Transmission Cost Planner User Guide

Prepared by: PJM System Planning
PJM Interconnection, L.L.C.
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Introduction

The PJM Transmission Cost Planner tool (TC Planner) is a web-based application developed to help PJM stakeholders better understand their current transmission costs and estimate their future transmission costs. To enable users to achieve this goal, the TC Planner has a wealth of pertinent information for PJM Regional Transmission Expansion Plan (RTEP) Baseline and Supplemental Upgrades. The TC Planner uses this information, along with applicable Carrying Charges for those Transmission Owners with formula rate filings on the PJM website, to estimate the Transmission Owners' Annual Revenue Requirement for each upgrade for the current Rate Year and for any of the next 10 Rate Years. From the Annual Revenue Requirements, the TC Planner develops monthly transmission cost charges for each upgrade for the current month and a user selected future month within the 10-year horizon for a user selected responsible transmission zone.

Section 1: Access Request for Transmission Cost Planner

In order to access the Transmission Cost Planner Application (TC Planner), follow the steps below to setup or update your account in Account Manager. For read only access to the application, no special access is required. Any user with an account in Account Manager can use TC Planner in read only mode. A limited number of individuals for certain designated companies require additional TC Planner access in order to edit formula rate data for their company.

For read only access:

1. If you already have an account in Account Manager, no further action is required.
2. If you do not have an account in Account Manager and your company is an active member of PJM:
    a. Go to PJM's Account Manager Page at: https://www.pjm.com/markets-and-operations/etools/account-manager.
    b. Register for a new account

For write access:

1. Follow the steps for read only access to establish an account in Account Manager
2. Go to PJM's Account Manager Page at: https://www.pjm.com/markets-and-operations/etools/account-manager.
3. Log in to Account Manager with your user ID and password and request **TC Planner Read/Write** access.
4. If you do not see **TC Planner Read/Write**, request access through your company Account Manager (CAM). They will be able to authorize your access to the **TC Planner Read/Write** role. You may be required to create a new user ID under the specific organization provided by your CAM.

If your CAM administrator is not familiar with **TC Planner Read/Write**, please contact custsvc@pjm.com.

If your company is not an active Member and/or you do not have an account, please visit the Account Manager page (https://www.pjm.com/markets-and-operations/etools/account-manager) for further guidance on Non-Member CAMs and Non-member accounts. For any additional questions and guidance, please contact custsvc@pjm.com.

Section 2: Capabilities

The Transmission Cost Planner (TC Planner) application supports the following capabilities:

- Users can select any future billing month for any Responsible Zone within the next 10 years.
- The TC Planner provides the transmission cost summaries for the selected Responsible Zone for the current and future month.
- The TC Planner provides the detail information on the baseline and supplemental upgrades which contribute to the future transmission cost for the selected Responsible Zone for the current and future month.
- The TC Planner provides Transmission Owners' Formula Rate information.
- The TC Planner provides Transmission Owners capability to edit and add their own Formula Rate information.
- The TC Planner provides reference information including a glossary, some relevant links, and links to current formula rate filings.
- The TC Planner enables users to download the data from the web application to Excel file.

Section 3: Limitations

The Transmission Cost Planner application has the following limitations:

- The future transmission costs provided by the TC Planner may be inaccurate as they are not always based on the same information the Transmission Owners use to develop the actual future transmission costs.
- TC Planner focuses only on the cost of baseline and supplemental upgrades. No other transmission costs are in the scope. To better account for these inaccuracies, users could refer to details in the formula rate filings posted on the PJM website.

Section 4: PJM Responsible Zone Abbreviations

The Transmission Cost Planner application lists Responsible Zones as abbreviations. Please use the following table as a reference for the complete definitions.

Abbreviation	Definition
AEC	Atlantic City Electric Company
AEP	American Electric Power East Zone
APS	Allegheny Power Systems (Now First Energy)
ATSI	American Transmission Systems, Inc. | First Energy
BGE	Baltimore Gas & Electric Company | Exelon
ComEd	Commonwealth Edison Company (ComEd)
Dayton	The Dayton Power & Light Company (Now AES Ohio)
DEOK	Duke Energy Ohio & Duke Energy Kentucky
DL	Duquesne Lighting Company
Dominion	Dominion (formerly Virginia Power)
DPL	Delmarva Power & Light Company
ECP	East Cost Power, LLC
EKPC	Eastern Kentucky Power Cooperative Inc.
HTP	Hudson Transmission Partners, LLC
JCPL	Jersey Central Power & Light Company
ME	Metropolitan Edison Company | First Energy
MISO	Midcontinent Independent System Operator
Neptune	Neptune Regional Transmission System, LLC
OVEC	Ohio Valley Electric Corporation
PECO	PECO Energy Company (Formerly Philadelphia Electric Company) | Exelon
PENELEC	Pennsylvania Electric Company | First Energy
PEPCO	Potomac Electric Power Company | Exelon
PPL	PPL Electric Utilities Corporation (Formerly Pennsylvania Power & Light)
PSEG	Public Service Electric & Gas Company
RE	Rockland Electric (East)

Section 5: Application Overview

The TC Planner application displays estimated charges from RTEP system upgrades for a selected responsible transmission zone or the entire PJM footprint. A user will be prompted to accept terms of use and acknowledge the PJM legal disclaimer before using the tool as shown in **Figure 5.1**.

The three pages that focus on system upgrades and their associated charges include a search area where the user must select the responsible zone of interest. Pages that display charges always display charges for the current month. On those pages, the user can optionally select a future billing period in order to show charges for a future month alongside the current charges. The three different search options are shown in **Figure 5.2**, **Figure 5.3**, and **Figure 5.4.**

The search value for responsible zone defaults to ‘PJM RTO’, which searches for upgrades across the PJM footprint. The user can change this search value by selecting a responsible zone. The selected zone is then used on all application pages. The user may change the selected zone at any time and the new value will continue to be used on all pages. The zone that a user most recently selected is saved so the next time the user signs in to the application, the selected zone will default to whichever zone they used last time.

Like the responsible zone, the selected future billing period is used on all appropriate pages that use a future month. The future billing period is not saved, though. The next time the user signs in to the application, they will need to select a future billing period if they wish to see any future charges.

Above the data list on each page is a link labeled ‘Links and References’. The link opens a dialog containing reference information including a glossary, some relevant links, and links to current planning formula rate filings. The dialog is shown in **Figure 5.5**, **Figure 5.6**, and **Figure 5.7**.

Above the data list on each page is an icon labeled ‘XLS’. When the icon is clicked, an Excel file is generated containing the data on the current page and that file is downloaded to the user’s computer.

Figure 5.1: Disclaimer Acknowledgment

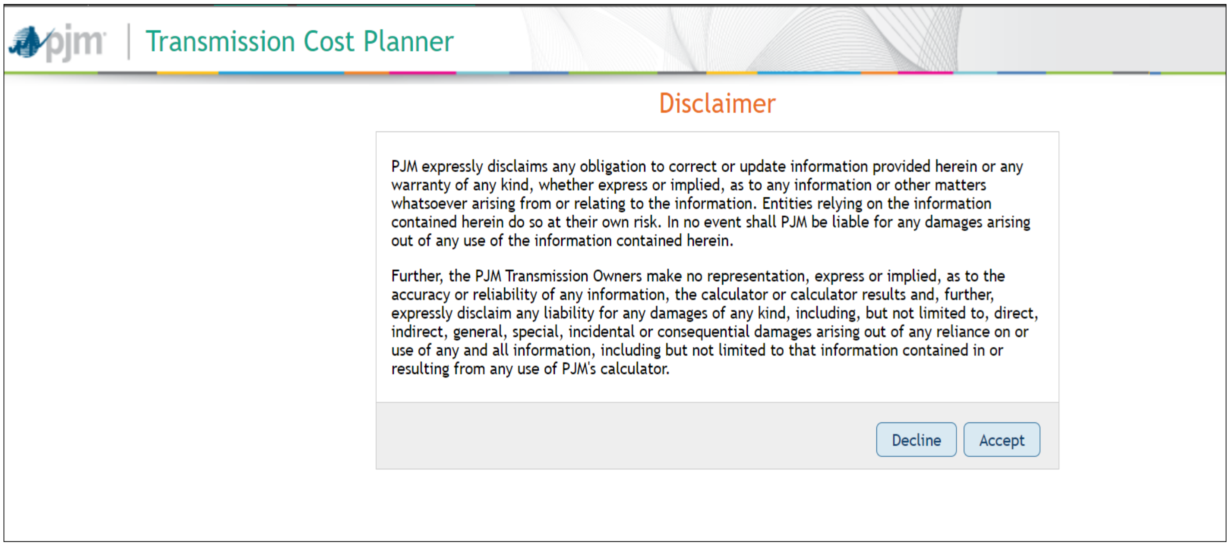


Figure 5.2: Estimated Summary by Zone User Inputs

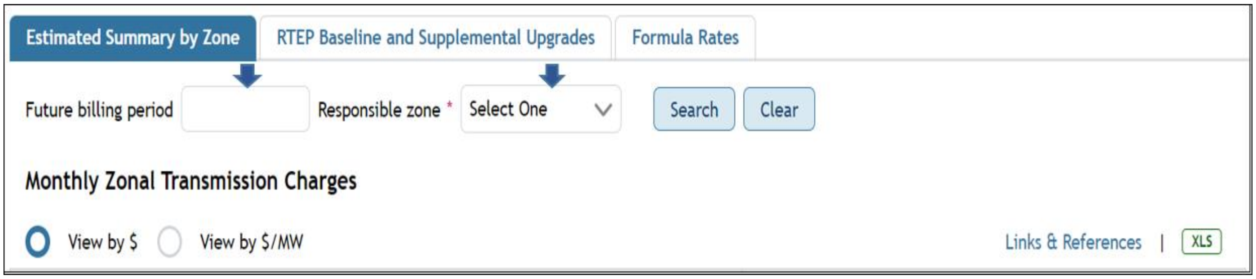


Figure 5.3: RTEP Baseline and Supplemental Upgrades - General Information User Inputs

