PJM Energy Offer Verification Process Overview

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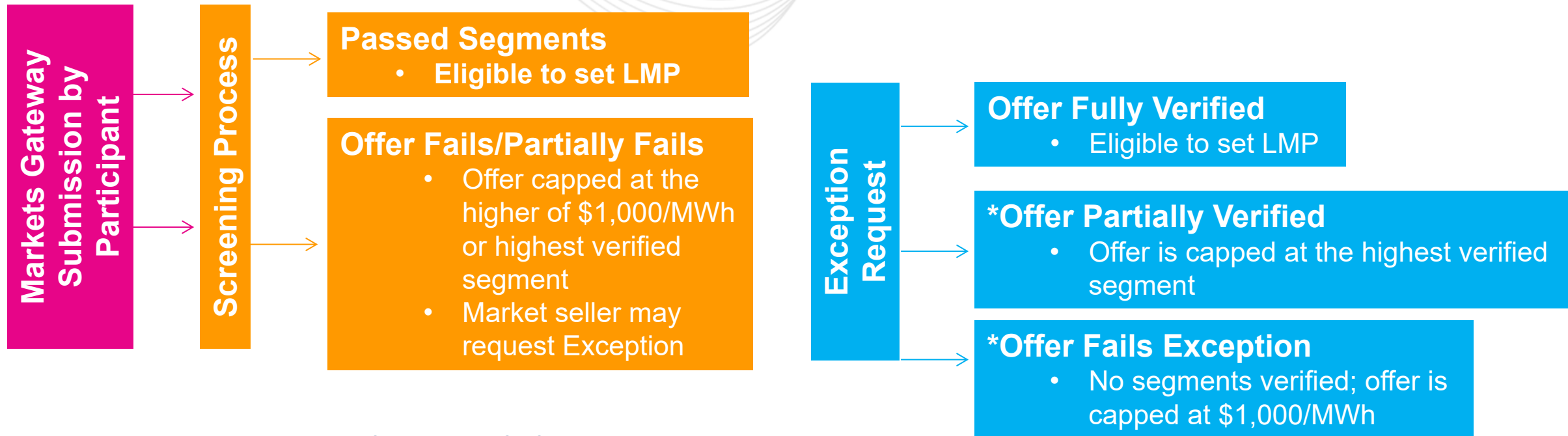Special MIC: Energy Offer Verification Education Session
December 6, 2023

- Preparation for Winter Energy Offer Verification
- Review Offer Verification process for Incremental Offers above $1000/MWh
- Review Exception Request Process
  - New Markets Gateway Feature
- Review Offer Verification process for Composite Offers above $1000/MWh
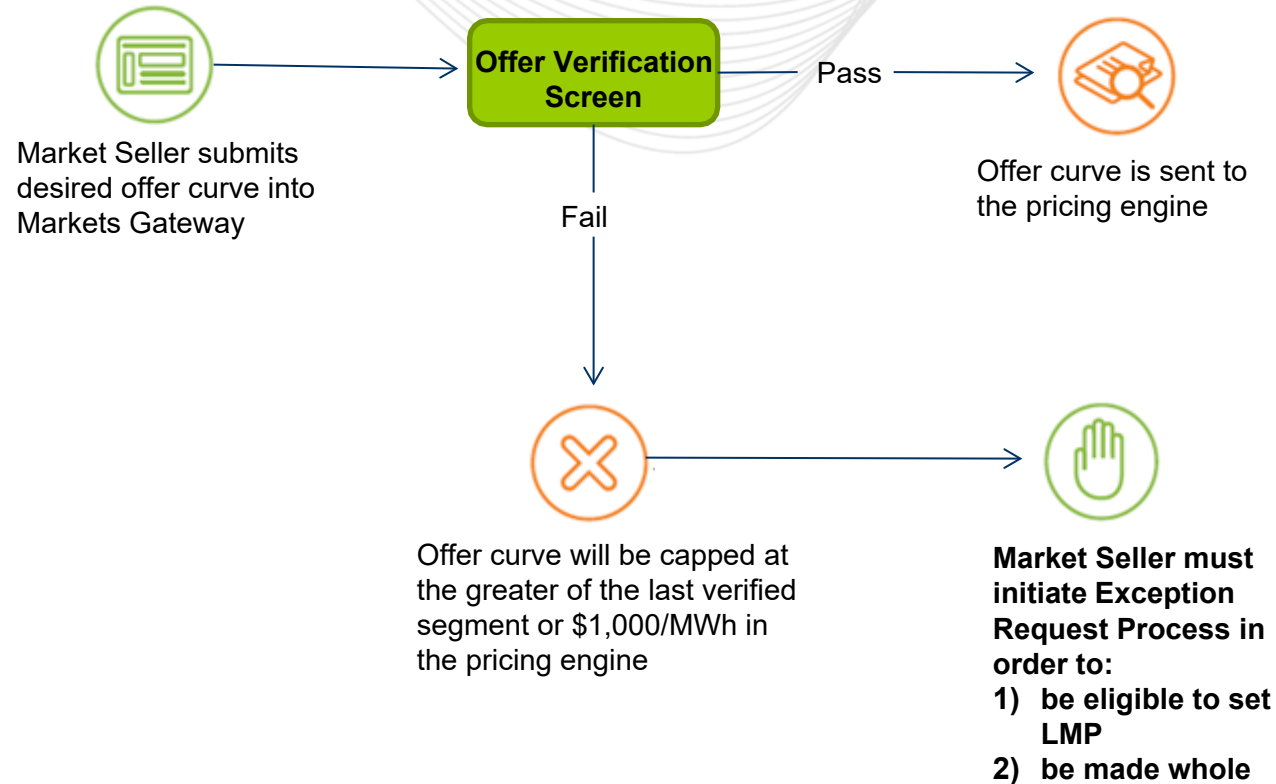
Participants confirm access to:

