



Periodic Review of Default Gross CONE and Gross ACR Values

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Minimum Offer Price Rule (MOPR) – Attachment DD § 5.14 (h-2)

- New resources can elect a default Net Cost of New Entry (CONE) by using the default Gross CONE and subtracting the default Energy and Ancillary Service (E&AS) revenue.
- Existing resources can elect a default Net Avoidable Cost Rate (ACR) by using the default Gross ACR and subtracting the unit-specific E&AS revenue.

Market Seller Offer Cap (MSOC) – Attachment DD § 6.4

- Existing resources calculate a Net ACR by using the default Gross ACR and subtracting the unit-specific E&AS revenue.

Unit-specific request is an option to calculate MOPR or MSOC.



PJM Periodic Review of MOPR and MSOC Values

Beginning with the 2022/2023 Delivery Year, every four delivery years, PJM will update default Gross CONE and default Gross ACR values for MOPR purposes.

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Updated default Gross ACR values will also be used for MSOC purposes.



PJM updated the Gross CONE values using updated values from public sources and assumptions used in the Quadrennial Review.

New Gross CONE values will start being used for the 2026/2027 Delivery Year.

PJM retained The Brattle Group (Brattle) and Sargent & Lundy (S&L) to analyze gross avoidable costs for existing generation.

New Gross ACR values will start being used for the 2026/2027 Delivery Year.

OCT. 6, 2022

NOV. 11, 2022

DEC./JAN. 2022

Q1 2023

NOV. 2023

- Introduction to default Cost of New Entry (CONE) and default Avoidable Cost Rate (ACR)
- Overview on proposed approach for updating values

- MIC special session
- Present initial updated values for feedback

- MIC special session(s)
- Present final CONE values
- Brattle to provide final report with ACR values

- Present final CONE and ACR values
- Advisory vote at the MRC/MC
- Submit a filing to FERC

- 2026/2027 BRA with updated default CONE and default ACR values



2026/2027 Updated Default CONE Values

Minimum Offer Price Rule (MOPR) – Attachment DD § 5.14 (h-2)

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Market Seller Offer Cap (MSOC) – Attachment DD § 6.4

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Unit-specific request is an option to calculate MOPR.

PJM updated the Gross CONE values using updated values from public sources and assumptions used in the Quadrennial Review.

New Gross CONE values will start being used for the 2026/2027 Delivery Year.

PJM retained The Brattle Group (Brattle) and Sargent & Lundy (S&L) to analyze gross avoidable costs for existing generation.

New Gross ACR values will start being used for the 2026/2027 Delivery Year.

PJM updated Gross CONE values similarly to the previous iteration.

Notable changes:

- Changes in ITC and bonus depreciation due to planned sunset of the TCJA
- New reference resource for CC and onshore wind
- Quadrennial Review included BES data

All Gross CONE values increased except for batteries primarily due to ITC eligibility.

PJM selected installed capital costs (Capex) and fixed operating and maintenance costs (FOM) from public sources.

- National Renewable Energy Laboratory (NREL)
- U.S. Environmental Protection Agency (EPA)
- U.S. Energy Information Agency (EIA)
- Lazard

Source	Link
1 NREL: 2022 Annual Technology Baseline	<ul style="list-style-type: none"> • https://atb.nrel.gov/ • https://data.openei.org/submissions/5716
2 Lazard: 2021 Levelized Cost of Energy & Storage	<ul style="list-style-type: none"> • https://www.lazard.com/perspective/levelized-cost-of-energy-levelized-cost-of-storage-and-levelized-cost-of-hydrogen/ • https://www.lazard.com/media/451882/lazards-levelized-cost-of-storage-version-70-vf.pdf • https://www.lazard.com/media/451905/lazards-levelized-cost-of-energy-version-150-vf.pdf
3 EPA: IPM Platform 2021 Reference Case	https://www.epa.gov/power-sector-modeling/epas-power-sector-modeling-platform-v6-using-ipm-summer-2021-reference-case
4 EIA: 2022 Capital Cost Report	<ul style="list-style-type: none"> • https://www.eia.gov/analysis/studies/powerplants/capitalcost/ • https://www.eia.gov/outlooks/aeo/assumptions/pdf/electricity.pdf
5 PJM: Quadrennial Review	https://www.pjm.com/directory/etariff/FercDockets/6885/20220930-er22-2984-000.pdf
6 LBNL: Utility Scale Solar – 2022 Edition	https://emp.lbl.gov/utility-scale-solar/
7 IHS: US Solar PV Capital Cost and LCOE Outlook	https://ihsmarkit.com/research-analysis/index.html



