



**BPA's Public Engagement for Establishing a Policy Direction on Potential Day Ahead Market (DAM) Participation - Workshop 8**  
July 18, 2024

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# Agenda

- Update on the Pathways Initiative
- Day-Ahead Market from the Transmission Perspective

# Key dates for CY24

- Additional workshop dates:
  - August 6-7
  - September 19
- The August workshop will continue DAM related scenario discussions and feature analysis which Bonneville contracted for with E3
  - A full list of planned market scenarios can be found [at BPA.gov](https://www.bpa.gov).
- The September workshop will walk through the draft policy direction to address requests for clarification

# What is BPA's DAM Decision timeline for CY24?

2024

Jul

Aug

Sep

Oct

Nov

**DAM Public Workshop 8**

Jul 18

**DAM Public Workshop 9**

Aug 6 - Aug 7



**Draft Letter to the Region**

Aug 29

**Letter to the Region Public Workshop**

Sep 19

**Final Letter to the Region**

Nov 22



2024



# Pathways Update



# Pathways Update

- CAISO has launched a policy initiative on Pathways Step 1 and BPA is engaging in that initiative, most recently by submitting comments in response to the proposal.
- BPA recently assigned staff to participate in four of the Pathways Step 2 work groups. BPA also continues to attend all Pathways public meetings.
- BPA sees the Pathways work as important for determining if and how CAISO markets can move towards independent governance, including limiting the authority of any one state. The governance of CAISO markets is important to BPA and its customers regardless of BPA's DAM policy direction.
- BPA continues to encourage the Pathways Initiative to make all meetings, including its work groups, open for increased transparency.



# Day-Ahead Market from the Transmission Perspective



# Topics

- Summary of Day-Ahead Market Comment Themes on Transmission
- Topics for Future Workshops / Unknowns
- Transmission in a Day-Ahead Market
  - Transmission design overviews for EDAM and Markets+
  - Day-Ahead Market Process Timeline from the Transmission Perspective
  - Transmission Made Available for Market Use (SFC) examples
- Day-Ahead Market Considerations for BPA Transmission Products and Services



# Day-Ahead Market Comment Themes on Transmission

- Transmission Customers would like to gain a better understanding of:
  - their transmission rights
  - ability to redirect and/or resell transmission (PTP only)
  - scheduling on BPA's system
  - ability to opt out transmission rights from the market
- Request for transmission utilization in a day-ahead market, including request for "Day-in-the-Life" walk-through
- Request for transmission scenarios
- Impact to transmission service (specifically STF and NF)
- Cost recovery and concerns of cost shifts between customers (specifically PTP to NTs)
- Concerns of erosion of LTF for PTP customers
- Congestion rent eligibility
- Availability of BPA transmission in the DA and RT horizon that can be purchased by non-M+ entities
- Business case
- Seams

# Transmission Topics for Future Workshops

- Today's purpose is to share information from the current evaluation phase of DAM transmission design elements and identify its potential impacts on BPA transmission products and services for the future implementation phase, if the decision is to join a DAM.
- BPA will address transmission revenue and seams in the future as market developments mature.

# Unknowns

- There are a number of unknowns as BPA evaluates whether to participate in a DAM:
  - Final Markets+ (M+) Tariff (pending FERC response to SPP filing on M+ Tariff requested by late July 2024)
  - Final EDAM Business Practice Manuals and M+ Protocols
  - EDAM and M+ Requirements for Technical Implementation
  - Required changes to BPA OATT and Business Practices, systems, and processes



# Transmission Design Overviews for EDAM and Markets+



# Transmission Design Overview

- Day-Ahead Market (DAM) frameworks will rely upon transmission made available by Market Participants, Transmission Service Providers, and transmission customers to facilitate the transfer of energy across the market footprint
- There are currently two DAM offerings, EDAM and Markets+, with the following transmission design similarities:
  - The Market Operator will respect Market Participants' existing transmission rights.
  - The Market Operator will be informed of transmission that will be made available for the market's use and transmission that is not made available for the market's use according to the respective market's rules.
  - Tagging is required if importing/exporting to/from the DAM footprint or wheeling through the DAM footprint. Tagging is not needed within the DAM footprint for market clearing purposes, but Market Participants are able to "self-schedule" if desired.
  - Participating Transmission Service Providers, Transmission Owners and Transmission Operators will retain their existing BAA and transmission owner/operator functions and responsibilities.
  - Participating TSPs will maintain their open access transmission tariff (OATT), administer their OASIS, and continue to sell firm and non-firm transmission service as they normally do, pursuant to their respective OATTs.
  - Participating TSPs are required to pause processing of TSRs for the next operating day during the DAM clearing process.

# EDAM Transmission Design

- Transmission availability is effectuated through the “buckets” framework, and parties can also continue to exercise their OATT rights.
  - “**Bucket 1**” is transmission across EDAM area interfaces made available to the market supporting the Resource Sufficiency Evaluation (RSE) (supply from neighboring EDAM areas that is delivered supporting the RSE, can be economically bid or self scheduled including if parties elect to exercise their specific OATT rights which the market will not optimize).
  - “**Bucket 2**” is transmission that is released in advance (that otherwise is not supporting the RSE) as well as transmission that is left unscheduled by DA market run.
  - “**Bucket 3**” is all unsold ATC (by 10am on DA), which is made available to the market by the TSP
- Transmission rights are registered with CAISO and a Contract Reference Number (CRN) is assigned to the transmission rights.
- EDAM Entities may exercise their existing OATT rights and self-schedule associated with the CRN
- Transmission may be carved out of the market under limited circumstances specified in the EDAM Entity’s Tariff.
- The Market Operator will respect Market Participants’ existing transmission rights.
- Congestion rent design is differentiated between Congestion Revenue (binding constraint internal to the BA) and Transfer Revenue (binding constraint occurs across an interface between BAs at a transfer location).

# Markets+ Transmission Design

- For M+, Market Participants' transmission rights are considered “all in” for market use unless specifically opted out.
- Market Participants, Transmission Service Providers, or transmission customers can make transmission available for the market.
  - Unsold transmission from the TSP and scheduled and unscheduled transmission from the transmission customer or Market Participant is considered available for M+ use.
- SPP will rely on the Participating BAs and M+ TSPs to inform the Market Operator what transmission is available for M+ use.
- For M+ Transmission Contributors, SPP will work with the M+ Transmission Contributor, non-participating TSP, and associated BA to ensure those contributed rights are available for M+ use in accordance with the TSP's OATT.
  - Non-Participating TSPs and BAs are not obligated under M+ tariff to interact with SPP, but SPP is obligated to take their input if they provide information related to transmission contributor model.
- Market Operator will create and maintain constraints in the market optimization based on the transmission available to M+.
- Congestion rent design leverages OATT framework and LT right holder's investments (PTP reservations and NITS rights (billed peak allocation on a given constraint))

# Markets+ Transmission Design

- **Markets+ Transmission Capability (from M+ Tariff):** Any transmission capability that has been identified by either Markets+ Transmission Service Providers or Markets+ Transmission Contributors as available to Markets+ for use in the Day-Ahead Market and in the Real-Time Balancing Market, regardless of whether the capacity has been reserved or scheduled.
- **Service Flow Constraint (SFC):** Intended to represent a commercial constraint that manages market flows attributed to the market, not total physical flow
  - For example, a limit on a flowgate (or path) that is less than the physical limit due to a commercial constraint (e.g., opt-outs, rights, etc.). Market flow is associated only with resources and loads within the M+ footprint.



# Markets+ Transmission Design: Opt-Outs

- Markets+ Transmission Opt-Outs are transmission rights owned by a transmission customer on a participating M+ TSP's system that are not available for Markets+. Examples may include:
  - Transmission customers not participating in any day-ahead market
  - EDAM Participants with OATT Transmission rights that want to be optimized by EDAM
  - Transmission rights that support pseudo-tied generation and load out or across the M+ Participating BAA/TSP
- The Market Participant will submit an opt-out request for a specified duration (or indefinitely) to the M+ TSP for approval subject to individual OATT or other governing document requirements.