- PJM Markets Gateway

- Member Information Reporting Application (MIRA):

  – Fuel Cost Policies are up-to-date

  – All cost offer information in the COA MIRA module is accurate and complete

    • For example, the heat input curve, fuel adders and other relevant inputs are consistent with the submitted energy offers

- XML Setup for Fuel Price Exception Step 1 in Markets Gateway

  – XML setup not required but may be helpful

- FERC Order 831 requires validation of incremental energy offers above $1000/MWh prior to being eligible to set LMP
- Composite Energy Offers above $1000/MWh require validation before being eligible to set LMP
- Offers > $1,000/MWh that fail initial validation are capped at $1,000/MWh in Markets Gateway
    - Stakeholders have the opportunity to submit an Exception Request
    - Supporting documentation required for PJM to review request

- **Prior to submission of any Exception Request, ensure the incremental offer(s) are submitted by 11:00AM EPT for potential consideration in the DA Market**
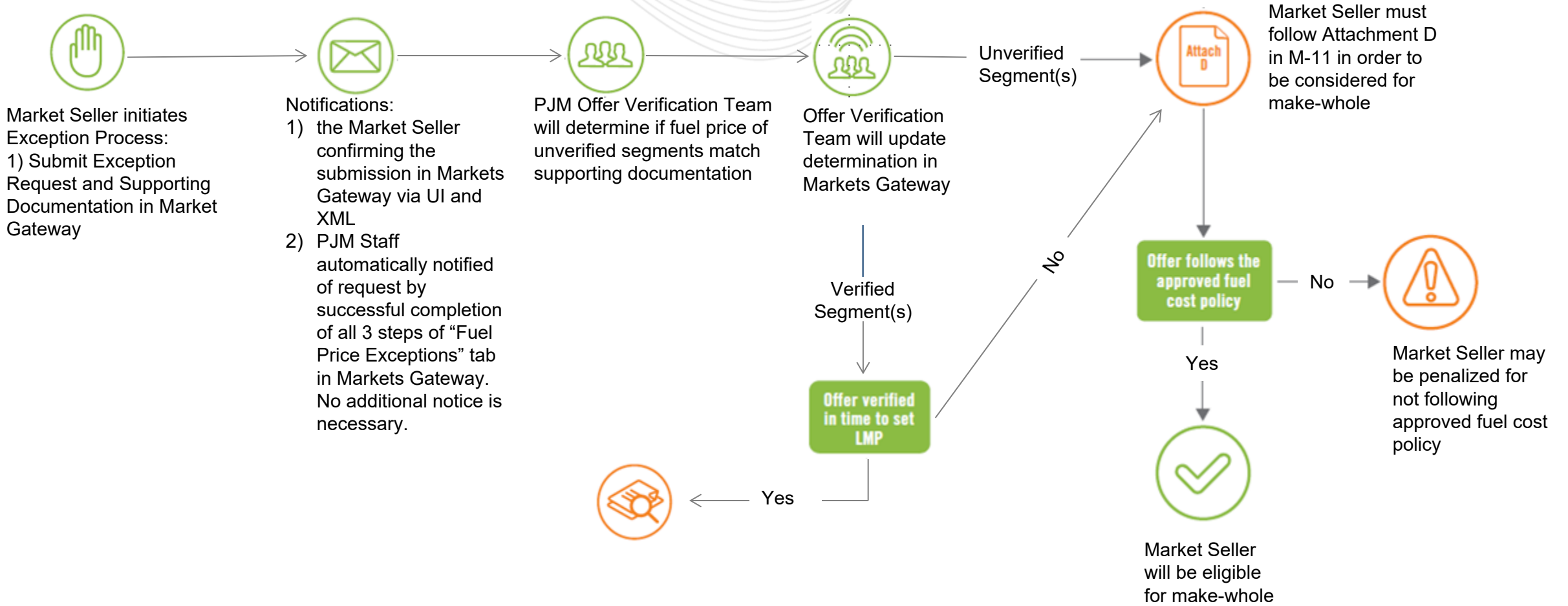
Markets Gateway Submission by Participant