Comparison of Installed Capital Costs (\$/kW)

Technology	NREL 2026	Lazard	EPA 2025	EIA 2022	Used by PJM
Nuclear	7,026	7,800–12,800	5,679	6,695	6,695
Coal	2,765	2,950–6,225	3,422	4,074	4,074
Combined Cycle	934	700–1,300	1,009	1,201	● 1,270
Combustion Turbine	809	700–925	613	785	● 927
Solar PV – Tracking	■ 1,198	950	1,091	1,327	1,327
Solar PV – Fixed	▲ 1,114	800	▲ 1,041	▲ 1,234	1,234
Onshore Wind	1,155	1,025–1,350	1,456	1,718	1,718
Offshore Wind	2,823	2,500–3,600	1,987	4,833	4,833
Battery Energy Storage	1,285	NA	1,022	1,316	● 1,681

■ NREL installed capital cost is noted at \$936/kW DC, and PJM multiplied the value by an Inverter Load Ratio of 1.28 to calculate \$1,198/kW AC.

▲ Fixed cost is obtained from multiplying Solar PV - Tracking cost by 0.93.

● As-filed Quadrennial Review values

- Financial assumptions for the 2026/2027 CONE values are the same values used in the as-filed 2022 Quadrennial Review.
- Bonus depreciation and Investment Tax Credit (ITC) were also used where applicable. Bonus depreciation drops to 20% for 2026, with the rest eligible for the MACRS depreciation.
- Combined cycle value is from the as-filed 2022 Quadrennial Review.
- PJM determined that the assumed applicable asset life for battery storage resources should be 15 years.

Financial Assumptions	
Expected Life	20 Years
Debt Ratio	55%
Debt Rate	6.3%
Equity Rate	14.1%
Total Tax Rate	27.2%
ATWACC	8.85%
Inflation Rate	2.2%

Financial assumptions developed during 2022 Quadrennial Review were used to determine Gross CONE from the installed capital and fixed O&M costs.

Inflation Reduction Act signed into law Aug. 16, 2022, and included Investment Tax Credits (ITC) allowable to wind, solar and battery energy storage resources.

Eligibility requirements:

- 30% if prevailing wage and apprenticeship for five years after in service, or reduce the ITC to 6%
- Increased by 10% if domestic content requirements are satisfied; facility would need 100% of the steel or iron produced in the U.S. and 40% of the manufactured products produced in the U.S.
- Increased by 10% if built in an “energy community”

PJM is expecting market participants to maximize profits and therefore is using a 30% ITC value for determining Gross CONE values.



Description and Cost for Reference Resource

Resource Type	Technology Description	Source of Information	Fixed O&M (\$/kW-Year)	Installed Capital Costs (\$/kW)
Nuclear	2x Westinghouse AP1000 pressurized water reactor (2,156 MW)	EIA (Case 11)	127.35	6,695
Coal	Ultra-Supercritical coal (650 MW)	EIA (Case 1)	42.49	4,074
Combined Cycle	Double train 1x1 GE Frame 7HA.02 with evaporative cooling, SCR and CO catalyst (1,155 MW)	As-filed Quadrennial Review	38.5	1,270
Combustion Turbine	GE Frame 7HA.02 with evaporating cooling and SCR (357 MW)	As-filed Quadrennial Review	40	927
Solar PV – Tracking	Single-axis tracking (150 MW AC)	EIA (Case 24)	15.97	1,327
Solar PV – Fixed	Fixed tilt (100 MW AC)	EIA, LBNL	14.85	1,234
Onshore Wind	71 x 2.8 MW WTGs (200 MW)	EIA (Case 20)	27.57	1,718
Offshore Wind	40 x 10 MW WTGs, 100' deep (400 MW)	EIA (Case 22)	115.16	4,833
Battery Energy Storage	50 MW utility-scale, lithium-ion, 200 MWh rating	As-filed Quadrennial Review	36.85	1,681



