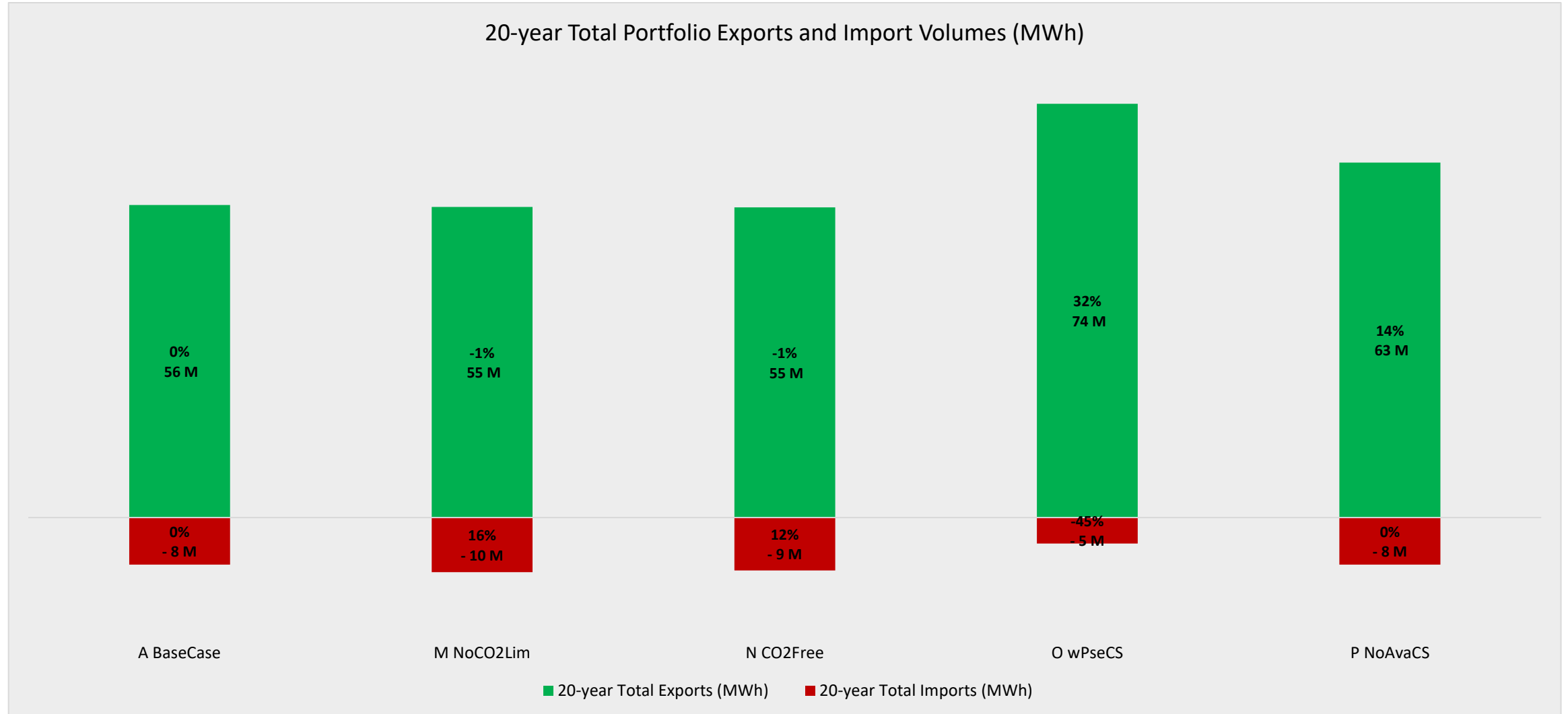
The total energy production of the Base Case and the resource sensitivities relative to the forecasted load.



