Round II Modeling Results – Supplement – Portfolio 14

Austin Energy Resource, Generation and Climate Protection Plan to 2035

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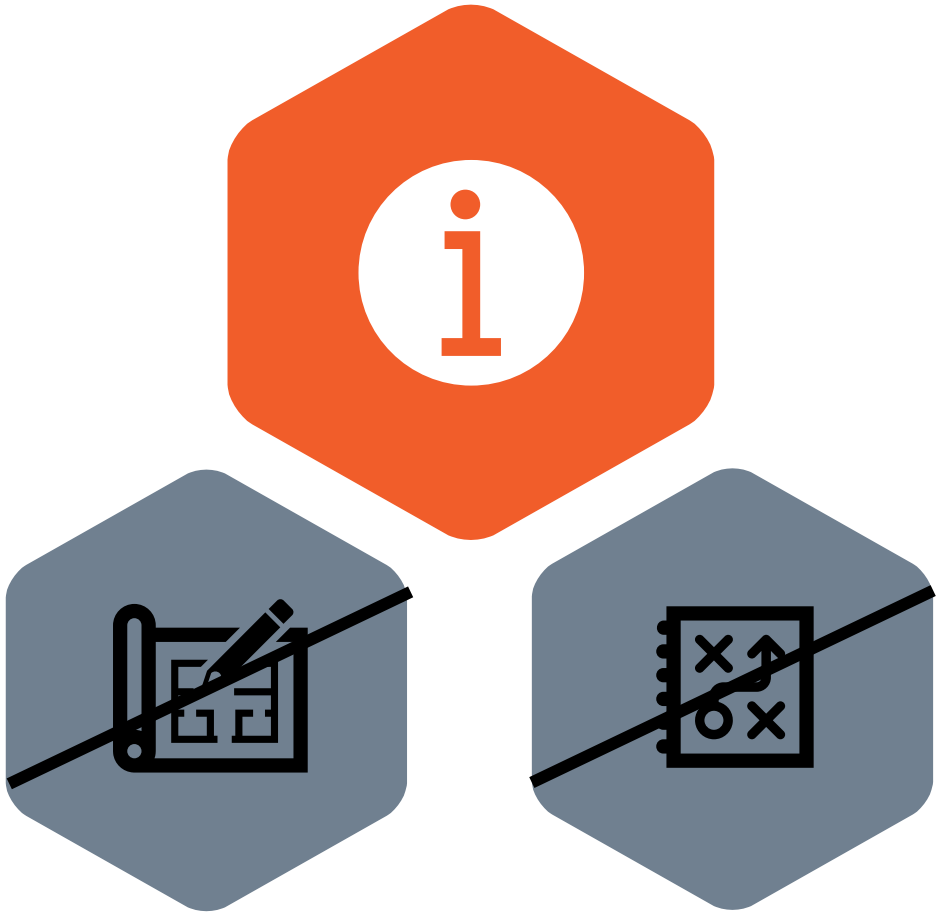
Important Context for this Discussion



Models provide information

not a specific plan or recommendation

The following slides show data results associated with preliminary modeling efforts for the Resource, Generation and Climate Protection Plan to 2035. **These results do not reflect a recommendation, and they do not reflect a plan.** These results are for informational purposes only. All modeling reflects the input assumptions coordinated with the Electric Utility Commission earlier this year.

Round II Portfolios

Austin Energy and EUC selected four new portfolios to improve our understanding of risks and tradeoffs

14

- Variation of Portfolio 10 with incremental new local storage + gas
- Tests “floor” level of local resources needed to maintain reliability

15

- Variation of Portfolio 12 with more local solar + storage + DR
- Tests cost/reliability of aggressive mix of DSM + storage only

16

- Variation of Portfolio 12 with larger ratio of storage to solar + more DR
- Tests relative performance of different solar + storage mixes
- Maintains Decker/Sand Hill past 2034

17

- Identical to Portfolio 12 with Decker/Sand Hill operating past 2034

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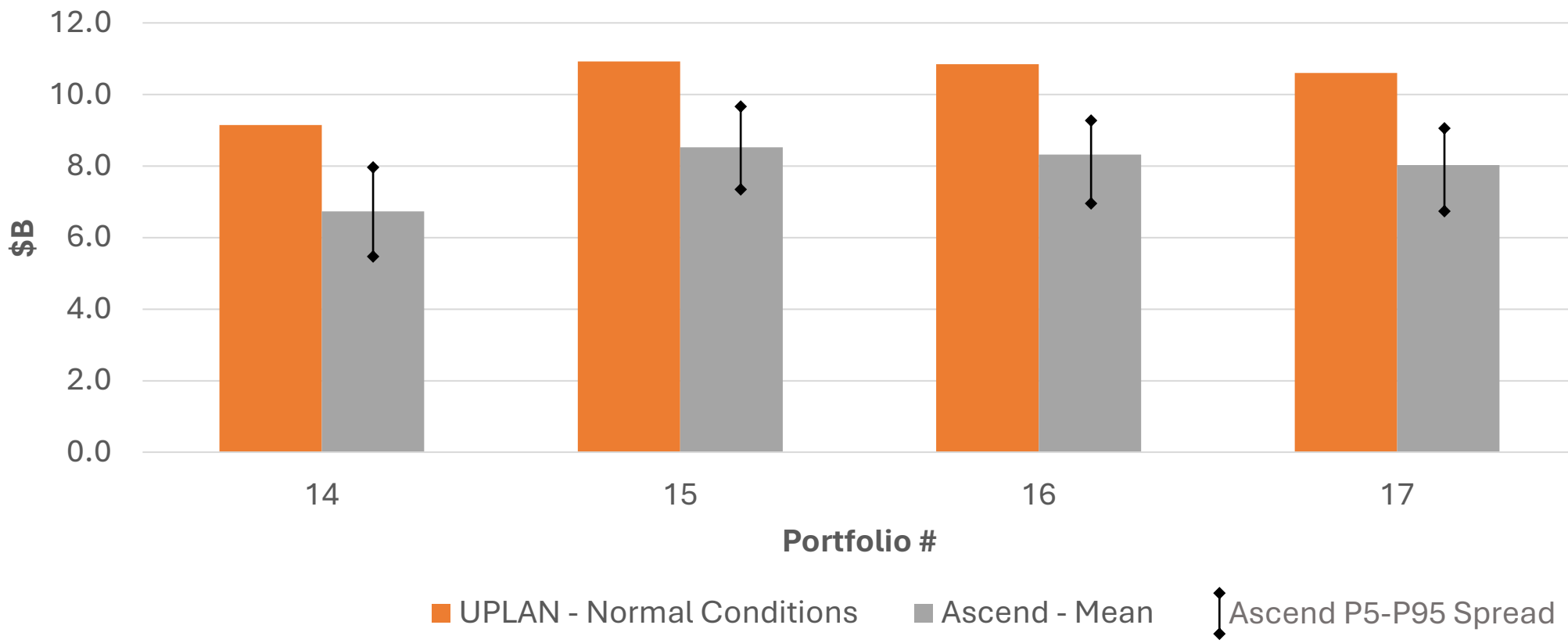
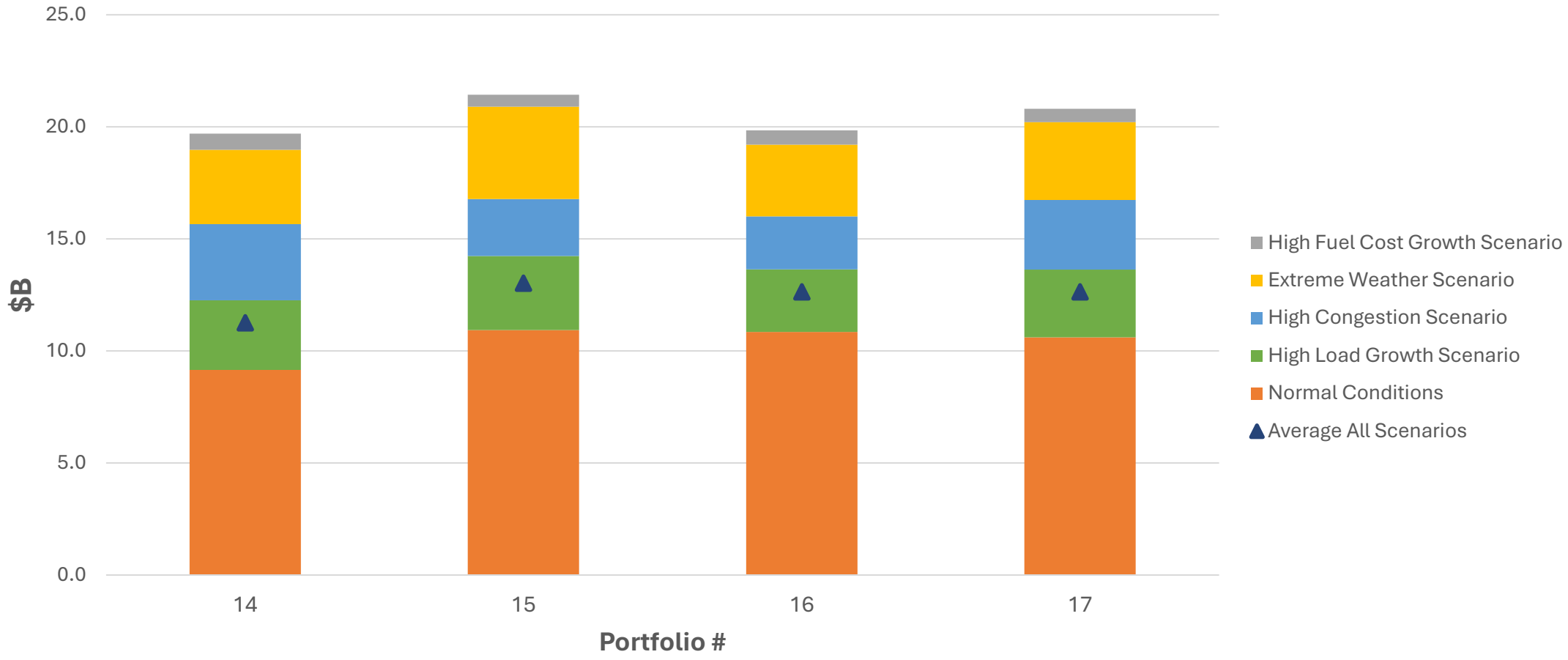
Reference Guide to New Portfolios

REF #	DESCRIPTION
10	**395 MW local storage**, 100% DNV projections, 65% RE (1,800 MW wind/solar PPAs), REACH on gas, **Decker/Sand Hill run through 2035**
14	**125 MW local storage** (100 MW 4-hr, 25 MW 2-hr), **200 MW local peakers**, 100% DNV projections (431 MW local solar, 270 MW demand response), 250 MW import capacity increase, 65% RE (1,800 MW wind/ solar PPAs), REACH on gas, Decker/Sand Hill run through 2035
12	**525 MW local storage** (300 MW 12-hr, 200 MW 4-hr, 25 MW 2-hr)**, 700 MW local solar, 300 MW demand response**, 100% RE as % of load (2,500 MW wind/solar PPAs), 100% CF, REACH on gas, retire Decker/Sand Hill 2034
15	**625 MW local storage** (350 MW 12-hr, 250 MW 4-hr, 25 MW 2-hr), **960 MW local solar, 325 MW demand response**, 250 MW import capacity increase, 100% CF, 100% RE as % of load (2,500 MW wind/solar PPAs), REACH on gas, retire Decker/Sand Hill in 2034
16	**725 MW local storage** (400 MW 12-hr, 300 MW 4-hr, 25 MW 2-hr), **860 MW local solar, 400 MW demand response**, 250 MW import capacity increase, 100% RE as % of load (2,500 MW wind/solar PPAs), REACH on gas, Decker/Sand Hill run through 2035
17	Same as 12 except **Decker/Sand Hill run through 2035**

Net Present Value of 20-Yr Annual Net Costs ($B)