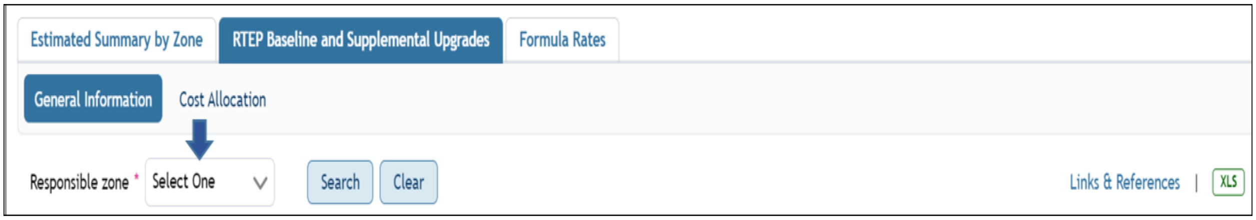


Figure 5.4: RTEP Baseline and Supplemental Upgrades - Cost Allocation User Inputs

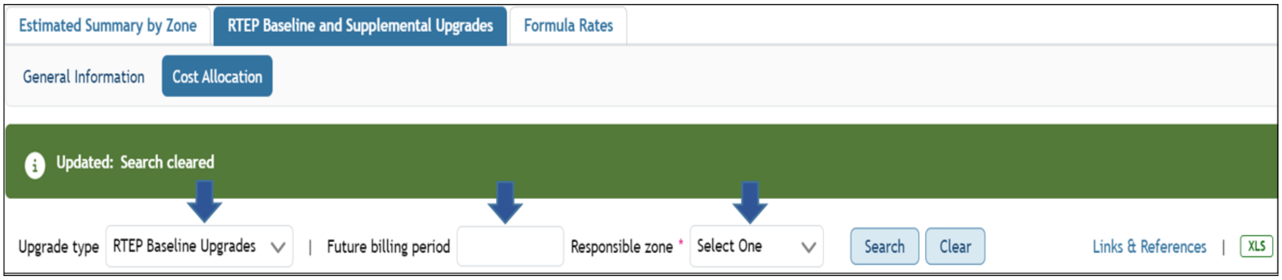
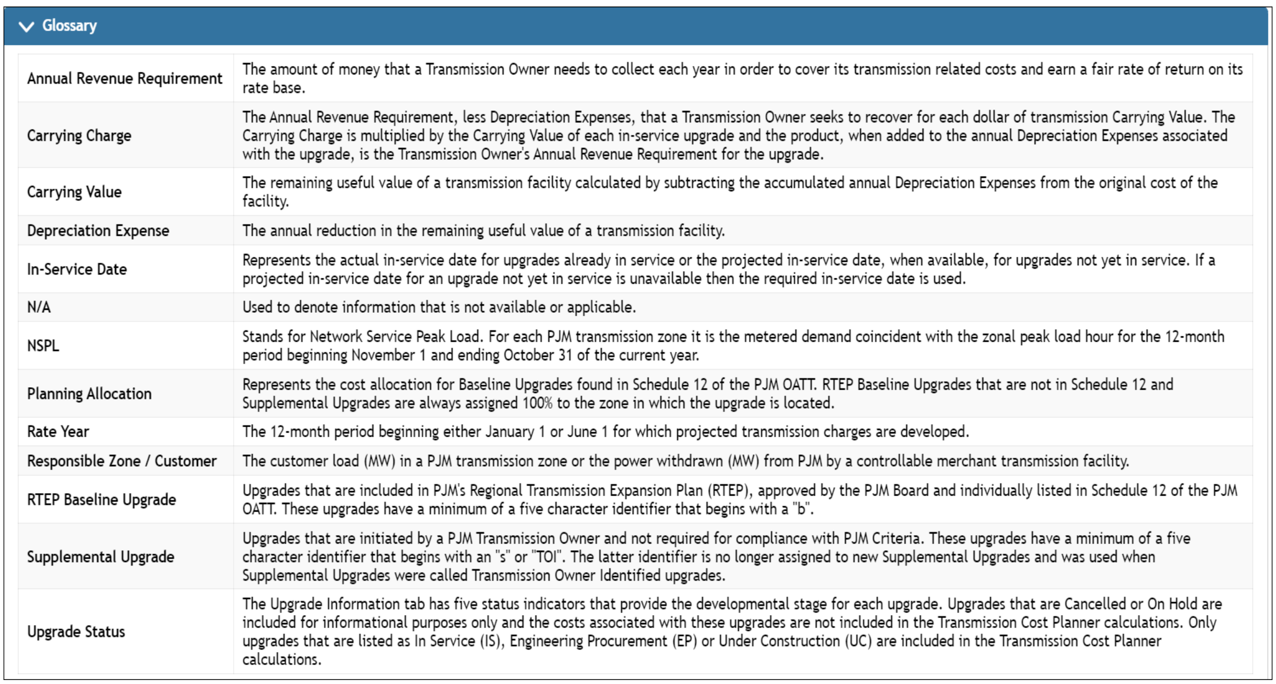


Figure 5.5: Glossary



Glossary

Annual Revenue Requirement	The amount of money that a Transmission Owner needs to collect each year in order to cover its transmission related costs and earn a fair rate of return on its rate base.
Carrying Charge	The Annual Revenue Requirement, less Depreciation Expenses, that a Transmission Owner seeks to recover for each dollar of transmission Carrying Value. The Carrying Charge is multiplied by the Carrying Value of each in-service upgrade and the product, when added to the annual Depreciation Expenses associated with the upgrade, is the Transmission Owner's Annual Revenue Requirement for the upgrade.
Carrying Value	The remaining useful value of a transmission facility calculated by subtracting the accumulated annual Depreciation Expenses from the original cost of the facility.
Depreciation Expense	The annual reduction in the remaining useful value of a transmission facility.
In-Service Date	Represents the actual in-service date for upgrades already in service or the projected in-service date, when available, for upgrades not yet in service. If a projected in-service date for an upgrade not yet in service is unavailable then the required in-service date is used.
N/A	Used to denote information that is not available or applicable.
NSPL	Stands for Network Service Peak Load. For each PJM transmission zone it is the metered demand coincident with the zonal peak load hour for the 12-month period beginning November 1 and ending October 31 of the current year.
Planning Allocation	Represents the cost allocation for Baseline Upgrades found in Schedule 12 of the PJM OATT. RTEP Baseline Upgrades that are not in Schedule 12 and Supplemental Upgrades are always assigned 100% to the zone in which the upgrade is located.
Rate Year	The 12-month period beginning either January 1 or June 1 for which projected transmission charges are developed.
Responsible Zone / Customer	The customer load (MW) in a PJM transmission zone or the power withdrawn (MW) from PJM by a controllable merchant transmission facility.
RTEP Baseline Upgrade	Upgrades that are included in PJM's Regional Transmission Expansion Plan (RTEP), approved by the PJM Board and individually listed in Schedule 12 of the PJM OATT. These upgrades have a minimum of a five character identifier that begins with a "b".
Supplemental Upgrade	Upgrades that are initiated by a PJM Transmission Owner and not required for compliance with PJM Criteria. These upgrades have a minimum of a five character identifier that begins with an "s" or "TOI". The latter identifier is no longer assigned to new Supplemental Upgrades and was used when Supplemental Upgrades were called Transmission Owner Identified upgrades.
Upgrade Status	The Upgrade Information tab has five status indicators that provide the developmental stage for each upgrade. Upgrades that are Cancelled or On Hold are included for informational purposes only and the costs associated with these upgrades are not included in the Transmission Cost Planner calculations. Only upgrades that are listed as In Service (IS), Engineering Procurement (EP) or Under Construction (UC) are included in the Transmission Cost Planner calculations.