Screening Process

Passed Segments
- **Eligible to set LMP**

Offer Fails/Partially Fails
- Offer capped at the higher of $1,000/MWh or highest verified segment
- Market seller may request Exception

Exception Request

Offer Fully Verified
- Eligible to set LMP

***Offer Partially Verified**
- Offer is capped at the highest verified segment

***Offer Fails Exception**
- No segments verified; offer is capped at $1,000/MWh

There is no requirement to make any verbal communication to PJM when submitting an offer above $1000/MWh or making an exception request. Please send all notifications/questions to EnergyOfferVerification@pjm.com

- Submit Incremental Offers to the Offer Updates Screen in Markets Gateway

- Incremental Offers submitted over $1000/MWh are subject to Markets Gateway automated screen validation

- Incremental Offers that fail validation will be capped at $1000/MWh or highest approved segment

- Stakeholders have the opportunity to submit an Exception Request for Incremental offers that fail validation via the new screen, "Fuel Price Exceptions"

- Exception Requests that are submitted via the new screen are only valid for energy offers over $1000/MWh and fail initial validation

Market Seller submits desired offer curve into Markets Gateway

Offer Verification Screen

Pass

Offer curve is sent to the pricing engine

Fail

Offer curve will be capped at the greater of the last verified segment or $1,000/MWh in the pricing engine

Market Seller must initiate Exception Request Process in order to:
1) **be eligible to set LMP**
2) **be made whole**

Markets Gateway has internal automation logic to screen offers with data it has on the fuels market and may pass the offer on its own. Only if this fails and the offer is capped is there a need to submit an exception request.

Market Seller initiates Exception Process:
1) Submit Exception Request and Supporting Documentation in Market Gateway

Notifications:
1) the Market Seller confirming the submission in Markets Gateway via UI and XML
2) PJM Staff automatically notified of request by successful completion of all 3 steps of "Fuel Price Exceptions" tab in Markets Gateway. No additional notice is necessary.

PJM Offer Verification Team will determine if fuel price of unverified segments match supporting documentation

Offer Verification Team will update determination in Markets Gateway

Unverified Segment(s)

Market Seller must follow Attachment D in M-11 in order to be considered for make-whole

Attach D

Offer follows the approved fuel cost policy

No

Market Seller may be penalized for not following approved fuel cost policy

Yes

Market Seller will be eligible for make-whole

Verified Segment(s)

No

Offer verified in time to set LMP

Yes

$$[\text{Fuel-Related Cost} + \text{Variable Operations \& Maintenance} + \text{Emissions}] \times 10\%$$

- Fuel-Related Costs must follow the approved Fuel Cost Policy
- Variable Operating Cost and Maintenance Adders must be approved by PJM in order to be included
- Emissions rates must be approved by PJM in order to be included

- The 10% adder for incremental costs above $1,000/MWh is gradually reduced to zero:
  - For incremental cost <= $1,000/MWh, adder is up to 10% of incremental cost
  - For incremental cost > $1,000/MWh and <= $1,900/MWh, adder is up to $100/MWh (Capped)
  - For incremental cost > $1,900/MWh and <=$2,000/MWh, adder is up to $2,000 minus incremental cost
  - For incremental cost > $2,000/MWh, adder is equal to zero.
- ➢Cost-based offers that do not adhere to the limitations of 10% adder will be subject to penalties

- Fuel Cost Policy updates since Winter 2021/22:

  - **Weekend/Holiday Natural Gas Estimates.** Default assumption is that market participants are using weekend strip for commodity estimate, unless otherwise specified in their approved fuel cost policy.