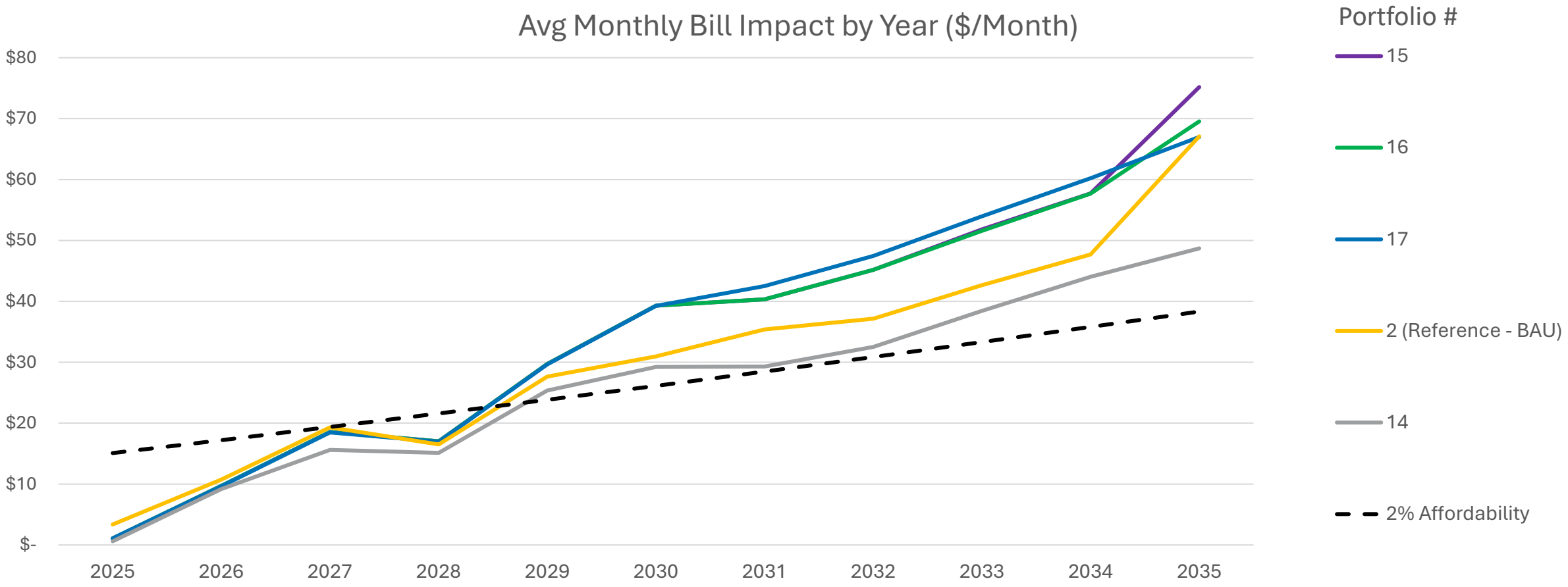
Net Present Value of 20-Yr Annual Net Costs ($B) – All Scenarios - UPLAN



2035 Average Monthly Residential Bill Increase

Austin Energy 2% Affordability Target is not adjusted for inflation.

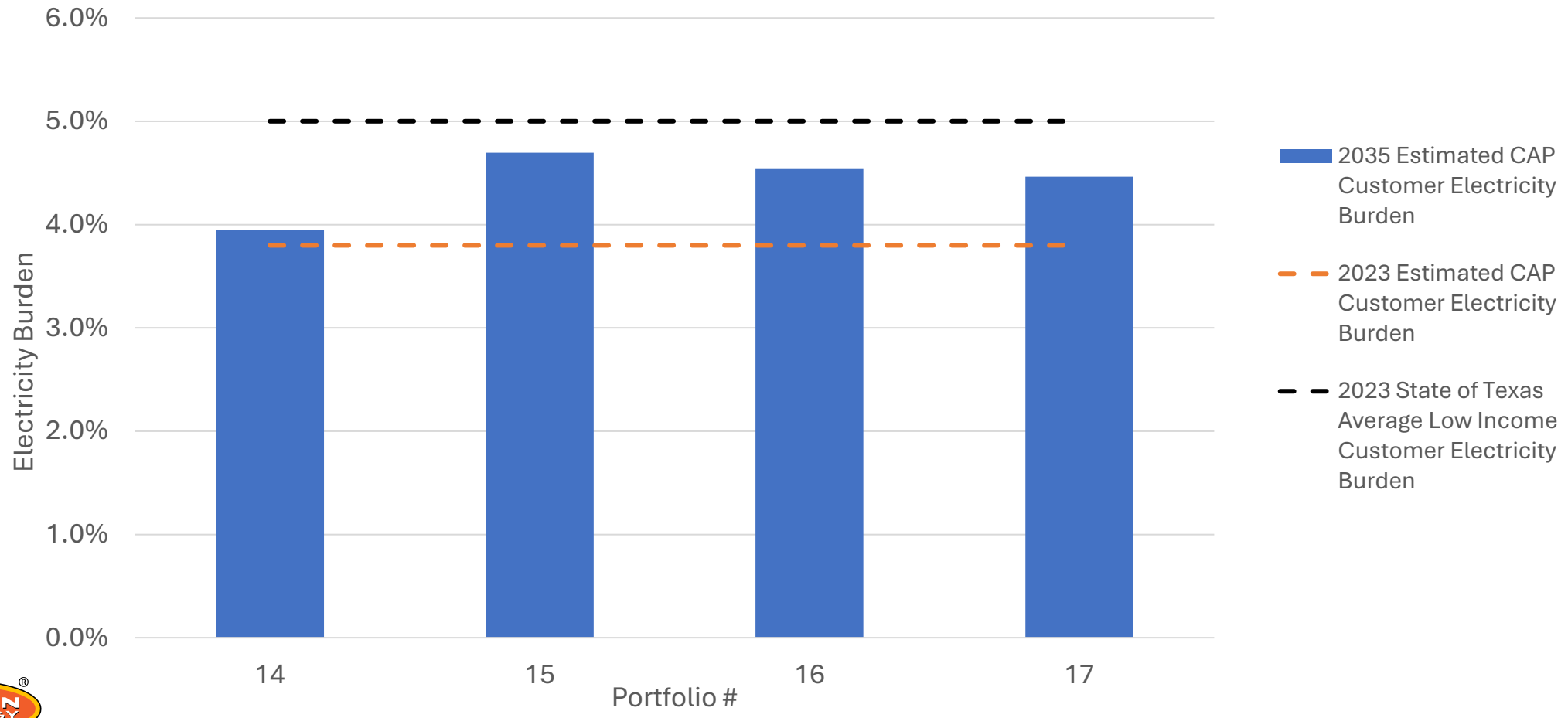
Monthly bill impact data provided in nominal dollars



DISCLAIMER: These are representative results based on modeling for the 2035 Resource Generation Plan and are not projections of Austin Energy's future prices. The results are not inclusive of factors beyond the scope of this Resource Generation Plan modeling.

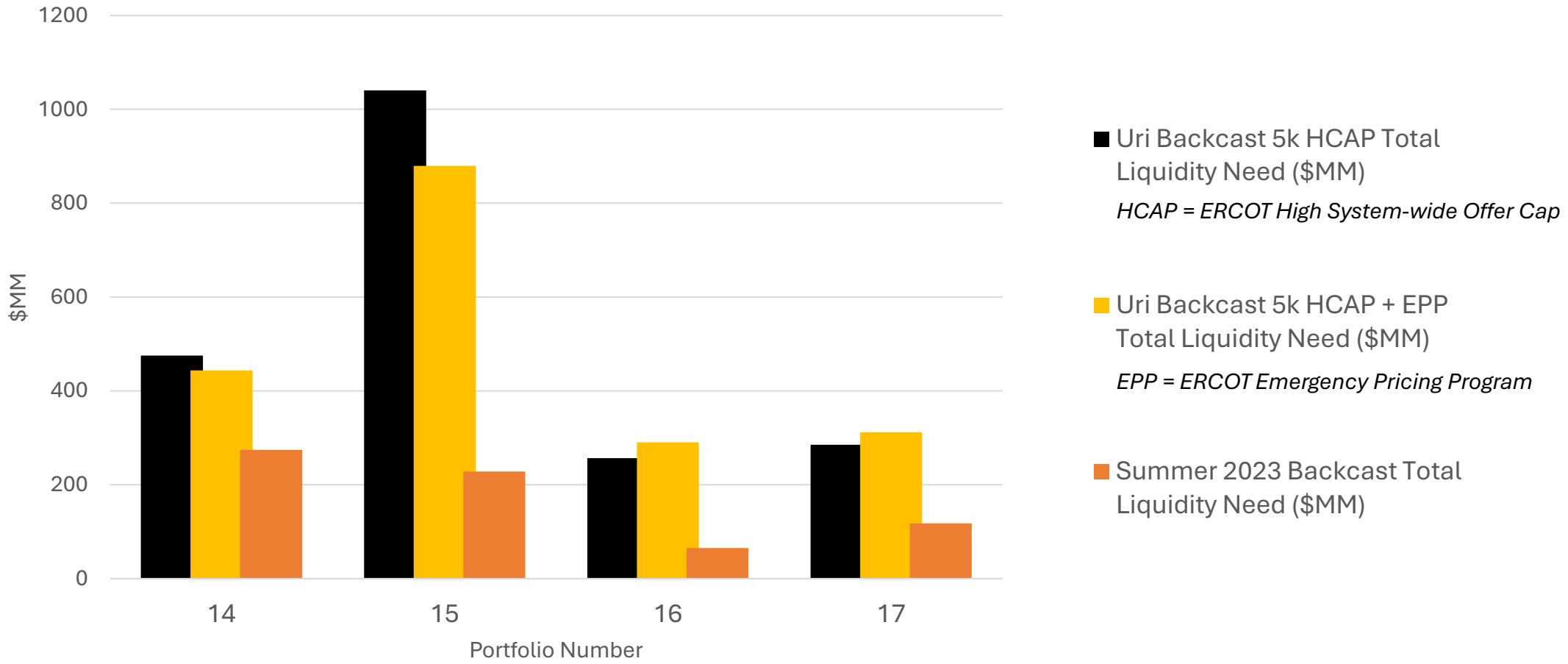
2035 Electricity Burden

2035 Estimated Customer Assistance Program (CAP) Customer Electricity Burden (Avg of Scenarios)



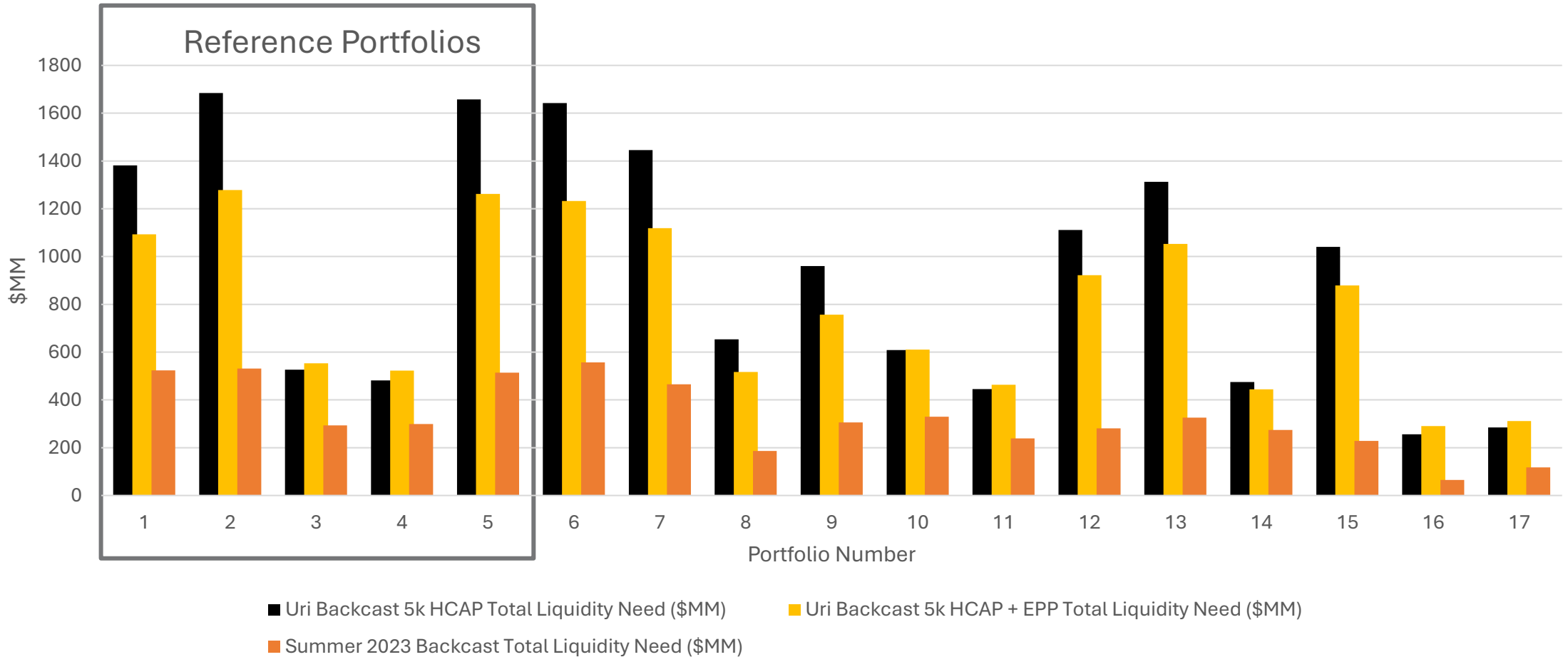
Stress Test Results – Liquidity Risk

Based on 2035 portfolio mix



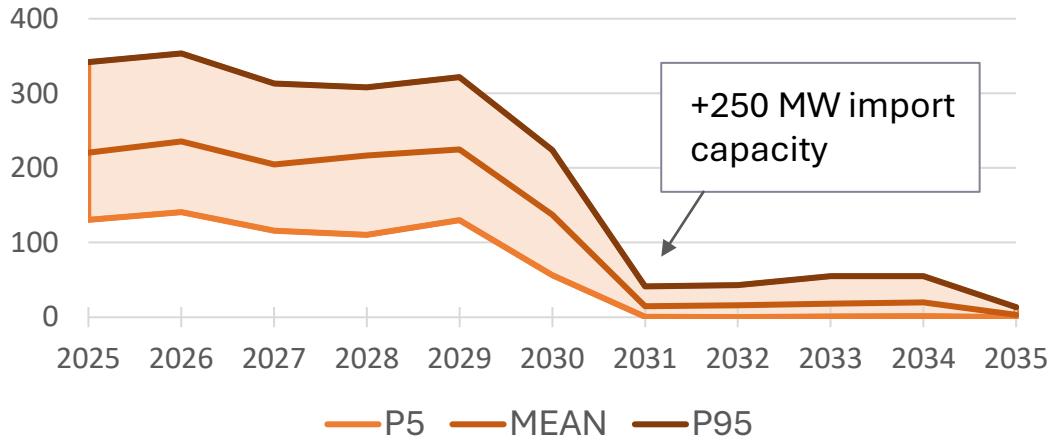
Stress Test Results – Total Liquidity Risk