# Markets+ Transmission Design: Opt-Outs

- Participating BAs, in coordination with M+ TSPs, will communicate to the Market Operator the transmission capability available for the market.
- Communication to the Market Operator for transmission opt-outs must be made 15 days prior to the start of the month, for the upcoming operational month.
  - Approval from the M+ TSP must be completed prior to the Market Operator deadline
  - Example:
    - Eligible: Communicate to Market Operator by July 16 for August 1 through 31 (whole calendar months)
    - Not Eligible: Communicate to Market Operator by July 16 for August 10 through September 10
- Market Participants opt-in/out status persists until it is changed. There is a monthly opportunity to change the status and will remain as such until it is actively changed.

# Markets+ Transmission Design: Opt-outs

- Qualified opt outs must be monthly duration or longer
  - The service increment (duration) must span the full applicable calendar month
  - Weekly, daily, and hourly transmission do not qualify for opt-outs
- Transmission that is opted out is no longer eligible for congestion rent in Markets+, nor market optimization to help serve schedules on that transmission
  - Transmission opt-out communication timing aligns with the congestion rent eligibility snapshot.
- Note: Transmission that is not opted out can still be used



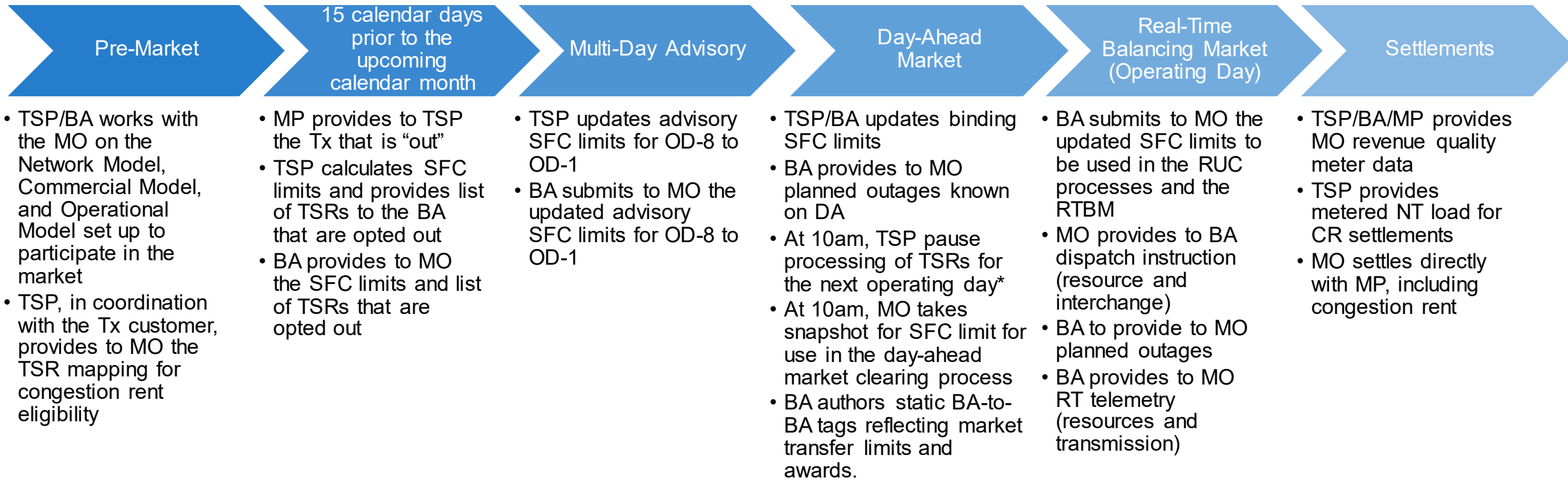
# Transmission in a Day-Ahead Market



# Transmission in a Day-Ahead Market Illustrations

- Today's illustrations present a high-level overview of how Transmission may work in a Day-Ahead Market (DAM) building on the examples shared at the [May 8, 2024 Workshop \(see slides 26-66\)](#) and [June 3, 2024 Workshop \(see slides 16-40\)](#).
  - Day-Ahead Market Process Timeline for Transmission Activities
  - Transmission Made Available for Market Use (SFC) examples

# Markets+ Day-Ahead Market Process Timeline for Transmission Activities (TSP/BA Perspective)



BA = Balancing Authority  
 CR = Congestion Rent  
 MP = Market Participant  
 OD = Operating Day  
 RTBM = Real Time Balancing Market  
 RT = Real Time

RUC = Reliability Unit Commitment  
 SFC = Service Flow Constraint  
 TSP = Transmission Service Provider  
 TSR = Transmission Service Request  
 Tx = Transmission

\*TSRs may still be submitted but will not be processed until queue opens. TSPs may continue processing TSRs for current day and OD+1 and beyond

# Markets + Day-Ahead Market Process Timeline for Transmission Activities (Market Participant Perspective)



- MP registers with the MO its load, generation, and transmission, includes:
  - Tx capability from participating M+ TSP
  - Opt-in Tx capability on non-participating TSP
- MP coordinates with TSP on TSR mapping for congestion rent eligibility

- MP can tag self-schedules, conduct sales on transmission secondary market, and redirect transmission rights
- MP must complete the transmission opt out request/approval
- MO will scrape the TSRs provided by the MP and/or TSP for congestion rent verification

- MP can tag self-schedules, conduct sales on transmission secondary market, and redirect transmission rights

- Prior to 10am, MPs can conduct sales on transmission secondary market, and redirect transmission rights
- Prior to 10am, MP authors tags or updates tags for interchange transactions leaving/entering the M+ footprint (imports / exports / wheels) (including self-schedules)

- Prior to T-30, MPs can tag self-schedules, conduct sales on transmission secondary market, and redirect transmission rights

- TSP/BA/MP provides MO revenue quality meter data
- MO settles with MP - Market Transmission Use (MTU) Charge
- MO settles with the MP on congestion rent, if applicable
- MO settles with the TSP for any unsubscribed congestion rent
- TSP suballocates to transmission customers as appropriate (e.g., credits and debits, uplift charges, etc)

BA = Balancing Authority  
 CR = Congestion Rent  
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# Transmission Available for Market Use





# Transmission Made Available for Market Use

- The use of the M+ market design for the scenarios is done to demonstrate how transmission may work in a day-ahead market construct per BPA's Staff Recommendation on day-ahead markets.
- The following slides are illustrative examples of transmission made available for market use and the associated service flow constraint limit:
  - How a transmission customer may make transmission on a participating Transmission Service Provider's system available for market use.
  - How a Market Participant (M+ Transmission Contributor) that has transmission rights on a non-participating Transmission Service Provider's system available for market use.

# Transmission Made Available for Market Use

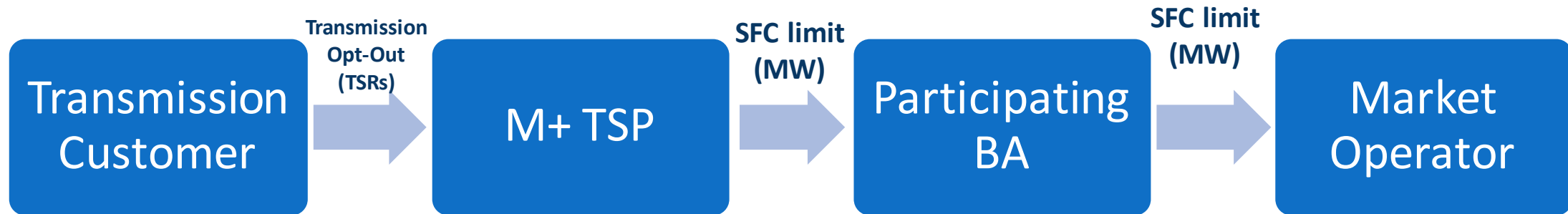
- The illustrative examples are simple scenarios
  - Assuming 1:1 paths and do not represent BPA Transmission flow-based paths
  - Represents a single hour for a single path
- Service Flow Constraint (SFC): Intended to represent a commercial constraint that manages market flows attributed to the market, not total flow
  - For example, a limit on a flowgate (or path) that is less than the physical limit due to a commercial constraint (e.g., opt-outs, rights, etc.). Market flow is associated only with resources and loads within the M+ footprint.