Figure 5.6: Relevant Links

Links & References

> Glossary

Relevant Links

FERC Docket Search	FERC Docket Search
FERC Filings	PJM Filings & Orders
Formula Rate Filings	Formula Rates
NSPLs	Billing, Settlements & Credit
PJM Manuals	Manuals
PJM Tariff	Open Access Transmission Tariff
PJM TEAC Material	PJM TEAC
QA Test	Testing
TEC Worksheets	Billing, Settlements & Credit

Figure 5.7: Formula Rate Filing Links

Links & References

> Glossary

> Relevant Links

Formula Rate Filing Links

AE Coop	Allegheny Electric Cooperative, Inc. / PPL	Stated
AEC	Atlantic City Electric Company / AEC	Formula
AEP	AEP East Operating Companies & AEP East Transmission Companies / AEP	Formula
	AEP Appalachian Transmission Company, Inc. / AEP	Formula
	AEP Indiana-Michigan Transmission Company, Inc. / AEP	Formula
	AEP Kentucky Transmission Company, Inc. / AEP	Formula
	AEP Ohio Transmission Company, Inc. / AEP	Formula
	AEP West Virginia Transmission Company, Inc. / AEP	Formula
	Appalachian Power Company / AEP	Formula
	Indiana Michigan Power Company / AEP	Formula
	Kentucky Power Company / AEP	Formula
	Kingsport Power Company / AEP	Formula
	Ohio Power Company / AEP	Formula
	Wheeling Power Company / AEP	Formula
AMPT	AMP Transmission, LLC	Formula
	AMP Transmission, LLC / AEP	Formula
	AMP Transmission, LLC / ATSI	Formula
	AMP Transmission, LLC / Dayton	Formula
APS	South FirstEnergy Operating Companies / APS	Formula
	Monongahela Power Company / APS	Formula
	Potomac Edison Company / APS	Formula

Close

Section 6: Application Workflow

This section of the user guide explains how to use each page in the application.

6.1 Estimated Summary by Zone

The Estimated Summary by Zone page displays summary charges for all baseline and supplemental upgrades that are charged to a given responsible transmission zone. The user must select a Responsible Zone and can optionally select a future billing period. When the user clicks the Search button, the information on the screen updates to show the charges to the selected zone. The table displaying monthly zonal transmission charges always includes a column with estimated charges for the current month. If a future billing period is selected, the table includes a column with estimated charges for that future month as well as a column listing the incremental change. The incremental change is the difference between the estimated charges for the future month and estimated charges for the current month.

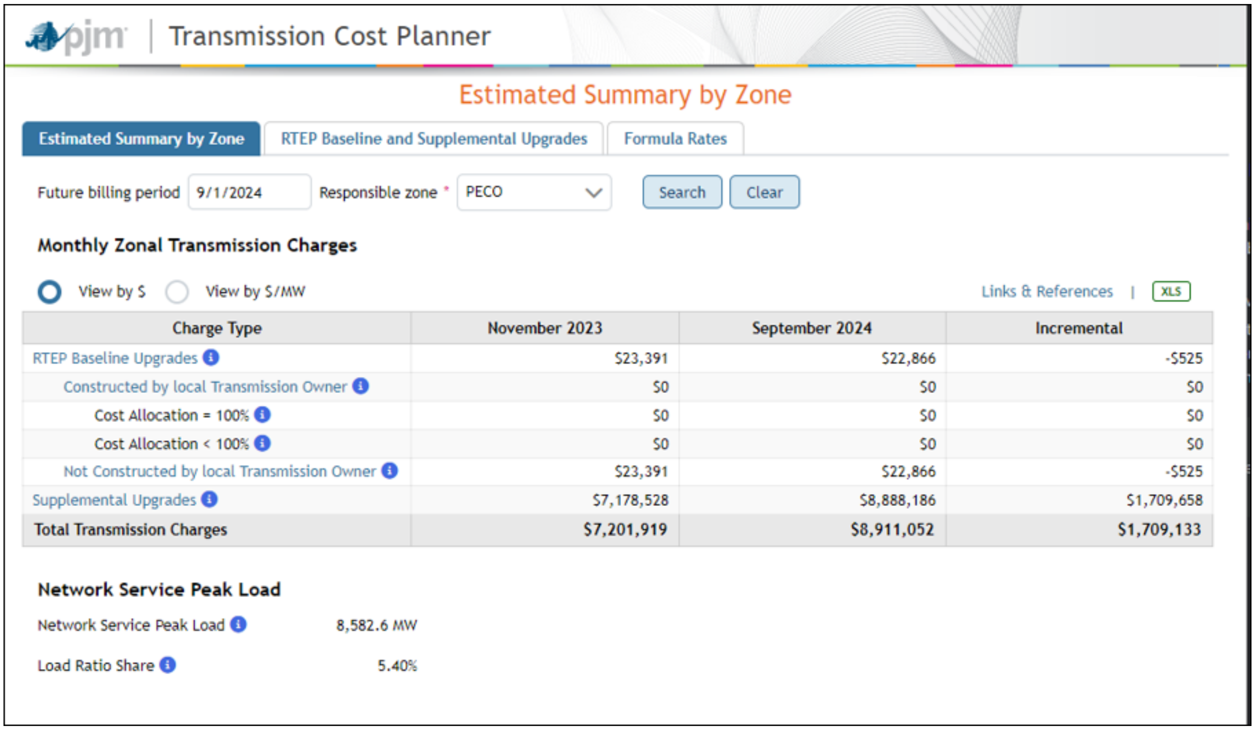
Values in the table listing charges can be displayed as dollars or dollars per megawatt by selecting either of the radio buttons labeled 'View by $' or 'View by $/MW'.

Estimated charges are broken down into 6 categories:

1. RTEP Baseline Upgrades – Total charges for all baseline upgrades that have a cost allocation to the selected zone.
2. Constructed by local Transmission Owner – Subset of RTEP Baseline Upgrades including only charges for baseline upgrades where the local transmission owner is the designated entity for the upgrade. In most cases, the transmission owner assigned to a zone (local transmission owner) has the same name as the zone.
3. Cost Allocation = 100% – Subset of Constructed by local Transmission Owner but including only charges for upgrades that are 100% allocated to the local transmission owner.
4. Cost Allocation < 100% – Subset of Constructed by local Transmission Owner but including only charges for upgrades that are less than 100% allocated to the local transmission owner.
5. Not constructed by local Transmission Owner – Subset of RTEP Baseline Upgrades including only charges for baseline upgrades where the upgrade is not constructed by the local transmission owner.
6. Supplemental Upgrades – Total charges for all supplemental upgrades assigned to the local transmission owner of the selected zone.

Some of the charge type labels in the monthly zonal transmission charges table are links that navigate to the 'RTEP Baseline and Supplemental Upgrades – Cost Allocation' page. Navigating the link takes the user to the cost allocation page with options and filters set to show only the upgrades included in the charges for that charge type.

Below the monthly zonal transmission charges table, network service peak load information for the search zone is shown. The peak load shown is the PJM network service peak load for that zone in megawatts (MW) for the current year. The load ratio share is the ratio of the peak load for the zone to the sum of the peak loads for all zones. The peak load is used to compute the cost per megawatt when the user selects the 'View by $/MW' option.

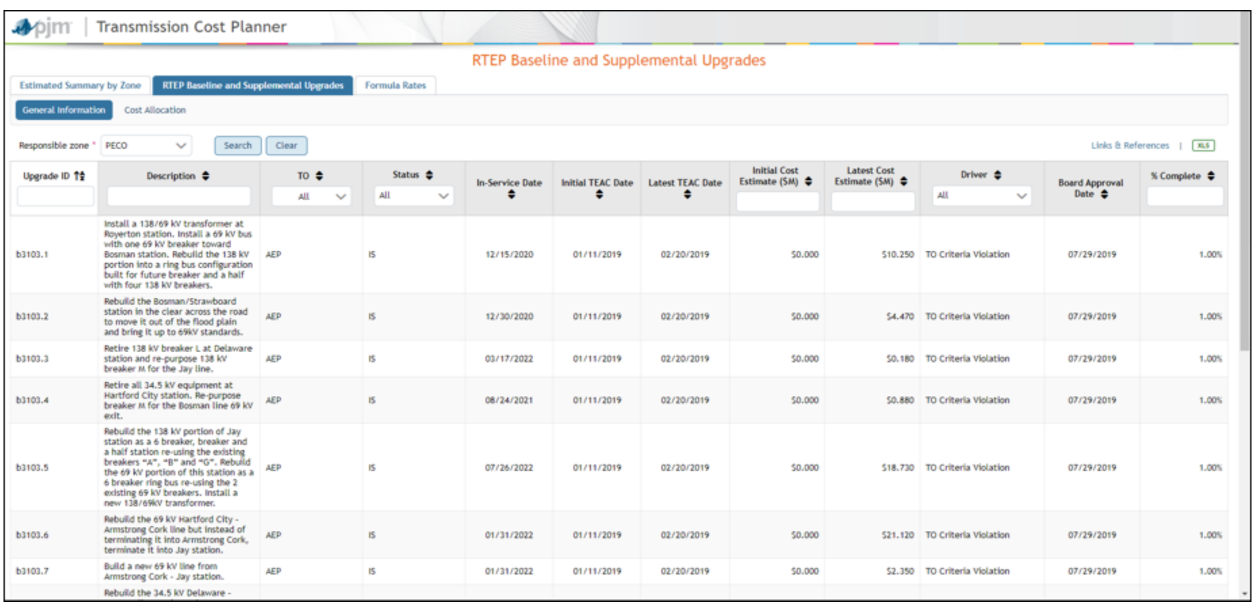


Charge Type	November 2023	September 2024	Incremental
RTEP Baseline Upgrades	$23,391	$22,866	-$525
Constructed by local Transmission Owner	$0	$0	$0
Cost Allocation = 100%	$0	$0	$0
Cost Allocation < 100%	$0	$0	$0
Not Constructed by local Transmission Owner	$23,391	$22,866	-$525
Supplemental Upgrades	$7,178,528	$8,888,186	$1,709,658
Total Transmission Charges	**$7,201,919**	**$8,911,052**	**$1,709,133**