  - **Rebid and Intraday Updates.** Rebid and intraday updates to the maximum allowable cost offer must follow the triggers (e.g. time window, pipeline events) specified in the fuel cost policy. Additional triggers must be identified in the approved fuel cost policy in order to update offers more than once per day.

- Effective 12/1/23, new feature for Winter 2023-24 and onwards requires participants to submit supporting documentation for Exception Requests directly in **Markets Gateway > Schedules > Fuel Price Exceptions** screen

- Available in TRAIN environment

- New screen in Markets Gateway enhances the current process by:
  - Simplifying Exception Request submission for Stakeholders
  - Simplifying Exception Request processing for PJM
  - Removing the need for SharePoint (site retired 12/1/23) and additional user accounts
  - **XML submissions supported for Step 1 ONLY**

- Markets Gateway User Guide updated to reflected latest enhancements

- Manual 11 Language changes endorsed by MIC/MRC and effective 11/15/23. (Version 127)

First - Submit Incremental Energy Offers on Offer Updates Screen

Offers that are greater than $1,000 and fail validation will be capped at $1,000. The "Exception Exists" column will indicate "No" for these offers until an exception is successfully submitted on the Fuel Price Exceptions screen.

Second – Complete Exception Request

Markets Gateway

Bilaterals
Demand
▸ Demand Response
▾ Generator
    Unit
    Schedules
    Dispatch Lambda
    Market Results
    Regulation Market
    Synchronized Reserve Ma
    Non-Synchronized Reserv
    Secondary Reserve Marke
    Unit Limitations
Interface Pricing
Opportunity Cost Calculator
Parameter Limits
Price Responsive Demand
Pseudo Tie Transaction
▸ Public
System Utilities
Up-To-Transaction
Virtual
Weather Forecast

Portfolio PORTFOLIO 01   Location TEST UNIT 01 CT   Schedule 99 (99)

Refresh   Save

All three steps are required for submission

Offers | Offer Updates | Detail | Detail Updates | Manager | Selection | Availability Update | Restriction Information | TPS Schedule Switch | **Fuel Price Exceptions** | Composite Offer Verification

PJMTST >> 2023-09-09 >> TEST UNIT 01 CT (UnitID)

STEP 1: Create Fuel Price Exception

Location	Schedule	Start Hour	End Hour	Source of Fuel Price	Fuel Hub Name	Fuel Price	Fuel Cost Policy Number
		Show all					
TEST UNIT 01 CT	99(99)	1	1	Third Party	FuelHub1	150	999999

Note: Right-click in this whitespace and select "Add Item" to be able to insert Exception Request data

STEP 2: Upload Supporting Document ⇐ New step to allow for uploading supporting documentation directly in Markets Gateway

NOTE: Supporting files may be shared for multiple locations and schedules. File operations are auto-saved.

Upload   Download   Modify   Delete

File Name	File Description	Start Day	End Day
Fuel Cost Policy 01.docx	Fuel Cost Policy	2023-09-09	2023-09-10
Fuel Price Quote.JPG	Screenshot of Quoted Fuel Price	2023-09-09	2023-09-10
Numerical Example.xlsm	Numerical Example Template	2023-09-09	2023-09-10

Note: Select "Upload" button to upload supporting documentation files to Step 2, then add a description and select the Start/End Days

STEP 3: Assign File to Location / Schedule ⇐ New step to allow for assigning the uploaded supporting documentation to the appropriate Location and Schedule

File Name	Location and Schedule	Start Hour	End Hour
Fuel Cost Policy 01.docx / Fuel Cost Policy	TEST UNIT 01 CT / 99	1	1
Fuel Price Quote.JPG / Screenshot of Quoted Fuel Price	TEST UNIT 01 CT / 99	1	1
Numerical Example.xlsm / Numerical Example Template	TEST UNIT 01 CT / 99	1	1

Note: Right-click in this whitespace and select "Add Item" to be able to select a File Name & Location / Schedule from the respective dropdowns

XML submissions supported for Step 1 ONLY

Summary of Annotations from Previous Slide

- All 3 Steps required for successful submission.

- XML submissions supported for Step 1 ONLY.