# Transmission Made Available for Market Use – Market Operator

- SPP does not sell transmission service and is not the BA in Markets+. The Market will respect underlying transmission rights.
- SPP will rely on the Participating BAs and M+ TSPs to inform the Market Operator what transmission is available for Markets+ use.
- For Markets+ Transmission Contributors, SPP will work with the Markets+ Transmission Contributor, non-participating TSP, and associated BA to ensure those contributed rights are available for Markets+ use in accordance with the TSP's OATT.
  - Non-Participating TSPs and BAs are not obligated under M+ tariff to interact with SPP, but SPP is obligated to take their input if they provide information related to transmission contributor model.

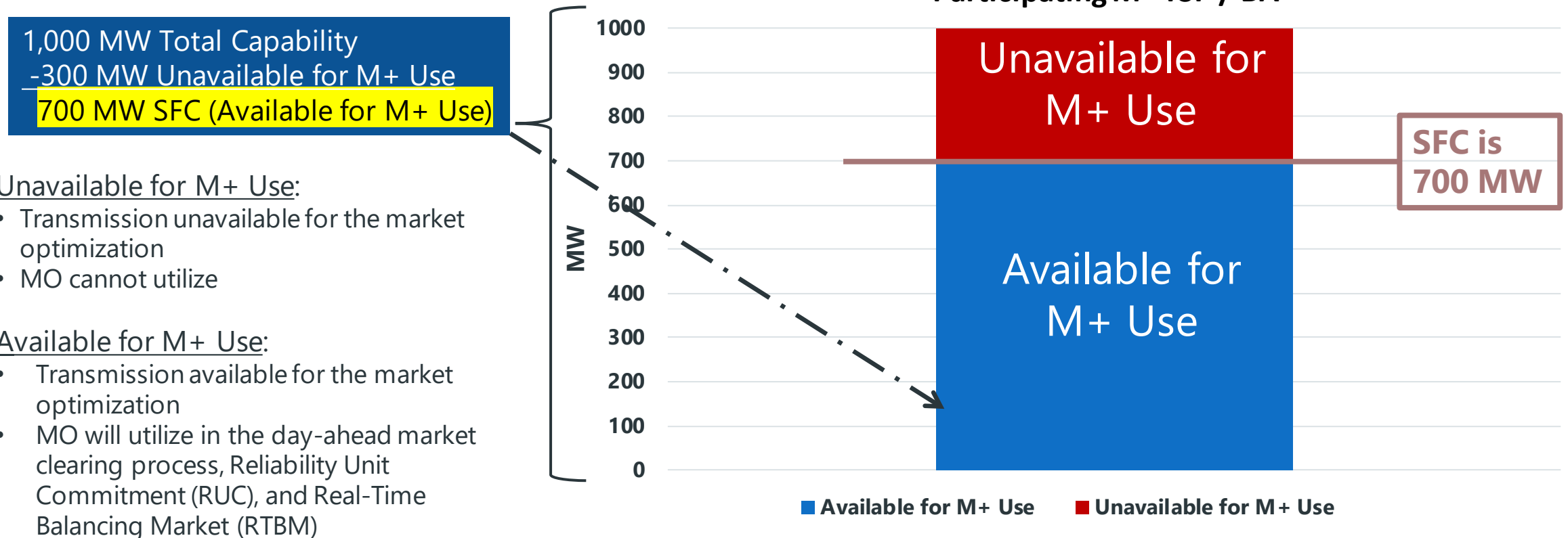
# Communication Chain – Market Participant

- Market Participant's transmission rights on a participating M+ TSP system is assumed "in" unless communicated to opted out. Communication is only required for opting out transmission from the market optimization.



## Transmission made available for market use

- High-level illustrative example on a single path for a single hour
- The BA, in coordination with the TSP, will limit the transmission available to the M+ Footprint via SFC limit.
- The Markets+ systems will be configured to exclude the transmission not available for Markets+ optimization for the appropriate timeframe.



# Transmission made available for market use

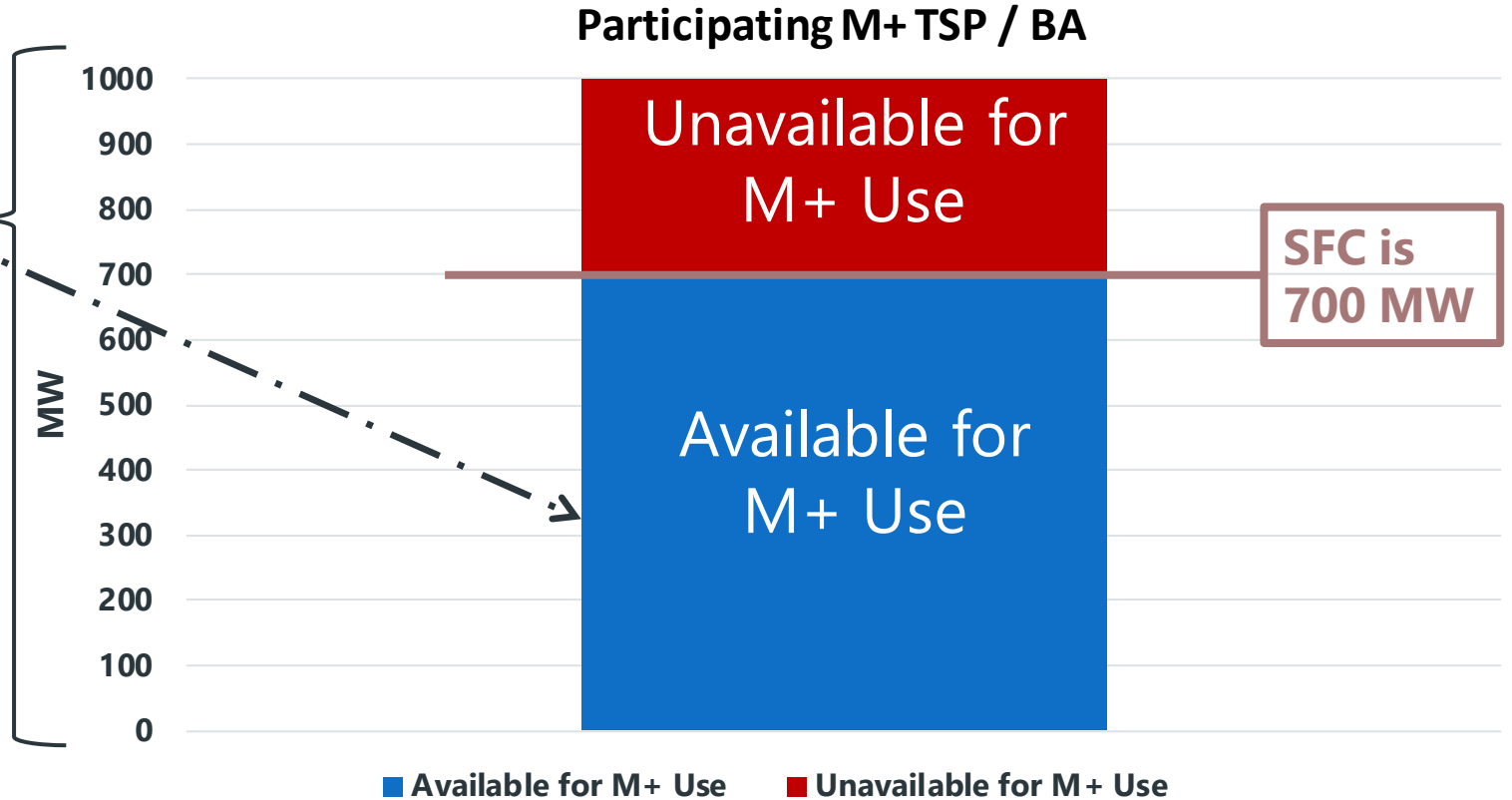
1,000 MW Total Capability  
 -300 MW Unavailable for M+ Use  
 700 MW SFC (Available for M+ Use)

