

MARKETS



Portland, OR Meeting
August 9, 2022



*Working together to responsibly and economically
keep the lights on today and in the future.*



SouthwestPowerPool



SPPorg



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Southwest Power Pool
**WESTERN
ENERGY
SERVICES**

WELCOME AND OVERVIEW

BRUCE REW

SPP SR. VP, OPERATIONS

AGENDA – AUGUST 9

| | |
|------------------|---|
| 1:00-2:00 | Opening Session |
| | Participant Introductions |
| | Opening Remarks: Barbara Sugg and Lanny Nickell |
| | Design Team Updates |
| 2:00-3:30 | Workshop Session I – General Session: Congestion |
| 3:30-4:00 | Break |
| 4:00-5:30 | Workshop Session II – Breakout Sessions |
| | Governance: SPP Perspective on Comments (Firs I) |
| | Joint Market Design/Transmission: Base Schedules (Main) |
| 5:30-6:30 | Reception |

PARTICIPANT INTRODUCTIONS

OPENING REMARKS

BARBARA SUGG, PRESIDENT AND CEO
LANNY NICKELL, EXEC. VP AND COO

DESIGN TEAM UPDATES

DESIGN TEAM UPDATES

| | |
|--|----------------|
| Governance Design Team Update | Kara Fornstrom |
| Transmission Availability Design Team Update | Steve Johnson |
| Market Products/Price Formation Design Team Update | Jim Gonzalez |
| GHG Tracking and Accounting Update | Yasser Bahbaz |
| Market Monitoring – Comment Summary | Kara Fornstrom |

GOVERNANCE DESIGN TEAM UPDATE

KARA FORNSTROM, SPP

GOVERNANCE DESIGN TEAM

STAKEHOLDER LEADS

| | | |
|-------------|---|--|
| Aly Koslow | Director, Federal Regulatory Affairs and Compliance | Arizona Public Service |
| David Rubin | Federal Energy Policy Director | NV Energy |
| Joe Fina | Assistant General Counsel | Snohomish County Public Utility District No. 1 |
| Lea Fisher | Senior Policy Analyst | Public Generating Pool |

SPP Support Team

| | |
|----------------|---|
| Paul Suskie | General Counsel & EVP Regulatory Policy |
| Kara Fornstrom | Director, State Regulatory Policy |
| Mike Riley | Associate General Counsel |
| Britney Lloyd | Attorney |
| Nicole Wagner | Manager, Regulatory Policy |
| Patti Kelly | Lead Regulatory Analyst |

GOVERNANCE DESIGN TEAM ACTIVITY

- June 23: WEIB hosted Webinar with State Representatives
Side by Side Comparison
- June 24: M+GDT Webinar–Revised Straw Proposal Summary
Issued Revised Straw Proposal
- July 15: Comment Deadline
- July 22: M+GDT Webinar-Summarized Comments

WRITTEN COMMENTS WERE SUBMITTED BY:

Arizona Public Service

Avista

Basin Electric Power Cooperative

Bonneville Power Administration

Chelan County PUD

Clean Energy Buyers Alliance

Idaho Power Company

Municipal Energy Agency of Nebraska

Northwest & Intermountain Power Producers Coalition

NV Energy

Powerex

Public Generating Pool

Public Power Council

Public Service of Colorado

Renewable Northwest

Salt River Ag Improvement & Power District

Shell Energy

State Commissioners (WA, OR, CO, NV)

Western Area Power Admin

Western Power Trading Forum

Western Resource Adequacy/Sustainable FERC

COMMENT CATEGORIES

Introduction

SPP Board of Directors

Markets+ Independent Panel

MIP Nominating Committee

Markets+ Participants Exec Cmte

Markets+ State Committee

Working Groups/Task Forces

Markets+ Market Participants

Markets+ Market Stakeholders

Appeals

SPP Staff Support

Governance Review

Other Issues

Conclusions

GOVERNANCE DESIGN TEAM FUTURE MEETINGS

- Issue a Second Revised Straw Proposal – Version 3.0
- Host Webinar to Summarize Changes

GOVERNANCE: MEETING GOALS AND EXPECTATIONS

SPP PERSPECTIVES ON COMMENTS

MPEC VOTING STRUCTURE

TYPES OF SECTOR VOTING (MIP NC, WGS)

QUESTIONS/DISCUSSION

TRANSMISSION AVAILABILITY DESIGN TEAM UPDATE

STEVE JOHNSON, SPP

TRANSMISSION AVAILABILITY TEAM

| STAKEHOLDER LEADS | | |
|-------------------|---|---------------------------------|
| Joe Taylor | Manager, Transmission Access | Xcel Energy |
| Chris Hofmann | Director Transmission & Generation Operations | Salt River Project |
| Mike Linn | Director, Market Analytics | Public Power Council |
| Bri Allen | Regional and Market Initiatives Lead | Bonneville Power Administration |

| SPP Support Team | |
|------------------|---------------------------------|
| Steve Johnson | Principal Operations Specialist |
| Hamilton Bitely | Senior Operations Analyst |
| Shari Brown | Manager, Tariff Administration |

TRANSMISSION AVAILABILITY DESIGN TEAM ACTIVITY

- June 15: Webinar – Service Flow Constraints and Service Offering Transmission Concepts
- June 29: Webinar– Congestion Discussion
- July 20: Webinar– Continuation of Congestion Discussion
- August 1: Released Market Design and Transmission Availability Sessions Working Draft
- August 3: Webinar– Review Transmission Elements in Working Draft

TADT DASHBOARD (6/15)

Revenue Recovery Amount

Revenue Recovery mechanism (load vs. market based)

Revenue distribution methodology

All transmission in, out by exception






TSP data collection and analysis

Working draft of design document

TSP and Planning functions retained, OATT rights respected

Base Schedule support

Flow-based operations DA and RT

-  Ongoing Discussions/work
-  Future Discussion
-  Nearing Comment Phase
-  Ready for comment
-  Ready for Offering

TADT DASHBOARD (CURRENT)

Revenue Recovery Amount

Revenue Recovery mechanism (load vs. market based)

Revenue distribution methodology

All transmission in, out by exception






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Flow-based operations DA and RT

-  Ongoing Discussions/work
-  Future Discussion
-  Nearing Comment Phase
-  Ready for comment
-  Ready for Offering

TRANSMISSION AVAILABILITY DESIGN TEAM FUTURE WEBINARS

- September 7 – 10:00-12:00 Mountain
- September 21 – 10:00-12:00 Mountain

TRANSMISSION: MEETING GOALS AND EXPECTATIONS

MARKET TRANSMISSION SERVICE

- REVENUE RECOVERY DETERMINATION
- REVENUE RECOVERY MECHANISM
- REVENUE DISTRIBUTION METHODOLOGY

IMPORTS, EXPORTS, WHEELS TRANSMISSION METHODOLOGY

QUESTIONS/DISCUSSION

MARKET PRODUCTS PRICE FORMATION DESIGN TEAM UPDATE

JIM GONZALEZ, SPP

MARKET PRODUCTS AND PRICE FORMATION DESIGN TEAM

| STAKEHOLDER LEADS | | |
|-------------------|---------------------------------------|---------------------------------|
| Jeff Spires | Director, Power | Powerex |
| Carrie Simpson | Director, Western Markets | Xcel Energy |
| Brian Cole | General Manager, Resource Management | Arizona Public Service |
| Laura Trolese | Senior Market Design & Policy Advisor | The Energy Authority |
| Russ Mantifel | Director of Market Initiatives | Bonneville Power Administration |





| SPP Support Team | |
|------------------|--------------------------------|
| Jim Gonzalez | Manager, Real Time Markets |
| Micha Bailey | Supervisor, Congesting Hedging |

PROGRESS SINCE DENVER

- **Market Design Sessions:**
 - 6/28/2022 Participation Models & Mitigation Logic
 - 7/19/2022 Introduction to Virtuals & Unit Commitment
- **Price Formation Deep-Dives:**
 - 7/14/2022 Fast Start Pricing
 - 7/21/2022 Co-optimization
 - 7/25/2022 Convergence Bidding/Virtuals
- **Market Design/Transmission Availability Working Draft published 8/1/2022**
 - https://spp.org/documents/67619/marketdesign_workingdraft_v0.1.pdf






DECISION SCORECARD PHOENIX (3/30/2022)

| | | | |
|-----------------------|------------------------|-------------------------|----------------------|
| Market Timelines | Losses | Congestion Hedge | Market Products |
| Congestion Management | Dispatch | Unit Commitment | Physical Sufficiency |
| Uplifts | Bilateral Transactions | Physical Deliverability | Mitigation |
| Participation Models | Price Formation | Virtuals | GHG/Carb |

