

Sixth Review of PJM's RPM VRR Curve Parameters

INTERIM UPDATE: GROSS CONE WITH TECHNOLOGY COST AND DEPRECIATION UPDATES

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Summary of Updates

Physical Updates (CC and CT)

- ⌘ With wet compression
- ⌘ Updated specifications from GE including higher firing temperature
- ⌘ Reduced inlet pressure drop

Financial Update (CC, CT, and BESS)

- ⌘ 100% bonus depreciation returning with the OBBBA
- ⌘ Bonus depreciation effect adjusted for reasonable estimate of typical present value capture for generators

Introduction



Our August 5 presentation incorporated 100% bonus depreciation per OBBBA, assuming gencos can take full advantage of it in year 1 of the project, as in our past reviews.

However, LS Power commented that our assumption was unrealistic because gencos tend to have limited taxable income to absorb 100% bonus depreciation in year 1 and pointed to its testimony in 2018.

After a fresh look given current circumstances, we agree with some of LS Power's conclusions:

- ✧ PJM's proposed reference resource is now a 1,393 MW CC with a \$2.4 billion installed cost (in Area 3) vs. a \$270 million CT that PJM used in the 2018 CONE study. This single-plant cost is more than a typical IPP's taxable income, such that the typical IPP cannot take full advantage of the bonus depreciation in year 1. (A 437 MW CT is \$670 million and 200 MW BESS is \$380 million installed cost).
- ✧ Taxable incomes may rise but so will investors' capital spend programs with load growth, not just in PJM but nationally. This will quickly "use up" taxable income.
- ✧ Since 100% bonus depreciation was allowed between 2018 and 2022 under TCJA, there has been essentially no market for depreciation-only investment structures with partner entities, such as tax equity flips or sales-and-leasebacks, to monetize the benefits.
- ✧ Moreover, the choice of tax strategies depends not only on the taxable income, but also on the companies' financial leverage, tax consolidation, existing NOLs, and other factors.

Analysis of Tax Appetite of Different Market Participants

Publicly-traded IPPs: an analysis of their taxable incomes suggests they, as representative developers, may not be sufficient to take full advantage of the 100% bonus depreciation in year 1.

Taxable Income for GAAP Reporting and US Tax Returns

(\$ in Millions)		2022	2023	2024	2022	2023	2024	2022	2023	2024	2022	2023	2024
		A. Constellation			B. NRG			C. Talen			D. Vistra		
GAAP Income Before Income Taxes	[A]	(542)	2,447	4,516	1,663	(213)	1,448	(1,328)	871	1,111	(1,560)	2,000	3,467
Federal Taxes - Current	[B]	219	464	426	3	26	55	(9)	(12)	(113)	2	(1)	2
Inferred Taxable Income	[C]	1,043	2,210	2,029	14	124	262	(43)	(57)	(538)	10	(5)	10

Sources and Notes: AES is excluded from the analysis because of its substantial international and regulated utility operations.

[A] and [B] from company 10-Ks. Talen for 2023 is the sum of two partial years.

[C] = [B] / 21%, where 21% is the federal tax rate.

Private Developers: less information and smaller than publicly-traded IPPs. Even if they can pass the tax benefits up to their corporate parents, some parents could potentially take full advantage of the year-1 100% bonus depreciation, but some parents could not as they are pass-through entities with some of the ultimate investors being tax-exempt.

Hyperscalers: some with high taxable incomes could invest in some projects, but we do not consider them typical or “marginal” for setting reference prices for the rest of the market.

Market Transfers: based on the TCJA experience, we do not believe the benefits can be readily captured through structured arrangements such as flips and sales-and-leasebacks.

Our Updated Tax Depreciation Assumptions

The key question is how quickly the “marginal” genco in PJM can depreciate the installed cost from its taxable income; faster realization of the same nominal depreciation has a higher present value.

We assume that the marginal genco would take the 100% bonus depreciation in year 1, carry the resulting NOL forward, and use it up as quickly as its taxable income allows. This will result in something in between:

- ⌘ Full year-1 realization of 100% bonus depreciation (giving rise to the “Min” CONEs); and
- ⌘ The original MACRS of 20 years for CC, 15 years for CT, and 7 years for BESS (giving rise to the “Max” CONEs).

Because the current taxable incomes of publicly-traded IPPs are smaller than the cost of even a single CC plant, we believe something closer to MACRS is more reasonable. We represent this with the following assumptions: 10-year straight-line depreciation for CC, 7-year straight-line depreciation for CT, and 3-year straight-line depreciation for BESS.