Unavailable for M+ Use Examples:

- If there are multiple owners on paths and/or interchanges, only the participating TSP/BA share of transmission can be made available to the market (e.g., NWACI)

Available for M+ Use Examples:

- Participating TSP share of transmission (unsold)
- Market participants' transmission rights (scheduled and unscheduled)



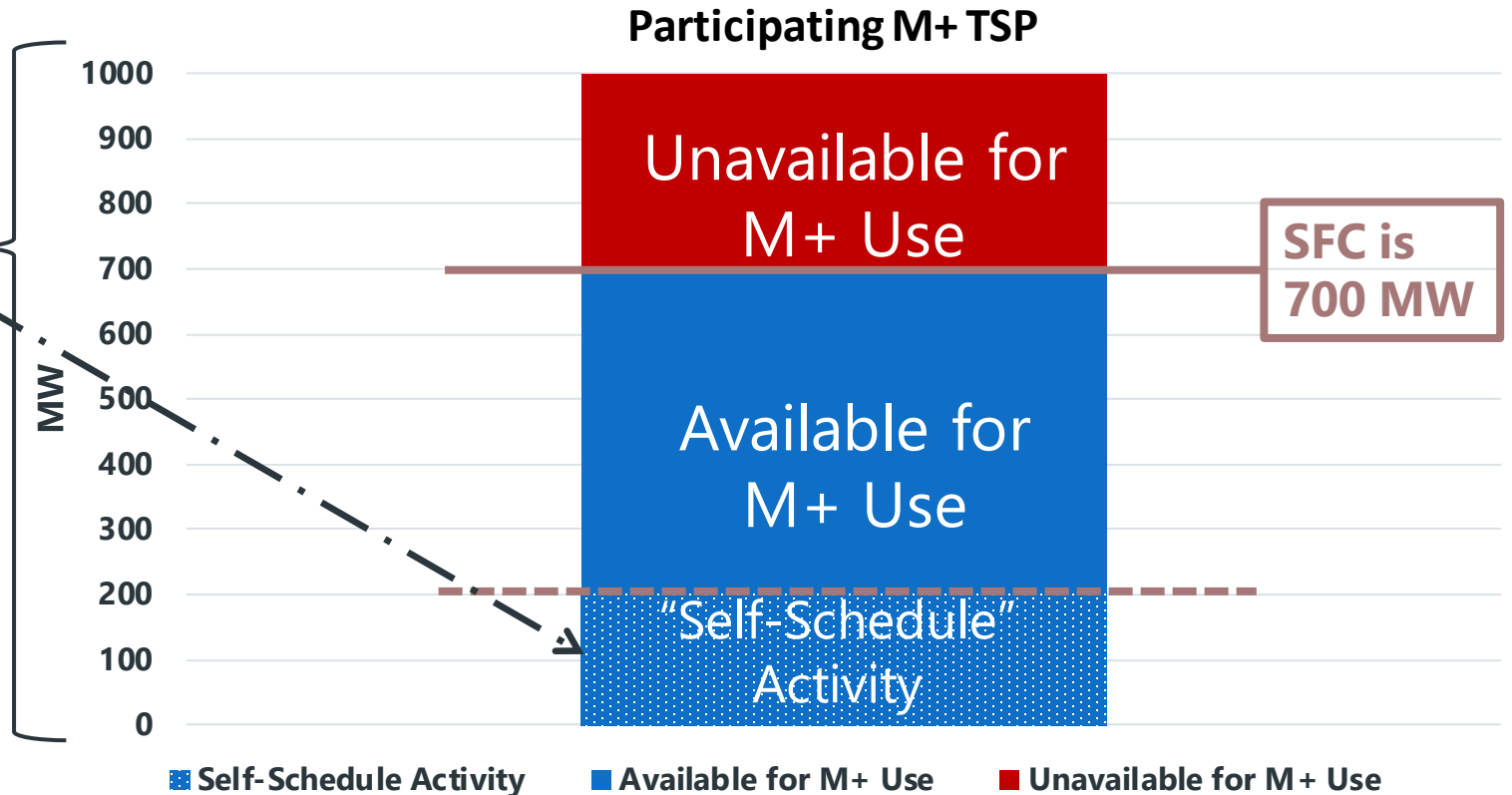
## Illustrative example: Transmission made available for market use with self-schedules

- Market participants can still "self-schedule" without opting their transmission out. In this case, the market recognizes that some of the transmission available for M+ use is used and will respect that usage within the optimization. Because the transmission is still opted in, the MP is still eligible for CR.
- "Self-schedule" – a fixed generation level incorporated into the market dispatch (e.g., non dispatchable portion of bid stack (min gen))

1,000 MW Total Capability  
 -300 MW Unavailable for M+ Use  
 700 MW SFC (Available for M+ Use)  
 200 MW "Self-Schedule" Activity  
 500 MW Participating TC or Unreserved

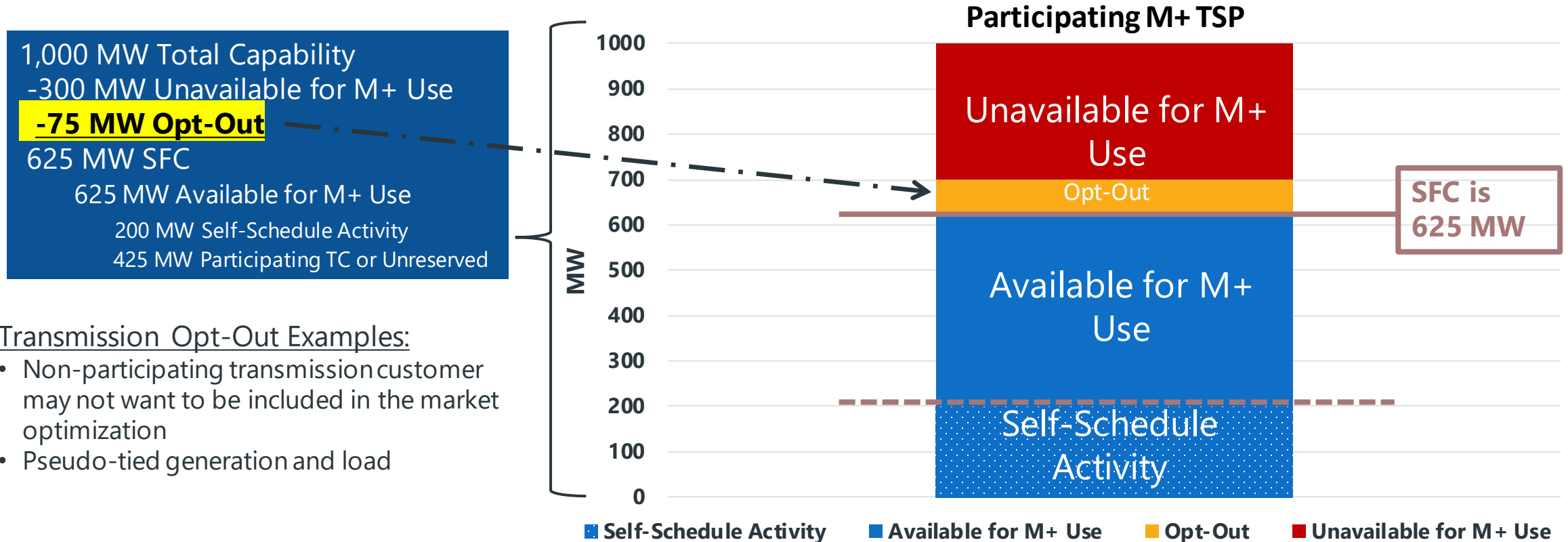
### "Self-Schedule" Activity:

- "Self-schedule" activity would consume this transmission (and would be price-takers) and not dispatchable by the market
- Interchange transactions entering/leaving the M+ footprint
- Could represent how BAs handle transmission customers not participating in DAMs



## Illustrative example: Transmission Opt-Out

- The Markets+ systems will be configured to exclude the transmission service unavailable for Markets+ optimization for the appropriate timeframe.
- Transmission that is opted out will not be eligible for M+ congestion rent.