Based on 2035 portfolio mix

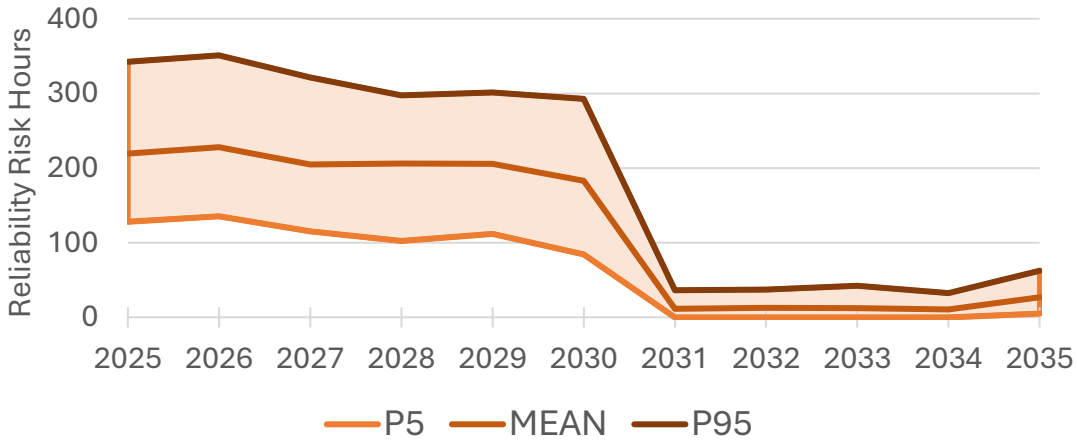


Reliability Risk Hours – Ascend

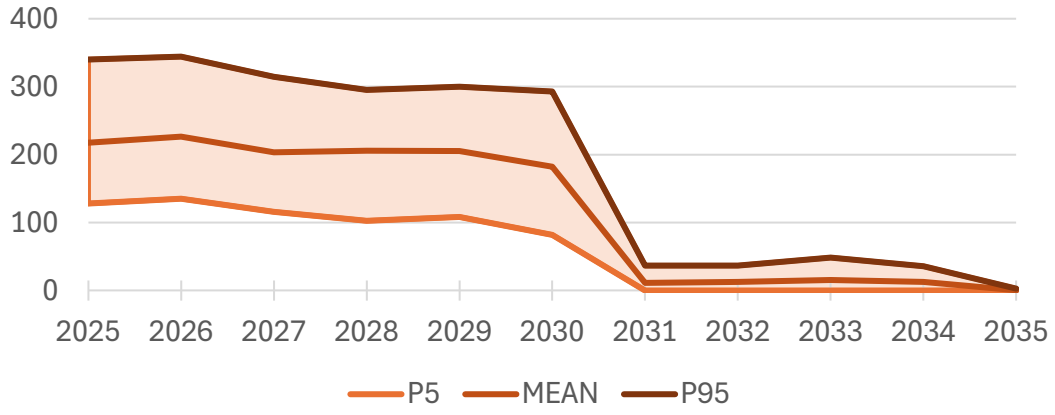
Portfolio 14



Portfolio 15

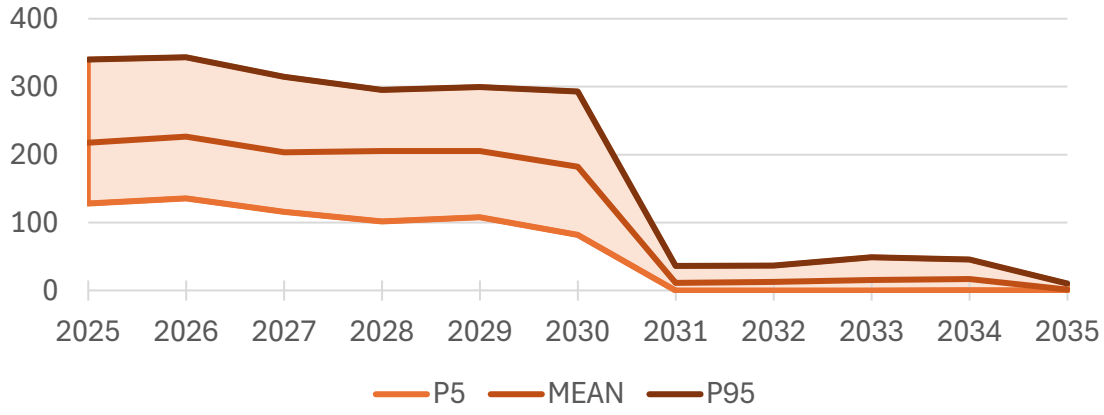


Portfolio 16



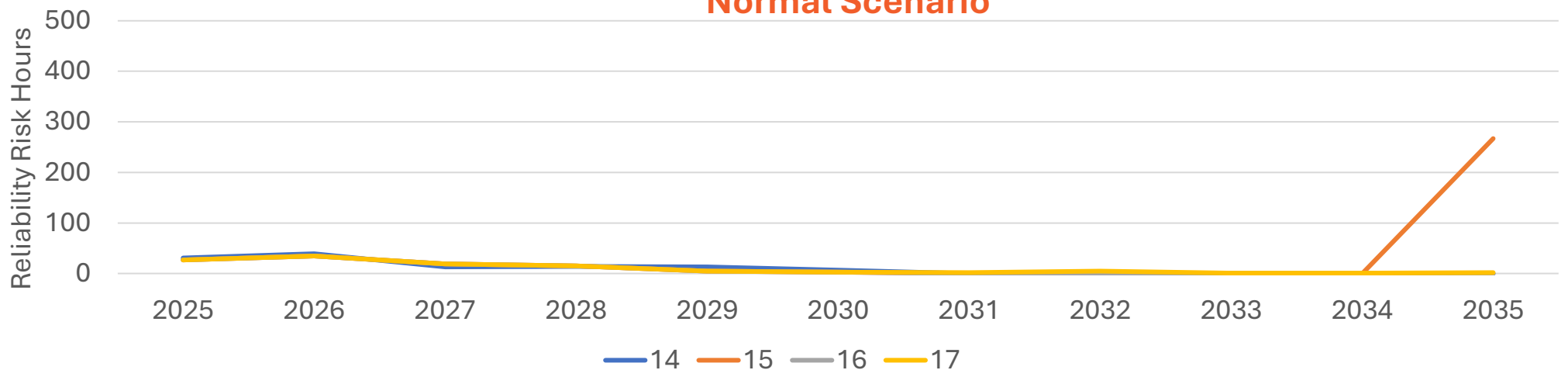
Portfolio 17

*Import capacity increase not included in UPLAN for P17



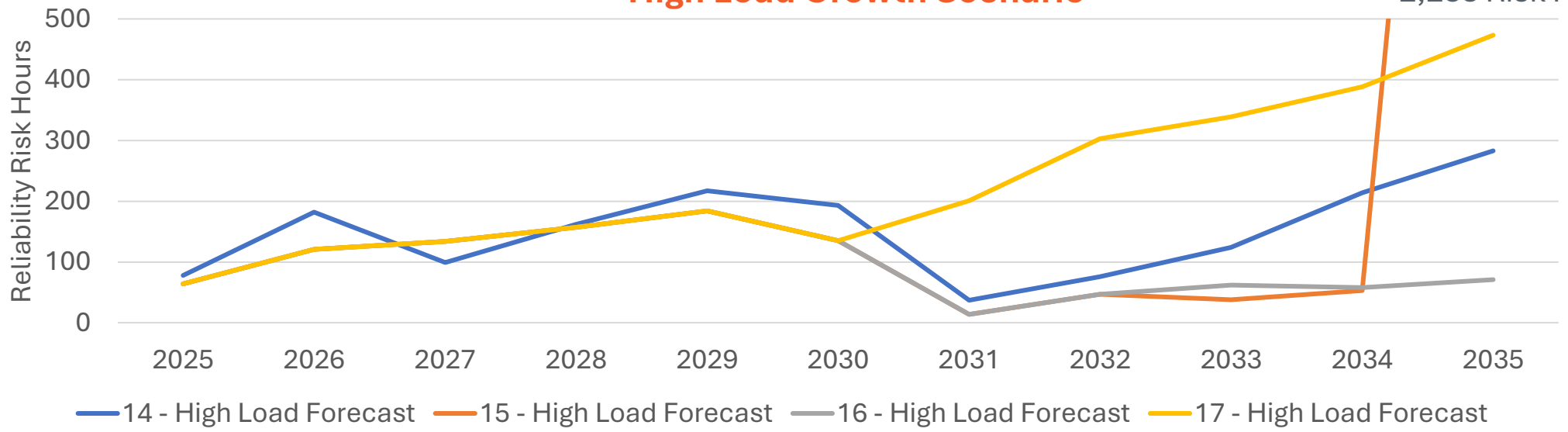
Reliability Risk Hours – UPLAN

Normal Scenario



High Load Growth Scenario

* 2,288 Risk Hrs (for P15 in 2035)

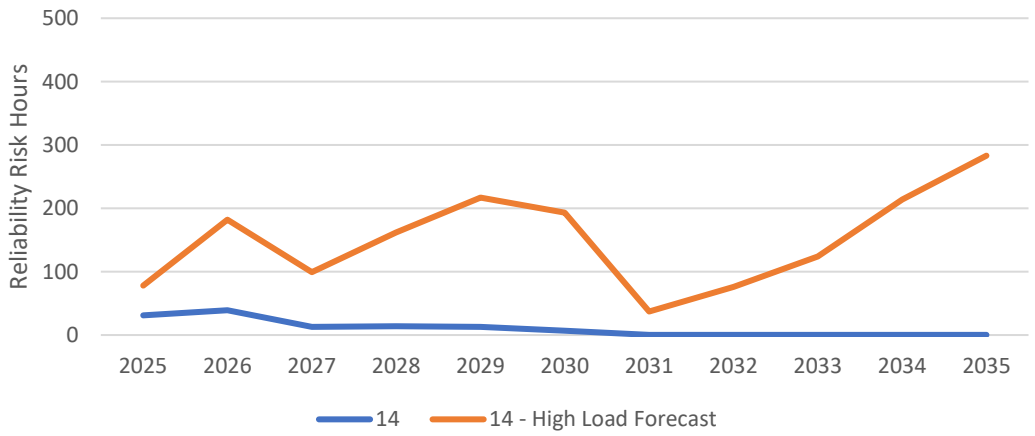


Peak Load is 21% Higher in 2035 in High Load Growth Scenario

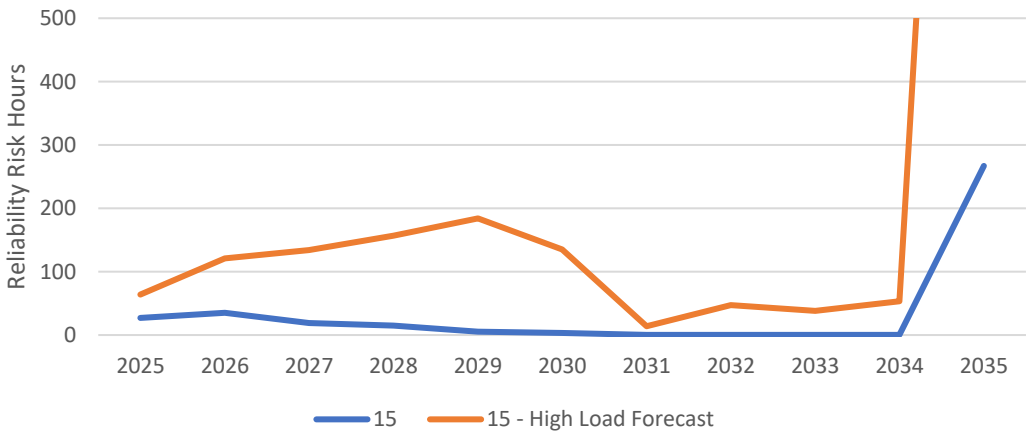
Normal vs. High Load Growth Reliability Risk