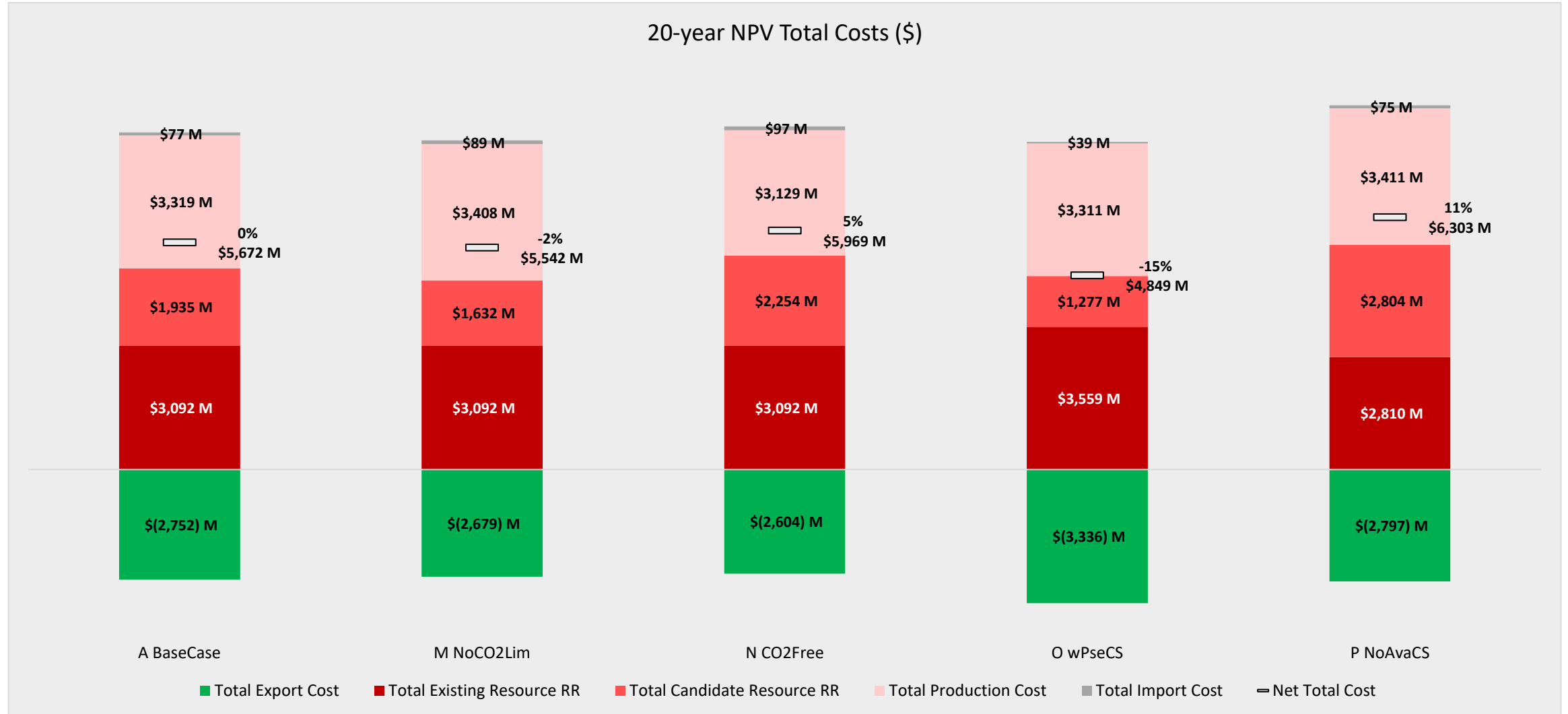
Carbon emissions from the Base Case and the resource sensitivities.



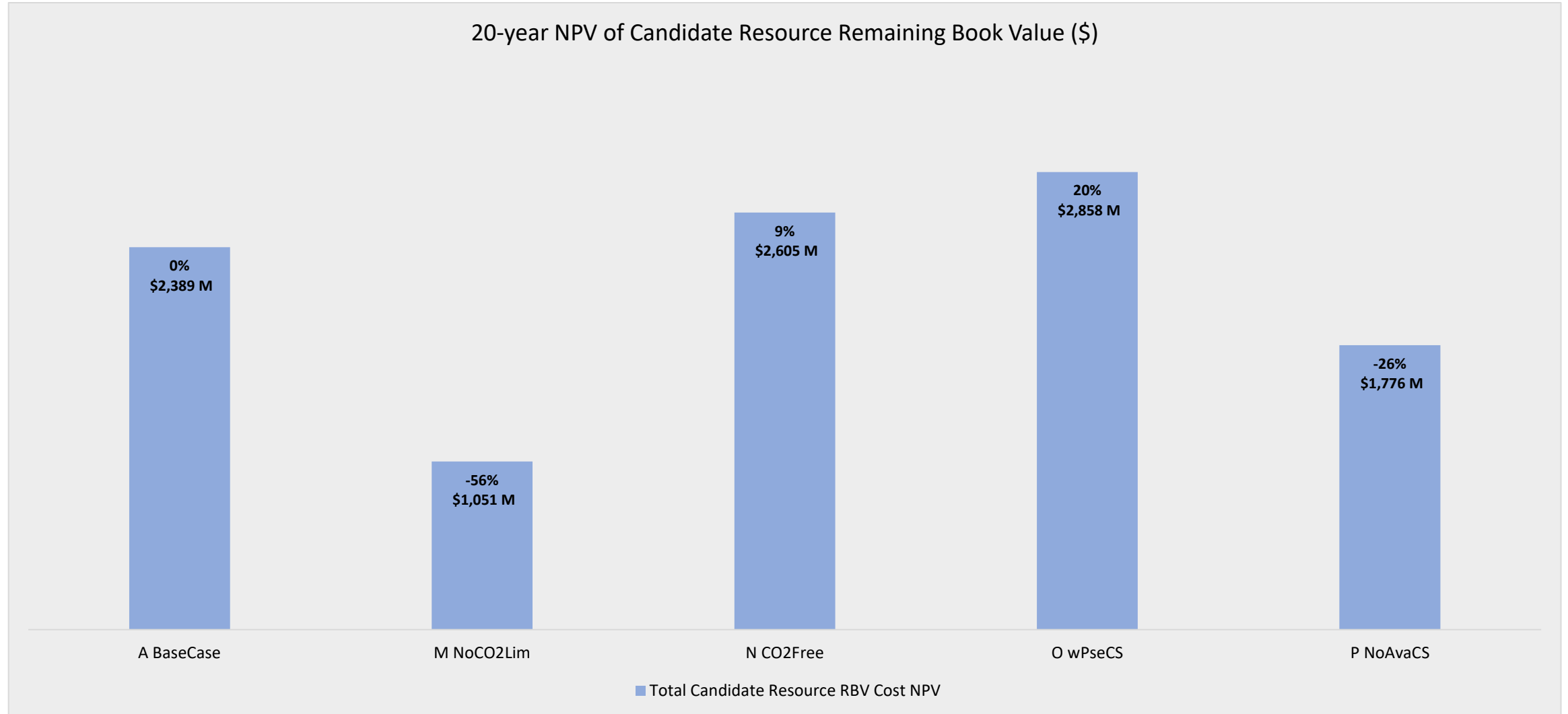
Transmission imports and exports from the Base Case and the resource sensitivities.