When the user searches for responsible zone ‘PJM RTO’, the estimated summary by zone page shows estimated charges for all upgrades across the PJM footprint. While some upgrades may have cost allocations to MISO, charges to MISO are excluded from the PJM RTO totals. The network service peak load in this case is the total peak loads for all PJM zones.

6.2 RTEP Baseline and Supplemental Upgrades – General Information

The General Information page displays details about all upgrades that have charges to the selected search zone. This includes both baseline and supplemental upgrades in a single list.

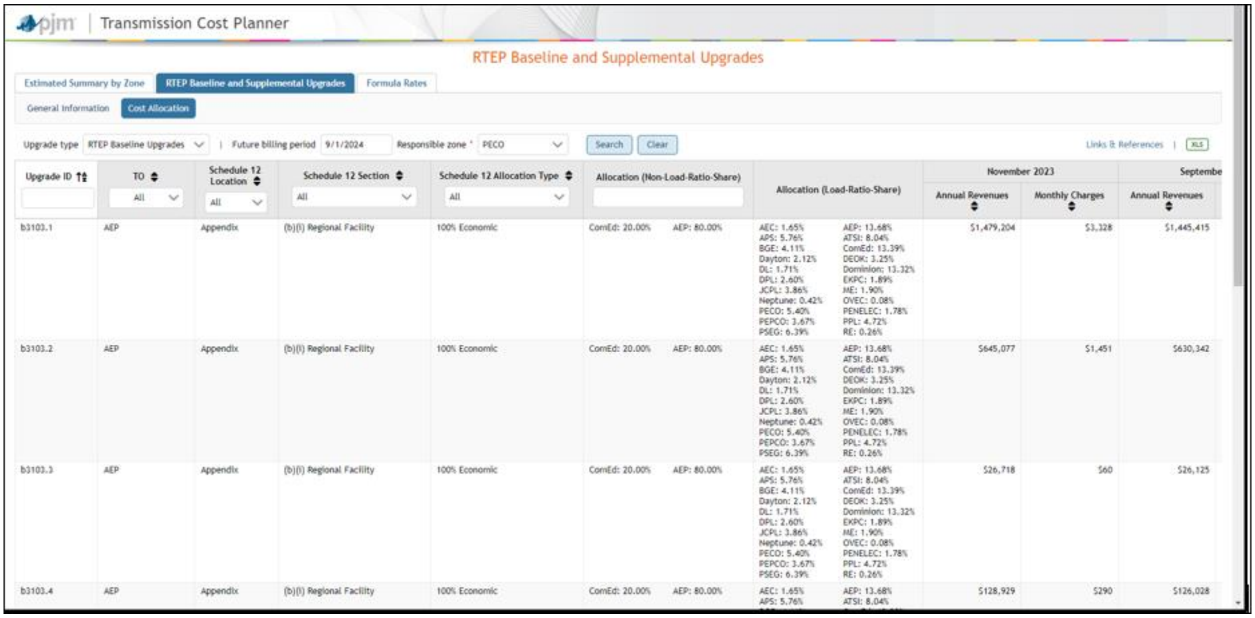


Upgrade ID	Description	TO	Status	In-Service Date	Initial TEAC Date	Latest TEAC Date	Initial Cost Estimate ($M)	Latest Cost Estimate ($M)	Driver	Board Approval Date	% Complete
		All	All						All		
b3103.1	Install a 138/69 kV transformer at Royerton station. Install a 69 kV bus with one 69 kV breaker toward Bosman station. Rebuild the 138 kV portion into a ring bus configuration built for future breaker and a half with four 138 kV breakers.	AEP	IS	12/15/2020	01/11/2019	02/20/2019	$0.000	$10.250	TO Criteria Violation	07/29/2019	1.00%
b3103.2	Rebuild the Bosman/Strawboard station in the clear across the road to move it out of the flood plain and bring it up to 69kV standards.	AEP	IS	12/30/2020	01/11/2019	02/20/2019	$0.000	$4.470	TO Criteria Violation	07/29/2019	1.00%
b3103.3	Retire 138 kV breaker L at Delaware station and re-purpose 138 kV breaker M for the Jay line.	AEP	IS	03/17/2022	01/11/2019	02/20/2019	$0.000	$0.180	TO Criteria Violation	07/29/2019	1.00%
b3103.4	Retire all 34.5 kV equipment at Hartford City station. Re-purpose breaker M for the Bosman line 69 kV exit.	AEP	IS	08/24/2021	01/11/2019	02/20/2019	$0.000	$0.880	TO Criteria Violation	07/29/2019	1.00%
b3103.5	Rebuild the 138 kV portion of Jay station as a 6 breaker, breaker and a half station re-using the existing breakers "A", "B" and "G". Rebuild the 69 kV portion of this station as a 6 breaker ring bus re-using the 2 existing 69 kV breakers. Install a new 138/69kV transformer.	AEP	IS	07/26/2022	01/11/2019	02/20/2019	$0.000	$18.730	TO Criteria Violation	07/29/2019	1.00%
b3103.6	Rebuild the 69 kV Hartford City - Armstrong Cork line but instead of terminating it into Armstrong Cork, terminate it into Jay station.	AEP	IS	01/31/2022	01/11/2019	02/20/2019	$0.000	$21.120	TO Criteria Violation	07/29/2019	1.00%
b3103.7	Build a new 69 kV line from Armstrong Cork - Jay station.	AEP	IS	01/31/2022	01/11/2019	02/20/2019	$0.000	$2.350	TO Criteria Violation	07/29/2019	1.00%
	Rebuild the 34.5 kV Delaware -										

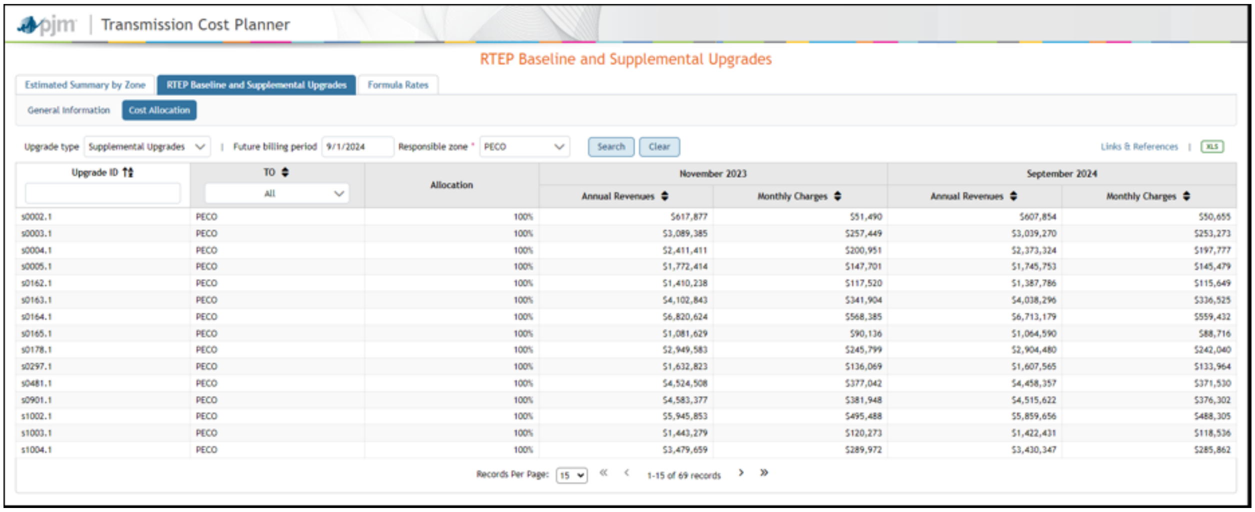
6.3 RTEP Baseline and Supplemental Upgrades – Cost Allocation

The Cost Allocation page displays allocation percentages, estimated annual revenues, and estimated monthly charges for upgrades that have charges to the selected search zone. The page includes separate lists for baseline upgrades and supplemental upgrades. The user can switch between the two lists by changing the ‘Upgrade type’ selection shown next to the search fields.