- Step 1: Existing step in Markets Gateway
  - Right-click in the white space and select "Add Item" to be able to insert Exception Request data

- Step 2: New step to allow for uploading supporting documentation directly in Markets Gateway
  - Select "Upload" button to upload supporting documentation files to Step 2, then add a description and select the Start/End days

- Step 3: New step to allow for assigning the uploaded supporting documentation to the appropriate location/schedule.
  - Right click in the whitespace and select "Add Item" to be able to select a file name & Location/Schedule from the drop downs. Drop Downs will be pre-populated with data if Steps 1 and 2 are completed.

Please provide the commodity price only in the "Fuel Price" field and account for any other adders/emissions in your numerical example which should also be reflected in COA MIRA module.

- PJM will review the approved Fuel Cost Policy and the supporting data that is provided to determine if exception should be granted

- Required documentation to be submitted:

  – Receipt, screenshot of ICE, brokers quote, etc. to verify estimated fuel cost

  – Highlighted/Annotated relevant portion of the approved Fuel Cost Policy to help expedite the review process

  – Excel document showing the construction of the Cost Development Calculation

- SharePoint/PJM Connect submissions of supporting documents will no longer be supported and login to this site is **no longer** needed to be maintained.

- All fields are required including the file name, description, and start/end dates
  - Files can be applicable for and span multiple days
- A user cannot submit duplicate file names for a unit. Please add specifics to file name such as a date to make every file name unique
  - Example: *quote.jpg* cannot be submitted twice including for different market days
- Files are available to participant/subaccount
  - Files can be applicable for multiple portfolios
- All files uploaded are subject to virus scanning by PJM
- Individual file uploads cannot exceed 500MB
- Do not upload .zip files
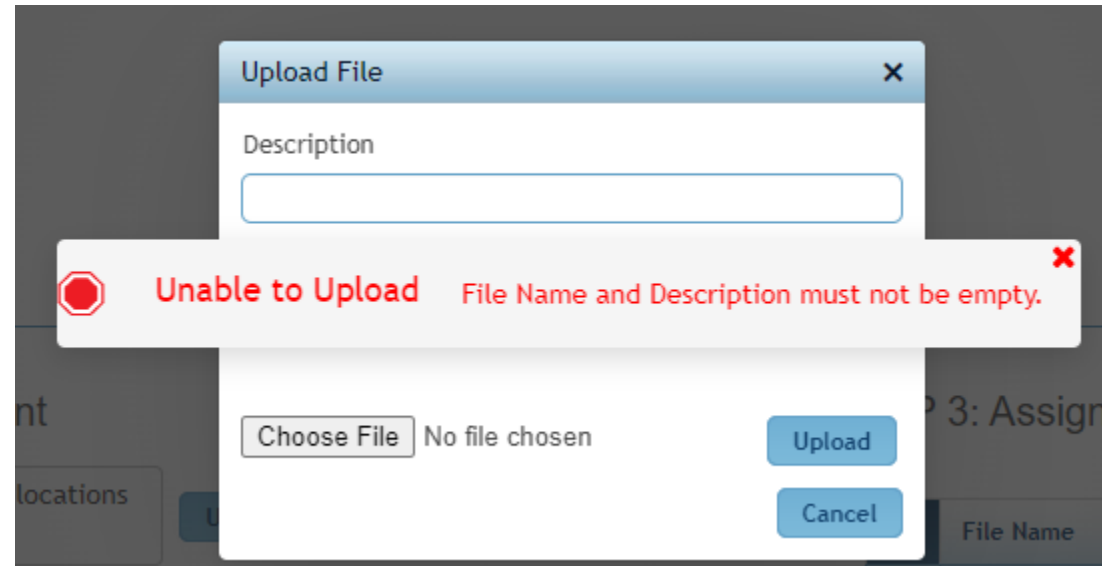
Example: If files are applicable to 11/4, then Start Day is 11/4 and End Day is 11/4.
    If files are applicable to 11/4-11/5, then Start Day is 11/4 and End Day is 11/5.

| Offers | Offer Updates | Detail | Detail Updates | Manager | Selection | Availability Update | Restriction Information | TPS Schedule Switch | Fuel Price Exceptions | Composite Offer Verification |

PJMTST >> 2023-11-04 >> PJM TEST UNIT 01 CT (UnitID)

STEP 1: Create Fuel Price Exception

Location		Schedule	Start Hour	End Hour	Source of Fuel Price	Fuel Hub Name	Fuel Price	Fuel Cost Policy Number
			Show all					
PJM TEST UNIT 01 CT		1(1)	1	1	Third Party	FuelHub01	250	12345

File upload error

File with same name [Step 02 Screenshot - 2023.11.04.JPG] is already uploaded for Start Day [04-Nov-2023] End Day [05-Nov-2023]

STEP 2: Upload Supporting Document

NOTE: Supporting files may be shared for multiple locations and schedules. File operations are auto-saved.