-  Ongoing Discussions
-  Future Discussion
-  Nearing Feedback Request
-  Feedback Requested
-  Ready for Offering




DECISION SCORECARD DENVER (6/2/2022)

| | | | |
|-----------------------|------------------------|-------------------------|----------------------|
| Market Timelines | Losses | Congestion Hedge | Market Products |
| Congestion Management | Dispatch | Unit Commitment | Physical Sufficiency |
| Uplifts | Bilateral Transactions | Physical Deliverability | Mitigation |
| Participation Models | Price Formation | Virtuals | GHG/Carb |

-  Ongoing Discussions
-  Future Discussion
-  Nearing Feedback Request
-  Feedback Requested
-  Ready for Offering

DECISION SCORECARD CURRENT

| | | | |
|-----------------------|------------------------|-------------------------|----------------------|
| Market Timelines | Losses | Congestion Hedge | Market Products |
| Congestion Management | Dispatch | Unit Commitment | Physical Sufficiency |
| Uplifts | Bilateral Transactions | Physical Deliverability | Mitigation |
| Participation Models | Price Formation | Virtuals | GHG/Carb |

-  Ongoing Discussions
-  Future Discussion
-  Nearing Feedback Request
-  Feedback Requested
-  Ready for Offering

MARKET DESIGN: MEETING GOALS AND EXPECTATIONS

SCHEDULE ADDITIONAL DEEP DIVES

QUESTIONS/DISCUSSION

GHG TRACKING AND ACCOUNTING UPDATE

YASSER BAHBAZ, SPP

RECENT ACTIVITY

- Established design objectives consistent with requests summarized in the GHG materials presented in GHG workshops and previous Markets+ sessions
- Took into consideration existing challenges with GHG accounting and designation of MWs
- SPP investigated various approaches to include a GHG design in the market
- Possible solutions and an approach with options will be presented in the GHG design session scheduled for Day 2

FUTURE ACTIVITY

- Discuss GHG design options in the GHG session Day 2 of Portland meeting
- Schedule GHG design webinar sessions after the Portland meeting
- Document a design and options to resolve open items and challenges in the Markets+ Working Draft design document
 - Solicit Feedback

GHG: MEETING GOALS AND EXPECTATIONS

QUESTIONS/DISCUSSION

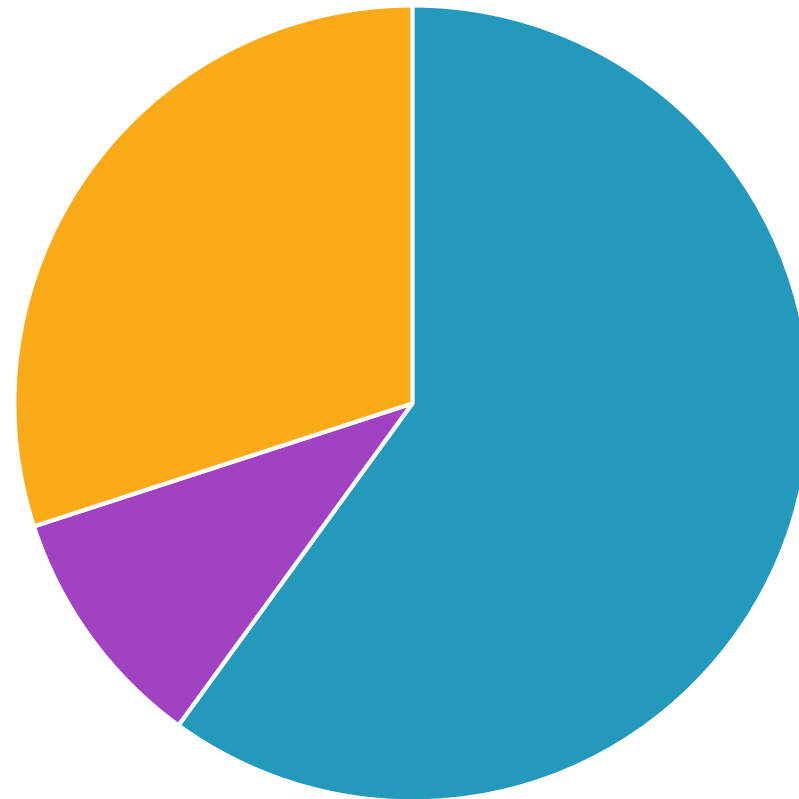
MARKET MONITOR COMMENT SUMMARY

KARA FORNSTROM, SPP

MARKET MONITORING – UPDATE SLIDE

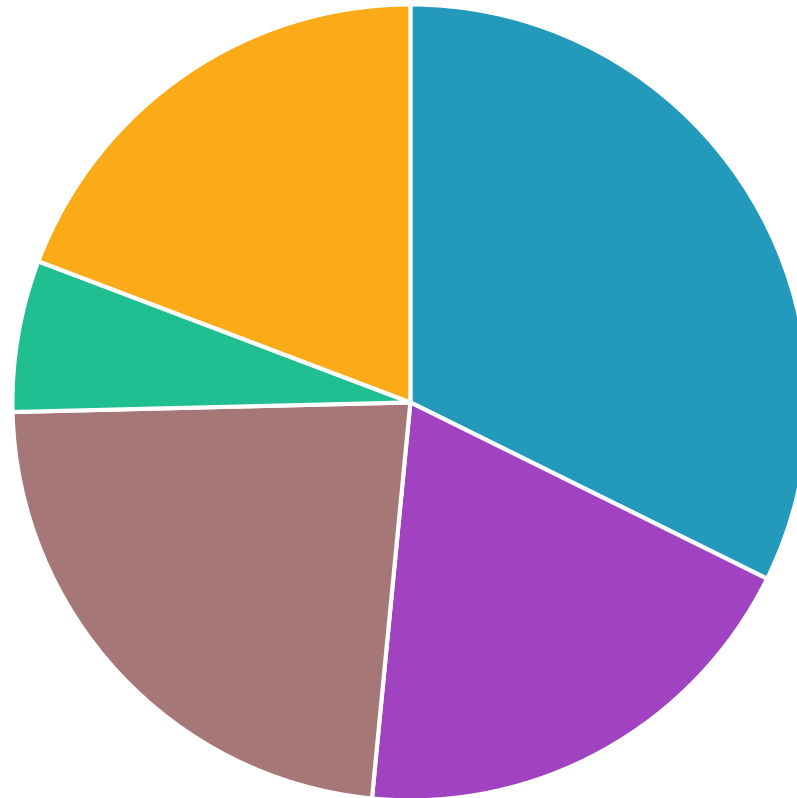
- SPP Webinar – April
 - Presentation by Barbara Stroope, Ph.D., Manager, Day-Ahead Markets
- Denver Meeting: June 1st General Session Panel
- Written Comment Opportunity – June 17
 - Comments Due July 15
- Comment Summary Posted July 18

PREFERRED MARKET MONITORING MODEL



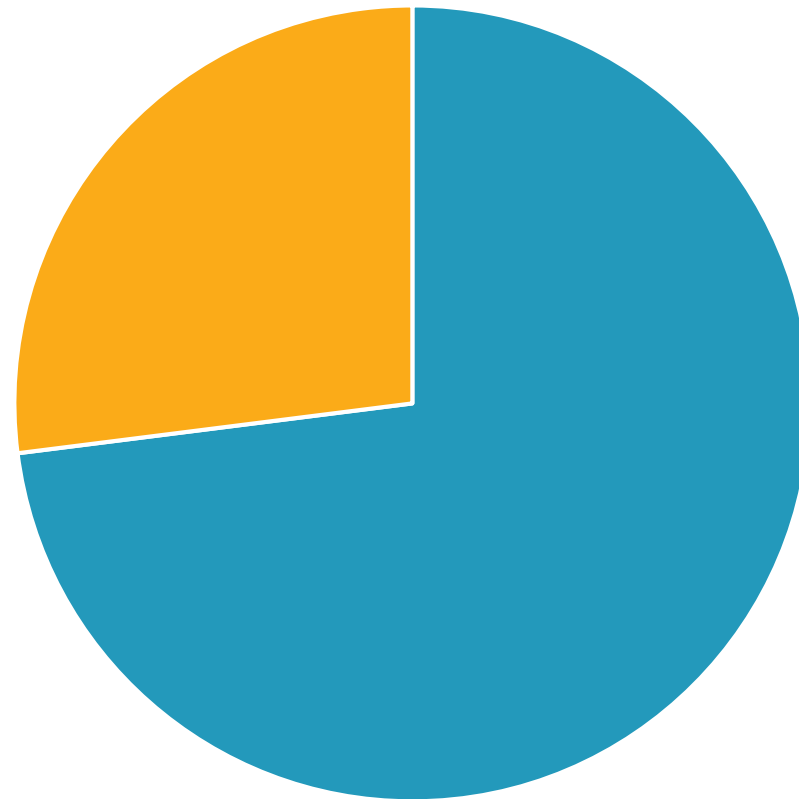
■ Internal monitor (60%) ■ External monitor (10%) ■ Hybrid model (30%)