PCM results for the Base Case and the resource sensitivities.



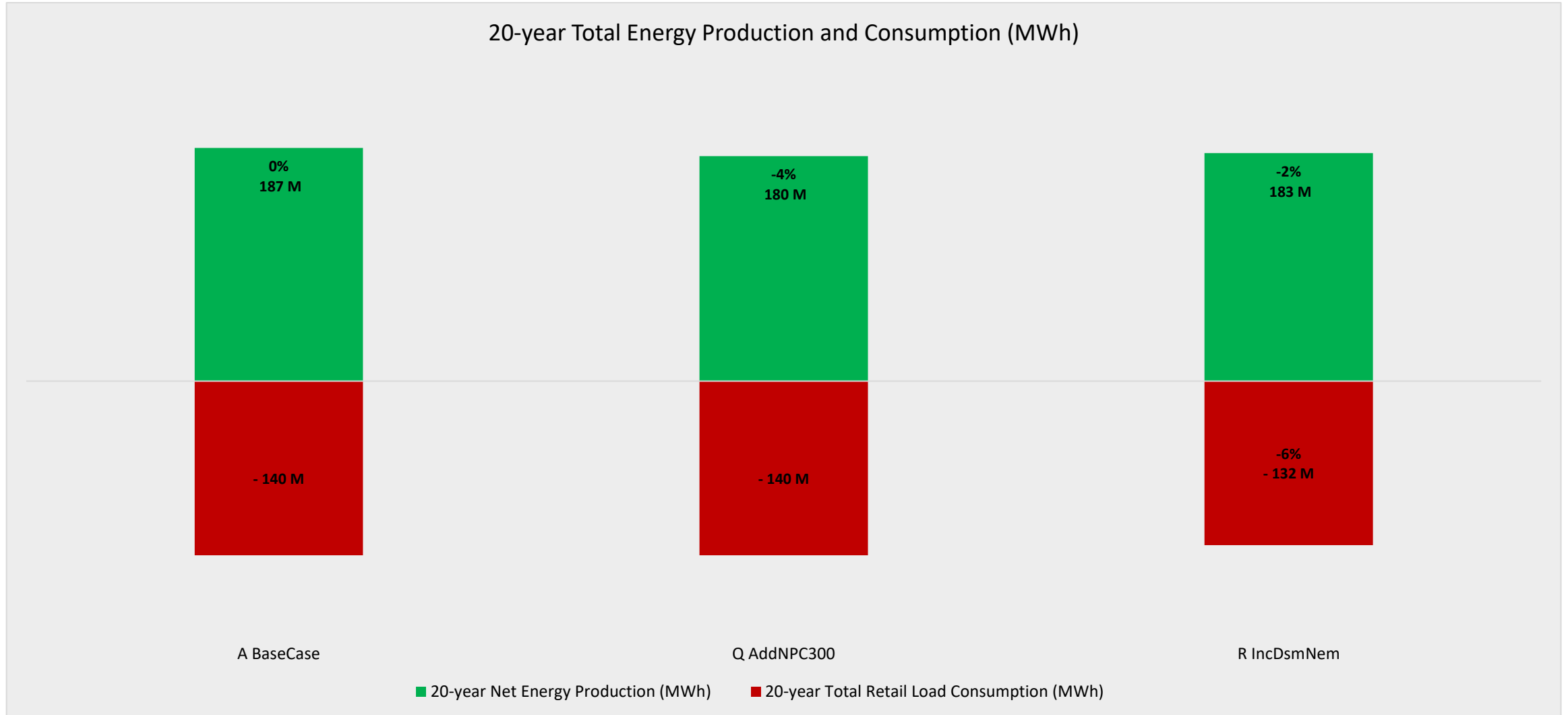
Remaining book value for candidate resources in the Base Case and the resource sensitivities.