* 2,288 Risk Hrs
(for P15 in 2035)

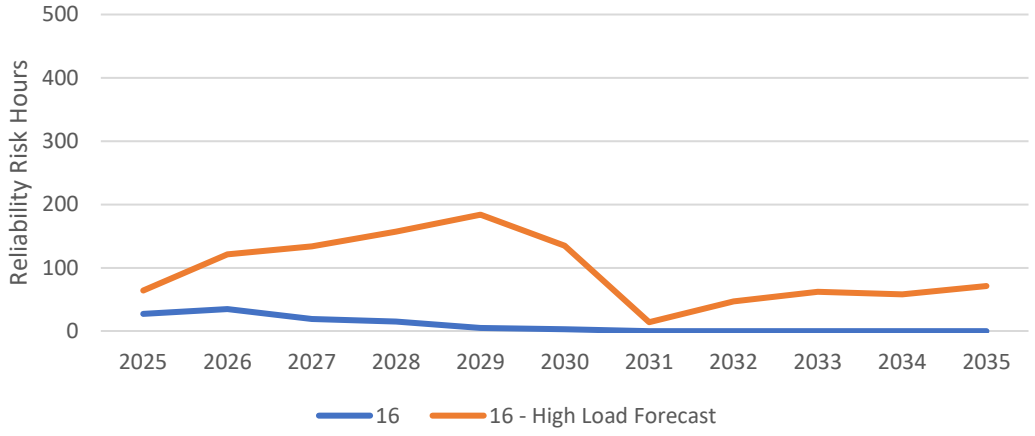
Portfolio 14



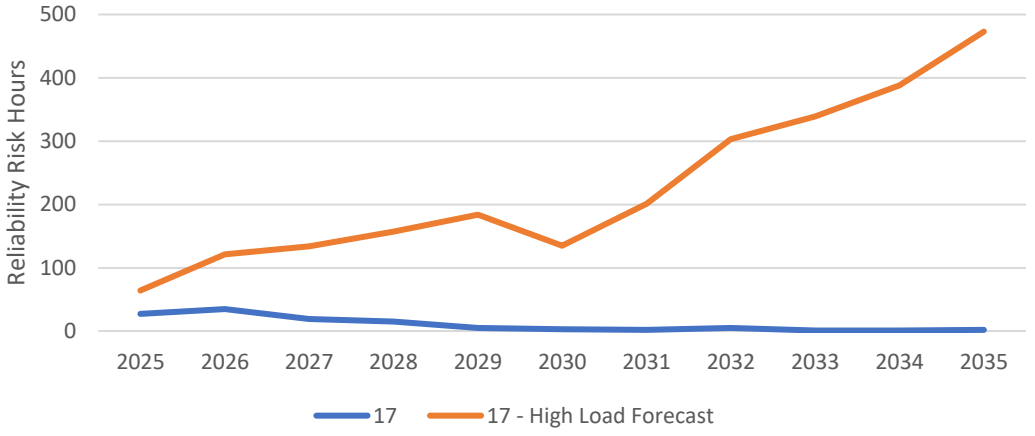
Portfolio 15



Portfolio 16



Portfolio 17



Capacity Factor of Peakers

Capacity Factor (P14)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Sand Hill Peakers	0%	1%	3%	4%	4%	5%	7%	9%	10%	10%	10%
Decker Peakers	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
New NG Peakers			5%	6%	7%	7%	9%	11%	13%	12%	12%

Capacity Factor (P15)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Sand Hill Peakers	0%	1%	3%	4%	4%	5%	7%	9%	10%	10%	0%
Decker Peakers	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Capacity Factor (P16)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Sand Hill Peakers	0%	1%	3%	4%	4%	5%	7%	9%	10%	10%	9%
Decker Peakers	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Capacity Factor (P17)	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Sand Hill Peakers	0%	1%	3%	4%	4%	5%	8%	9%	11%	11%	10%
Decker Peakers	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

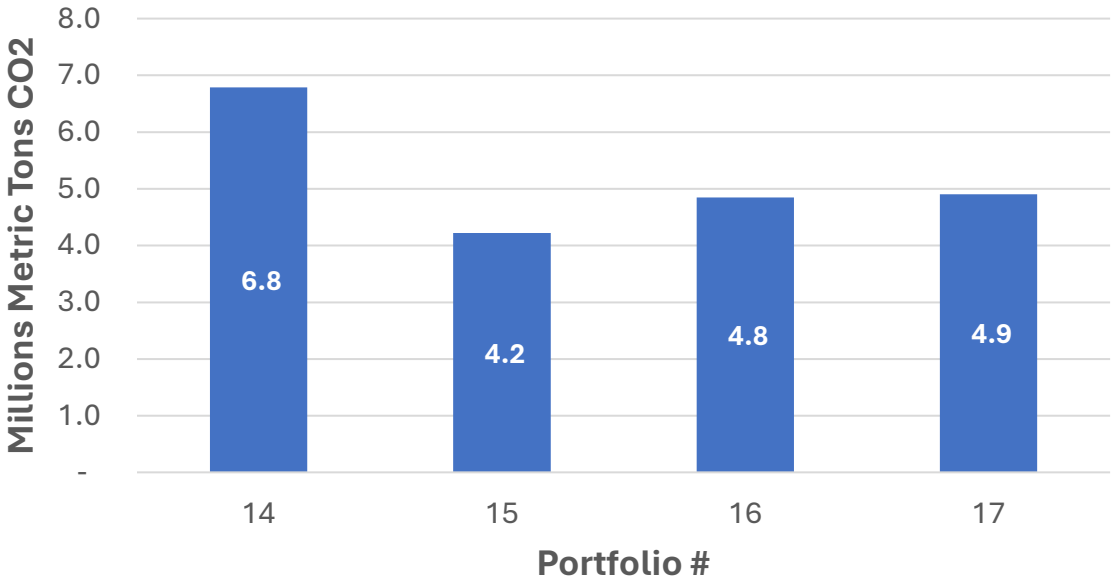
Decker peakers cover Ancillary Services obligations more often which results in low capacity factor

Modeled Austin Energy Stack CO_2 Emissions

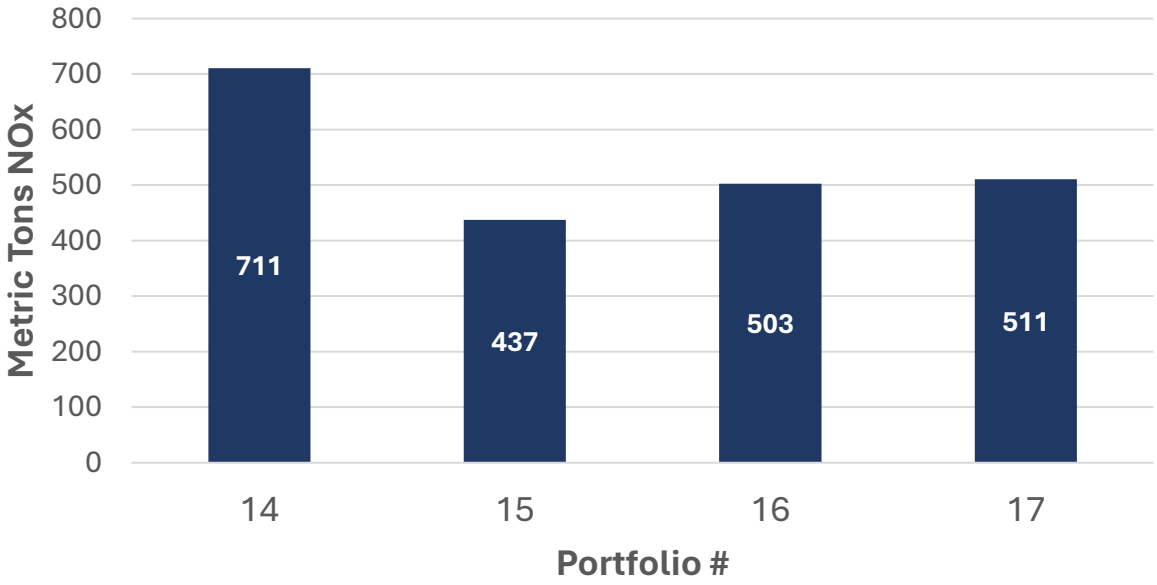
By Year vs. Historical

Modeled Austin Energy Stack Emissions

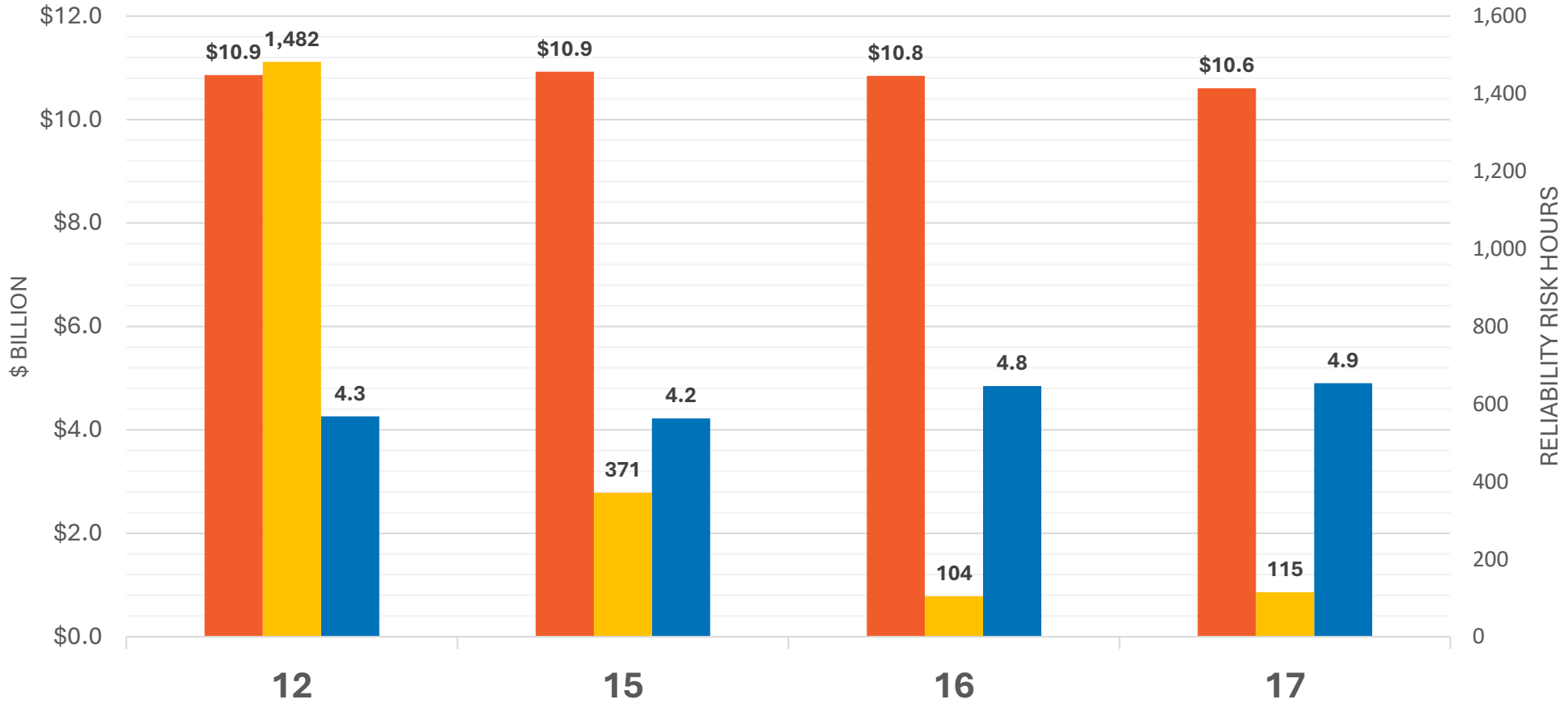
Total CO2 Emissions (Million Metric Tons) 2025-2035