IMPORTANT FACTORS IN PREFERRED MODEL



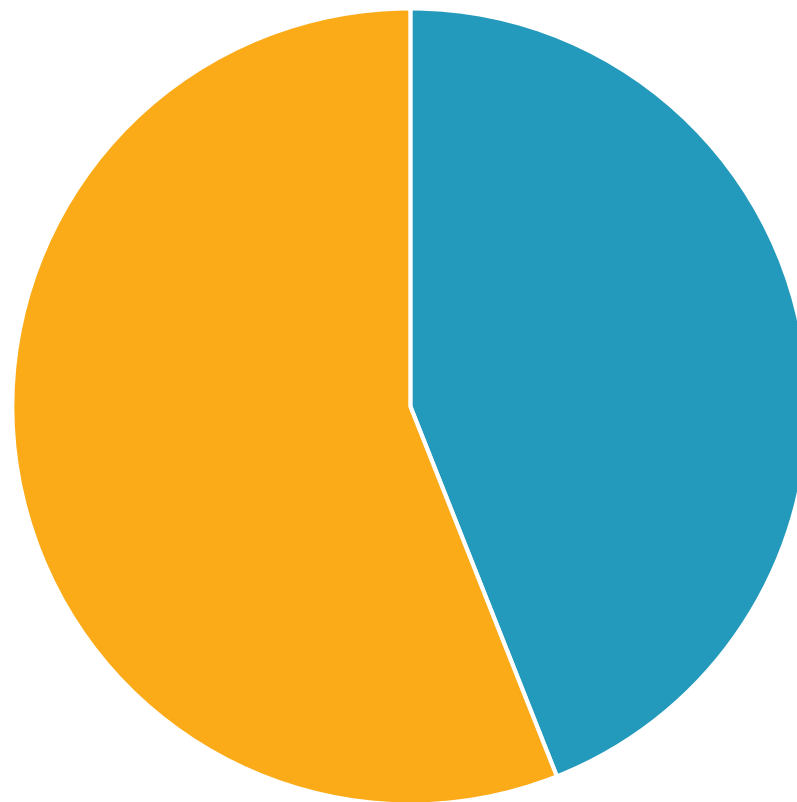
■ Availability of expertise (42%) ■ Concerns regarding independence (25%) ■ Hybrid model (30%) ■ Cost (8%) ■ Other (25%)

ARE YOU FAMILIAR WITH SPP'S MARKET MONITORING APPROACH?



■ Yes (73%) ■ No (27%)

MARKET MONITOR AS DRIVING FACTOR IN PARTICIPATION IN MARKETS+



■ Yes (44%) ■ No (56%)

QUESTIONS/DISCUSSION

WORKSHOP SESSION I GENERAL SESSION: CONGESTION RENTS

AGENDA – WORKSHOP SESSION I

CONGESTION RENTS

Common Ground

Additional Considerations

Allocation Methodology Examples

COMMON GROUND

AN OVERVIEW

CONGESTION RENTS

DA Congestion Rents

- Sum up all Generators
- Sum up all Loads
- Net out losses



Allocation of DA Congestion Rents

GENERAL CONSENSUS ON THE ALLOCATION OF CONGESTION RENT

- In the Day-Ahead Market, a set amount of dollars will be collected
 - Per Interval
- The congestion experienced today will be different than the congestion that will be experienced in Markets+

GENERAL CONSENSUS ON THE ALLOCATION OF CONGESTION RENT

- Allocation, no market functions
 - No Simultaneous Feasibility Testing (SFT) in allocation
 - SFT occurs in Transmission Service process
- Allocation cap
 - Network = 103% * (Average last three years of peak load)
 - PTP = MWs on PTP reservation
- No uplift calculations
 - What is collected, allocate back
- All positions will be options not obligations
 - Counter flow positions will have a value of \$0

ADDITIONAL CONSIDERATIONS

ADDITIONAL CONSIDERATIONS

- All Day-Ahead Congestion Rents will be allocated back out to agreed upon **TSRs**
- Allocation equation:
 - $[\text{Sum of MP's } \text{TSR MWs} * (\text{Source MCC minus Sink MCC})] / \text{Sum of Total } [\text{TSR MWs} * (\text{Source MCC minus Sink MCC})]$
- Timing of TSR submittal
 - **Monthly vs Daily**

TYPES OF FIRM TSRs

- **Network Integrated Transmission Service (NITS)**

Delivery from a generation station (or stations) to a load settlement location

- **Firm Point-to-Point (FPTP)**

Delivery from a one location on the grid to another location on the grid.
Today, used primarily for exports/imports into SPP

- **Grandfathered Agreements (GFAs)**

A pre-existing contractual agreement prior to SPP Tariff that is the network equivalent to NITS

- **Conditional Firm Service**

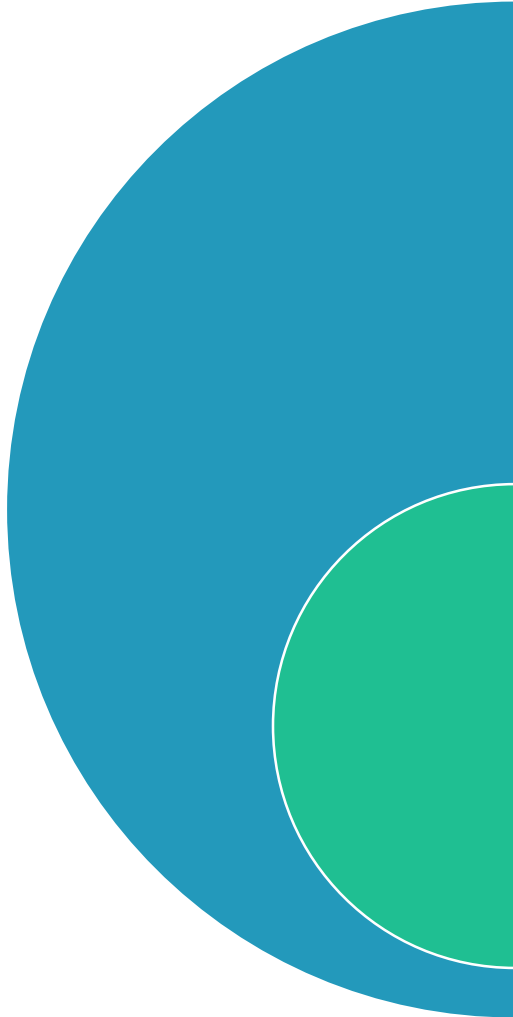
Treated as firm when specific conditions are met

CONDITIONAL FIRM SERVICE DISCUSSION

Transmission Service Reservation Priorities

| Transmission Service Reservation Priorities | | |
|---|---------|---|
| Priority | Acronym | Name |
| 0 | NX | Next-hour Market Service |
| 1 | NS | Service over secondary receipt and delivery points |
| 2 | NH | Hourly Service |
| 3 | ND | Daily Service |
| 4 | NW | Weekly Service |
| 5 | NM | Monthly Service |
| 6 | NN | Network Integration Transmission Service from sources not designated as network resources |
| 7 | F | Firm Point-to-Point Transmission |
| | FN | Network Integration Transmission Service from Designated Resources |

TYPES OF FIRM TSRs



**Congestion Rent Allocation
helps incentivize building new
transmission network upgrade**

**Which TSRs should be
included to help continue with
this benefit?**

ALLOCATION METHODOLOGY EXAMPLES

BOOK END EXAMPLES

SPP RTO East DAMKT Data for the following intervals:

- Interval 1: June 4, 2022 Hour 12 CPT
 - Larger amount of congestion rent collection
- Interval 2: June 13, 2022 Hour 12 CPT
 - Lower amount of congestion rent collection
- Interval 3: June 23, 2022 Hour 12 CPT
 - Highly congested area

ASSUMPTIONS

Settled the DAMKT Congestion Rent collected for chosen intervals in two separate scenarios

Scenario 1: All TSRs

- Allocation based on all TSRs for each Asset Owner
- NITS service pro-rated to nomination cap based on HPL

Scenario 2: Pick your Source/Sink Pair

- Allocation based on TSRs for each Asset Owner corresponding DAMKT resource bids for that hour
- NITS service pro-rated to nomination cap based on HPL