- ⌘ These result in CONE values that are equivalent to weighted averages between **Min** (100% bonus depreciation in year 1) and **Max** (applicable MACRS) of 25/75 for CC, and 40/60 for CT and BESS.
- ⌘ Due to lumpiness, the larger plants have a longer schedule to capture all of the NOLs.

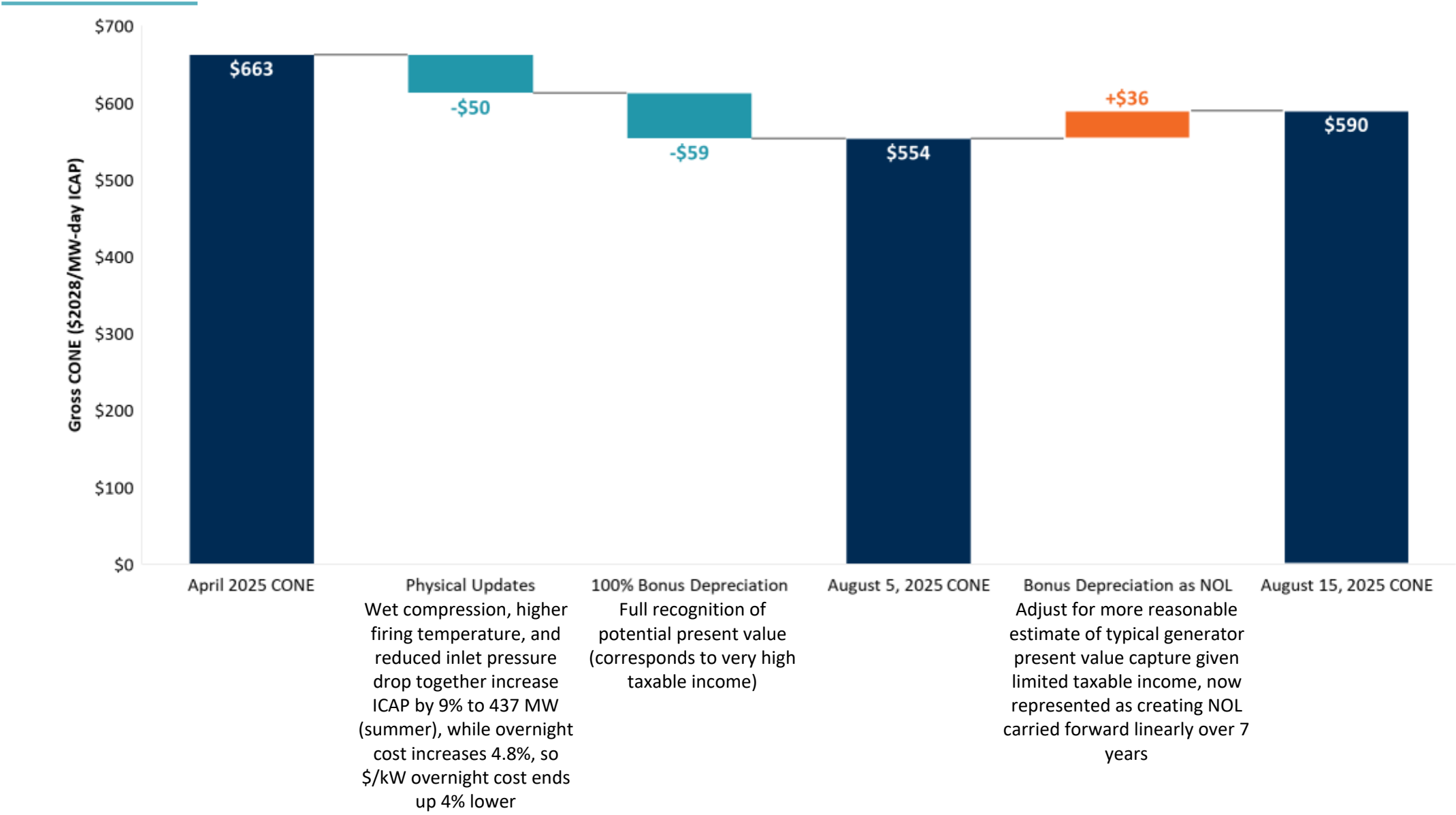
We believe these assumptions are reasonable, while recognizing that the present value of depreciation is a less precise component of the CONE analysis than many others. This is inevitable since we lack relevant data and are not able to rigorously identify the relevant investors and predict their taxable incomes, capital expenditures, and tax strategies.