Final Default CONE Values

Resource Types	Gross Cost of New Entry (2022/2023 \$/MW-Day) (Nameplate)	Gross Cost of New Entry (2026/2027 \$/MW-Day) (Nameplate)
1. Nuclear	\$2,000	\$2,568
2. Coal	\$1,068	\$1,480
3. Combined Cycle	\$320	\$540
4. Combustion Turbine	\$294	\$427
5. Fixed Solar PV	\$271	\$298
6. Tracking Solar PV	\$290	\$321
7. Onshore Wind	\$420	\$438
8. Offshore Wind	\$1,155	\$1,351
9. Battery Energy Storage	\$532	\$502

Gross CONE will continue to be escalated for each subsequent delivery year.



2026/2027 Default Net CONE Calculation

Resource Type	Fixed O&M Cost (\$/kW-Year)	Installed Capital Cost (\$/kW)	Investment Tax Credit %	Gross CONE (\$/MW-Day) (Nameplate)	Average Zonal Net Energy Revenue Offset (\$/MW-Day) (Nameplate)	Average Zonal Net Ancillary Services Revenue Offset (\$/MW-Day) (Nameplate)	Net CONE (\$/ICAP-MW-Day)	Capacity Value Percentages or Factors	Net CONE (\$/UCAP-MW-Day)
Nuclear	\$127	\$6,695	0%	\$2,568	\$786	\$9	\$1,773	99.1%	\$1,790
Coal	\$42	\$4,074	0%	\$1,480	\$186	\$9	\$1,285	87.2%	\$1,473
Combined Cycle			0%	\$540	\$347	\$9	\$184	96.4%	\$191
Combustion Turbine	\$40	\$927	0%	\$427	\$137	\$6	\$284	95.5%	\$297
Solar PV – Tracking	\$16	\$1,327	30%	\$298	\$264	\$9	\$25	47.0%	\$53
Solar PV – Fixed	\$16	\$1,234	30%	\$321	\$165	\$9	\$147	31.0%	\$474
Onshore Wind	\$28	\$1,718	30%	\$438	\$325	\$9	\$104	14.0%	\$742
Offshore Wind	\$115	\$4,833	30%	\$1,351	\$478	\$9	\$864	34.0%	\$2,541
Battery Energy Storage	\$37	\$1,681	30%	\$502	\$182	\$9	\$311	95.0%	\$818

NOTES:

- Fixed O&M and installed capital costs are from EIA report 2022. PV (fixed) costs are 93% of the costs for Solar PV (Tracking).
- Combined Cycle CONE value is the average of the CONE values from the as filed 2022 Quadrennial Review for 2026.
- Solar and Wind Investment Tax Credit depends on prevailing wage and apprenticeship requirements. An optimistic 30% value is assumed for solar and wind resources. The additional 10% ITC adder for domestic content, and additional 10% for building in an energy community, are not included.
- Class average ELCC values, estimated for the 2026/2027 Delivery Year, as percent of nameplate MW solar, wind and battery generation are used to calculate Net CONE in \$/UCAP-MW-day. Class average EFORD percentages are the values used in the 2024/2025 Delivery Year MOPR calculations.
- Battery energy storage costs are the average of the CONE values from the as-filed 2022 Quadrennial Review for 2026 for a four-hour plant with 15-year life. Gross CONE is calculated including an optimistic 30% Investment Tax Credit. The additional 10% ITC adder for domestic content, and additional 10% for building in an energy community, are not included. Net CONE (\$/UCAP-MW-day) is calculated by multiplying Net CONE (\$/ICAP-MW-day) by 2.5, and dividing by a 100% ELCC value and a 5% class average EFORD.
- Net Energy Revenue Offset is based on the posted 2025/2026 E&AS values, and Ancillary Service Revenue Offset is based on reactive services of \$3,350/MW-year or \$9/MW-day. The CT value is from the Tariff: \$2,199/MW-year or \$6/MW-day.