Upload | Download | Modify | Delete

File Name	File Description	Start Day	End Day
Step 02 Screenshot - 2023.11.04.JPG	Fuel Price Quote 01	2023-11-04	2023-11-05

STEP 3: Assign File to Location / Schedule

File Name	Location and Schedule	Start Hour	End Hour

To ensure a timely review of your exception request, please complete all steps and save the changes.

Third - Verify Exception Request Submitted

- Step 1:
  - An exception request must exist for all hours above $1000/MWh that require PJM review.
  - If a resource has multiple schedules with offers above $1000/MWh, then each schedule requires its own exception request
    - For example: if schedules 1, 79, 99 have segments above $1000, 3 rows/requests should be submitted.
  - If the commodity price is the same across hours per schedule, then one row/request can be applicable for multiple hours.
    - For example: if Fuel Price applies to hours 11-24 for one schedule, then just need one row in Step 1 spanning those hours.

- Step 2:
  - If applicable, the supporting documentation can be used to justify multiple schedules across multiple days.
    - For example: If the same price quote is applicable for all three schedules for the respective resource, then only 1 file upload is required.

- Step 3:
  - Each schedule with offer above $1000/MWh in Step 1 will require a mapping to the supporting document in Step 3.
    - For example: If three files are loaded in Step 2 which justify all 3 schedules, then there would be nine rows in Step 3 to tie each of the files to each schedule.

- Steps 2 and 3 are not XML capable so these will be entered via the UI.

- **All 3 steps on Exceptions screen are required for a successful submission**

- PJM will review Fuel Cost Policy in addition to supporting documentation submitted to Markets Gateway via Step 2 of Fuel Price Exceptions screen to determine if exception should be granted

  – Verify Exception submitted successfully via "Exception Exists" column on Offer Updates page changing from "No" to "Yes"

- If Exception Request is approved, the Max Allowable Offer Price (MAOP) will be updated and any segments at or below MAOP will be considered passed

- No additional action will be required if Exception Request is approved

- Stakeholders can reference the "Capped Price" column in the Offer Updates screen of Markets Gateway to confirm if request is approved

If Exception Request is approved, MAOP will be updated to the new calculated price, and no additional action is required

Any modification to an approved offer will return the offer to be capped at $1000 and require PJM review and approval again.

- PJM will make every effort to process Exception Request in a timely manner

- There is a risk that Exception Request(s) submitted close prior to the DA Market Closing and PJM unable to review/process them in time for the DA Market consideration

- The request may be approved after this deadline and the offer may be considered in the RAC run and in Real-time Market.

- These requests require manual review by PJM and IMM Staff, which can take time depending on the complexity of the request.

- Manual 11, Attachment D details the only procedure by which Market Sellers that incur incremental operating costs for a generation resource committed by PJM with offer(s) greater than $1,000/MWh, which did not pass the offer screening process, as described in Section 2.3.6.2 of this Manual, in time to set LMP for all or a portion of the operating day can receive credit for Operating Reserves.

- Generation owners of resources committed by PJM that meet the eligibility criteria to be compensated using this procedure have until **11:00 EPT** on the business day following the operating day to invoke the procedure even if all additional information is not available by following the communication procedure within Attachment D.

- Specify a reference Cost-based schedule for respective Market based offer (Price and/or PLS schedule)
- Have certain offer data <u>identical</u> to "Reference Cost-based Schedule"
  - MW Blocks
  - Use Bid Slope
  - Fuel Type
- Have offer values less than or equal to "Reference Cost-based Schedule"
  - Startup and No-load offers
  - Incremental energy curve prices per segment
- ➢ Participants can alternatively select "Switch to Cost" and remove the market based schedule from consideration

- Reference Cost Schedule for Market based offers can be entered in Markets Gateway under Generator > Schedules > Detail Updates screen

- Implemented September 1, 2021
- Fast Start Capable resources Composite Energy Offer above $1000/MWh will be subject to Offer Verification
  - Generation Resources
  - Economic Load Response Resources
- Composite Energy Offer = incremental offer + amortized No Load cost + amortized Startup cost
  - Startup and No load cost are always considered for Offer Verification purposes under Fast Start Pricing
- See appendix for information on FS capable and eligible resources