Updated Results by Technology and CONE Area

CONE Area	Technology	Overnight Capital Cost [A] Nominal\$ for 2028 Online Year	Capital Charge Rate [B] %/year	Year 1 Capital Recovery [C] \$/MW-day	Levelized Fixed O&M [D] \$/MW-day	Gross CONE ICAP [E] \$/MW-day
1. EMAAC	Gas CT	\$1,278	15.3%	\$535	\$61	\$596
	Gas CC	\$1,449	16.3%	\$645	\$106	\$752
	BESS 4-hr	\$1,832	9.4%	\$470	\$197	\$667
2. SWMAAC	Gas CT	\$1,235	15.3%	\$516	\$91	\$608
	Gas CC	\$1,354	16.2%	\$601	\$159	\$761
	BESS 4-hr	\$1,753	9.4%	\$450	\$208	\$658
3. Rest of RTO	Gas CT	\$1,247	15.2%	\$521	\$69	\$590
	Gas CC	\$1,363	16.2%	\$605	\$152	\$757
	BESS 4-hr	\$1,750	9.4%	\$449	\$191	\$640
4. WMAAC	Gas CT	\$1,274	15.2%	\$532	\$60	\$592
	Gas CC	\$1,415	16.2%	\$628	\$127	\$754
	BESS 4-hr	\$1,784	9.4%	\$458	\$196	\$655
5. COMED	Gas CT	\$1,369	16.5%	\$619	\$60	\$679
	Gas CC	\$1,579	17.6%	\$760	\$100	\$860
	BESS 4-hr	\$1,980	9.3%	\$507	\$204	\$711