For baseline upgrades, the cost allocation list includes several ‘Schedule 12’ related fields that describe the type of allocations for each upgrade. The column labeled ‘Allocation (Non-Load-Ratio-Share)’ displays allocation percentages that are individually assigned for each zone that is charged for the upgrade. The column labeled ‘Allocation (Load-Ratio-Share)’ displays load ratio percentages for all upgrades that include such type of cost allocations. Upgrades with a ‘Schedule 12 Section’ of ‘(b)(i) Regional Facility’ and some upgrades with a ‘Schedule 12 Allocation Type’ of ‘Multi-Driver’ include load ratio cost allocations. When shown, the load ratio allocations are all the same as the load ratio share for a zone is the ratio of its peak load to the total peak loads for all PJM zones.



The list for supplemental upgrades includes fewer columns. These types of upgrades do not have the schedule 12 cost allocation values. They are always implicitly 100% allocated to the zone where the upgrade is located.



Upgrade ID	TO	Allocation	November 2023		September 2024	
	All		Annual Revenues	Monthly Charges	Annual Revenues	Monthly Charges
s0002.1	PECO	100%	$617,877	$51,490	$607,854	$50,655
s0003.1	PECO	100%	$3,089,385	$257,449	$3,039,270	$253,273
s0004.1	PECO	100%	$2,411,411	$200,951	$2,373,324	$197,777
s0005.1	PECO	100%	$1,772,414	$147,701	$1,745,753	$145,479
s0162.1	PECO	100%	$1,410,238	$117,520	$1,387,786	$115,649
s0163.1	PECO	100%	$4,102,843	$341,904	$4,038,296	$336,525
s0164.1	PECO	100%	$6,820,624	$568,385	$6,713,179	$559,432
s0165.1	PECO	100%	$1,081,629	$90,136	$1,064,590	$88,716
s0178.1	PECO	100%	$2,949,583	$245,799	$2,904,480	$242,040
s0297.1	PECO	100%	$1,632,823	$136,069	$1,607,565	$133,964
s0481.1	PECO	100%	$4,524,508	$377,042	$4,458,357	$371,530
s0901.1	PECO	100%	$4,583,377	$381,948	$4,515,622	$376,302
s1002.1	PECO	100%	$5,945,853	$495,488	$5,859,656	$488,305
s1003.1	PECO	100%	$1,443,279	$120,273	$1,422,431	$118,536
s1004.1	PECO	100%	$3,479,659	$289,972	$3,430,347	$285,862

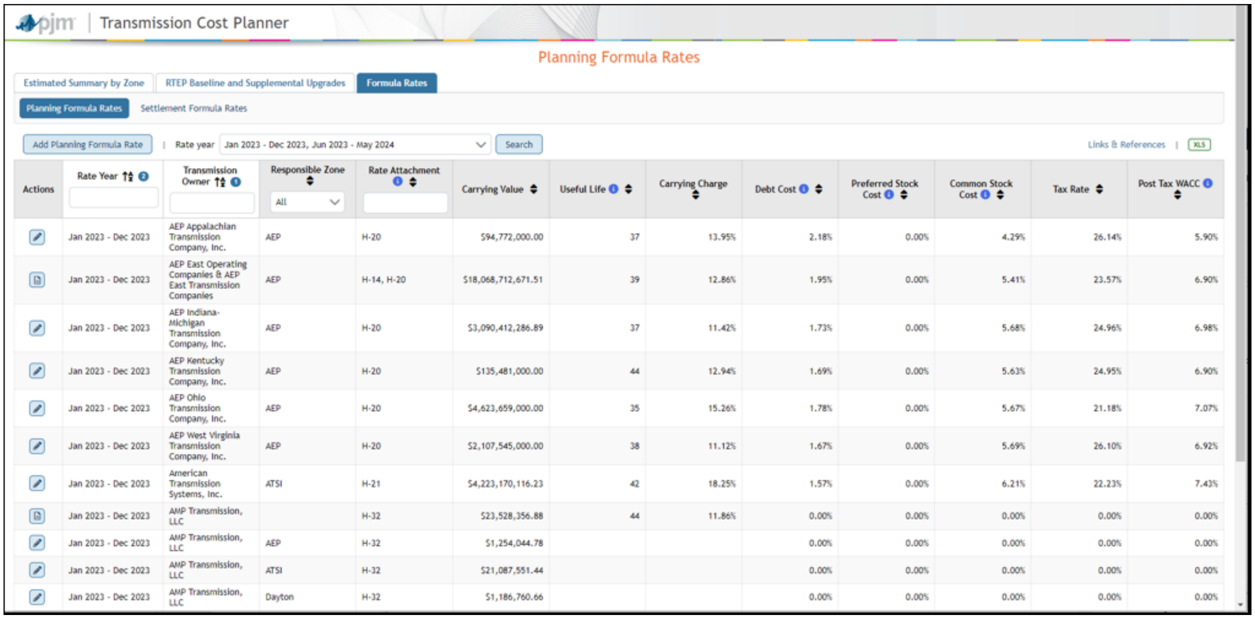
Each list includes a column showing the current annual revenue requirement (labeled ‘Annual Revenues’) for each upgrade, as well as the estimated monthly charges to the selected search zone. If the user selected a future billing period, additional columns are displayed containing the annual revenue requirement and expected charges for that future billing period.

6.4 Formula Rates – Planning Formula Rates

This page displays formula rate information that is relevant to the PJM planning department, some of which is used by the TC Planner application to calculate annual revenue requirements and estimated monthly charges. The application uses the rate period (range of dates), useful life, and carrying charge in the computations. All other fields are for informational purposes only.

By default, the formula rate list shows all planning formula rates for the current rate year. For transmission owners whose rates start in January, this includes their rates for the current calendar year. For transmission owners whose rates start in June, this includes whichever rates are currently effective for that transmission owner. If the current date is before June 1, the rate is the rate that started in June of the prior year. If the current date is on or after June 1, the rate is the rate that started in June of the current year.

To show rates for different rate years, the user can choose different options in the ‘Rate Year’ search field. The list of search options includes all rate years for which rates are defined in the system. Rates starting in January and June are listed separately in the options list. This allows users to display only January rates or only June rates.



Actions	Rate Year	Transmission Owner	Responsible Zone	Rate Attachment	Carrying Value	Useful Life	Carrying Charge	Debt Cost	Preferred Stock Cost	Common Stock Cost	Tax Rate	Post Tax WACC
			All									
	Jan 2023 - Dec 2023	AEP Appalachian Transmission Company, Inc.	AEP	H-20	$94,772,000.00	37	13.95%	2.18%	0.00%	4.29%	26.14%	5.90%
	Jan 2023 - Dec 2023	AEP East Operating Companies & AEP East Transmission Companies	AEP	H-14, H-20	$18,068,712,671.51	39	12.86%	1.95%	0.00%	5.41%	23.57%	6.90%
	Jan 2023 - Dec 2023	AEP Indiana-Michigan Transmission Company, Inc.	AEP	H-20	$3,090,412,286.89	37	11.42%	1.73%	0.00%	5.68%	24.96%	6.98%
	Jan 2023 - Dec 2023	AEP Kentucky Transmission Company, Inc.	AEP	H-20	$135,481,000.00	44	12.94%	1.69%	0.00%	5.63%	24.95%	6.90%
	Jan 2023 - Dec 2023	AEP Ohio Transmission Company, Inc.	AEP	H-20	$4,623,659,000.00	35	15.26%	1.78%	0.00%	5.67%	21.18%	7.07%
	Jan 2023 - Dec 2023	AEP West Virginia Transmission Company, Inc.	AEP	H-20	$2,107,545,000.00	38	11.12%	1.67%	0.00%	5.69%	26.10%	6.92%
	Jan 2023 - Dec 2023	American Transmission Systems, Inc.	ATSI	H-21	$4,223,170,116.23	42	18.25%	1.57%	0.00%	6.21%	22.23%	7.43%
	Jan 2023 - Dec 2023	AMP Transmission, LLC		H-32	$23,528,356.88	44	11.86%	0.00%	0.00%	0.00%	0.00%	0.00%
	Jan 2023 - Dec 2023	AMP Transmission, LLC	AEP	H-32	$1,254,044.78			0.00%	0.00%	0.00%	0.00%	0.00%
	Jan 2023 - Dec 2023	AMP Transmission, LLC	ATSI	H-32	$21,087,551.44			0.00%	0.00%	0.00%	0.00%	0.00%
	Jan 2023 - Dec 2023	AMP Transmission, LLC	Dayton	H-32	$1,186,760.66			0.00%	0.00%	0.00%	0.00%	0.00%

6.4.1 Create a New Formula Rate

Users with the 'TC Planner Read/Write' role are able to create new planning formula rates for certain transmission owners. An application administrator sets up which transmission owners that users from a given Account Manager account (company) can edit. Effectively, users with this permission can create rates for their own company.