# Transmission Opt-Out

- Under the Markets+ design, transmission customers may opt out transmission.
- Transmission that is opted out may continue to be scheduled, redirected, and/or resold in a manner that is consistent with BPA's tariff, business practices, and any another relevant agreements.

# Opt-Out: PTP TSR Resale Example

The TSR is opted out (not available for market optimization and not eligible for congestion rent). Then the TSR is resold after the deadline.

- Resold TSR is not eligible congestion rent (not included in snapshot)

Future policy decision(s) for inclusion of resales in SFCs is up to the individual M+ TSP/BA.

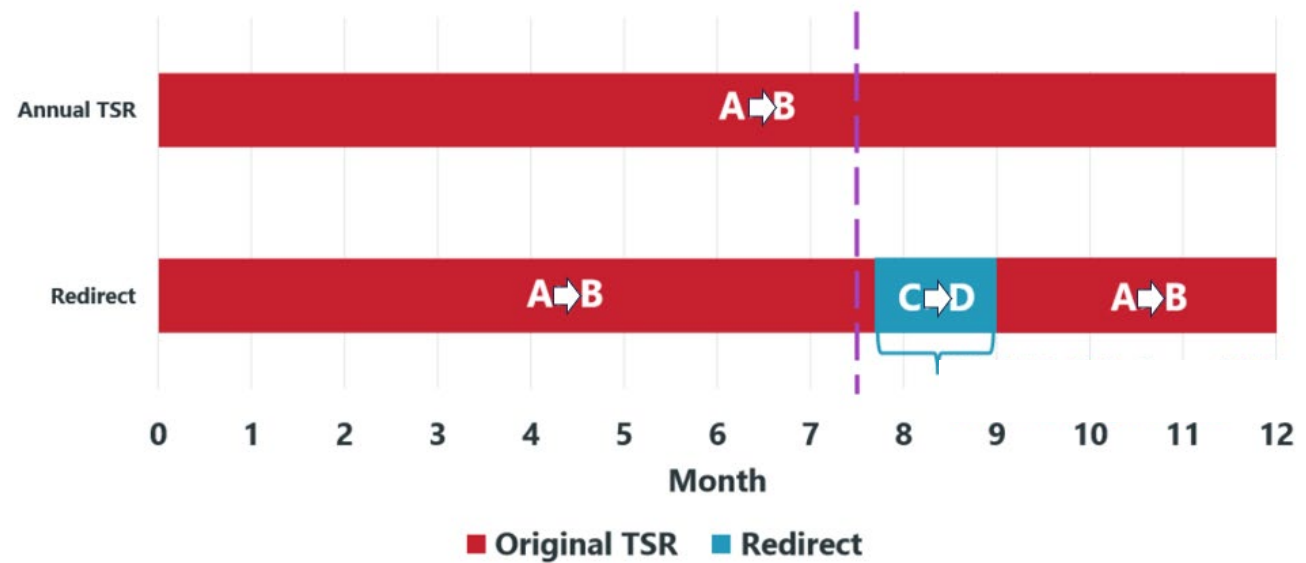


# Opt-Out: PTP TSR Redirect Example

Parent TSR (path A to B) is opted out and redirected (path C to D) after the deadline.

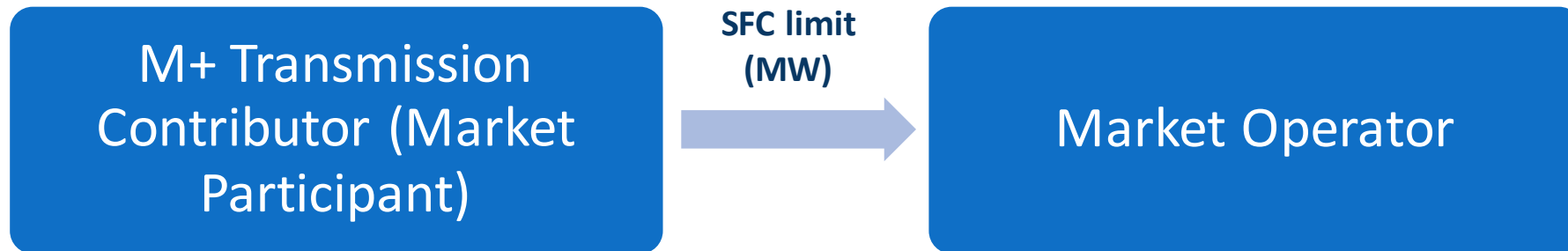
- The Parent TSR (path A to B) is still considered opted out, not available for market optimization, and not eligible for congestion rent.
- Redirect TSR (path C to D) is not eligible for congestion rent (not included in snapshot).

Future policy decision(s) for inclusion of redirect in SFCs is up to the individual M+ TSP/BA.



# Communication Chain – M+ Transmission Contributor

- Markets+ Transmission Contributor (TC) from the Markets+ Tariff: Any Market Participant that voluntarily provides its transmission service rights on a non-participating transmission service provider's system for Markets+ optimization.
- The Markets+ Transmission Contributor must coordinate with the non-Participating TSP on the contributed transmission made available for use in Markets+. The use of the transmission must be consistent with the underlying transmission rights under the non-Participating TSP's OATT.
- M+ Transmission Contributor communicates the transmission available to the market directly to the Market Operator.



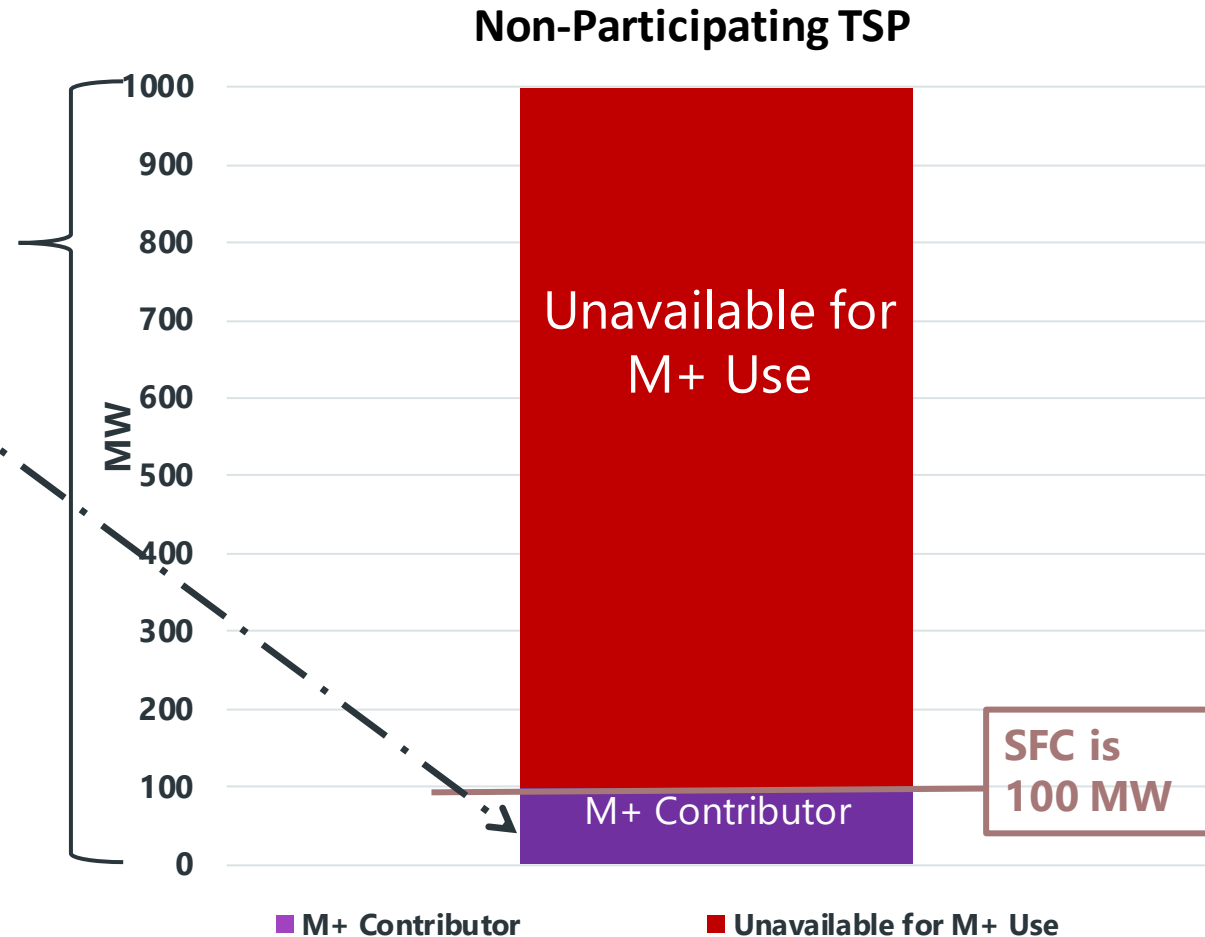
## Illustrative example: M+ Transmission Contributor