2026/2027 Updated Default ACR Values

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Market Seller Offer Cap (MSOC) – Attachment DD § 6.4

- Existing resources calculate a Net ACR by using the default Gross ACR and subtracting the unit-specific E&AS revenue.

Unit-specific request is an option to calculate MOPR or MSOC.

PJM updated the Gross CONE values using updated values from public sources and assumptions used in the Quadrennial Review.

New Gross CONE values will start being used for the 2026/2027 Delivery Year.

PJM retained The Brattle Group (Brattle) and Sargent & Lundy (S&L) to analyze gross avoidable costs for existing generation.

New Gross ACR values will start being used for the 2026/2027 Delivery Year.

PJM contracted Brattle, along with S&L, to determine Gross ACRs.

Notable changes:

- Added Steam Oil & Gas for a new default unit type
- Additional analysis into NEI data to reflect costs for the nuclear fleet
- Refined property tax and insurance estimates

All Gross ACR values increased except for Nuclear – Single resource type.

- Brattle and S&L completed a bottom-up analysis of costs for representative plants, drawing on data and experience.
- Solicited and incorporated stakeholder input through three rounds of presentations at the MIC special session
- Selected a representative resource that balanced the risks of under-mitigation and over-mitigation
- Brattle and S&L provided a representative low-cost plant, representative plant, and representative high-cost plant for comparison for each unit type.

Analyzed the fleet of each technology type for defining characteristics of the median plant by capacity with the following cost drivers:

- Unit Size
 - Plant age and technology vintage
 - Location in PJM
 - Configuration of the unit, including pollution controls
-
- Calculated gross costs that would be avoided if such plant retired, consistent with costs allowable per the Tariff
 - Idiosyncratic plants, due to older, non-standard technology, limited default values for additional technology types.

- Thermal plants are based on S&L’s regression analyses of FERC Form 1 filings with characteristics similar to the representative plant by technology type, benchmarked and adjusted using confidential cost estimates from S&L’s project database.
- Nuclear plants are based on NEI’s latest “Nuclear Costs in Context” study, with adjustments to reflect the representative plant.
- Intermittent plants used FERC Form 1 data and S&L’s project database when FERC Form 1 data was insufficient.

- Brattle and S&L calculated each technologies' total costs and then allocated the allowable costs, as outlined in the PJM OA Schedule 2, into the default Gross ACRs.
- Default Gross ACRs include Fixed Capital Costs and Fixed Operation & Maintenance (FOM) costs, but not major maintenance costs for systems directly related to electric production.



PJM Fleet Capacity by Plant Type

Plant Type	Total MW (Summer ICAP)	% of Total PJM Capacity	Recommendation
NGCC	55,828	28%	Included
Coal	41,554	21%	Included
Nuclear	32,556	16%	Included
Simple Cycle CT	28,496	14%	Included
Wind	9,911	5%	Included
ST O&G	9,240	5%	Included
Solar	7,790	4%	Included
Pumped Storage	5,243	3%	Unit-specific review
Hydro	3,319	2%	Unit-specific review
Other	3,427	2%	Unit-specific review
PJM Total Installed Capacity	197,364	100%	

Notes and Sources: ABB, Energy Velocity Suite.