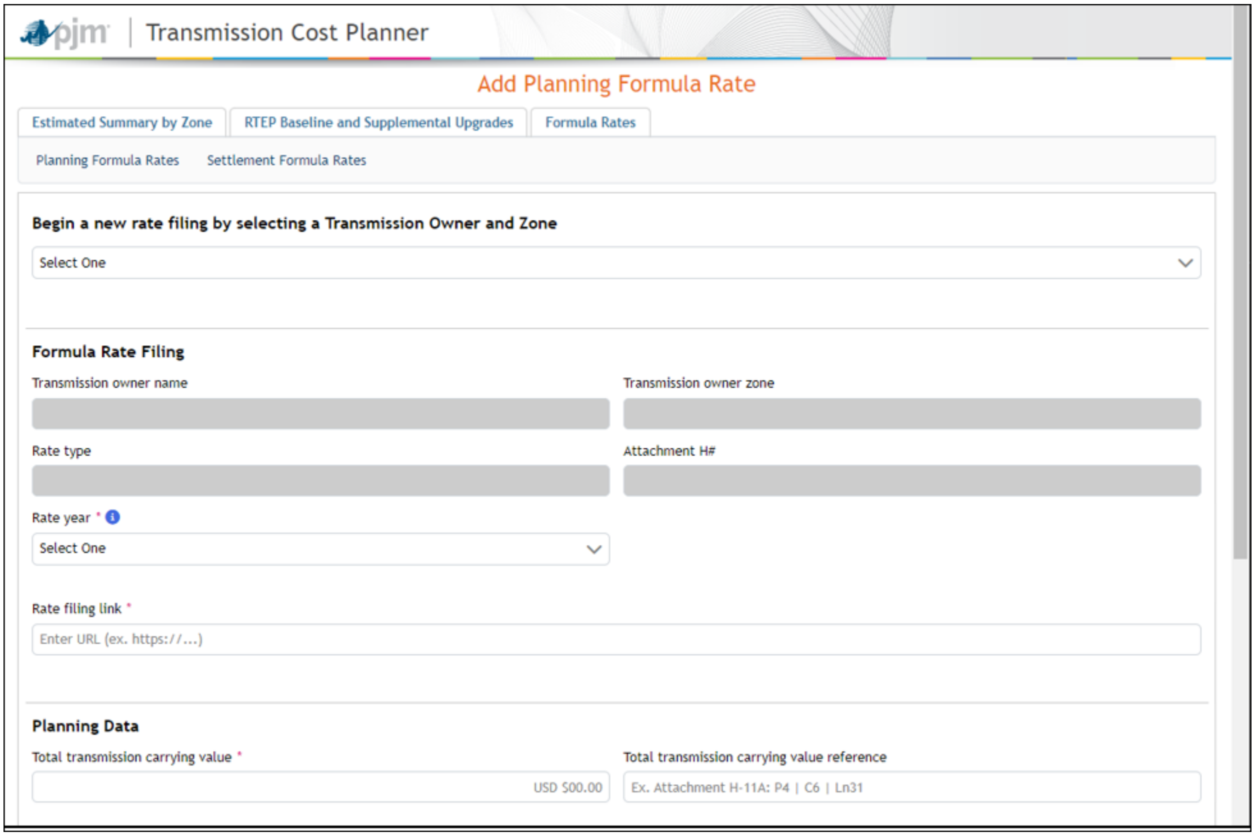
To create a rate, click on the 'Add Planning Formula Rate' button. This opens a new screen where the user can enter formula rate data.

In the formula rate data entry screen, the user must first select a Transmission Owner and Zone from the select list at the top of the screen. The list of available values includes all combinations of TO and Zone for which the user is permitted to create formula rates. Once a TO and zone is selected, the following read only fields are populated with information about the selected value: Transmission owner name, Transmission owner zone, Rate type, and Attachment H#.

Once a transmission owner and zone are selected, the user must enter a Rate Year for which the new rate will be effective. The list of values for rate year includes the current rate year and the next two rate years, but then excludes any rate years for which the TO and zone already has a rate. This prevents a user from creating a second rate for the same TO, zone and rate year. If rates have already been created for the current year and each of the next two years, the list includes the next rate year for which there is no rate in the system.

The user must then enter a value for the rate filing link as well as each of the formula rate data fields. The rate filing link is supposed to be a URL to where the formula rate information is posted on PJM.com. Each of the formula data fields is mandatory except for 'Total transmission carrying value' and 'Estimated useful life of projects'. The carrying value and useful life fields are only mandatory if a prior rate for the same TO and zone specified a value for that field. If the prior rate has no value, then the field is optional. When no value is entered for one of these optional fields, the application uses the PJM average for calculations. Once a value is entered for one of these rate fields, it will be mandatory from that point forward. For example, if the 2023 rate for a TO/zone has no value for useful life, then the useful life for that TO/zone is optional for 2024. If a useful life value is entered for that TO/zone's 2024 rate, then the useful life will be mandatory when the time comes to enter the 2025 rate information.

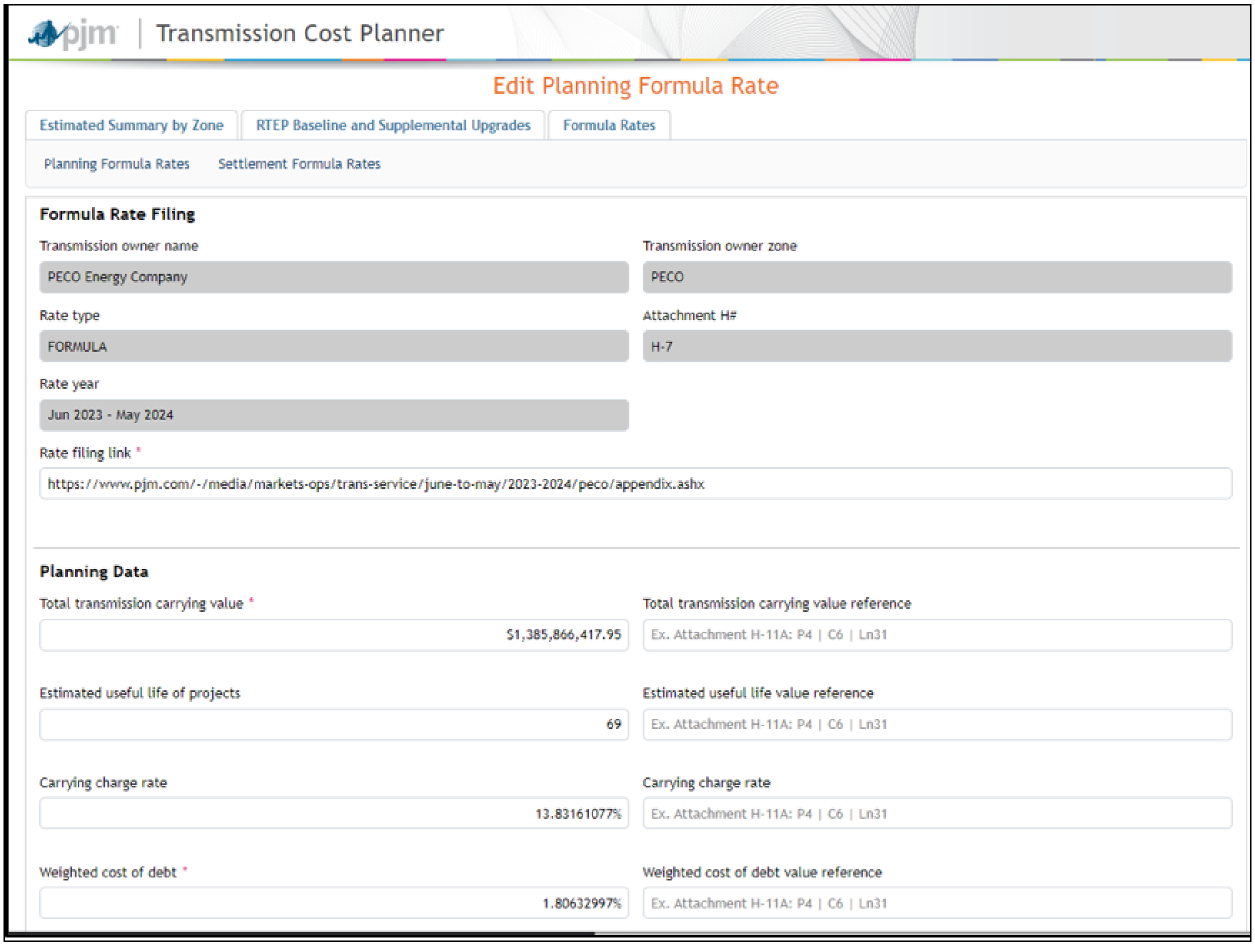
For each formula value on a formula rate, the screen includes an associated 'value reference' field. The value reference fields are much like comments that are intended to state where to find the formula value in the filing documentation. For planning rates, the value reference fields are all optional. The value reference fields are not shown in the table that lists formula rate values, but they are included in the Excel download that is available for the formula rate list.