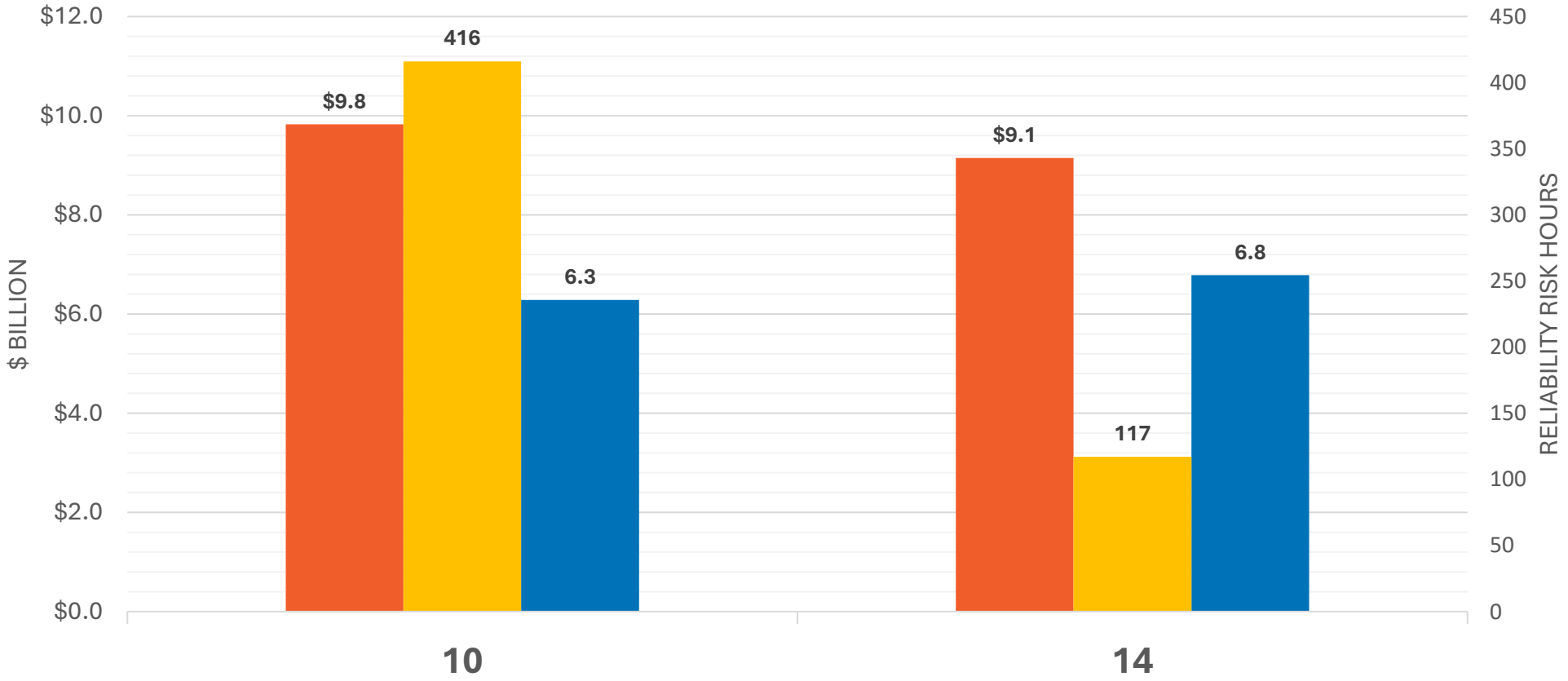
Total NOx Emissions (Metric Tons) 2025-2035



P12 vs. P15-17 (2025-2035)



P10 vs. P14 (2025-2035)



P14-17 (2025-2035)

Customer Driven. Community Focused.SM

Appendices

REF #	PORTFOLIO	DESCRIPTION
1	No New Commitments	Existing DSM commitments, no new generation
2	2030 Current Plan	100% Carbon-Free by 2035, 65% Renewables by 2027, existing DSM commitments, REACH on gas
3	Local Gen/Storage + Margin	**575 MW new local peakers and combined cycle starting 2027, 275 MW local storage,** 100% DNV projections*, replace PPAs, Decker/SHEC run through 2035
4	Local Dispatchable + Margin	**1,100 MW new local peakers & combined cycle starting 2027**, 50% DNV projections, REACH on FPP, Decker/SHEC run through 2035
5	Meet Env Goals + Expand DSM	**Retire Decker in 2027**, 100% DNV projections, 100% CF, 65% RE, REACH on gas, retire SHEC 2034
6	Aggressive DSM + Storage + Keep PPAs	**Aggressive DNV projections**, **replace PPAs**,100% CF, REACH on gas, retire Decker/SHEC 2034
7	Aggressive DSM + Storage + 65% RE Goal	**Aggressive DNV projections, 65% RE**, 100% CF, REACH on gas, retire Decker/SHEC 2034
8	Hydrogen-Capable Local Plant	**1,100 MW local hydrogen-capable peakers starting in 2030**, 100% DNV projections, 100% CF, 65% RE, REACH on gas, retire Decker/SHEC 2034
9	Hydrogen + Local Storage	**550 MW local hydrogen peakers, 395 MW local storage**, 100% DNV projections, 100% CF, 65% RE, REACH on gas, retire Decker/SHEC 2034
10	Keep Existing Gas + Local Storage	**Decker/SHEC run past 2035**, **395 MW local storage**, 100% DNV projections, 65% RE, REACH on gas
11	Replace FPP in 2028 w/Gas	**FPP retire end of 2028, 575 MW new local peakers and combined cycle**, 100% DNV projections, 65% RE, REACH on FPP and gas
12	EUC – 1 (Working Group Recs)	**525 MW local storage, 700 MW local solar, 540 MW new EE, 300 MW DR**, **100% RE as % of load,** 100% CF, REACH on gas, retire Decker/SHEC 2034
13	EUC – 2	**925 MW local storage**, aggressive DNV projections,100% RE as % of load, 100% CF, REACH on gas, retire Decker/SHEC 2034

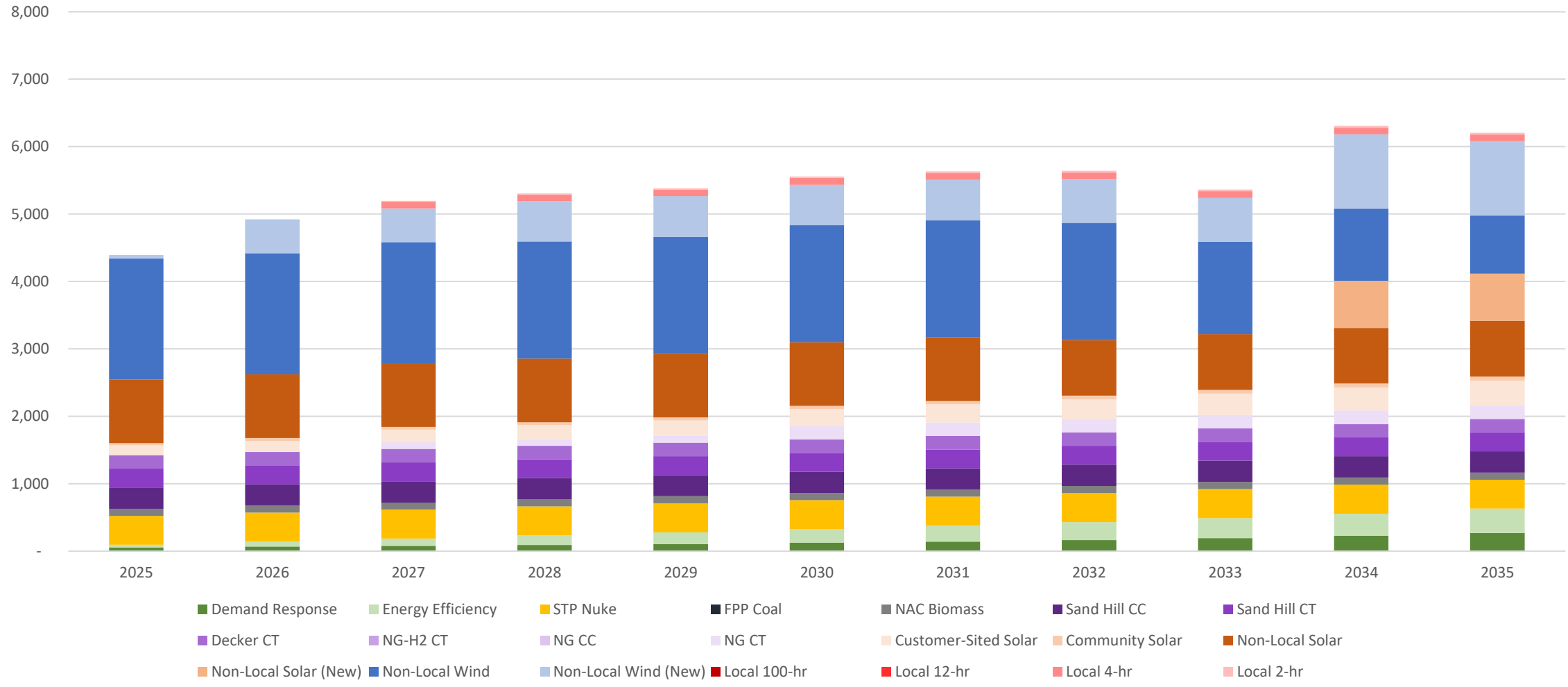
2035 Modeled Installed Capacity

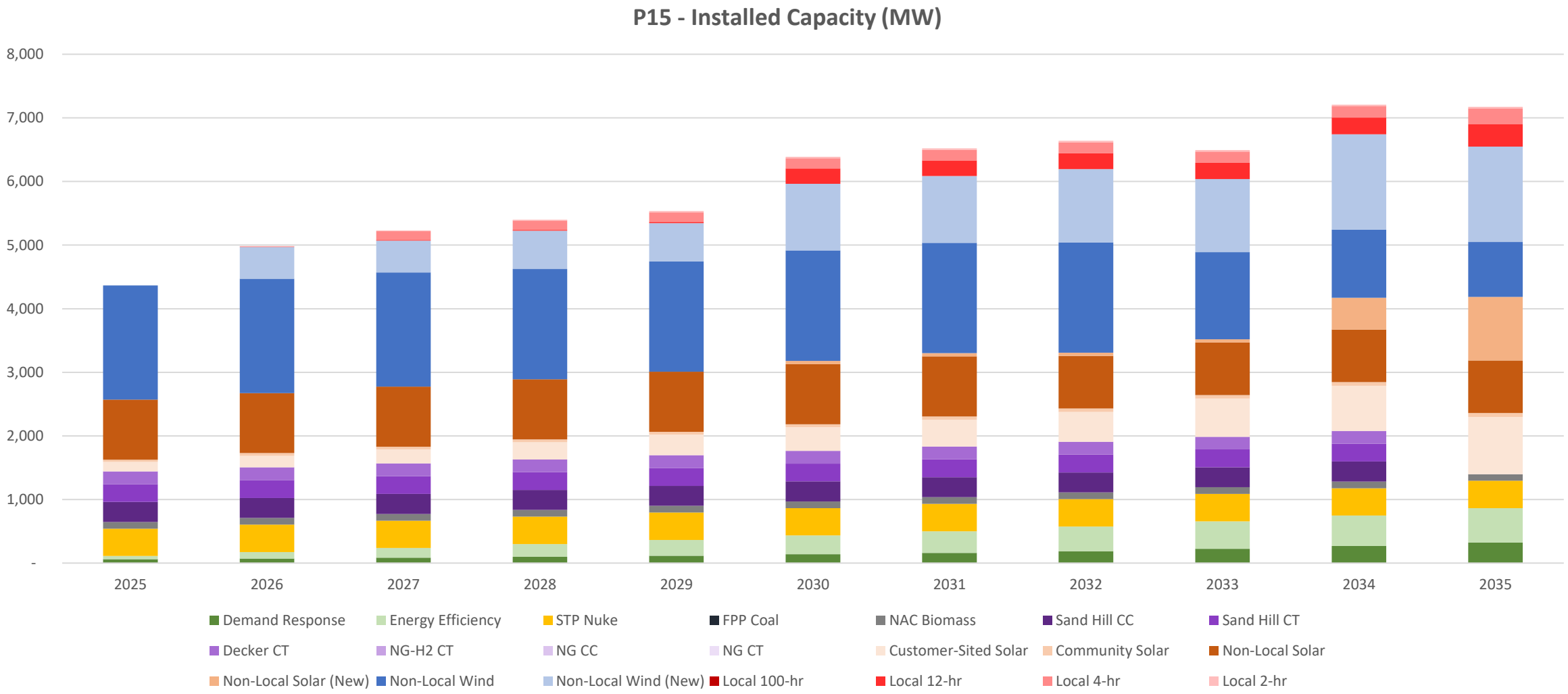
Portfolio	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
RESOURCES																	
Non-Local Solar (New)		700	118		700	118	700	700	700	700	700	1000	1000	700	1,000	1000	1000
Non-Local Wind (New)		1100	932		1100	932	1100	1100	1100	1100	1100	1500	1500	1100	1,500	1500	1500
NG CC			225	600							225						
NG CT			350	500							350			200			
NG-H2 CT								1100	550								
Local 2-hr			25			25	25		25	25		25	25	25	25	25	25
Local 4-hr			100			100	100		100	100		200	360	100	250	300	200
Local 12-hr			150			150	150		150	150		300	540		350	400	300
Local 100-hr						120	120		120	120							
Import Capacity Improvement														250	250	250	
Decker CT	200		200	200						200	200			200		200	200
Sand Hill CC	315		315	315						315	315			315		315	315
Sand Hill CT	280		280	280						280	280			280		280	280
FPP Coal																	
STP Nuke	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
NAC Biomass	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
Non-Local Wind	864	864	864	864	864	864	864	864	864	864	864	864	864	864	864	864	864
Non-Local Solar	826	826	826	826	826	826	826	826	826	826	826	826	826	826	826	826	826
Customer-Sited Solar	290	290	371	330	371	439	439	371	371	371	371	640	371	371	900	800	640
Community Solar	42	42	60	51	60	60	60	60	60	60	60	60	60	60	60	60	60
Demand Response	120	120	270	195	270	325	325	270	270	270	270	300	270	270	325	400	300
Energy Efficiency (additional)	360	360	360	360	360	360	360	360	360	360	360	540	360	360	540	540	540