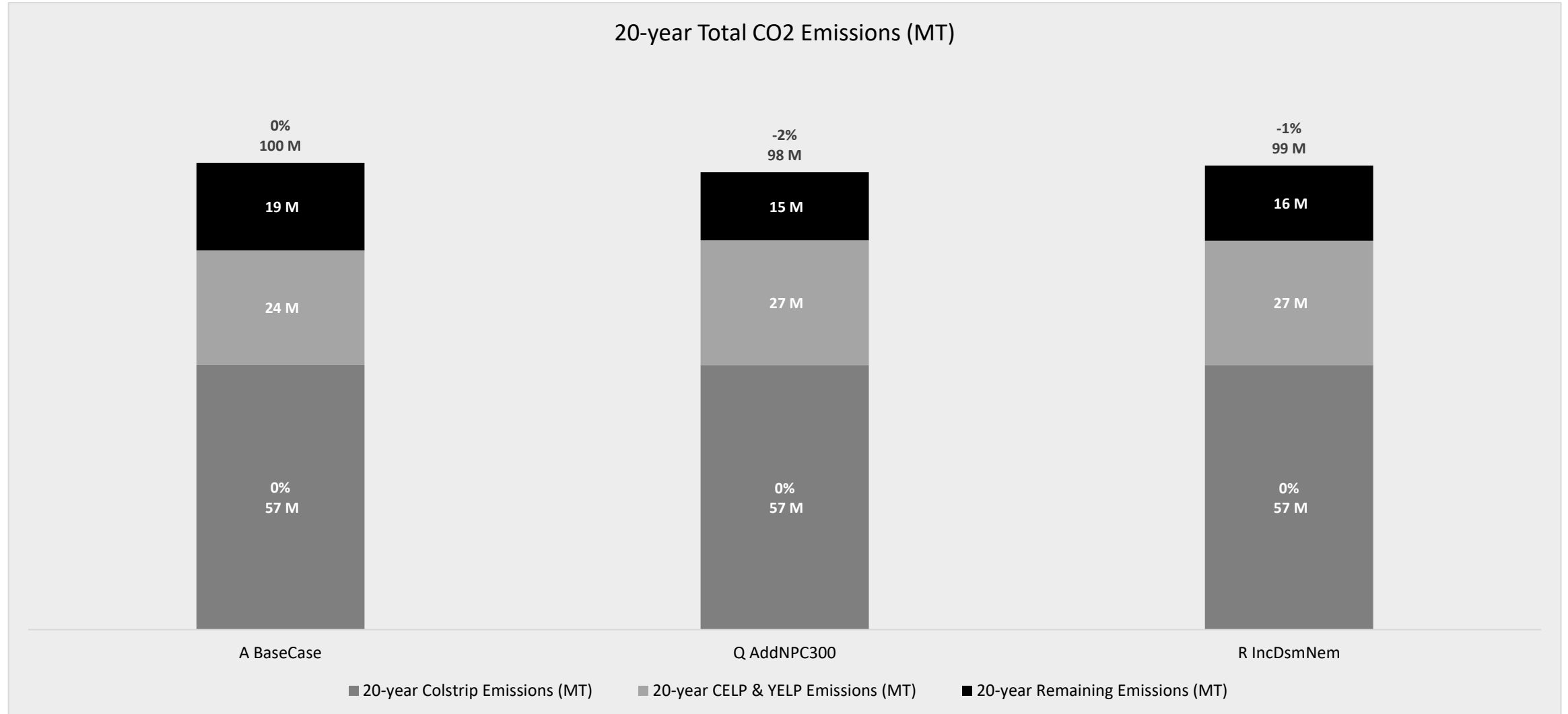


Base Case & Other Sensitivities

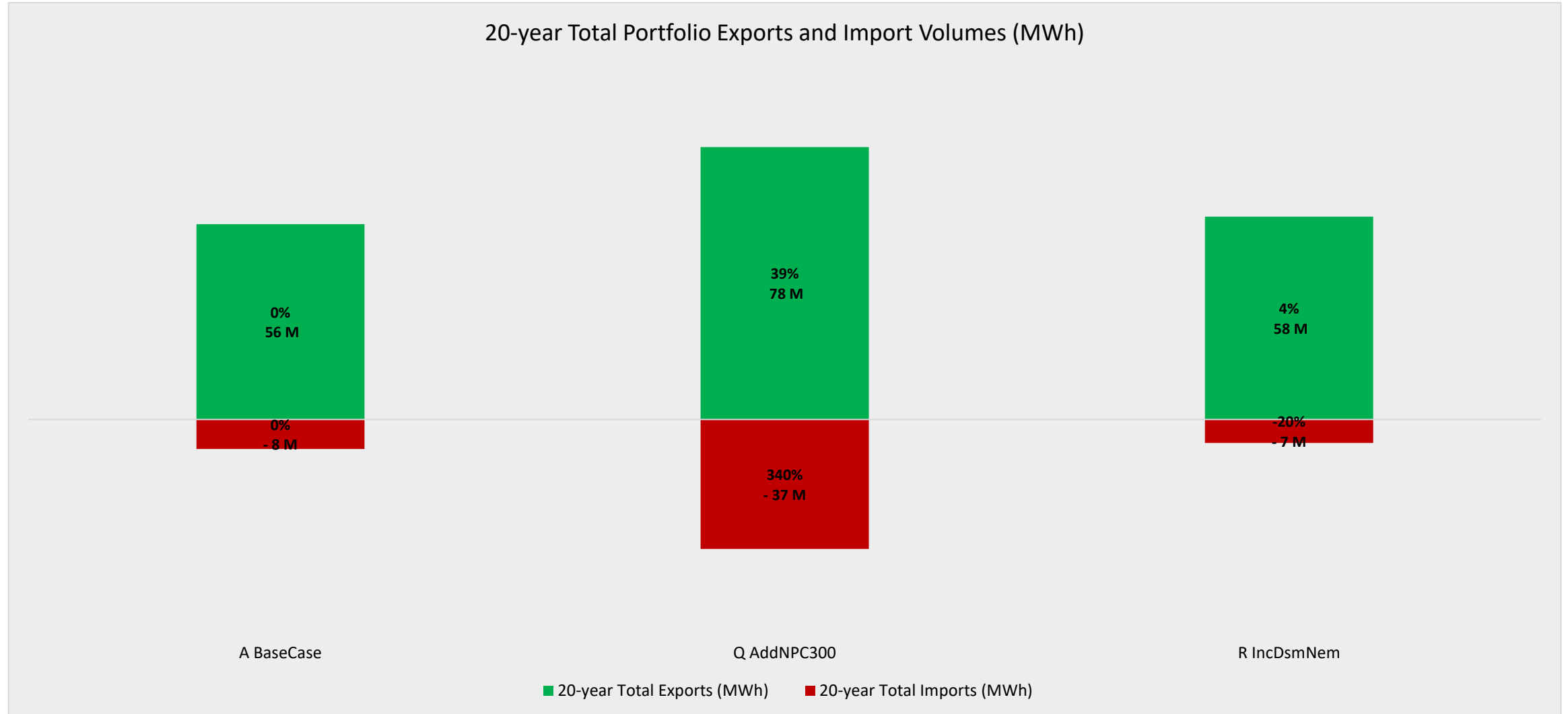
The total energy production of the Base Case and the other sensitivities to the forecasted load.