Gross Costs Estimates for Existing Generation

Resource Type	Representative Low-Cost Plant \$/MW-day	Representative Plant \$/MW-day	Representative High-Cost Plant \$/MW-day
Multi-unit nuclear	476	537	552
Single-unit nuclear	-	591	-
Coal	88	94	142
Natural gas CC	94	113	160
Simple-cycle CT	43	52	69
Steam oil & gas	53	64	102
Onshore wind	140	147	204
Large-scale solar PV	65	70	74

	Units	Single-Unit Nuclear Plant	Multi-Unit Nuclear Plant		
			Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	1,200	2,400	2,400	2,400
Gross Costs	<i>\$/MW-day</i>	\$591	\$476	\$537	\$552
Capital Costs	<i>\$/MW-day</i>	\$77	\$72	\$69	\$69
Fixed Operating Costs	<i>\$/MW-day</i>	\$491	\$381	\$445	\$460
Property Taxes	<i>\$/MW-day</i>	\$23	\$23	\$23	\$23
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$2.44	\$2.22	\$2.19	\$2.20
Operating Costs	<i>\$/MWh</i>	\$0.33	\$0.25	\$0.30	\$0.31
Major Maintenance	<i>\$/MWh</i>	\$2.11	\$1.96	\$1.89	\$1.90

		Coal Plant		
	Units	Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	1,800	1,500	100
Gross Costs	<i>\$/MW-day</i>	\$88	\$94	\$142
Labor	<i>\$/MW-day</i>	\$38	\$41	\$60
Fixed Expenses	<i>\$/MW-day</i>	\$48	\$51	\$79
Property Taxes	<i>\$/MW-day</i>	\$0.5	\$0.5	\$0.5
Insurance	<i>\$/MW-day</i>	\$1.5	\$1.5	\$1.5
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$10.47	\$10.92	\$9.61
Operating Costs	<i>\$/MWh</i>	\$5.00	\$5.45	\$5.62
Maintenance Adder	<i>\$/MWh</i>	\$5.47	\$5.47	\$3.99

		Natural Gas Combined Cycle Plant		
	Units	Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	1,100	750	400
Gross Costs	<i>\$/MW-day</i>	\$94	\$113	\$160
Labor	<i>\$/MW-day</i>	\$17	\$21	\$32
Fixed Expenses	<i>\$/MW-day</i>	\$52	\$72	\$120
Property Taxes	<i>\$/MW-day</i>	\$6	\$5	\$2
Insurance	<i>\$/MW-day</i>	\$19	\$15	\$6
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$2.36	\$2.71	\$2.60
Operating Costs	<i>\$/MWh</i>	\$0.75	\$0.52	\$0.94
Maintenance Adder	<i>\$/MWh</i>	\$1.61	\$2.19	\$1.66

		Simple Cycle Combustion Turbine Plant		
	Units	Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	640	320	100
Gross Costs	<i>\$/MW-day</i>	\$43	\$52	\$69
Labor	<i>\$/MW-day</i>	\$6	\$10	\$23
Fixed Expenses	<i>\$/MW-day</i>	\$8	\$12	\$28
Property Taxes	<i>\$/MW-day</i>	\$16	\$16	\$3
Insurance	<i>\$/MW-day</i>	\$13	\$13	\$16
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$4.29	\$4.29	\$5.39
Operating Costs	<i>\$/MWh</i>	\$0.42	\$0.42	\$0.97
Maintenance Adder	<i>\$/MWh</i>	\$3.88	\$3.88	\$4.43

		Oil and Gas-Fired Steam Turbine Plant		
	Units	Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	1,300	900	350
Gross Costs	<i>\$/MW-day</i>	\$53	\$64	\$102
Labor	<i>\$/MW-day</i>	\$21	\$26	\$43
Fixed Expenses	<i>\$/MW-day</i>	\$26	\$32	\$53
Property Taxes	<i>\$/MW-day</i>	\$1.6	\$1.6	\$1.6
Insurance	<i>\$/MW-day</i>	\$4.8	\$4.8	\$4.8
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$5.51	\$5.81	\$16.26
Operating Costs	<i>\$/MWh</i>	\$1.19	\$1.19	\$1.19
Maintenance Adder	<i>\$/MWh</i>	\$4.32	\$4.62	\$15.07