6.4.2 View or Edit Rate Details

The Actions column in the rate table includes one of two buttons depending on the user's permissions. If the user is permitted to edit rates for the rate's transmission owner, an edit button is shown, otherwise a view button is shown. Users are permitted to edit rates for the same transmission owners for which they are permitted to create new formula rates.

Either button navigates to a page with details about that formula rate. If the user is permitted to edit the rate, some fields are editable and if the user is only permitted to view details then all fields are disabled. The view/edit screen is the same as the screen for creating new rates except there is no field to select a Transmission Owner and zone, and the user is not allowed to change the rate year.

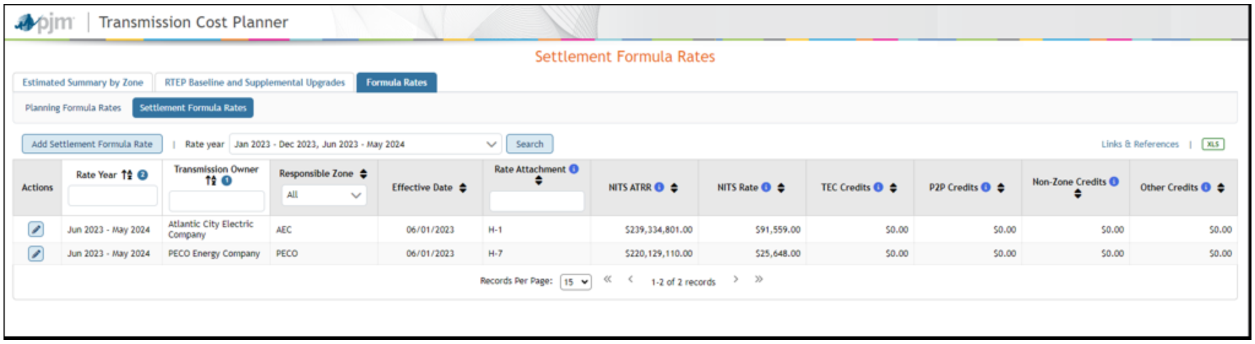


6.5 Formula Rates – Settlement Formula Rates

This page displays formula rate information that is for the PJM settlement department, none of which is used by the TC Planner application in its calculations. Settlement rates are included in TC Planner for informational purposes and as a means to allow stakeholder representatives to enter this data for the PJM settlement department.

By default, the formula rate list shows all settlement formula rates for the current rate year. For transmission owners whose rates start in January, this includes their rates for the current calendar year. For transmission owners whose rates start in June, this includes whichever rates are currently effective for that transmission owner. If the current date is before June 1, the rate is the rate that started in June of the prior year. If the current date is on or after June 1, the rate is the rate that started in June of the current year.

To show rates for different rate years, the user can choose different options in the 'Rate Year' search field. The list of search options includes all rate years for which rates are defined in the system. Rates starting in January and June are listed separately in the options list. This allows users to display only January rates or only June rates.



6.5.1 Create a New Formula Rate

Users with the 'TC Planner Read/Write' role are able to create new settlement formula rates for certain transmission owners. An application administrator sets up which transmission owners that users from a given Account Manager account (company) can edit. Effectively, users with this permission can create rates for their own company. Effectively, users with this permission can create rates for their own company.

To create a rate, click on the 'Add Settlement Formula Rate' button. This opens a new screen where the user can enter formula rate data.

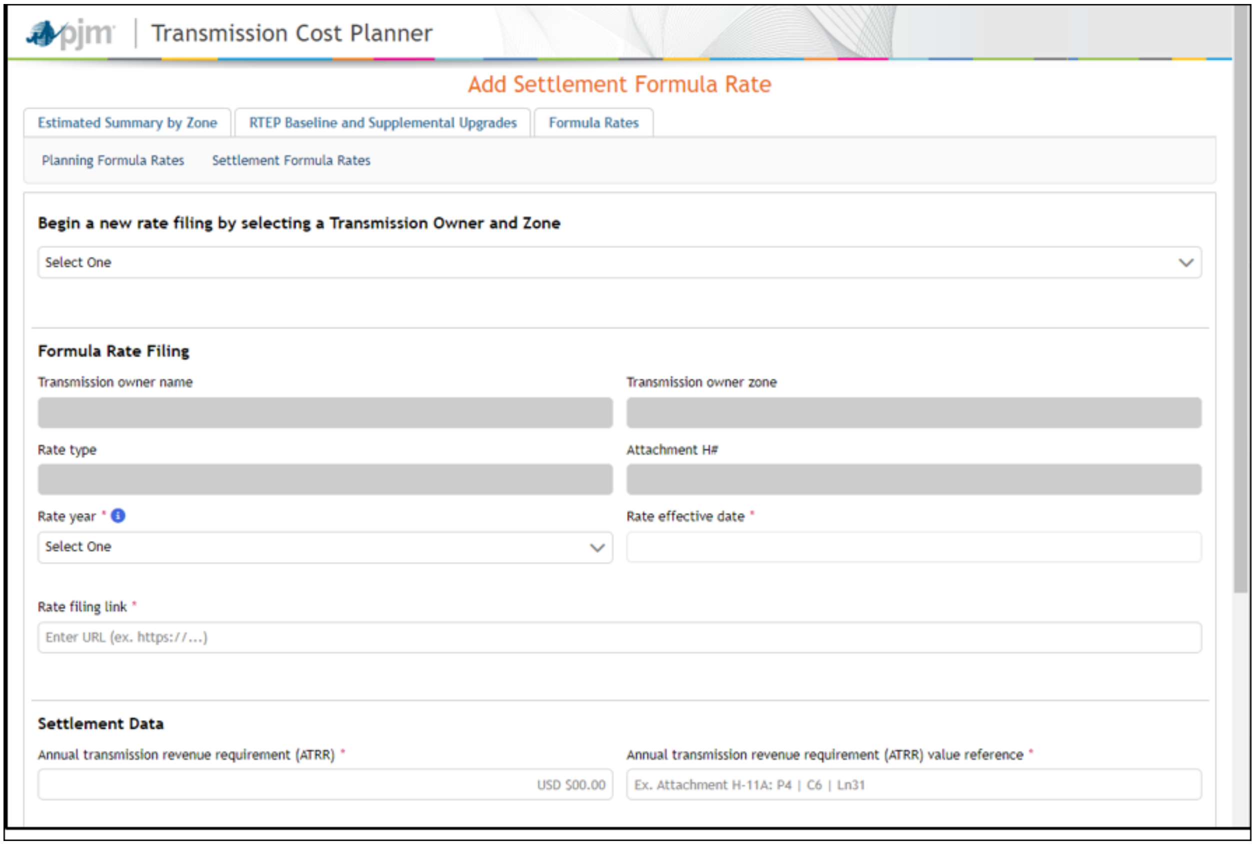
In the formula rate data entry screen, the user must first select a Transmission Owner and Zone from the select list at the top of the screen. The list of available values includes all combinations of TO and Zone for which the user is permitted to create formula rates. Once a TO and zone is selected, the following read only fields are populated with information about the selected value: Transmission owner name, Transmission owner zone, Rate type, and Attachment H#.