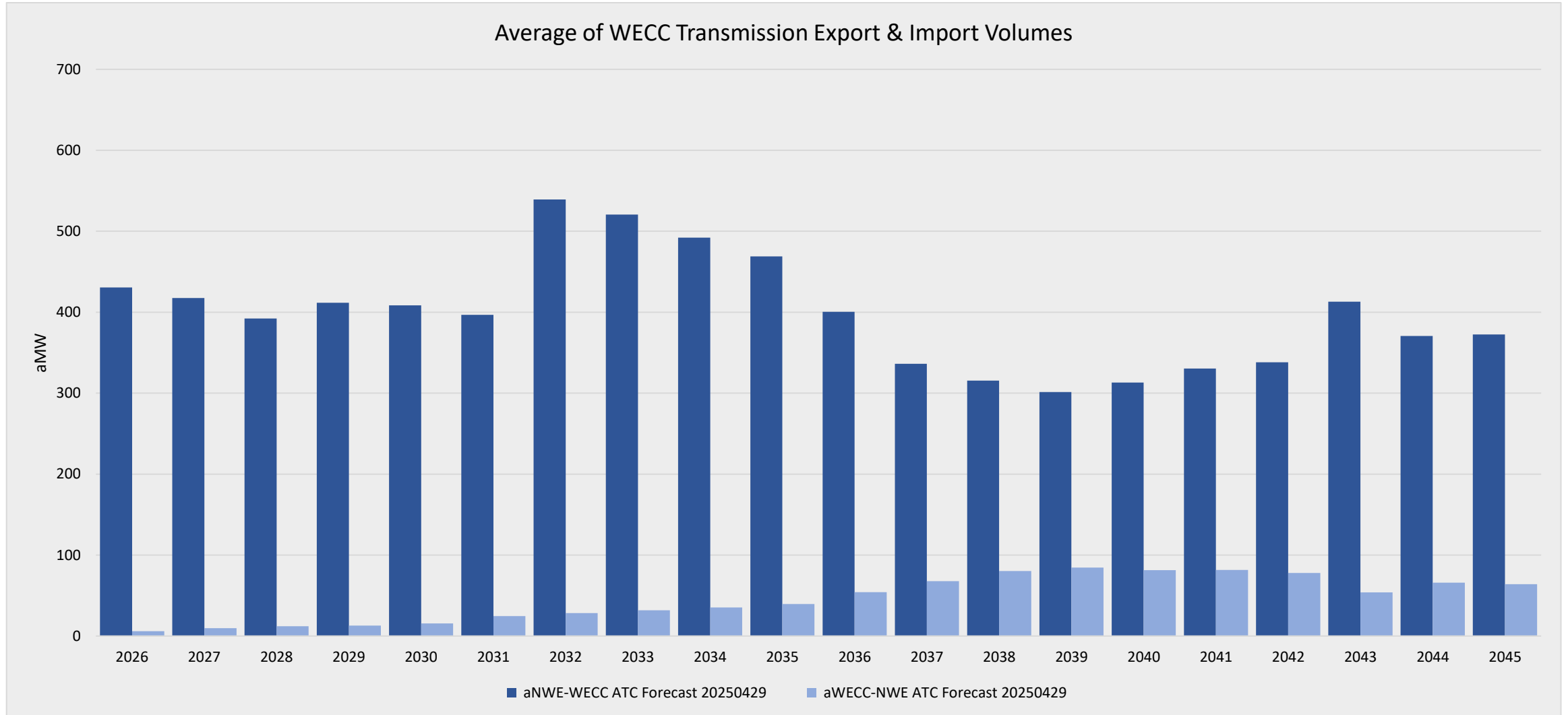
Carbon emissions from the Base Case and the other sensitivities.