The Markets+ Transmission Contributor, in coordination with the non-Participating TSP, Participating BA, and MO, will **increase the transmission available to the M+ Footprint** via SFC.

Transmission System Not in M+  
 1,000 MW Total Capability  
 -900 MW Unavailable for M+ Use  
**100 MW Participating TC / SFC**

### M+ Transmission Contributor

- Market Participant would coordinate with the non-M+ TSP and the market operator to register the transmission rights for M+ use.
- Expect price-taker activity to consume this transmission capability
- Transmission Contributor's transmission rights that are opted in are eligible for congestion rent on paths that bind





# Day-Ahead Market Considerations for BPA Transmission Products and Services



# Transmission Service Products

BPA made a commitment to be an OATT-based transmission provider. The Open Access Transmission Tariff (the Tariff) delineates the terms and conditions of requesting, studying, awarding, and utilizing transmission service.

- BPA's Tariff provides for two types of Transmission Service:
  - Point-to-Point (PTP) Service
    - Terms and conditions of PTP Service are located in Part II of the Tariff
    - PTP Service allows the Customer to move power from a Point of Receipt to a Point of Delivery
    - Billed on reservation capacity
    - Reference [PTP Product Overview](#)
  - Network Integration Transmission Service (NITS)
    - Terms and conditions of NITS Service are located in Part III of the Tariff
    - Available only for service to Network Load
    - Billed based on metered Network Load
    - Includes planning obligations
    - Reference [NT Product Overview](#)

# BPA ST TSR Processing Today

- Hourly Firm (PTP and NITS) Products available starting at 9:00 Pre-schedule and closing at 23:40 Day-ahead
- Hourly Non-Firm (PTP and NITS) and Secondary Hourly NF PTP Products available 10:00 Preschedule – End of Operating Hour on Operating Day
- ***BPA will need to evaluate and potentially conform the timelines for ST products to the DAM/RTBM timelines***



# Short-term TSR Processing Overview

- There is a single TSR queue for requests of all short-term products (hourly, daily, weekly, monthly).
  - NT short-term requests currently use PTP-like TSR's, so this process is equally applicable.
- Requests are processed in queue order, except those subject to the Simultaneous Submission Windows policy (discussed later).
- Processing of the queue is fully automated.
  - Manual intervention only occurs in the event of system errors.
  - Long-term requests also enter the same queue but remain in a QUEUED status until acted upon manually by the Reservation Desk.
- The overall process is administered by industry-compliant software from vendor OATI.
- ***Participating TSPs are required to pause processing of TSRs for the next operating day during the DAM clearing process.***
- ***BPA will need to evaluate and potentially conform to DAM timelines.***

# Ancillary and Control Area Services (ACS)

- Ancillary and Control Area Services (ACS) are services necessary to support the transmission of energy from resources to loads while maintaining reliable operation of BPA's Balancing Authority Area in accordance with Good Utility Practice.
- BPA, as the Transmission Provider, is required to provide ACS under its tariff.
  - Transmission customers are required to purchase certain ACS from BPA under its tariff.
  - There are additional ACS that the transmission customer must either purchase from BPA, or self-supply through a customer's own resources or from a third-party accordingly, as required under BPA's tariff.

# ACS and Potential DAM Impacts

If BPA decides to join a DAM, it would:

- Remain an independent/autonomous BA.
- Continue to meet NERC requirements and would not anticipate any major changes to ACS or how this translates into rates.
- Continue to rely on its operational tools, including OCBR.

# Transmission in a DAM

- If BPA joins a DAM, there remain many reasons to continue to acquire transmission:
  - Ensuring load service
  - WRAP participation (prerequisite to join M+)
    - WRAP requires participants demonstrate they have priority 6 or 7 transmission rights to deliver at least 75% of its Forward Showing Capacity Requirement (P50 load + planning reserve margin)
  - M+ will still require tags for imports/exports/wheels leaving/entering the M+ footprint
  - Renewable attribute deliveries (requires tags for greenhouse gas accounting)
  - Congestion rent eligibility

# Transmission in a DAM

- With or without DAM participation, BPA will continue to provide service under its tariff, including through the administration of the Open Access Same-Time Information System, and the sale of firm and non-firm transmission.
- If BPA joins a DAM, the BPA Tariff and Business Practices will need to incorporate changes that allow a DAM to function (commercially and operationally) within its footprint.
  - The BPA Business Practices will need to be updated to conform to DAM timelines.
  - DAM timelines will not align to the WECC Preschedule Calendar.

# BPA Next Steps

- If BPA adopts a policy direction towards DAM participation, BPA will need to address implementation regarding transmission products and services including but not limited to:
  - TSP review/approval process for transmission opt-out
  - Transmission made available to the market (SFC limits)
  - Congestion rent sub-allocation
  - ST product availability
  - Reserving Transmission and scheduling
  - Generation Inputs

# Tariff and Rate Proceedings

- If BPA were to pursue DAM participation, BPA would discuss potential changes in rate and tariff pre-proceeding workshops.
- BPA would establish transmission rates and the definition of services in rates and tariff proceedings, respectively.

