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Capital Recovery Factor (CRF) for Avoidable Project Investment Cost Determinations

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Members Committee
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- The CRF values currently in the Tariff need updating to reflect current federal tax laws.
- The current approach of “hardwiring” these values into the tariff is problematic as it does not allow for a timely update of the values should federal tax laws change in the future.
 - PJM Tariff, Attachment DD, section 6.8(a) - Table

- MIC simultaneously approved the issue charge and the proposed solution at the 3/10/2021 MIC meeting (Quick Fix)
 - Expected Deliverables: Revision to Section 6.8(a), Attachment DD of the PJM Tariff

[Issue Tracking](#)

Planned Committee Review/Endorsement Schedule

- MIC: 2/10/2021 (first read)
- MIC: 3/10/2021 (endorsement)
- MRC: 3/29/2021 (first read)
- MRC: 4/21/2021(endorsement)
- MC: 4/21/2021(approval) – same day vote

Seeking same day MRC/MC endorsement on 4/21/21 as
Tariff changes are needed for implementation for
December's 2023/2024 BRA

- Existing CRF table of tariff to be used through and including the BRA for the 2022/2023 Delivery Year
- The table of CRF values applicable to each RPM Auction will be determined and posted on the PJM website by no later than 150 days prior to the commencement of the offer period of each RPM Auction
- The values of the posted CRF table will be determined using federal income tax laws in effect for the relevant Delivery Year at the time of the determination and shall use the same assumptions of (i) capital structure and cost of capital; (ii) debt interest rate; and (iii) state income tax rate, as those used to calculate the Cost of New Entry for the Reference Resource for the relevant Delivery Year

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Capacity Recovery Factor for Avoidable Project Investment Cost Determinations



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Appendix

- Section 6.8(a), Attachment DD of the PJM Tariff, provides a table of CRF values applicable to resources seeking a resource-specific Offer Cap or a resource-specific MOPR Floor Offer Price
- The table of CRF values of section 6.8(a), Attachment DD of the PJM Tariff, were established as part of the PJM Tariff in 2007
- The CRF values of the table of section 6.8(a) of Attachment DD of PJM Tariff need updating to reflect current federal tax laws. In addition, the current approach of “hardwiring” these values into the tariff is problematic as it does not allow for a timely update of the values should federal tax laws change in the future.

- A Capital Recovery Factor (“CRF”) is used to calculate the Avoidable Project Investment Rate (“APIR”) as a component of the Net Avoidable Cost Rate (“ACR”) of a resource
 - The Net ACR of a given resource sets the Market Seller Offer Cap or the MOPR Floor Offer Price of the resource depending on which is applicable
- Section 6.8(a), Attachment DD of the PJM Tariff, provides a table of CRF values applicable to resources seeking a resource-specific Offer Cap or a resource-specific MOPR Floor Offer Price
 - CRF table of tariff is shown on next slide
 - These CRF values have been used in each RPM Auction conducted to date

CRF Table of Section 6.8(a), Attachment DD of the PJM Tariff

Age of Existing Units (Years)	Remaining Life of Plant (Years)	Levelized CRF
1 to 5	30	0.107
6 to 10	25	0.114
11 to 15	20	0.125
16 to 20	15	0.146
21 to 25	10	0.198
25 Plus	5	0.363
Mandatory CapEx	4	0.450
40 Plus Alternative	1	1.100

- CRF values are calculated for recovery periods of 1, 4, 5, 10, 15, 20, 25, and 30 years, using a standard financial model and assumptions of the following components: (i) capital structure and cost of capital; (ii) debt interest rate; (iii) state income tax rate, and (iv) federal income tax and depreciation rates
- The CRF table of prior slide was established as part of the PJM Tariff in 2007 using the following assumptions: (i) a capital structure of 50% debt/50% equity with cost of capital of 12%, (ii) a debt interest rate of 7%, (iii) a state income tax rate of 9%, and (iv) federal income tax laws in effect at that time
 - Most significantly, the CRF values of this table therefore do not reflect the significant change in federal income tax law enacted in 2017

- Use existing CRF table of tariff through and including the BRA for the 2022/2023 Delivery Year
 - Concern that seeking an earlier effective date could lead to further delays of an already-delayed 2022/2023 BRA auction
 - Relevant deadlines for 2022/2023 BRA are already in the past
 - PJM agrees with the IMM's expectation that offers including APIR in Net ACR values are unlikely to impact near term auction results thereby alleviating concerns of not updating for 2022/2023 BRA

- Thereafter, the table of CRF values applicable to each RPM Auction will be determined and posted on the PJM website by no later than 150 days prior to the commencement of the offer period of each RPM Auction
- The values of the posted CRF table will be determined using federal income tax laws in effect for the relevant Delivery Year at the time of the determination and shall use the same assumptions of (i) capital structure and cost of capital; (ii) debt interest rate; and (iii) state income tax rate, as those used to calculate the Cost of New Entry for the Reference Resource for the relevant Delivery Year
 - For this purpose, the state income tax rate will be set equal to the average state income tax rate used to calculate the Cost of New Entry of the Reference Resource across the four CONE Regions

- The table of CRF values that are posted for use in each auction will reflect the federal tax laws that are known to exist for the relevant Delivery Year at the time of the posting
- Using this approach, the CRF values of the following table reflect those that will be posted absent a change in federal tax law no later than 150 days prior to each auction conducted auction for the 2022/2023 Delivery Years through the 2025/2026 Delivery Year
 - 3rd IA for 2022/2023 Delivery Year would use the posted values
 - CRF values effective with the 2026/2027 Delivery Year, and each fourth Delivery Year thereafter, will reflect updated assumptions of (i) capital structure and cost of capital; (ii) debt interest rate; and (iii) state income tax rate consistent with most recent quadrennial review of such components

Age of Unit	Remaining Life of Plant	2022/23 Delivery Year	2023/24 Delivery Year	2024/25 Delivery Year	2025/26 Delivery Year
1 to 5	30	0.077	0.081	0.086	0.091
6 to 10	25	0.082	0.087	0.092	0.096
11 to 15	20	0.091	0.096	0.101	0.106
16 to 20	15	0.107	0.112	0.118	0.123
21 to 25	10	0.140	0.147	0.154	0.162
25 Plus	5	0.242	0.256	0.270	0.284
Mandatory CapEx	4	0.293	0.311	0.329	0.346
40 Plus Alternative	1	1.1	1.1	1.1	1.1

The CRF values of the table above were determined using federal income tax laws currently in effect for the relevant Delivery Year and the same assumptions of (i) capital structure and cost of capital; (ii) debt interest rate; and (iii) state income tax rate, as those used to calculate the Cost of New Entry for the Reference Resource for the relevant Delivery Year

Assumptions used in CRF Determination	Current OATT CRFs	Proposed Updated CRFs *
Debt / Equity Ratio	50%/50%	55%/45%
Cost of Debt (%)	7.0%	6.0%
Cost of Equity (%)	12.0%	13.0%
State Tax Rate (%)	9.0%	9.3% **
Federal Tax Rate (%)	36.0%	21.0%
First-Year Bonus Depreciation (%)	0.0%	100% ***

* Component assumptions reflect the values used in determination of the CONE of the Reference Resource

** Average state tax of the four CONE Regions (Cone Area 1, 2, 3, 4: 9%, 8.25%, 9.99%, 9.99%)

*** First-Year Bonus Depreciation declines by 20% per calendar year starting January 1, 2023.