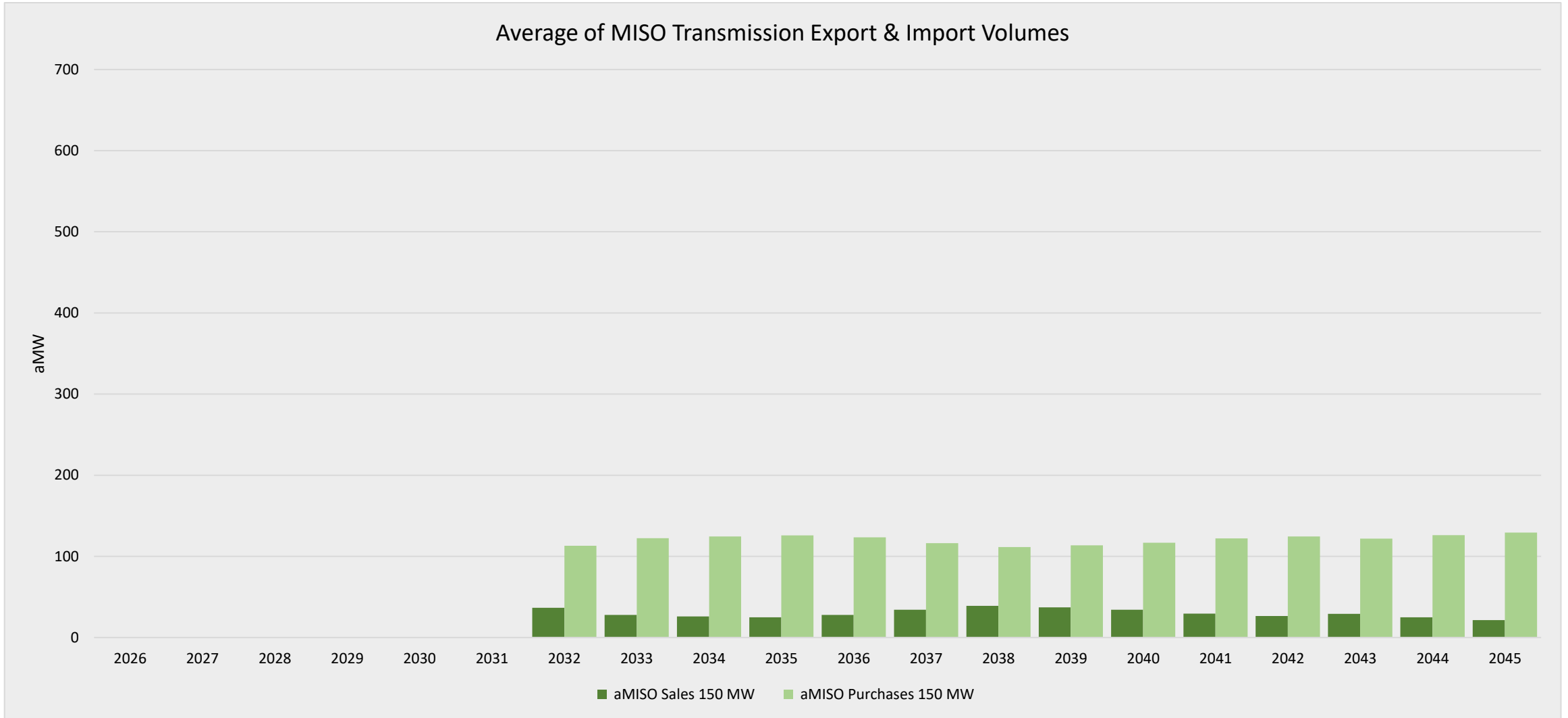
Transmission imports and exports from the Base Case and the other sensitivities.