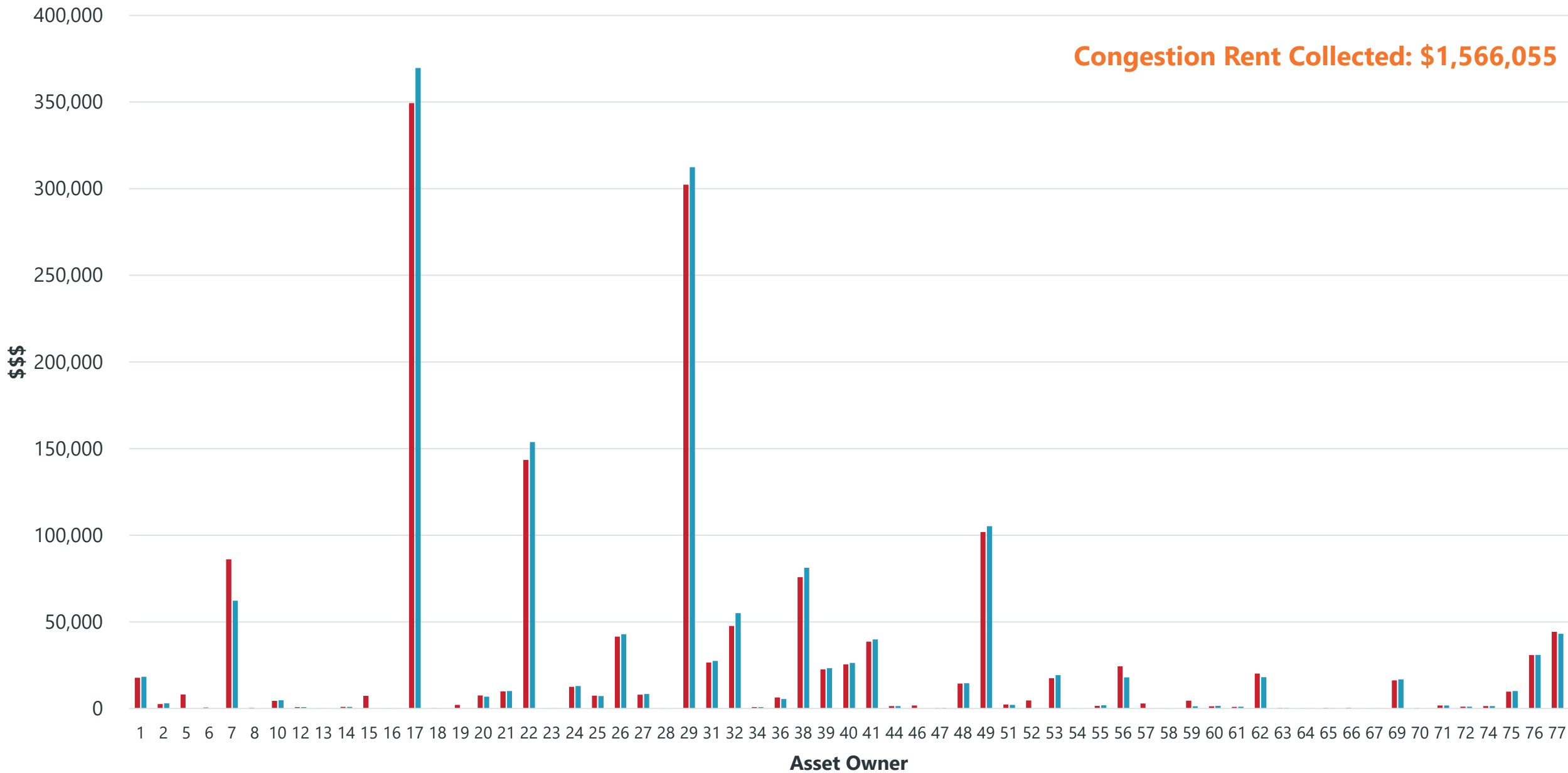
OTHER ASSUMPTIONS

Some other items that were not included that will change the allocation ratio:

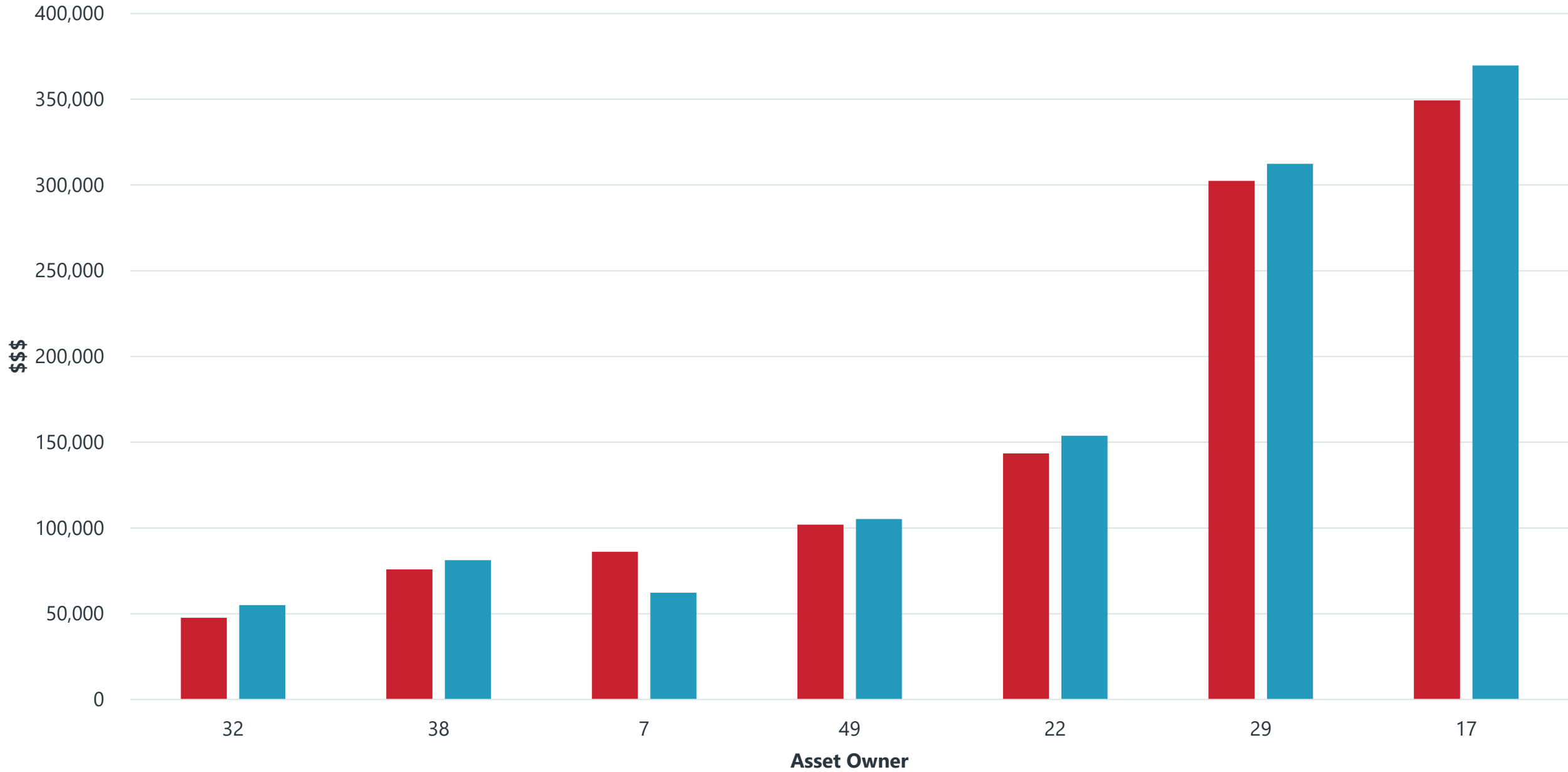
- SPP only used priority 7 service
- SPP did not look at Monthly vs Daily