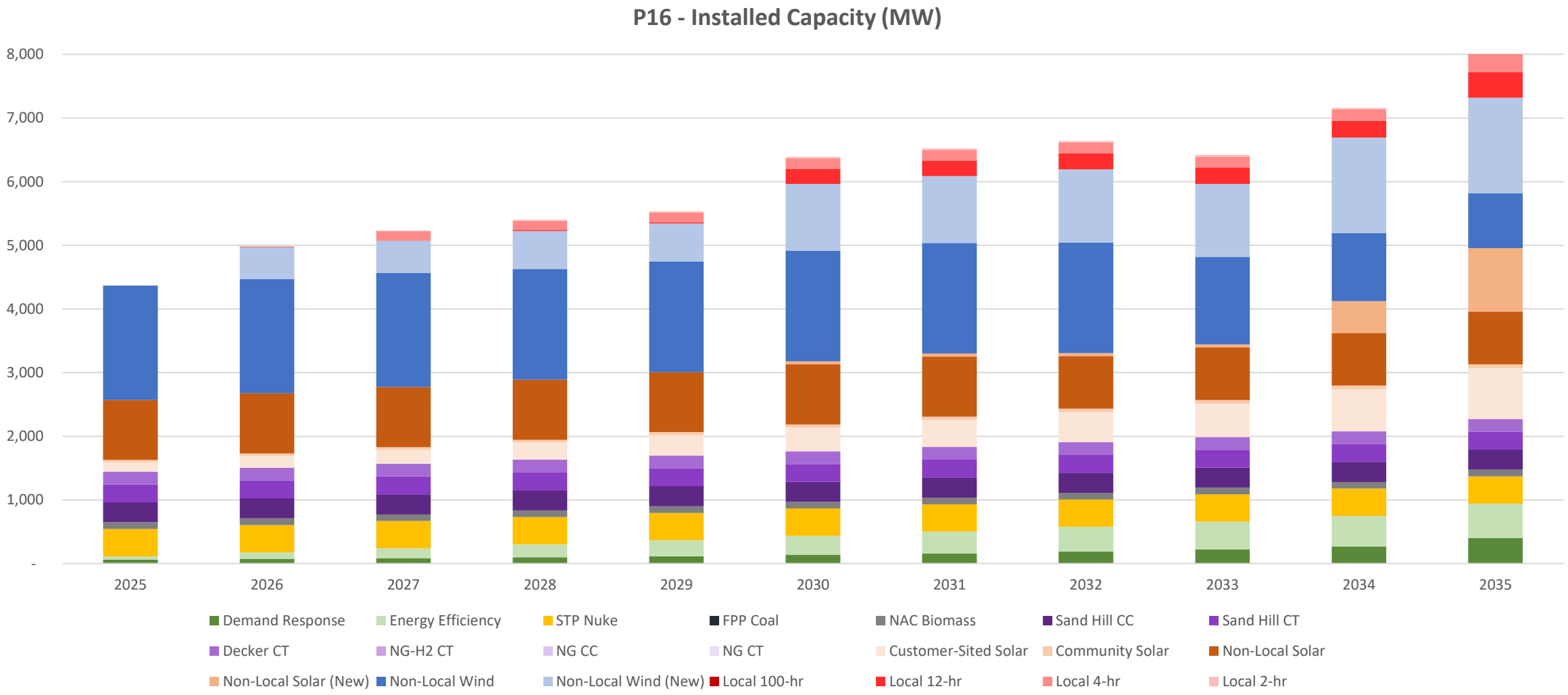
Summary UPLAN results Round II Portfolio

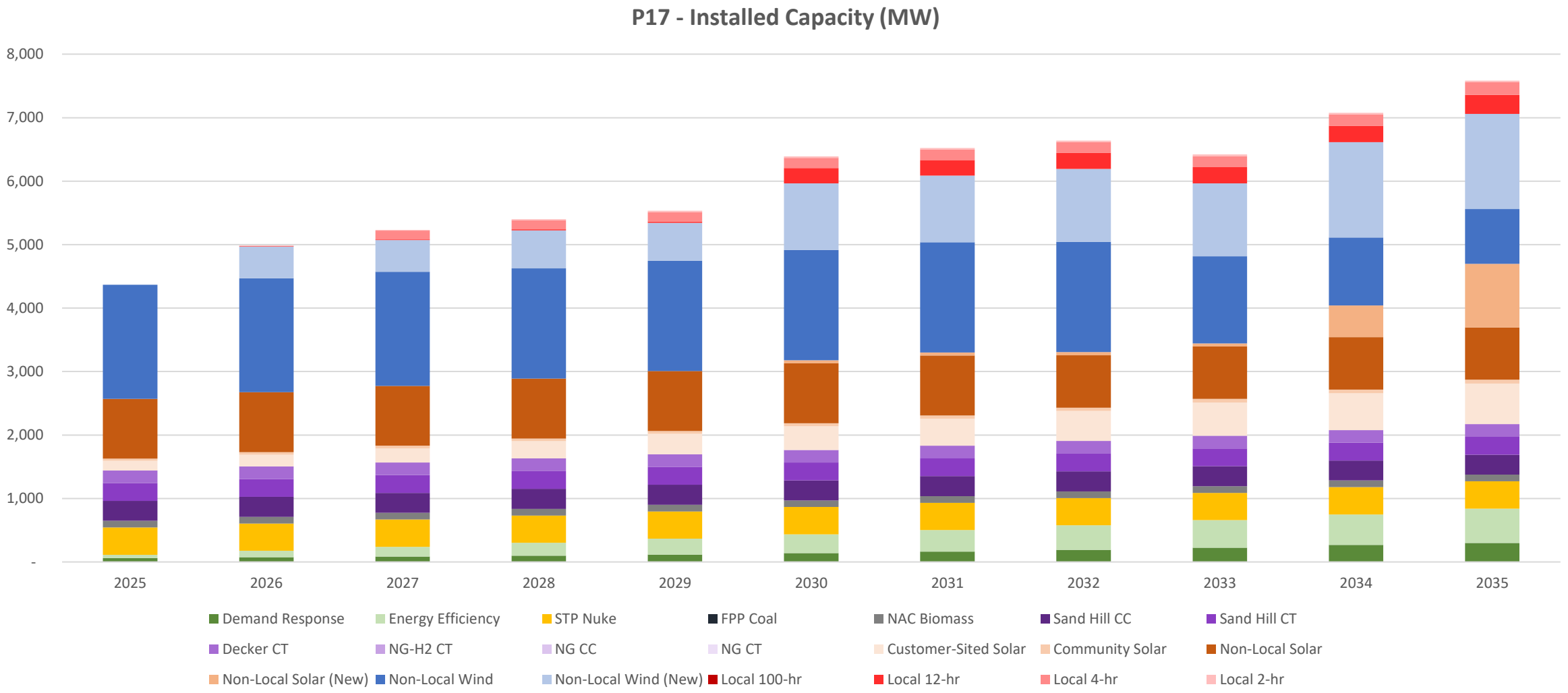
	20-yr NPV ($B)	2035 Bill Impact ($/Month)	2035 Electricity Burden (%)	Total Liquidity Need - Winter Event ($MM)	Total Liquidity Need - Summer Event ($MM)	Total Reliability Risk Hours (Hours)	Total 3+ Hour Reliability Risk Events (Count)	Total CO2 Emissions (Million Metric Tons)	Total NOx Emissions (Metric Tons)	Total SOx Emissions (Metric Tons)	Total PM Emissions (Metric Tons)
14	$9.1	$49	3.9%	$444	$274	117	20	6.8	711	2	184
15	$10.9	$75	4.7%	$879	$228	371	56	4.2	437	<1	113
16	$10.8	$70	4.5%	$290	$65	104	19	4.8	503	<1	130
17	$10.6	$67	4.5%	$312	$118	115	20	4.9	511	<1	132

P14 - Installed Capacity (MW)