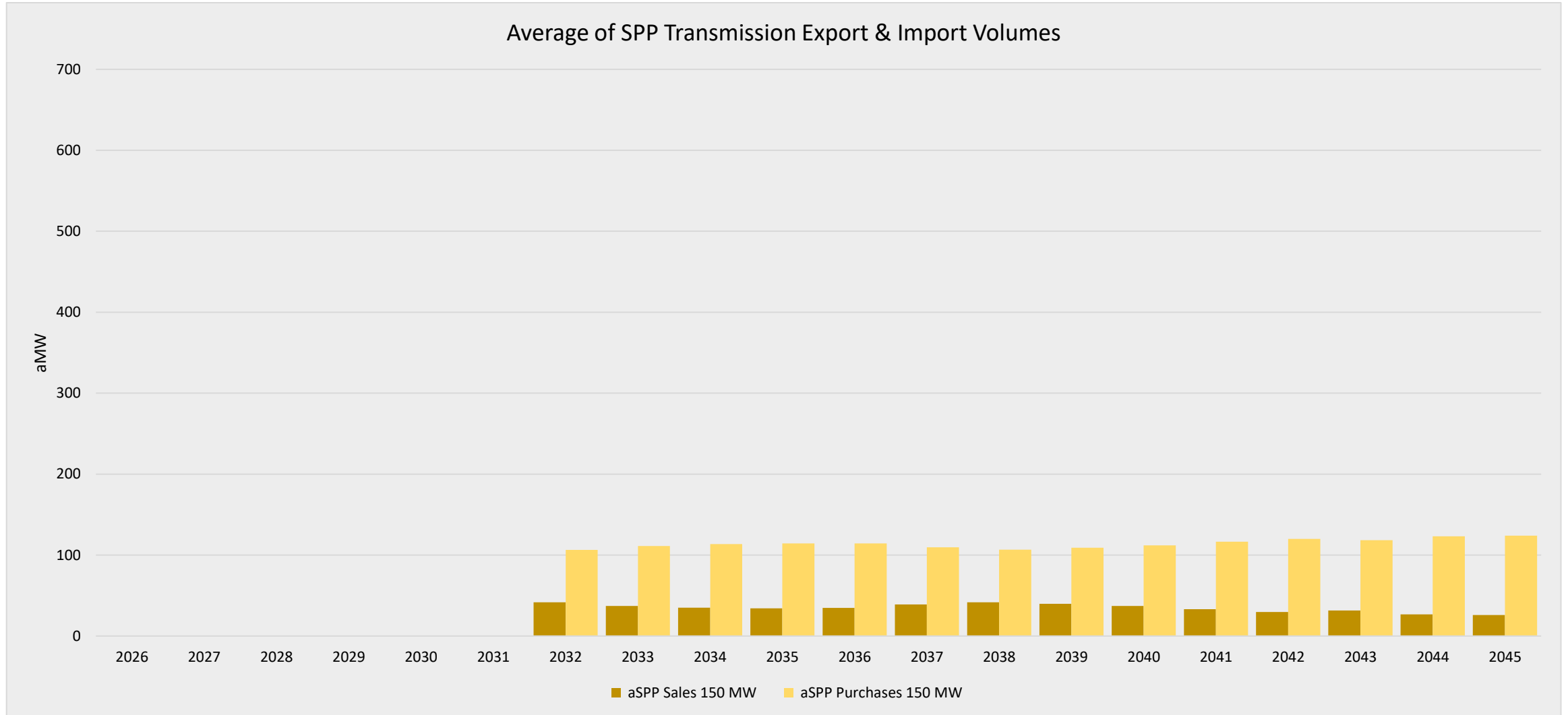
Sensitivity Q transmission imports and exports from and to the WECC interconnection.



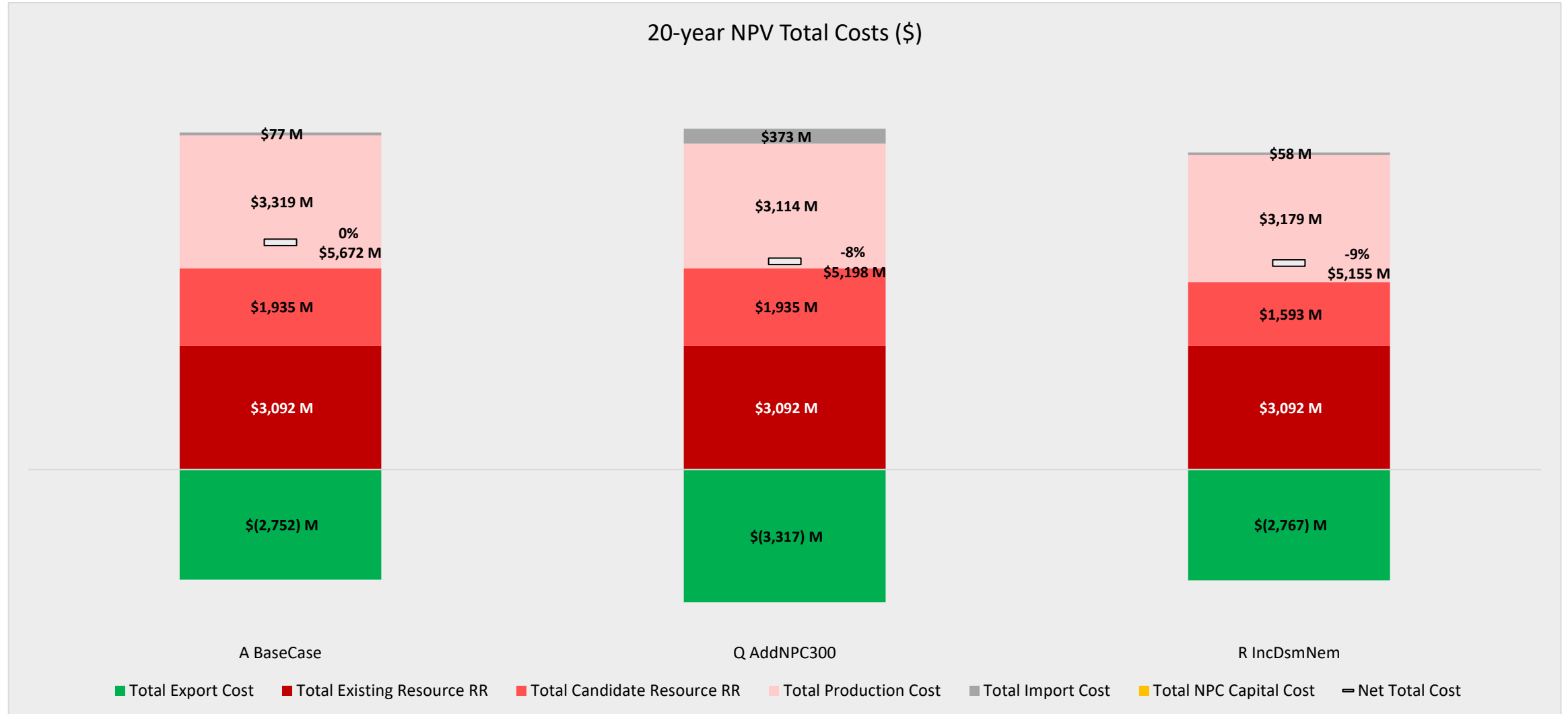
Sensitivity Q transmission imports and exports from and to the SPP power market.