Congestion Rent Allocation Interval 1

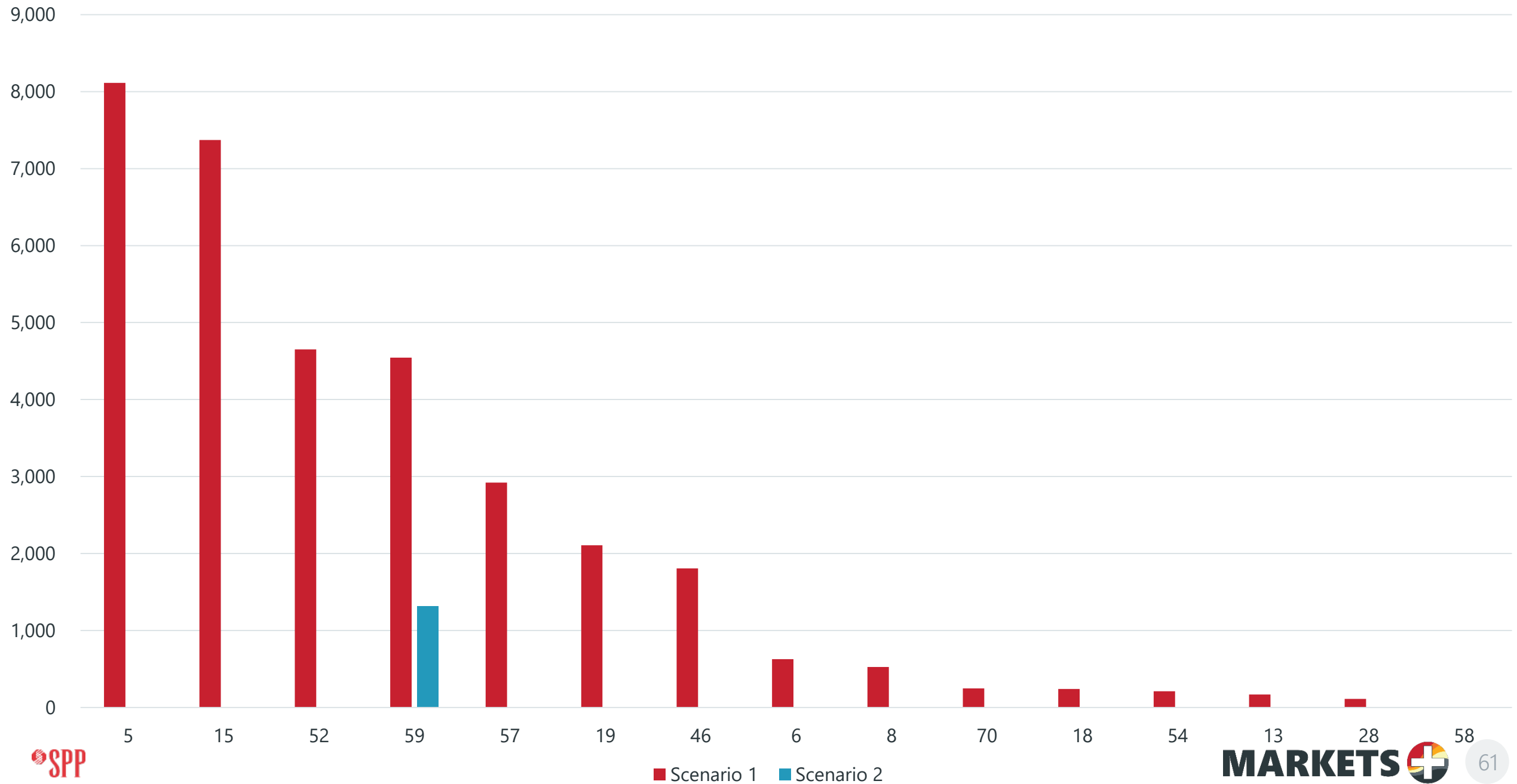
Congestion Rent Collected: \$1,566,055



Congestion Rent Allocation Interval 1: A Closer Look

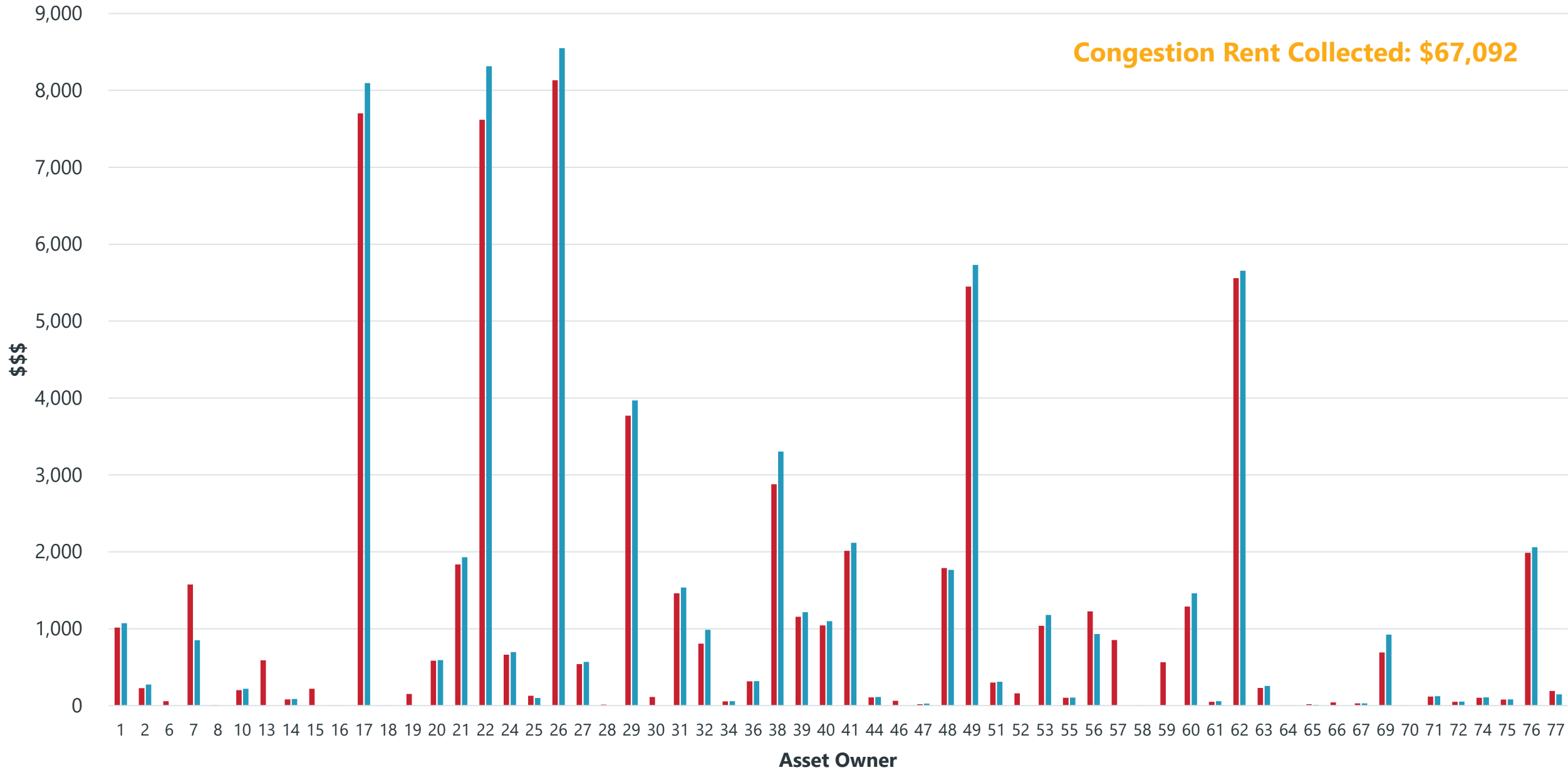


Congestion Rent Allocation Interval 1: A Closer Look

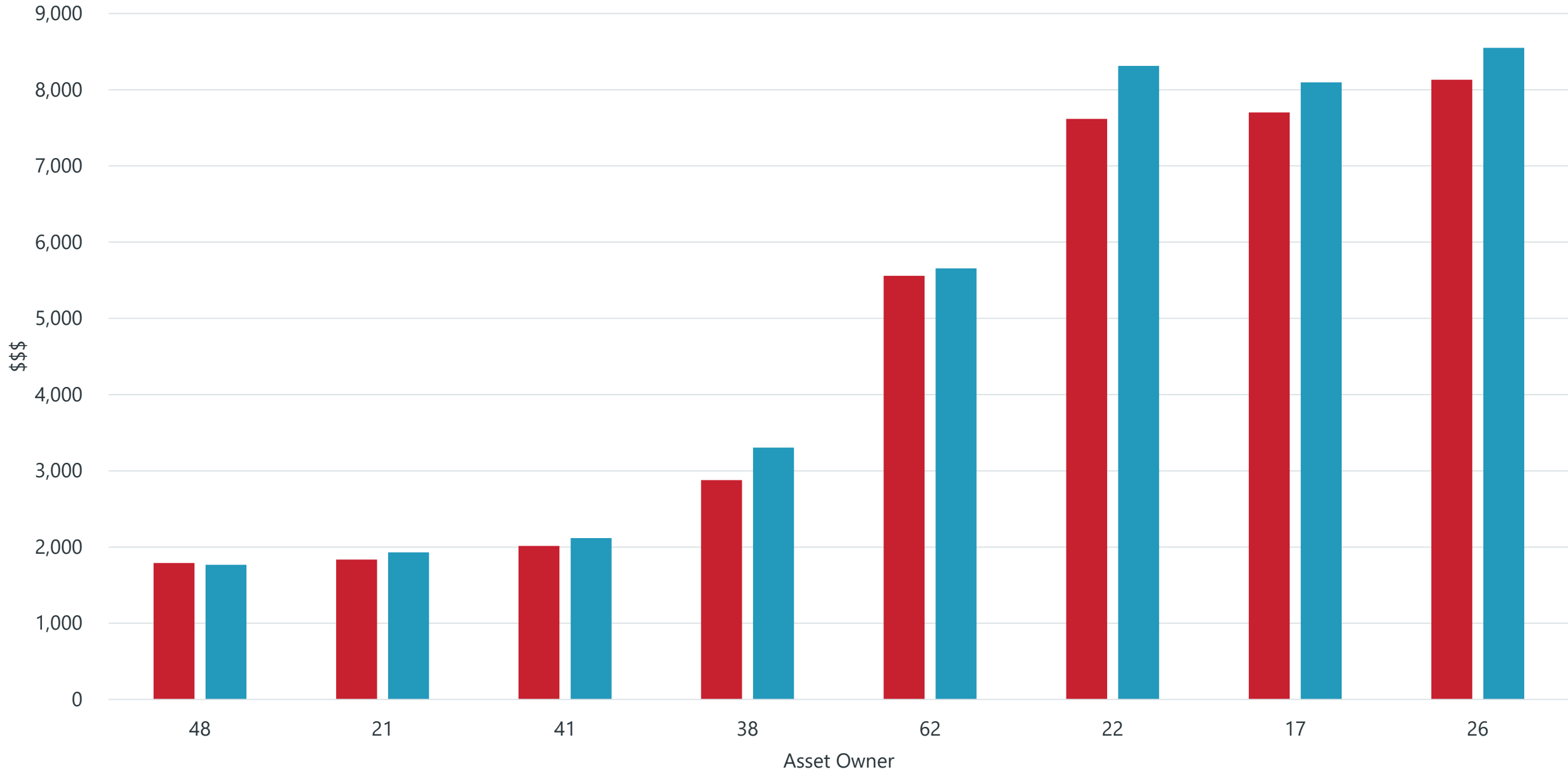