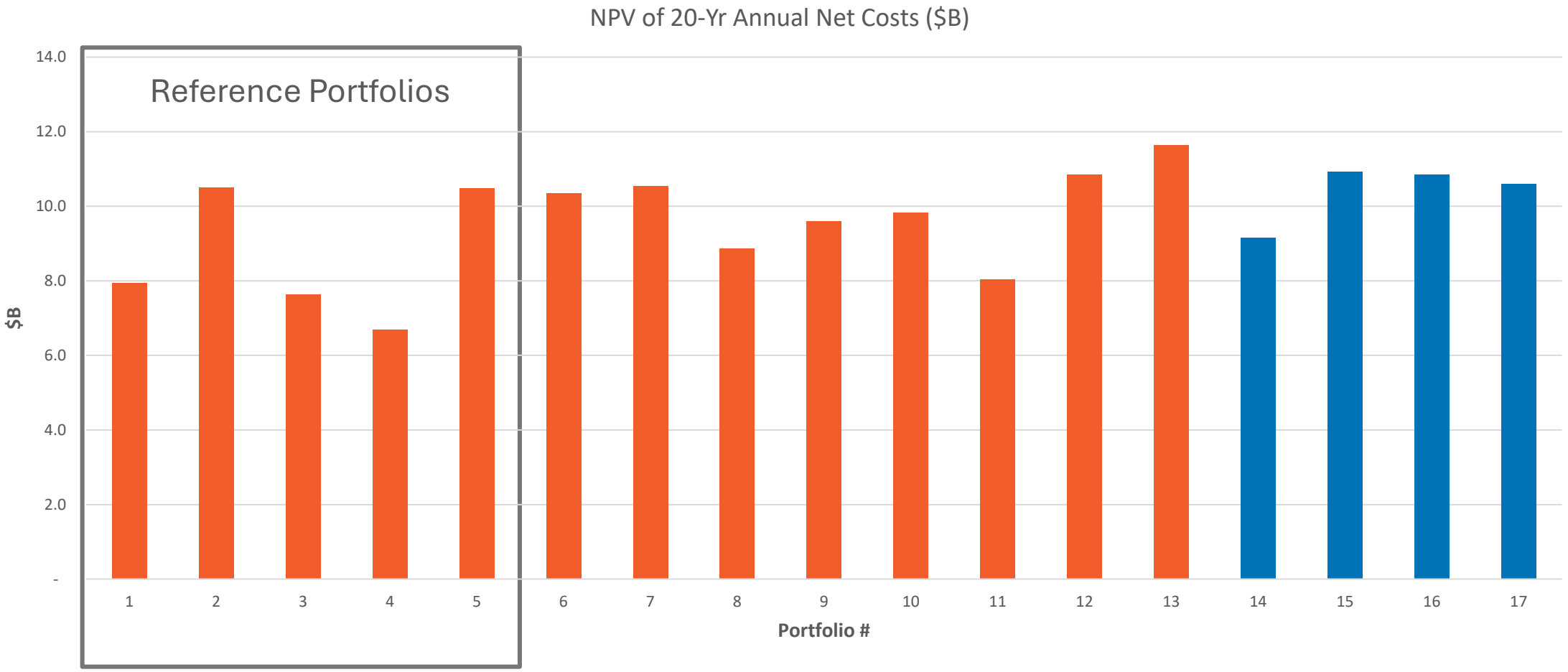


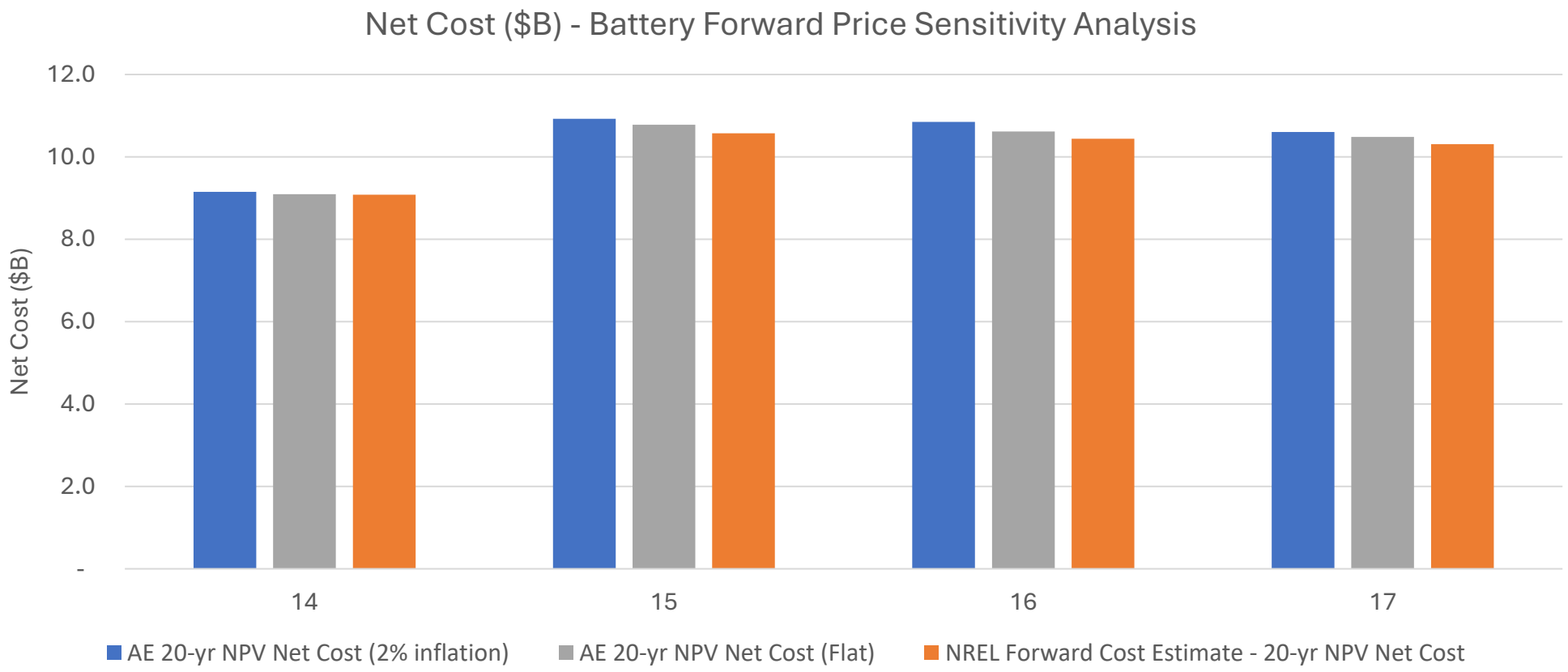

P15 - Installed Capacity (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
Demand Response
Energy Efficiency
STP Nuke
FPP Coal
NAC Biomass
Sand Hill CC
Sand Hill CT
Decker CT
NG-H2 CT
NG CC
NG CT
Customer-Sited Solar
Community Solar
Non-Local Solar
Non-Local Solar (New)
Non-Local Wind
Non-Local Wind (New)
Local 100-hr
Local 12-hr
Local 4-hr
Local 2-hr


P16 - Installed Capacity (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
Demand Response
Energy Efficiency
STP Nuke
FPP Coal
NAC Biomass
Sand Hill CC
Sand Hill CT
Decker CT
NG-H2 CT
NG CC
NG CT
Customer-Sited Solar
Community Solar
Non-Local Solar
Non-Local Solar (New)
Non-Local Wind
Non-Local Wind (New)
Local 100-hr
Local 12-hr
Local 4-hr
Local 2-hr

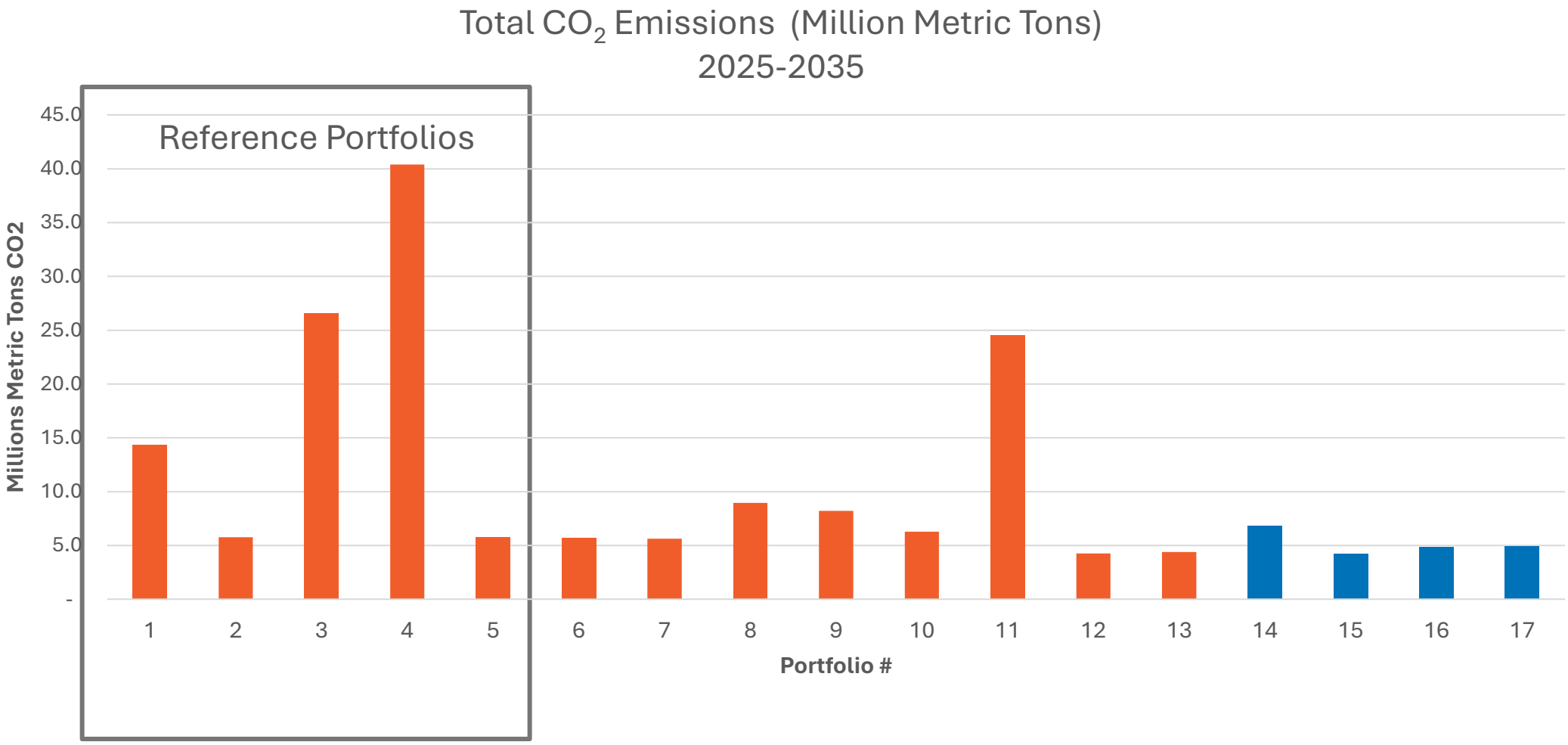

P17 - Installed Capacity (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
Demand Response
Energy Efficiency
STP Nuke
FPP Coal
NAC Biomass
Sand Hill CC
Sand Hill CT
Decker CT
NG-H2 CT
NG CC
NG CT
Customer-Sited Solar
Community Solar
Non-Local Solar
Non-Local Solar (New)
Non-Local Wind
Non-Local Wind (New)
Local 100-hr
Local 12-hr
Local 4-hr
Local 2-hr

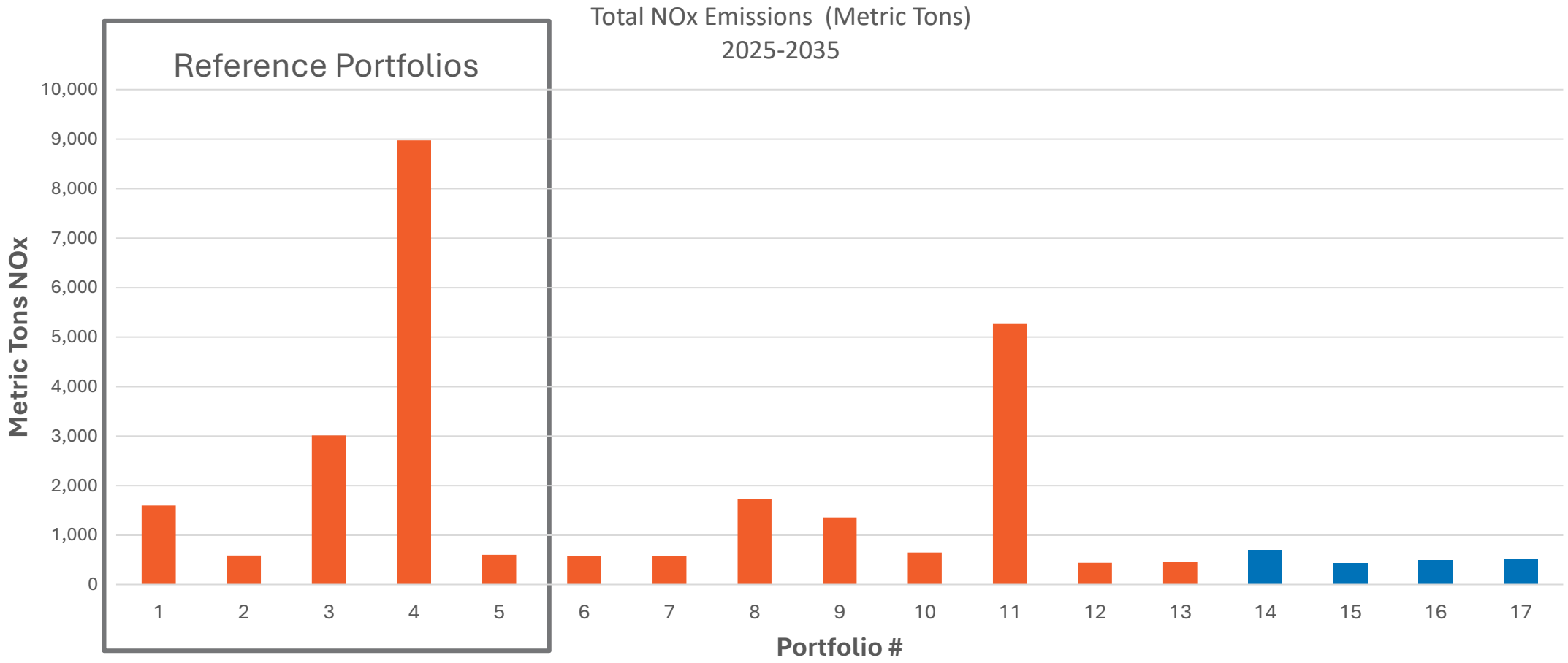
20-year NPV of Net Cost – All Portfolios