- No changes to the existing logic for validating incremental energy offers submitted to Markets Gateway
  - If incremental energy offer > $1000
- No exception process to adjust Startup and/or No Load if it fails validation
- Fast Start resources with Composite Energy Offer above $1,000/MWh, will be screened and validated each time a variable affecting the Composite Energy Offer calculation is changed
- Parameters that may affect Composite Energy Offer calculation
  - Incremental Offer
  - Startup Cost
  - No Load Cost
  - Economic Maximum MW
  - Minimum Run Time

- Markets Gateway provides information if the Composite Energy Offer is above $1,000/MWh for Fast Start Resources
- Screen details:
  - Read-only display
  - All inputs used to calculate the composite offer
  - Composite Energy Offer calculated at Ecomax
  - Results of automated validation of Startup Cost and No Load Cost (For Generators only)
    - Shutdown Cost for Economic Load Response
  - Results can be viewed by participant or individual unit level
  - Supports XML

Markets Gateway Composite Energy Offer Display

Market Day

Refresh | XML | CSV

Offers | Offer Updates | Detail | Detail Updates | Manager | Selection | Availability Update | Restriction Information | TPS Schedule Switch | Fuel Price Exceptions | **Composite Offer Verification**

Hour	Location	Schedule	Calculated Composite Offer	Noload Incremental Valid	Cold Startup Cost Valid	Noload Cost	Cold Startup Cost	Incremental Offer At Economic Maximum	Economic Maximum	Minimum Runtime	Hot Startup Time	Notification Time	Use Slope
Show all			Show all			Show all	Show all	Show all	Show all	Show all	Show all	Show all	
1		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
2		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
3		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
4		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
5		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
6		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
7		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
8		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
9		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
10		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
11		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
12		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
13		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
14		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
15		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
16		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
17		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
18		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
19		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
20		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
21		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
22		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
23		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No
24		Cost-s (2)	1048.66	No	No					2	0.25	0.1	No

- Markets Gateway User Guide: [Offer Verification Exception Request](#)

    – Section 8.18

- XML Guide: [Submit Unit Fuel Price Exception](#)

    – Section 6.22

- Manual 11 – [M11](#)

- PJM Offer Verification – [Website](#)

- Member Information Reporting Application (MIRA) – [Website](#)

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- Fast Start Eligible

- Fast Start Capable

- Fast Start Offer Verification Details

- Fast Start Offer Verification Examples

- Units must first be classified as Fast-Start capable in order to qualify for Fast-Start Pricing
- Generators based on technology type are pre-defined as Fast-Start Capable by default
- Resource not classified as Fast-Start capable may seek to be Fast-Start capable during the annual review period
    - Deadline to submit request: April 15
    - PJM review period (includes consultation with IMM): April 15 – May 31
    - Effective: June 1 and onwards
- Supporting data must be provided to prove unit can startup within one hour
- If unit cannot meet their bid in parameters, may lose Fast-Start capable designation
    - To be reconsidered, the unit may submit supporting data during the annual review period

- Resources classified as FS capable by default:
  - Generation Type:
    - Fuel Cells
    - All CTs
    - Diesels
    - Hydro
    - Battery
    - Solar
    - Landfill
    - Wind

- All Economic Load Response

- Resource classified not FS capable by default*:
  - Combined Cycle
  - Steam
  - Nuclear

*Resources may request to be considered FS Capable

- Once a unit is deemed Fast-Start capable, they must also meet the following requirements in order to qualify for Fast-Start Pricing:

  - Notification Time + Startup Time <= 1 hour

  - Minimum Run Time <= 1 hour

  - Resources must be online and running for PJM

- Pumped Hydro resources using the PJM Hydro Optimizer, partially Pseudo-tied resources, and dynamically scheduled resources are not eligible for Fast-Start Pricing

For Generation Resources:

- If the Composite Energy Offer is calculated to be above $1,000/MWh at the resource's economic maximum
  - Startup cost and no load cost plus incremental offer will automatically be validated
  - New display in Markets Gateway to provide validation results
  - No changes to existing logic for validating incremental energy offers above $1,000/MWh
  - Applies to both cost and price-based offers
  - Each component of the price-based offer must be less than or equal to the reference cost based components

- Composite Energy Offers cannot be above $2,000/MWh for the purpose of setting LMP

For Economic Load Response (ELR):

- If Composite Energy Offer is above $1,000/MWh:

  – Shutdown cost must be validated by the ELR team

  – The Market Seller is to provide PJM supporting documentation in **advance** that supports the end use customer's incremental and shutdown costs if they exceed $1,000/MWh

  – No changes to the existing logic for validating incremental energy offers

- Composite Energy Offers cannot be above $2,000/MWh for the purpose of setting LMP

- The following rules will be applied if the composite energy offer above $1000/MWh needs to be capped

Startup	No Load	Composite Offer	Adjustment (If needed)
Pass	Pass	Incr + SU + NL	None
Pass	Fail	Incr + SU + adjustment	Take from No Load to get offer to $1000, up to submitted value
Fail	Pass	Incr + NL + adjustment	Take from Startup to get offer to $1000, up to submitted value
Fail	Fail	Incr + adjustment	Take from No Load first, up to submitted No Load, then from Start Up, to get to $1000

- For each segment on the incremental offer curve:
  - **Composite Energy Offer** = incremental offer + (no load ($) / EcoMax (MWh)) + (startup ($) / (EcoMax (MWh)*min run time))
- Reasonability Check for Startup Cost
  - **Startup Cost ($)** = [[(Performance Factor) x (Start Fuel) x (Fuel Cost)] + Start Maintenance Adder + Additional Start Labor + Station Service Cost] x (1.1)
- Fast Start Resource Example:

Incremental Offer	Amortized Startup Cost	Amortized No Load	Composite Energy Offer	Offer above $1,000/MWh	Subject to Offer Verification?
$700	$100	$100	$900	No	No
$700	$200	$200	$1,100	Yes	Yes

Example 1

Scenario: Startup Fails, No Load passes with uncapped composite offer above $1000 at Economic Maximum

	Submitted Amortized Cost	Validation Test Result
Startup	200	Fail
No Load	100	Pass

Min Run Time	1 Hour
Ecomax	40 MW

Incr. Offer Curve		Submitted ASU ($/MWh)	Submitted ANL ($/MWh)	Uncapped Offer ($/MWh)	Incr. Offer Curve ($/MWh)	Effective ASU (($/MWh)	Effective ANL ($/MWh)	Modified Composite ($/MWh)
MW	($/MWh)							
40	900	200	100	① 1,200	900	② 0	100	1,000

① Original submitted composite offer is above $1000; therefore, offer verification is triggered

② Since Startup failed, exclude Startup cost from verified composite offer

*After the minimum run time has been met, the modified composite offer at the bid in Economic Maximum will remain at $1000 as the updated verified composite offer is $1000.

Example 2

Scenario: Verified composite offer below $1000 and failed startup is needed to cap offer at $1000

	Submitted Amortized Cost	Validation Test Result
Startup	200	Fail
No Load	100	Pass

Incr. Offer Curve		Submitted ASU ($/MWh)	Submitted ANL ($/MWh)	Uncapped Offer ($/MWh)	Incr. Offer Curve ($/MWh)	Effective ASU (($/MWh)	Effective ANL ($/MWh)	Modified Composite ($/MWh)
MW	($/MWh))							
40	725	200	100	1,025	725	175	100	1,000

Min Run Time	1 Hour
Ecomax	40 MW

① Original uncapped composite offer is above $1000; therefore, offer verification is triggered

② Since No Load pass reasonability test, included it in the composite offer

③ Since verified offer is below $1000, additional startup cost is needed to get the composite offer to $1000
   A. $175 amortized Startup cost is needed [$1000 – (725+100)]

*After the minimum run time has been met, the verified composite offer is $825 ($725 incremental offer + $100 of amortized No Load).

Example 3

Scenario: Incremental offer is above $1000 with NL passed

	Submitted Amortized Cost	Validation Test Result
Startup	200	Fail
No Load	150	Pass

Min Run Time	1 Hour
Ecomax	40 MW

Incr. Offer Curve		Submitted ASU ($/MWh)	Submitted ANL ($/MWh)	Uncapped Offer ($/MWh)	Incr. Offer Curve ($/MWh)	Effective ASU (($/MWh)	Effective ANL ($/MWh)	Modified Composite ($/MWh)
MW	($/MWh))							
40	1050	200	150	1,400	1050	0	150	1,200

1 Original uncapped composite offer is above $1000; therefore, offer verification is triggered

2 Since No Load pass reasonability test, included it in the composite offer

3 Capped composite offer during minimum run time is $1,200 (Exclude Startup)

*After the minimum run time has been met, the verified composite offer would *still* be $1,200 ($1,050 + $150 No Load).