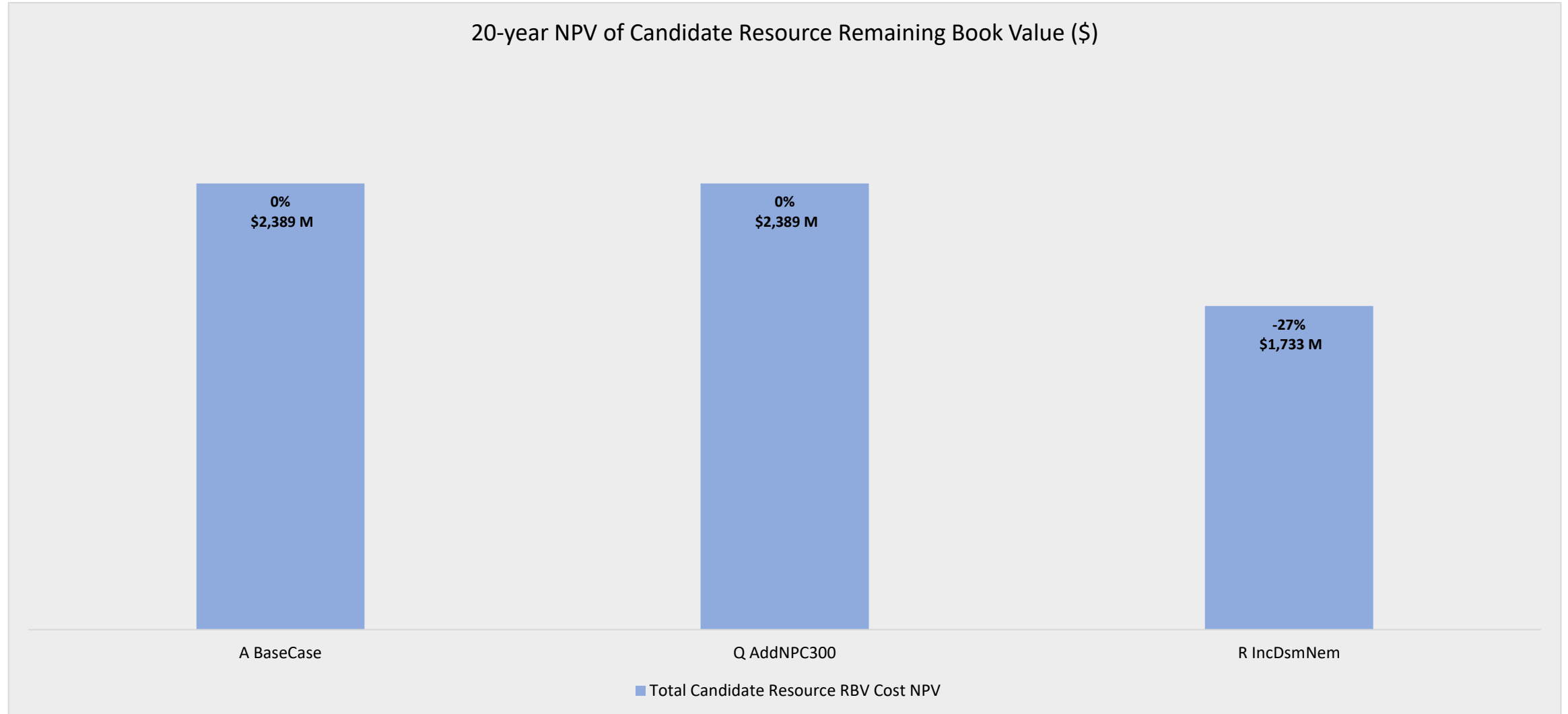
Sensitivity Q transmission imports and exports from and to the MISO power market.



PCM results for the Base Case and the other sensitivities.



Remaining book value for candidate resources in the base case and the other sensitivities.





Questions/Comments?