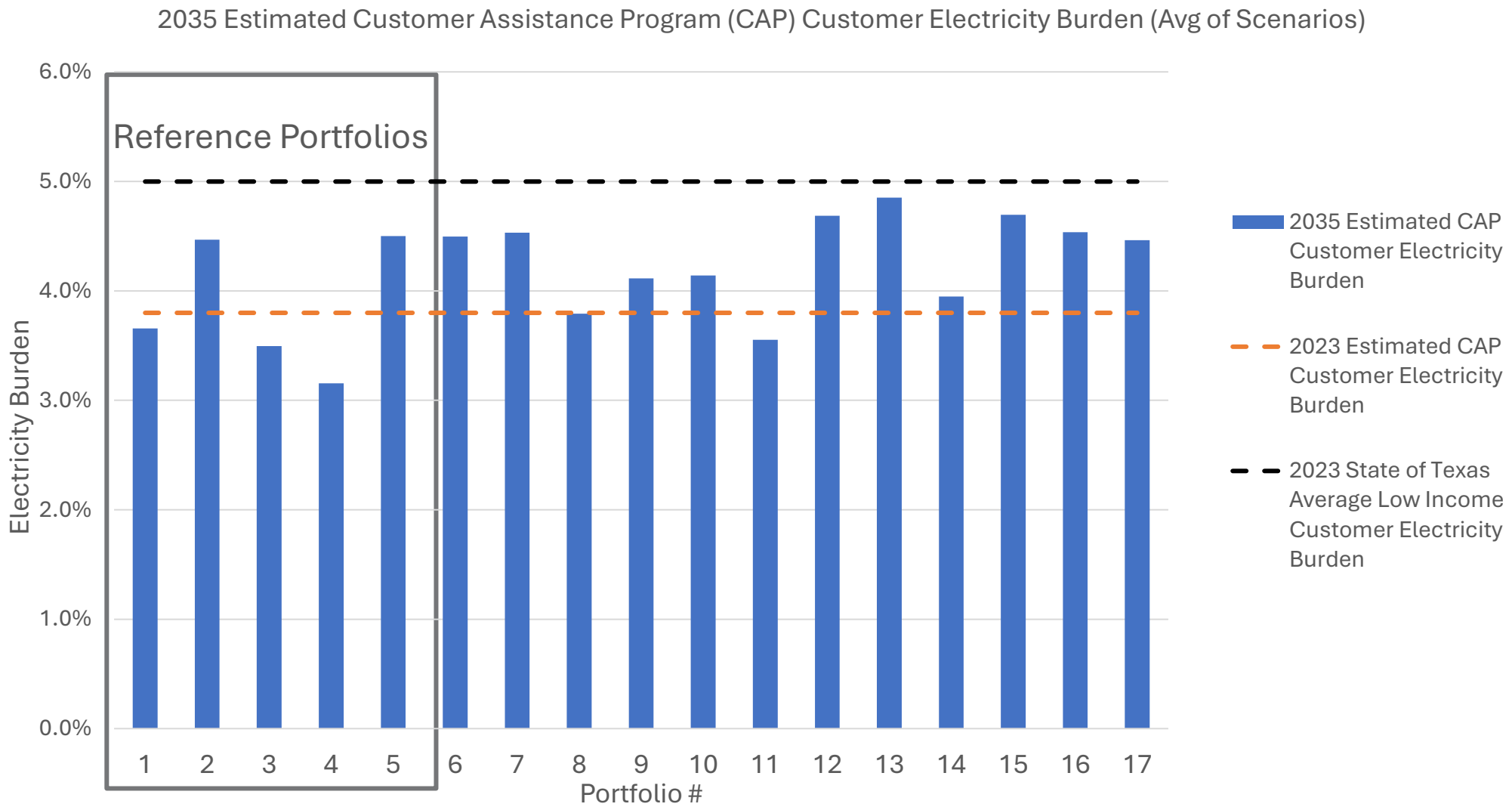




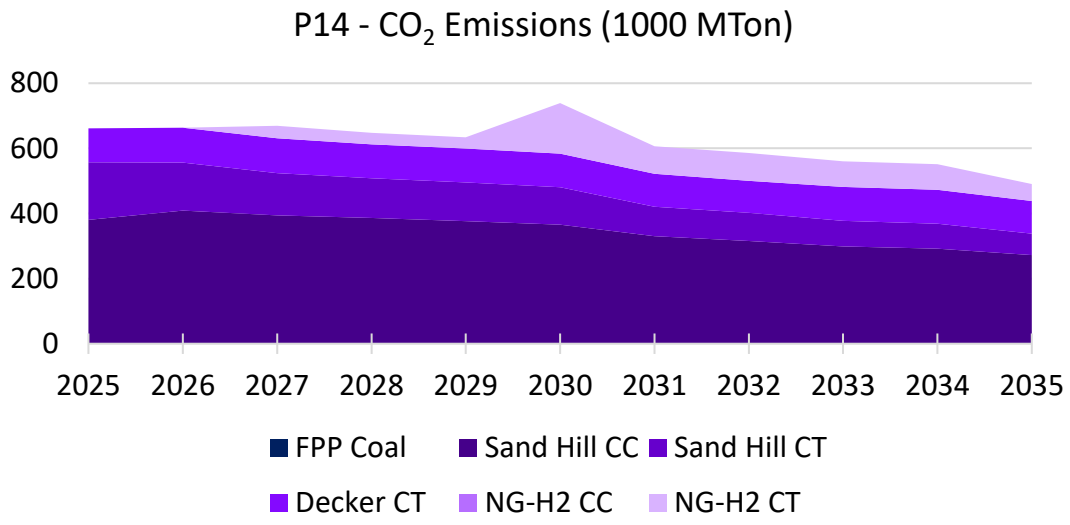
Average difference between AE 20-year NPV (with 2% inflation) and NREL forward cost curve = $352M or 3%

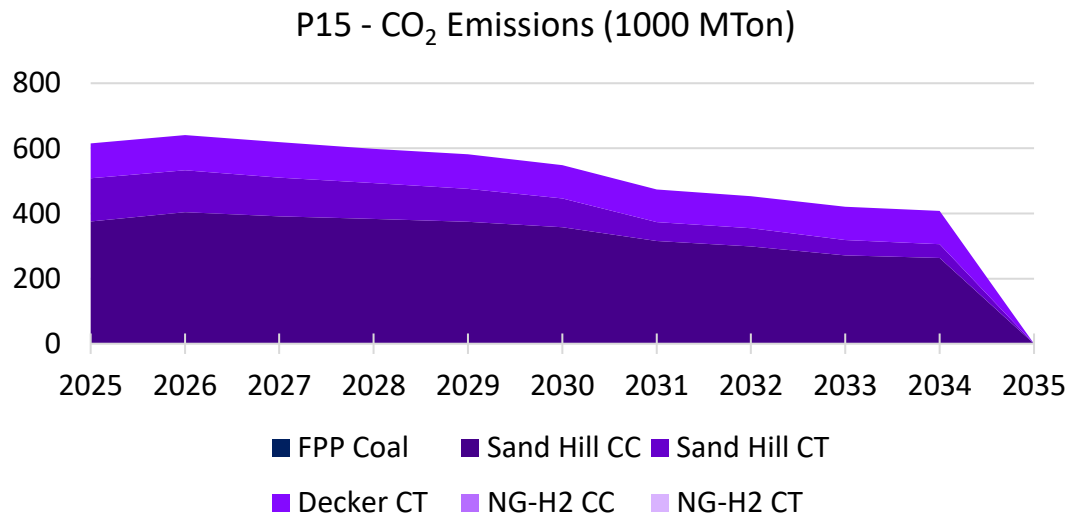

Total CO_2 Emissions (Million Metric Tons)
2025-2035
Reference Portfolios
Millions Metric Tons CO2
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
-
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Portfolio #

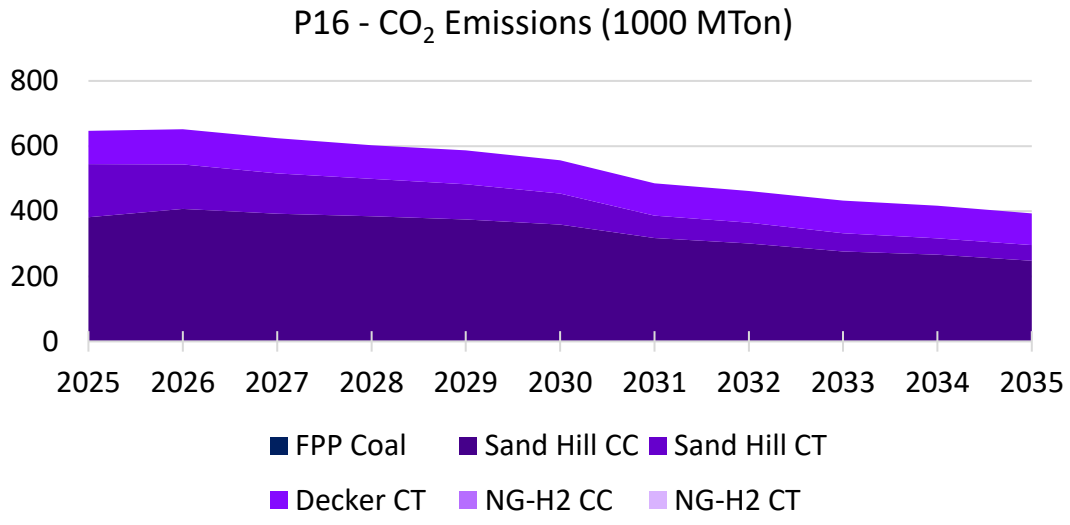

Total NOx Emissions (Metric Tons)
2025-2035
Reference Portfolios
Metric Tons NOx
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Portfolio #

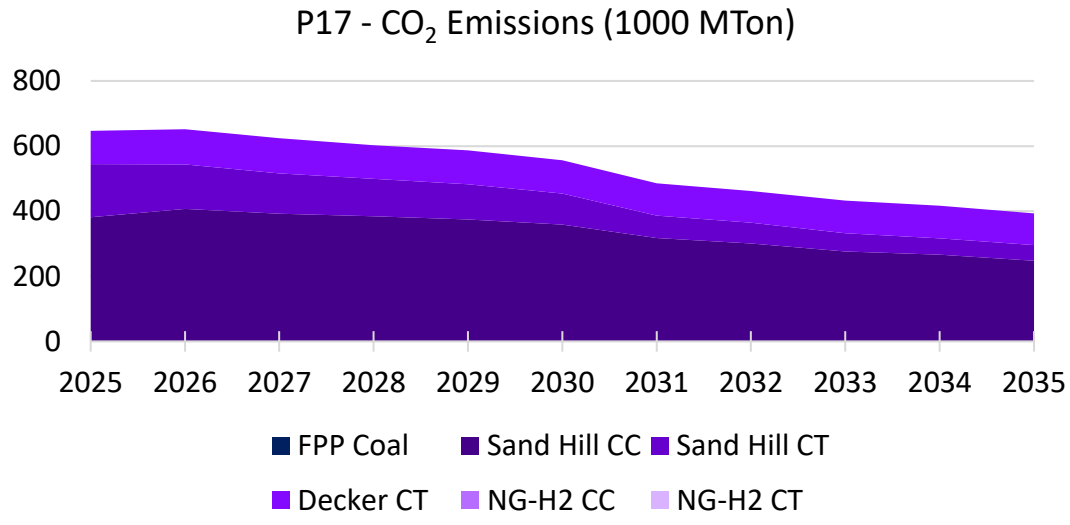

2035 Estimated Customer Assistance Program (CAP) Customer Electricity Burden (Avg of Scenarios)
Reference Portfolios
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
Electricity Burden
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Portfolio #
2035 Estimated CAP Customer Electricity Burden
2023 Estimated CAP Customer Electricity Burden
2023 State of Texas Average Low Income Customer Electricity Burden

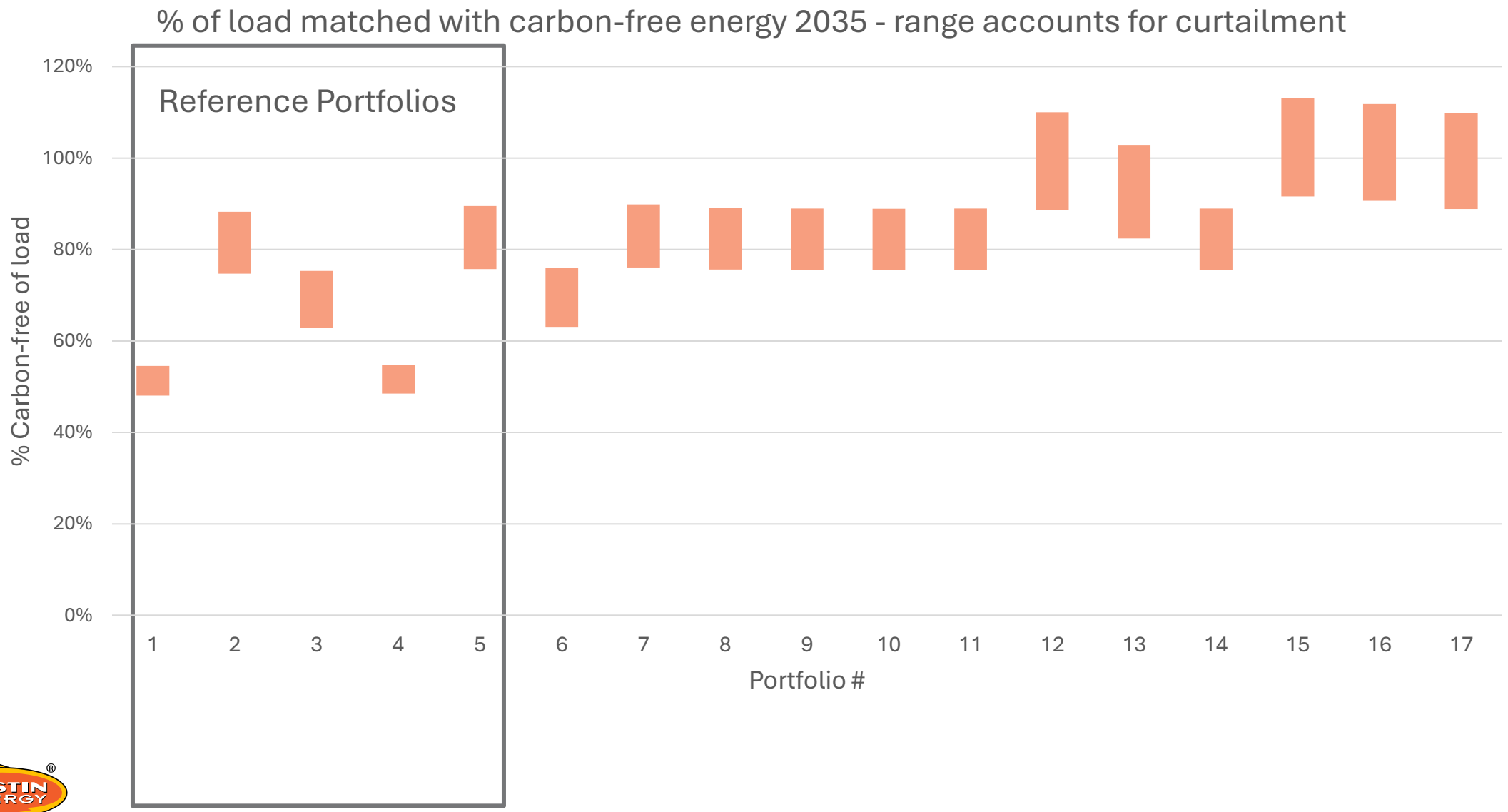
Ascend Emissions Trends










% of load matched with carbon-free energy 2035 - range accounts for curtailment
Reference Portfolios
% Carbon-free of load
120%
100%
80%
60%
40%
20%
0%
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Portfolio #