		Onshore Wind Plant		
	Units	Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	300	200	30
Gross Costs	<i>\$/MW-day</i>	\$140	\$147	\$204
Labor	<i>\$/MW-day</i>	\$26	\$27	\$50
Fixed Expenses	<i>\$/MW-day</i>	\$95	\$99	\$126
Property Taxes	<i>\$/MW-day</i>	\$12	\$13	\$17
Insurance	<i>\$/MW-day</i>	\$8	\$8	\$11
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$0.00	\$0.00	\$0.00
Operating Costs	<i>\$/MWh</i>	\$0.00	\$0.00	\$0.00
Maintenance Adder	<i>\$/MWh</i>	\$0.00	\$0.00	\$0.00

		Large Scale Solar Photovoltaic Plant		
	Units	Representative Low-Cost Plant	Representative Plant	Representative High-Cost Plant
Capacity	<i>Nameplate MW</i>	80	10	2
Gross Costs	<i>\$/MW-day</i>	\$65	\$70	\$74
Labor	<i>\$/MW-day</i>	\$20	\$22	\$25
Fixed Expenses	<i>\$/MW-day</i>	\$30	\$33	\$36
Property Taxes	<i>\$/MW-day</i>	\$5	\$4	\$4
Insurance	<i>\$/MW-day</i>	\$10	\$10	\$10
Non-Fuel Variable Costs	<i>\$/MWh</i>	\$0.00	\$0.00	\$0.00
Operating Costs	<i>\$/MWh</i>	\$0.00	\$0.00	\$0.00
Maintenance Adder	<i>\$/MWh</i>	\$0.00	\$0.00	\$0.00

Resource Types	Default Gross ACR (2022/2023 \$/MW-Day) (Nameplate)	Default Gross ACR (2026/2027 \$/MW-Day) (Nameplate)
1. Nuclear – Single	\$697	\$591
2. Nuclear – Dual	\$445	\$537
3. Coal	\$80	\$94
4. Combined Cycle	\$56	\$113
5. Combustion Turbine	\$50	\$52
6. Steam Oil & Gas	NA	\$64
7. Solar PV (fixed and tracking)	\$40	\$70
8. Wind Onshore	\$83	\$147

Gross ACR will continue to be escalated for each subsequent delivery year.

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Periodic Review of Default CONE and ACR Values



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Appendix



2022/2023 Default Net CONE Calculation

Resource Type	Fixed O&M Cost (\$/kW-Year)	Installed Capital Cost (\$/kW)	Investment Tax Credit %	Gross CONE (\$/MW-Day) (Nameplate)	Average Zonal Net Energy Revenue Offset (\$/MW-Day) (Nameplate)	Average Zonal Net Ancillary Services Revenue Offset (\$/MW-Day) (Nameplate)	Net CONE (\$/ICAP-MW-Day)	Capacity Value Percentages or Factors	Net CONE (\$/ICAP-MW-Day)
Nuclear	\$122	\$6,041	0%	\$2,000	\$508	\$9	\$1,483		\$1,483
Coal	\$41	\$3,676	0%	\$1,068	\$34	\$9	\$1,025		\$1,025
Combined Cycle			0%	\$320	\$159	\$9	\$152		\$152
Combustion Turbine			0%	\$294	\$42	\$6	\$246		\$246
Solar PV – Tracking	\$15	\$1,313	30%	\$290	\$176	\$9	\$105	60.0%	\$175
Solar PV – Fixed	\$14	\$1,234	30%	\$271	\$108	\$9	\$154	42.0%	\$367
Onshore Wind	\$35	\$1,677	30%	\$420	\$231	\$9	\$180	17.6%	\$1,023
Offshore Wind	\$110	\$4,375	30%	\$1,155	\$328	\$9	\$818	26.0%	\$3,146
Battery Energy Storage	\$25	\$1,389	0%	\$532	\$107	\$9	\$416	40.0%	\$1,040
Demand Response (Gen)	\$10	\$800	0%	\$254	\$0	\$0	\$254		\$254