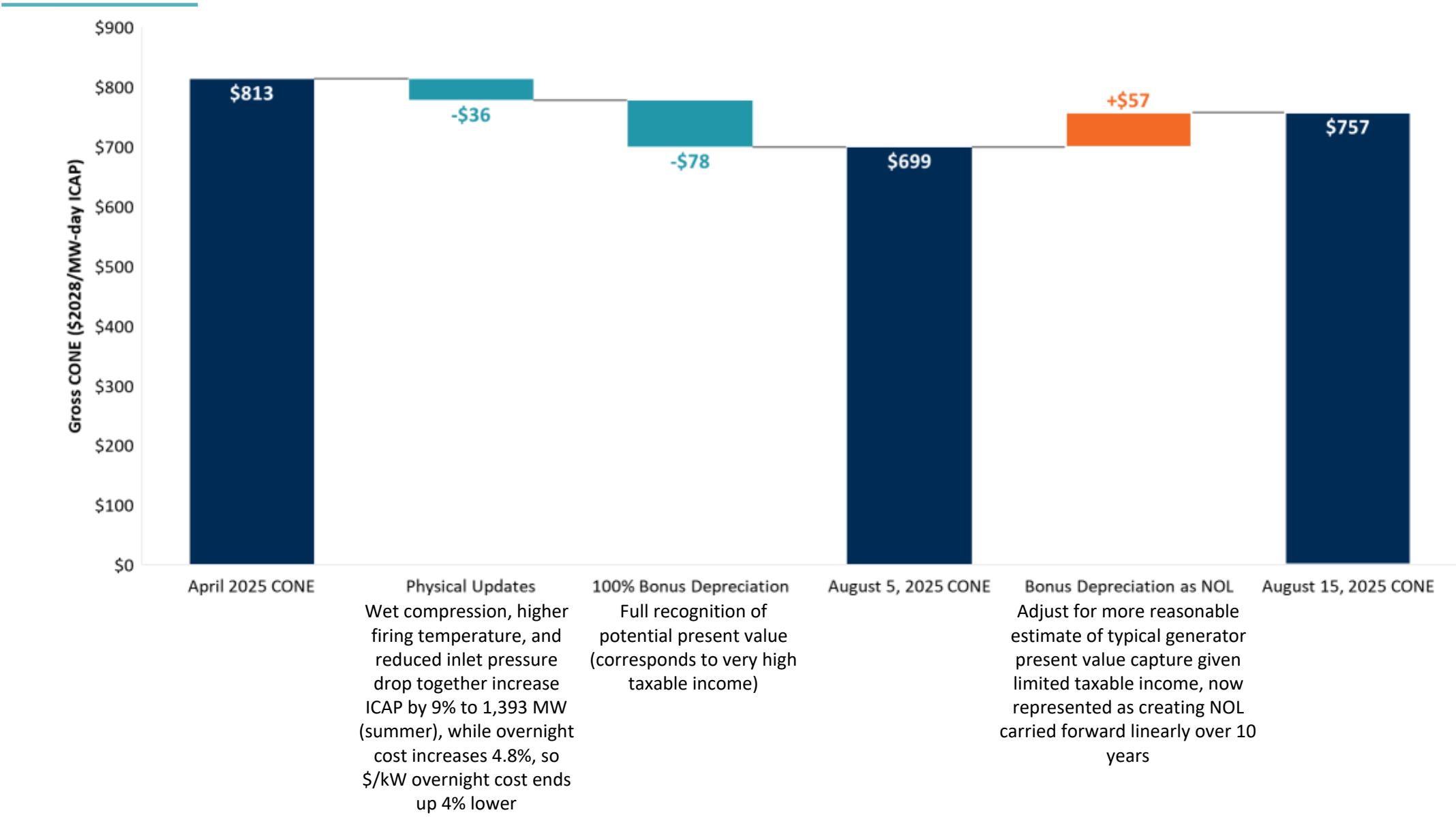
Updates to CT CONE

CONE Area 3, Rest of RTO, \$2028/MW-day ICAP



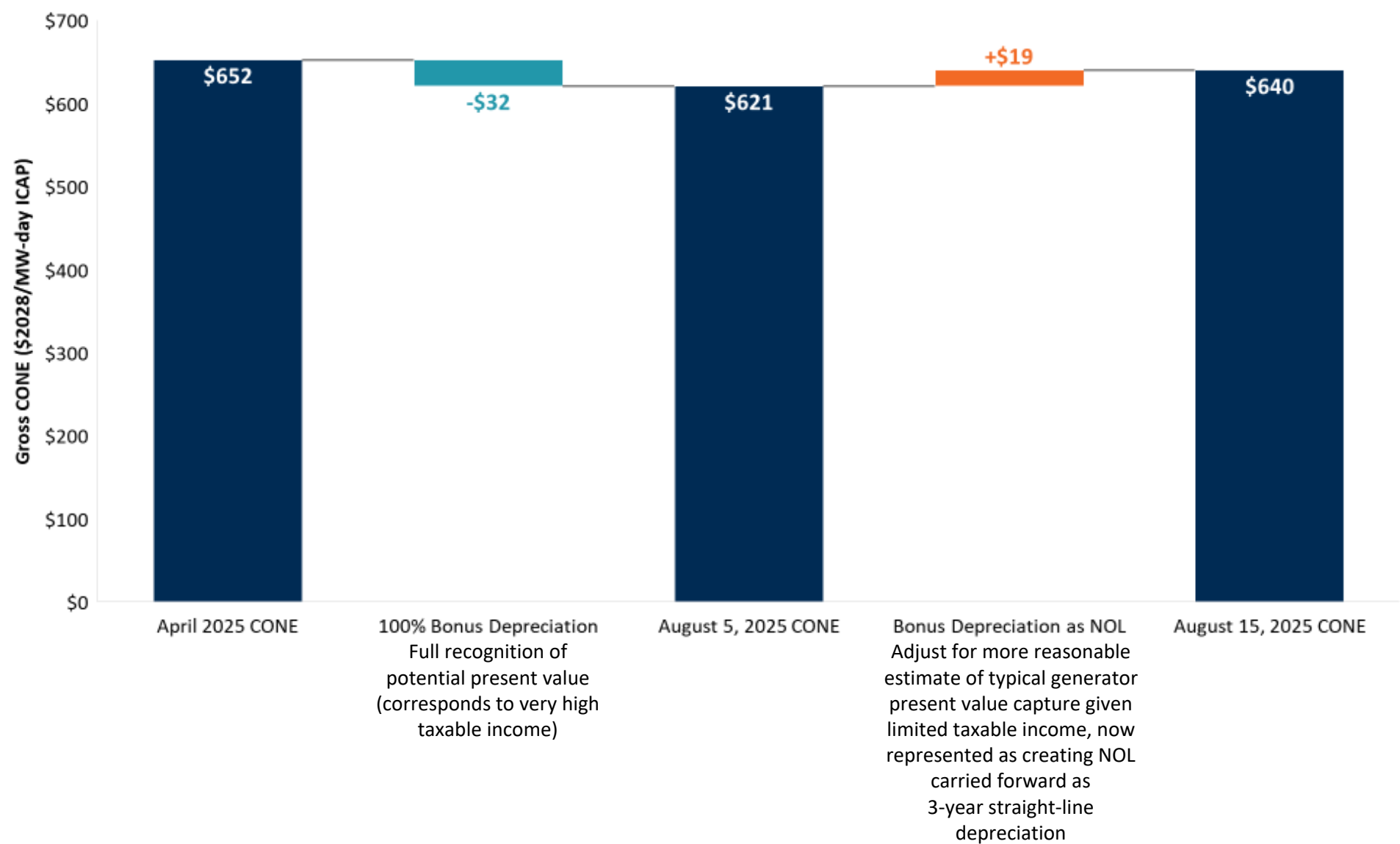
Updates to CC CONE

CONE Area 3, Rest of RTO, \$2028/MW-day ICAP



Updates to BESS CONE

CONE Area 3, Rest of RTO, \$2028/MW-day ICAP



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