**Questions?**





# Closeout and Q&A



# Wrap Up

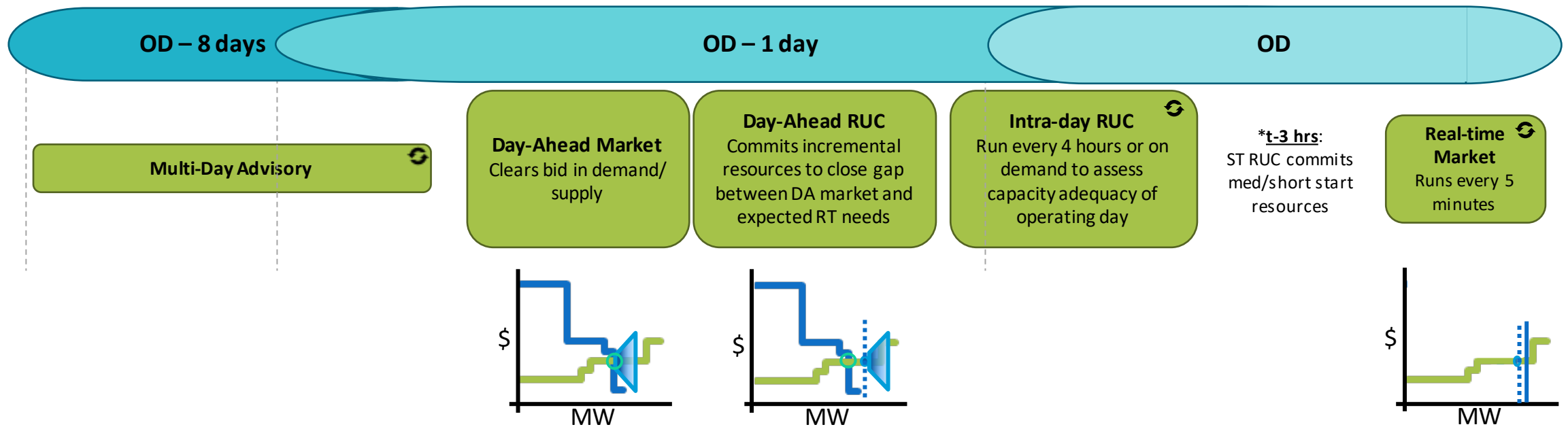
- Please submit comments on this workshop by August 16<sup>th</sup>.
- Please send comments to [techforum@bpa.gov](mailto:techforum@bpa.gov) (with “DAM Participation Evaluation” in the subject heading)
  - All formal feedback received will be posted to the BPA.gov page for BPA’s DAM Participation Evaluation



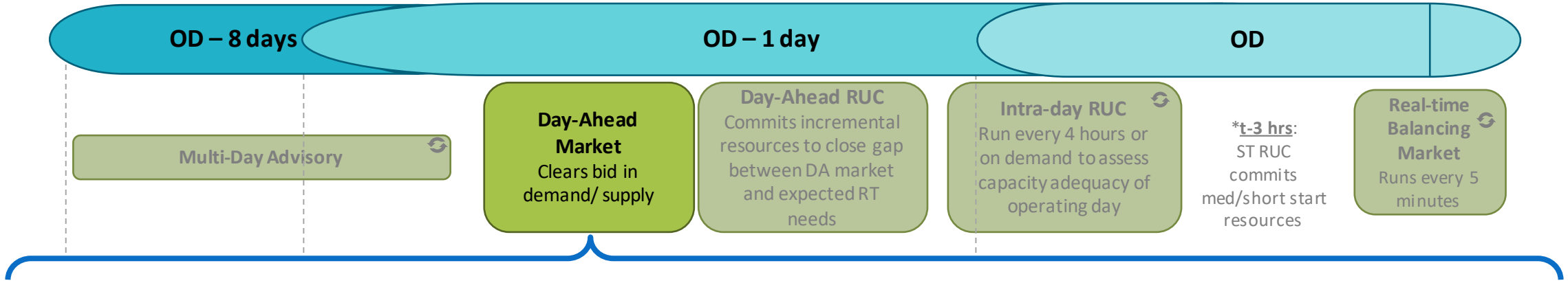
# Appendix



# Process Timeline (SPP M+)



# B O N N E V I L L E P O W E R A D M I N I S T R A T I O N



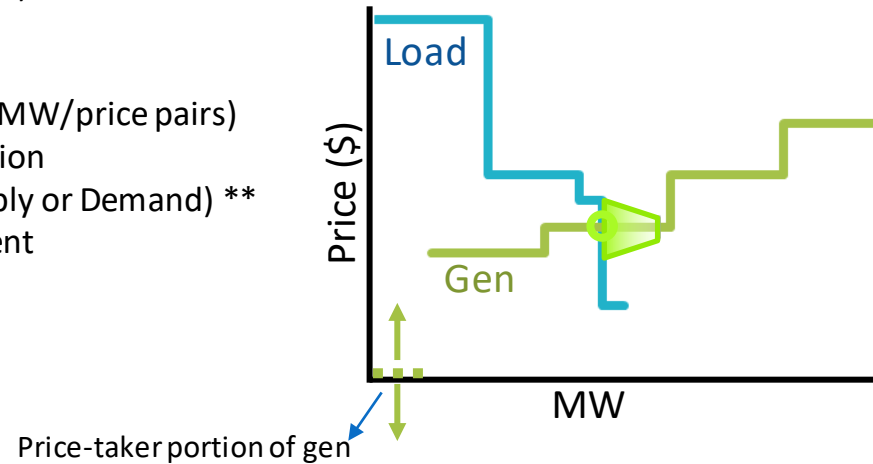
## DAM Inputs

- DA Generation Offers/“Self-schedules”\*
  - Identify commitment status
  - Identify 24 hourly resource offer (MW/price pairs)
  - Identify daily energy max (storage)
  - And more!
- Load Bids
  - Identify 24 hourly demand bids (MW/price pairs)
  - Hourly “Must-offer” demonstration
- Virtual (Convergence) Offers/Bids (Supply or Demand) \*\*
- MO-Calculated Flex Reserve Requirement
  - Relative to load/VER forecast
- Transmission Capability



## DAM Outputs

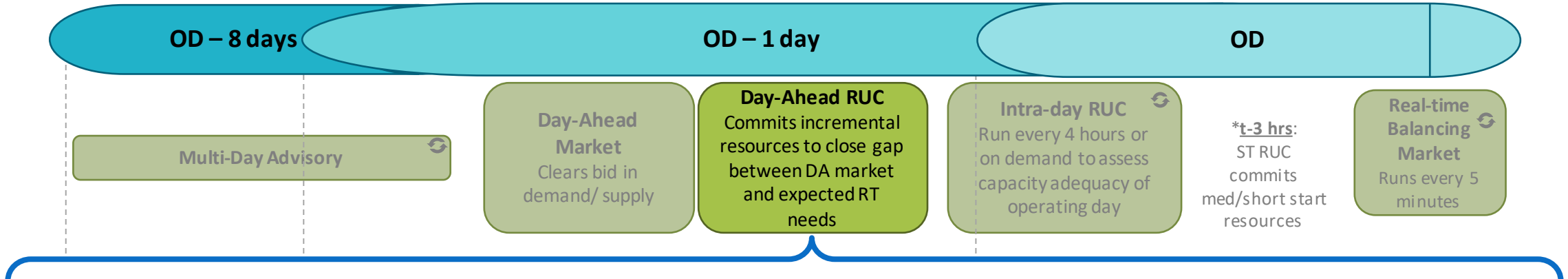
- 24 Hourly Energy Awards – sum to cleared load bids
  - Physical Generation
  - Virtual Supply\*\*
- Associated Hourly Energy Prices (LMP)
- 24 Hourly Flex Reserve Awards – sum to Flex Reserve Requirement
  - Physical Generation
- Associated Hourly Flexibility Reserve Prices
- Expected Tx Flows



\*Use of the term “self-schedule” represents submission of a static hourly resource output without market adjustability. Such a submission is treated as a price-taker

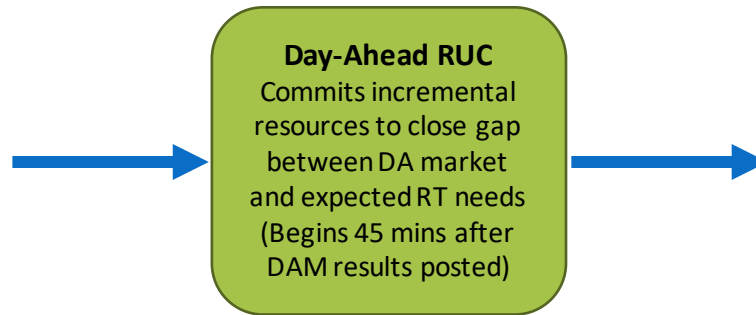
\*\* Virtuals will not be active at M+ go-live