Congestion Rent Allocation Interval 2

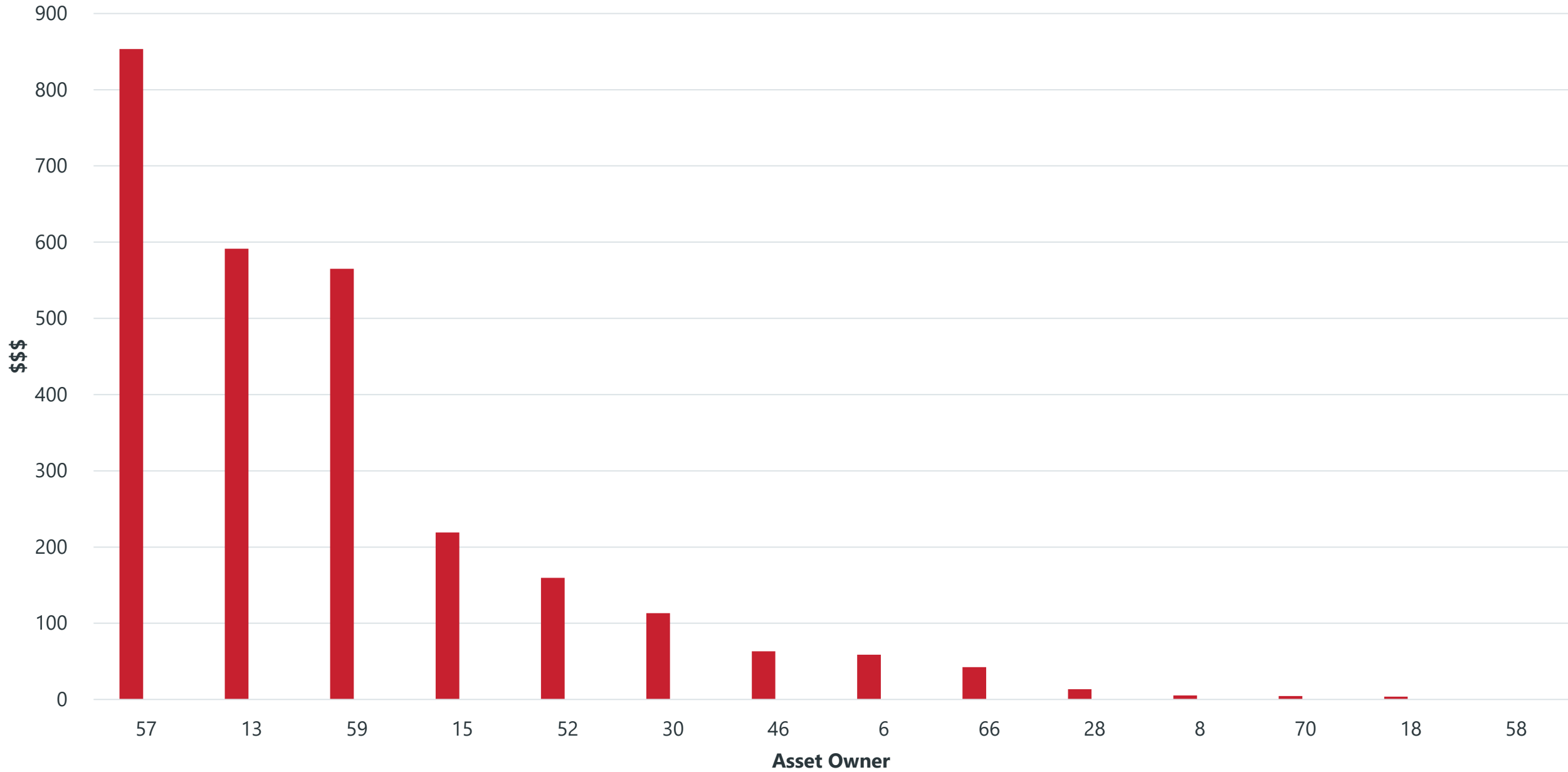
Congestion Rent Collected: \$67,092



Congestion Rent Allocation Interval 2: A Closer Look

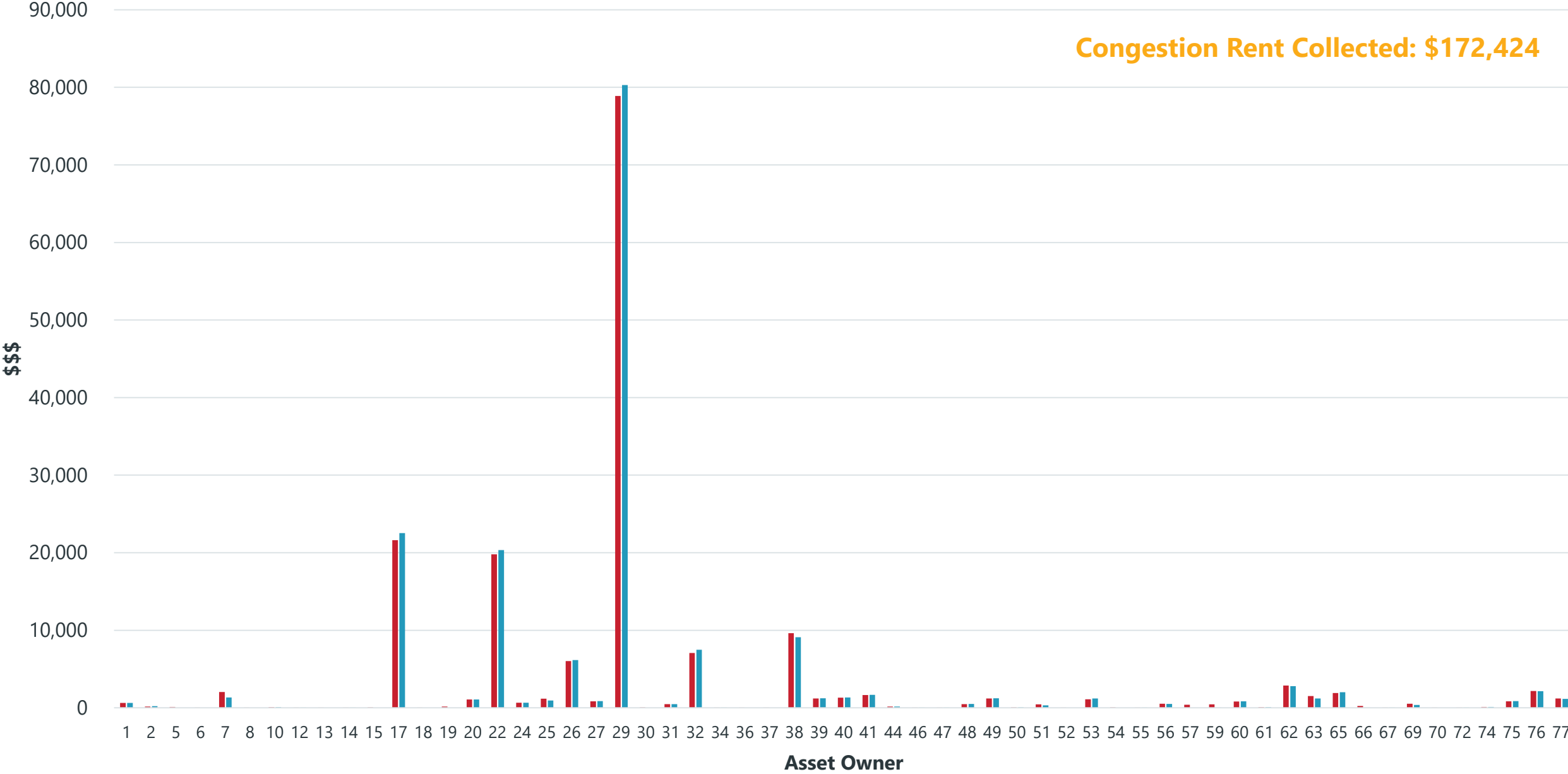


Congestion Rent Allocation Interval 2: A Closer Look

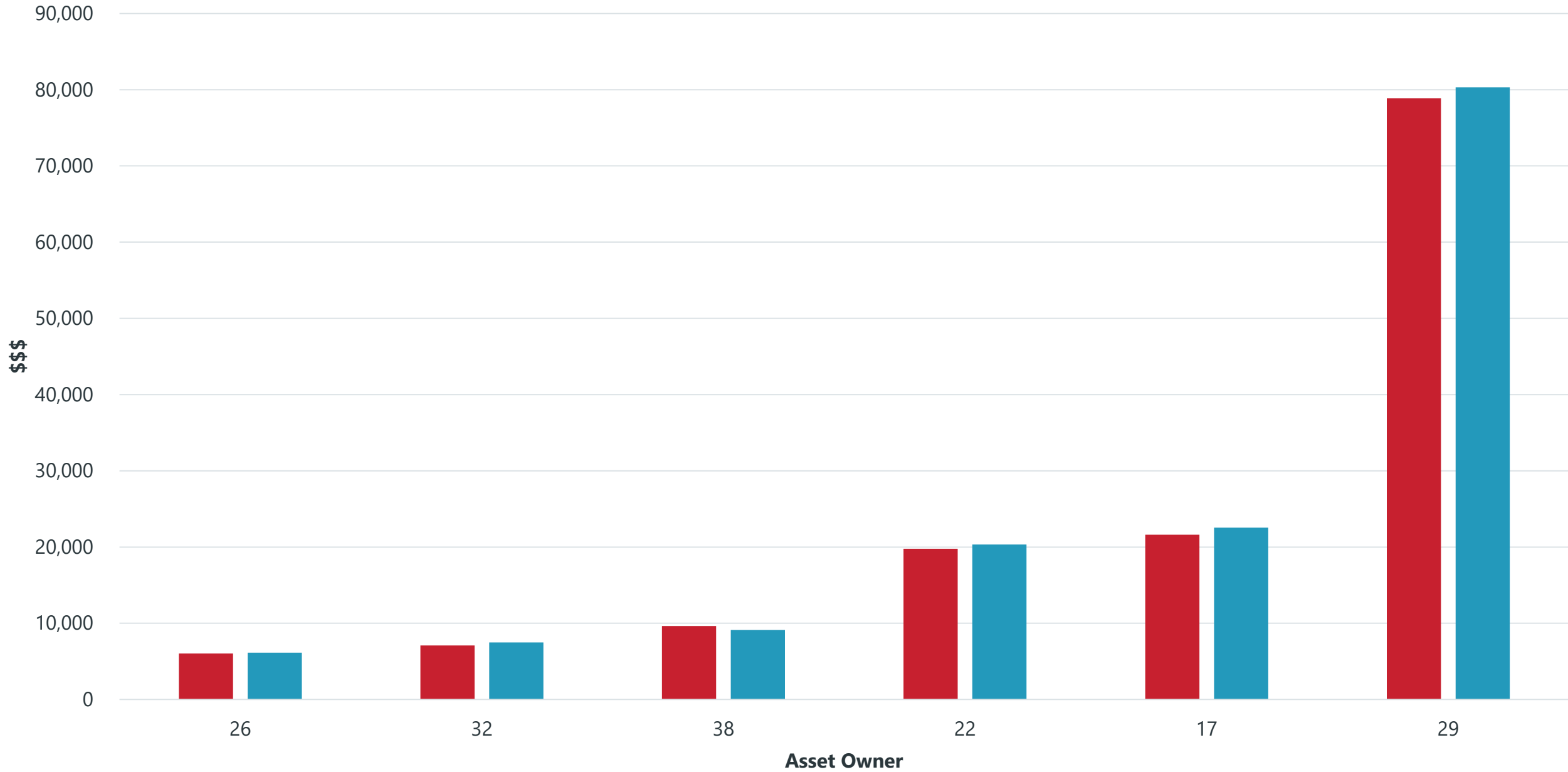