Notes:

- Fixed O&M and installed capital costs are from EIA report 2020. Solar PV (fixed) costs are 94% of the costs for Solar PV (Tracking). Nuclear and coal fixed O&M costs were reduced by \$20 and \$25 respectively in calculating Gross CONE.
- Combined Cycle and Combustion Turbine CONE values are the average of the CONE values from the 2018 Quadrennial Review for 2022.
- Solar and Wind Investment Tax Credit depends on the start of construction. An optimistic 30% value is assumed implying solar construction started before Jan. 1, 2020, and wind construction started before Jan. 1, 2017.
- Class average capacity values as percent of nameplate MW solar and wind generation are used to calculate Net CONE in \$/ICAP-MW-day.
- Battery energy storage costs are for a four-hour plant with a 15-year life. Gross CONE is calculated based on 15-year economic life and a 40% capacity value as percent of nameplate capacity is used to calculate Net CONE in \$/ICAP-MW-day.
- Net Energy Revenue Offset is based on the posted March 11, 2020, MIC material and Ancillary Service Revenue Offset is based on reactive services of \$3,350/MW-year or \$9/MW-day. The CT value is from the Tariff: \$2,199/MW-year or \$6/MW-day.

OATT Attachment DD § 5.14

- *Beginning with the Delivery Year that commences June 1, 2022, and continuing no later than for **every fourth Delivery Year** thereafter, the Office of the Interconnection shall review the **default gross cost of new entry values**. Such review may include, without limitation, analyses of the fixed development, construction, operation, and maintenance costs for such resource types. Based on the results of such review, PJM shall propose either to modify or retain the default gross cost of new entry values stated in the table above. The Office of the Interconnection shall post publicly and solicit stakeholder comment regarding the proposal. If, as a result of this process, changes to the default gross cost of new entry values are proposed, the Office of the Interconnection shall **file such proposed modifications with the FERC by October 1**, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.*
- *Beginning with the Delivery Year that commences June 1, 2022, and continuing no later than for **every fourth Delivery Year** thereafter, the Office of the Interconnection shall review the **default Avoidable Cost Rates** for Capacity Resource that is subject to the provisions of the Minimum Offer Price Rule pursuant to Tariff, Attachment DD, section 5.14(h-2)(2) that have cleared in an RPM Auction for any Delivery Year. Such review may include, without limitation, analyses of the avoidable costs of such resource types. Based on the results of such review, PJM shall propose either to modify or retain the default Avoidable Cost Rate values stated in the table above. The Office of the Interconnection shall post publicly and solicit stakeholder comment regarding the proposal. If, as a result of this process, changes to the default Avoidable Cost Rate values are proposed, the Office of the Interconnection shall **file such proposed modifications with the FERC by October 1**, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.*

OATT Attachment DD § 6.4 (a)

The Market Seller Offer Cap, stated in dollars per MW/day of unforced capacity, applicable to price-quantity offers within the Base Offer Segment for an Existing Generation Capacity Resource shall be the Avoidable Cost Rate for such resource, less the Projected PJM Market Revenues for such resource, stated in dollars per MW/day of unforced capacity. A Capacity Market Seller offering above \$0/MW-day must support and obtain approval of a unit-specific Market Seller Offer Cap pursuant to the procedures and standards of subsection (b) of this section 6.4 or may, at its election, if available, utilize a Market Seller Offer Cap determined using the applicable default gross Avoidable Cost Rate for the applicable resource type shown in the table below, as adjusted for Delivery Years subsequent to the 2022/2023 Delivery Year to reflect changes in avoidable costs, net of projected PJM market revenues equal to the resource's net energy and ancillary service revenues for the resource type, as determined in accordance with Tariff, Attachment DD, section 6.8(d-1).

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