# B O N N E V I L L E P O W E R A D M I N I S T R A T I O N



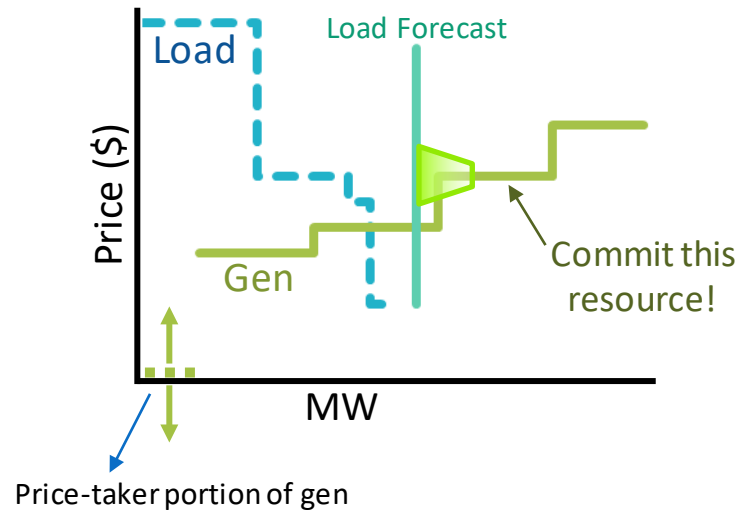
## DA RUC Inputs

- DAM Outputs
- Load Forecast
- VER Forecast
- Updated Gen Offers/"Self-schedules"
  - Start-up/no-load costs
- Transmission Capability

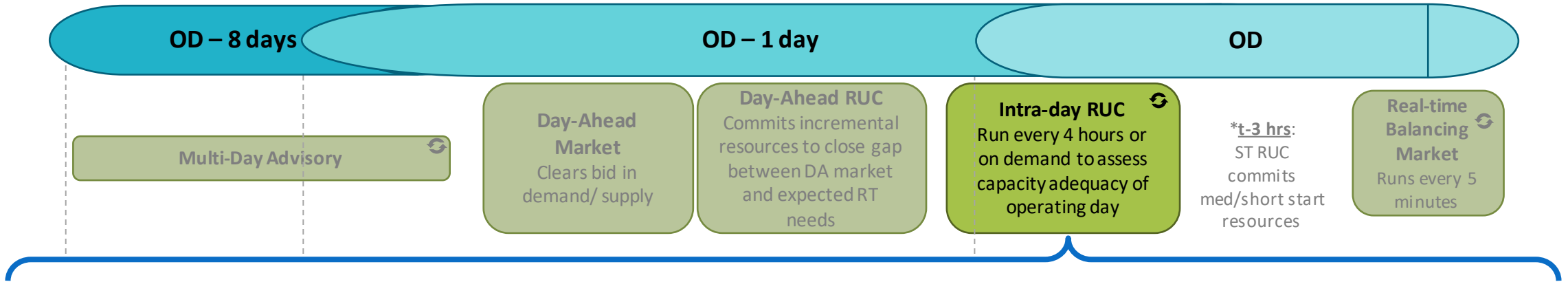


## DA RUC Outputs

- Additional unit starts/stops
  - Make-whole payment guarantee

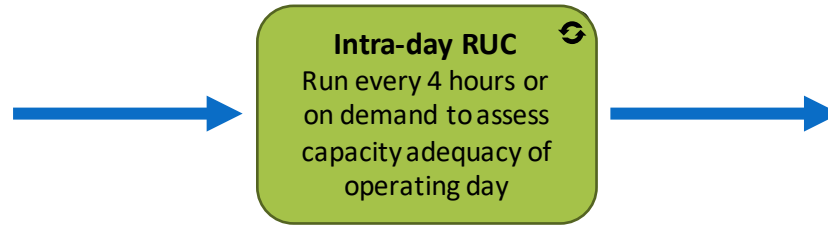


# B O N N E V I L L E P O W E R A D M I N I S T R A T I O N



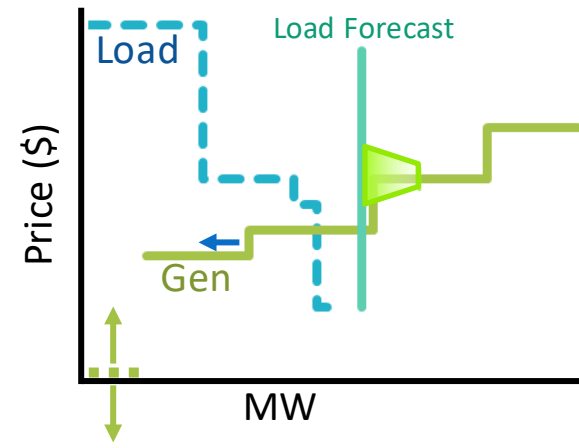
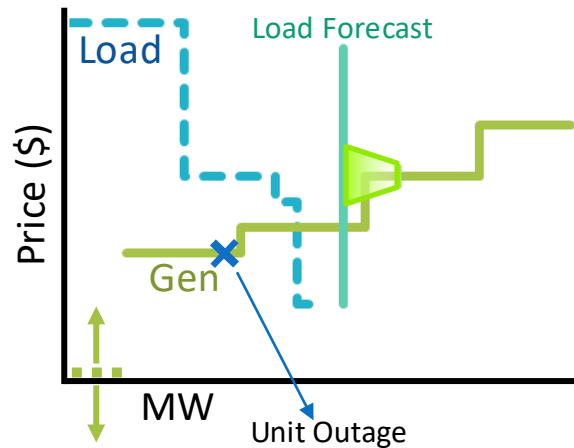
## Intra-day RUC Inputs

- DAM/RUC Outputs
- Changes (e.g. outages, contingencies, unanticipated uncertainty)
- RT Gen Bids/Self-schedules
- Transmission Capability

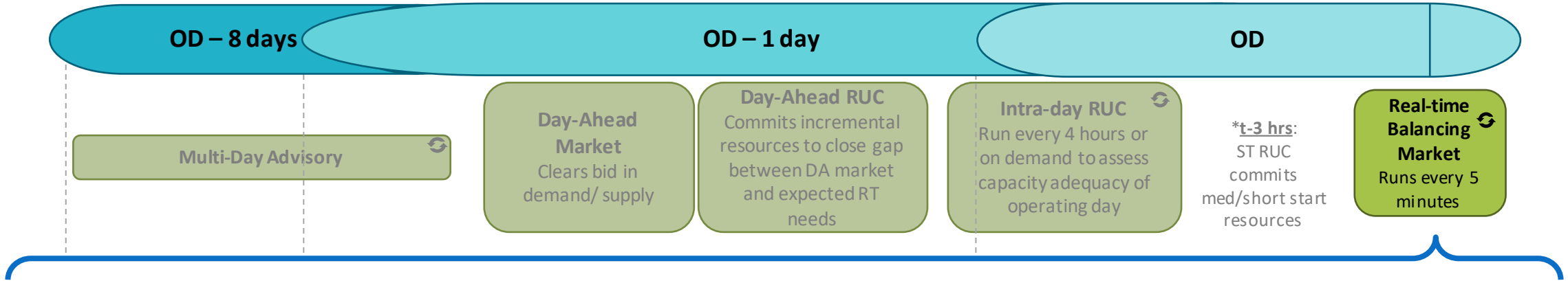


## Intra-day RUC Outputs

- Additional unit starts/stops
- Make-whole payment guarantee



# B O N N E V I L L E P O W E R A D M I N I S T R A T I O N



## RTBM Inputs

- DAM/RUC Outputs
- Real-time Load Consumption
- Real-time VER output
- Real-time Gen Offers/"Self-schedules"
  - RT MOO demonstration
- Transmission Capability



## RTBM Outputs

- 5-minute Energy Award
  - Physical Generation
- 5-minute Real-time LMP
  - Gen and load settlements are incremental to DA awards