Congestion Rent Allocation Interval 3

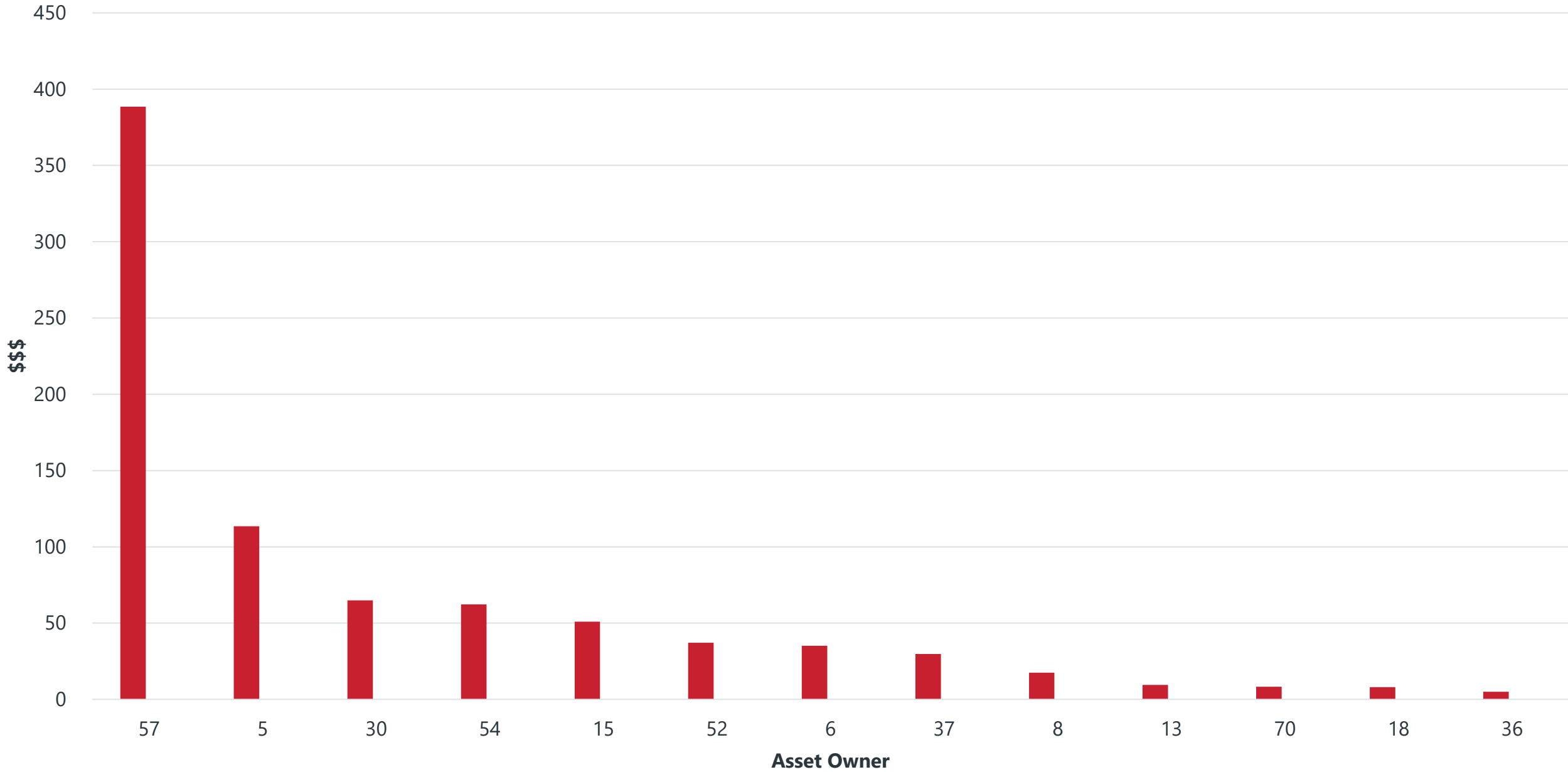
Congestion Rent Collected: \$172,424



Congestion Rent Allocation Interval 3: A Closer Look



Congestion Rent Allocation Interval 3: A Closer Look



QUESTIONS FOR YOU



Which set of TSRs will be included in the allocation ratio?