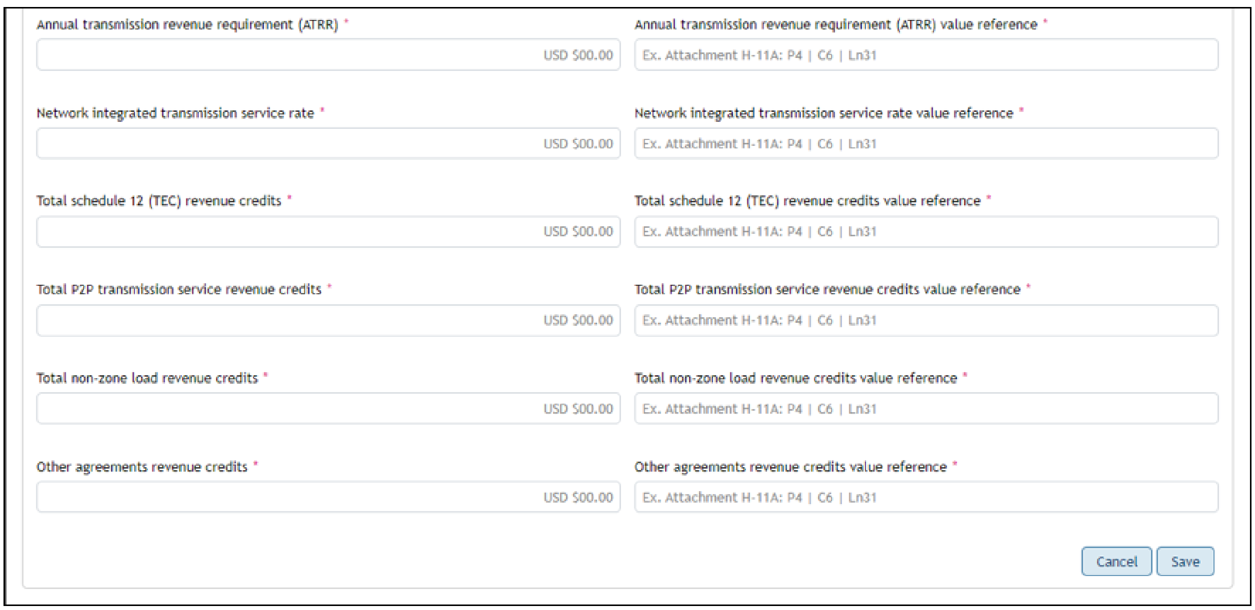
Once a transmission owner and zone are selected, the user must enter a Rate Year for which the new rate will be effective. The list of values for rate year includes the current rate year and the next two rate years, but then excludes any rate years for which the TO and zone already has a rate. This prevents a user from creating a second rate for the same TO, zone and rate year. See the section below describing how to edit a rate for details on how to create a second rate for a TO/zone that is effective at a date other than the first day of the rate year. If rates have already been created for the current year and each of the next two years, the list includes the next rate year for which there is no rate in the system.

When a rate year is selected, the application automatically populates the 'Rate effective date' with the first day of the rate year. The effective date is not editable for new records.

The user must then enter a value for the rate filing link as well as each of the formula rate data fields. The rate filing link is supposed to be a URL to where the formula rate information is posted on PJM.com. Each of the formula data fields is mandatory.

For each formula value on a formula rate, the screen includes an associated 'value reference' field. The value reference fields are much like comments that are intended to state where to find the formula value in the filing documentation. For settlement rates, the value reference fields are all required. The value reference fields are not shown in the table that lists formula rate values, but they are included in the Excel download that is available for the formula rate list.





6.5.2 View or Edit Rate Details

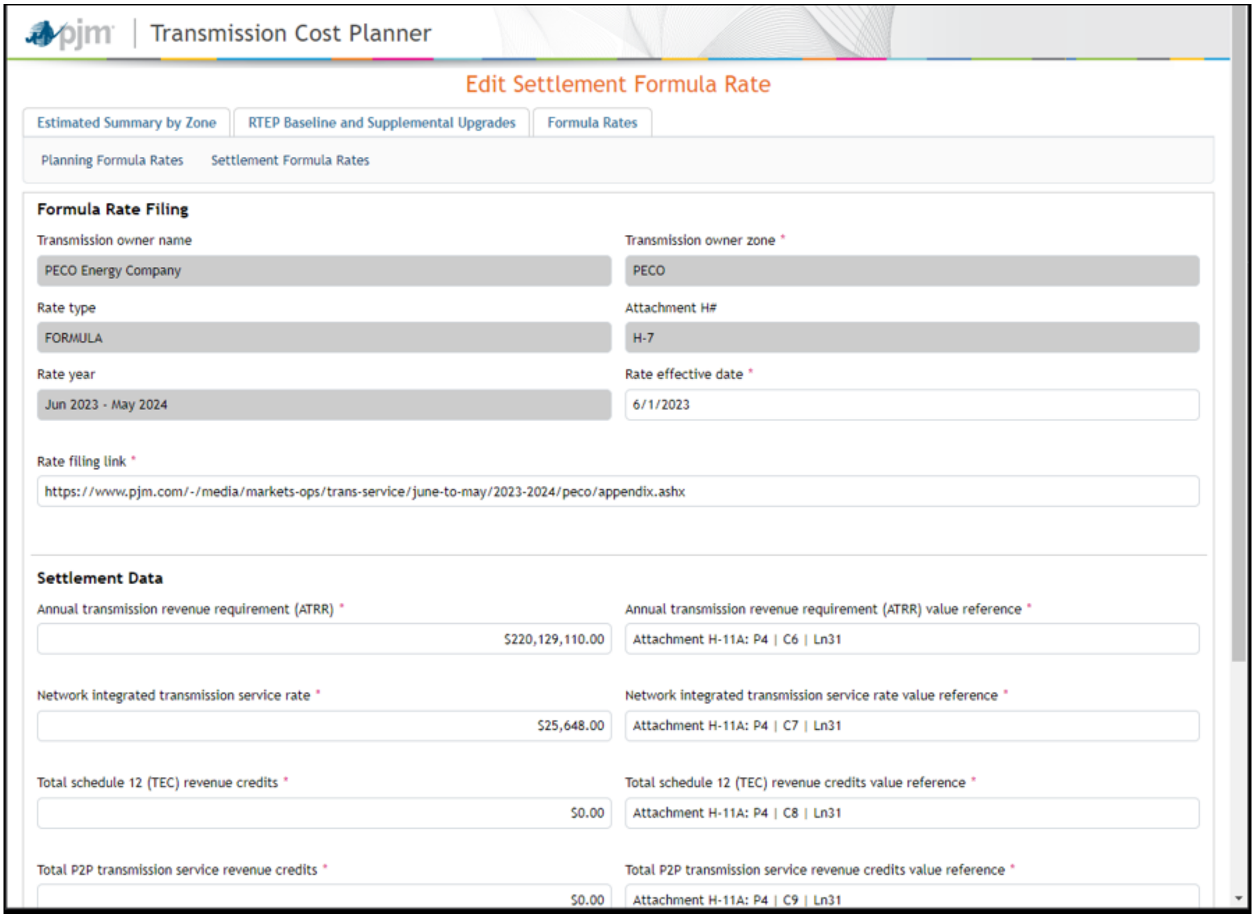
The Actions column in the rate table includes one of two buttons depending on the user's permissions. If the user is permitted to edit rates for the rate's transmission owner, an edit button is shown, otherwise a view button is shown. Users are permitted to edit rates for the same transmission owners for which they are permitted to create new formula rates.

Either button navigates to a page with details about that formula rate. If the user is permitted to edit the rate, some fields are editable and if the user is only permitted to view details then all fields are disabled. The view/edit screen is the same as the screen for creating new rates except there is no field to select a Transmission Owner and zone, and the user is not allowed to change the rate year.

When editing a settlement formula rate, users are allowed to change the effective date. Doing so, creates a new settlement rate for the same year as the original but effective on a different date. When a new rate for the same year is created, the table showing a list of rates for that year displays both rates.

A flow for managing settlement formula rates for a company whose rate year starts in January is as follows:

- A rate for a new year is created in October of the prior year. The effective date for this rate is Jan 1.
- After a new year starts, rates for the company are finalized. If there are any changes to the finalized rates, a user edits the existing rate and does not change the effective date so it remains Jan 1.
- At this point, the list of rates shows one rate for the company. That rate includes the updated values and is effective on Jan 1.
- Due to a FERC order, the rates for the company are required to change mid-year. In this example, the rate change must be effective on July 1.
- User edits the existing rate, setting new rate values and changing the effective date to July 1. This results in a new rate being created with the new values and new effective date.
- At this point, the list of rates shows two rates for the company. One rate is effective on Jan 1 and has the values that were effective on Jan 1. The second rate is effective on July 1 and has the updated values required by the FERC order.


Transmission Cost Planner
Edit Settlement Formula Rate
Estimated Summary by Zone
RTEP Baseline and Supplemental Upgrades
Formula Rates
Planning Formula Rates
Settlement Formula Rates
Formula Rate Filing
Transmission owner name
PECO Energy Company
Transmission owner zone *
PECO
Rate type
FORMULA
Attachment H#
H-7
Rate year
Jun 2023 - May 2024
Rate effective date *
6/1/2023
Rate filing link *
https://www.pjm.com/-/media/markets-ops/trans-service/june-to-may/2023-2024/peco/appendix.ashx
Settlement Data
Annual transmission revenue requirement (ATRR) *
$220,129,110.00
Annual transmission revenue requirement (ATRR) value reference *
Attachment H-11A: P4 | C6 | Ln31
Network integrated transmission service rate *
$25,648.00
Network integrated transmission service rate value reference *
Attachment H-11A: P4 | C7 | Ln31
Total schedule 12 (TEC) revenue credits *
$0.00
Total schedule 12 (TEC) revenue credits value reference *
Attachment H-11A: P4 | C8 | Ln31
Total P2P transmission service revenue credits *
$0.00
Total P2P transmission service revenue credits value reference *
Attachment H-11A: P4 | C9 | Ln31