How often will TSRs be submitted?

- Daily or Monthly

QUESTIONS/DISCUSSION

MARKETS



AFTERNOON BREAK

3:30-4:00

Refreshments in the West Foyer



*Working together to responsibly and economically
keep the lights on today and in the future.*



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**WESTERN
ENERGY
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WORKSHOP SESSION II BREAKOUT SESSIONS

GOVERNANCE

FIRS ROOM

AGENDA – WORKSHOP SESSION II GOVERNANCE BREAKOUT

SPP PERSPECTIVES ON COMMENTS

SPP Board of Directors

Markets+ Independent Panel

Markets+ Market Stakeholders

Markets+ Participants Executive Committee

SPP BOARD OF DIRECTORS (SPP BOD)

- Ultimate Oversight
- Significant recognition to the MIP
- Shall review:
 - Material Impact
 - M+ budgets, debt and staffing
 - MIP Appeals

Should SPP Director on MIP recuse on Appeal Vote?

Will Markets+ get Sufficient Attention from SPP BOD?

Can SPP BOD change MIP Authority?

When is Materiality Determined?

How determine Materiality?

MARKETS+ INDEPENDENT PANEL (MIP)

- Comprised of five persons (One is SPP Director)
- Recent and relevant senior level management expertise and experience: electric industry, markets, utility regulation
- Section 205 Rights
- Appeals to SPP BOD
- Four year terms, no term limits

SPP Director
on MIP
should be
Non-voting

Terms
Support 4 year terms
Term should be shorter
Establish term limit

SPP Director on MIP
should have Western
Experience

SPP Director
should not
Automatically be
MIP Chair

Appeals
Require good cause?
Broaden who can Appeal
Further describe Process

MARKETS+ MARKET STAKEHOLDER (MMS)

- Executed Stakeholder Agreement
- Does not contribute generation or load
- Voting rights: MIP Selection Forum
 - Eligible for voting seat on MIP NC & WGs
- Annual fee of \$5,000

"Cost Prohibitive"
"Unpopular"
"Eliminate Fee"
"Reduce Fee"
"Caused Significant Opposition"

Establish
Waiver
Process?

Exit
Fee?

Will fee
negatively
impact
robustness of
non-
participant
involvement?

Fee seems
Arbitrary &
Intended to
Narrow
Stakeholder
Participation

Requiring a
Fee is Not
Necessary to
Ensure
Stakeholder
Engagement

MARKETS+ PARTICIPANTS EXECUTIVE COMMITTEE (MPEC)

- Each Markets+ Participant will appoint a representative
- Authority:
 - Make recommendations to the MIP
 - Establish Working Groups and Task Forces

All Stakeholders should be Represented on the MPEC

Concerns about MPEC Chair appointing WG Representatives

Support Participant Only Composition

How will MPEC provide Recommendation to the MIP?
Advisory?
Non-binding?

If only Participants on the MPEC, create Advisory Group for Stakeholders?

QUESTIONS/DISCUSSION

JOINT: TRANSMISSION AND MARKET DESIGN

MAIN CONFERENCE ROOM

BASE SCHEDULES

AUGUST 9, 2022

MARKETS+ TRANSMISSION AVAILABILITY

- All-in transmission concept
- Will respect transmission rights not associated with a Markets+ participant
 - Service Flow Constraints
- Transmission Schedules
 - BA Base Tags
 - BA Base Schedules
 - Market SCED does not consider in solution
 - Market SCUC will use these to ensure BA sufficiency
 - Markets+ Base Schedules
 - External BA to Markets+ BA transfers (imports, exports, wheels)
 - Capacity Tags
 - Could represent reserves or other capacity set-asides

WHAT ARE BASE SCHEDULES

- Markets+ participants may use tagging and scheduling to create financial accounting records
- These include Bilateral Schedules between BAs that follow required tagging and scheduling rules
- These can have various impacts on the overall Markets+ Dispatch
- Markets+ solves with all generation and load
 $\text{Dispatch} = \text{Load} + \text{NSI}$

WHAT ARE BASE SCHEDULES CONTINUED

- To the extent that Markets+ Dispatch creates interchange between BAs, the design structure utilizes dynamic tags that will be updated to reflect that Dispatch.
- The need to further define Base Schedules into various types and how they impact Markets+ is the focus of this discussion
- This is primarily focused on how those schedules impact Markets+ Dispatch but there are also considerations on how those data artifacts can be leveraged for Congestion recovery and Green House Gas (GHG) accounting

SERVICE FLOW CONSTRAINTS

- Used to limit the interchange between areas by creating a constraint in the Markets+ Dispatch.

BA1

Gen1 Max: 500 MW
Gen1 Dispatch: 400 MW
Gen1 LMP: \$14

Load: 350 MW

SFC Limit 50MW

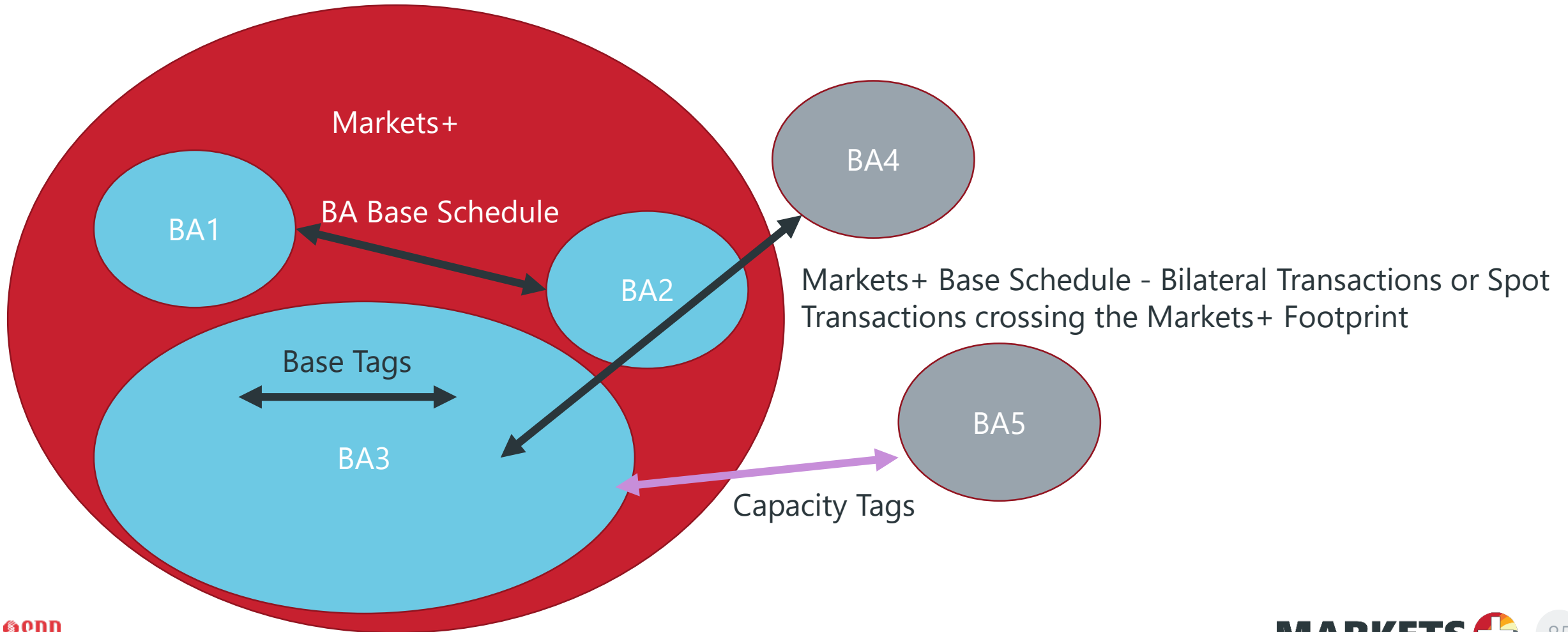


BA2

Gen2 Max: 200 MW
Gen2 Dispatch: 150 MW
Gen2 LMP: \$16

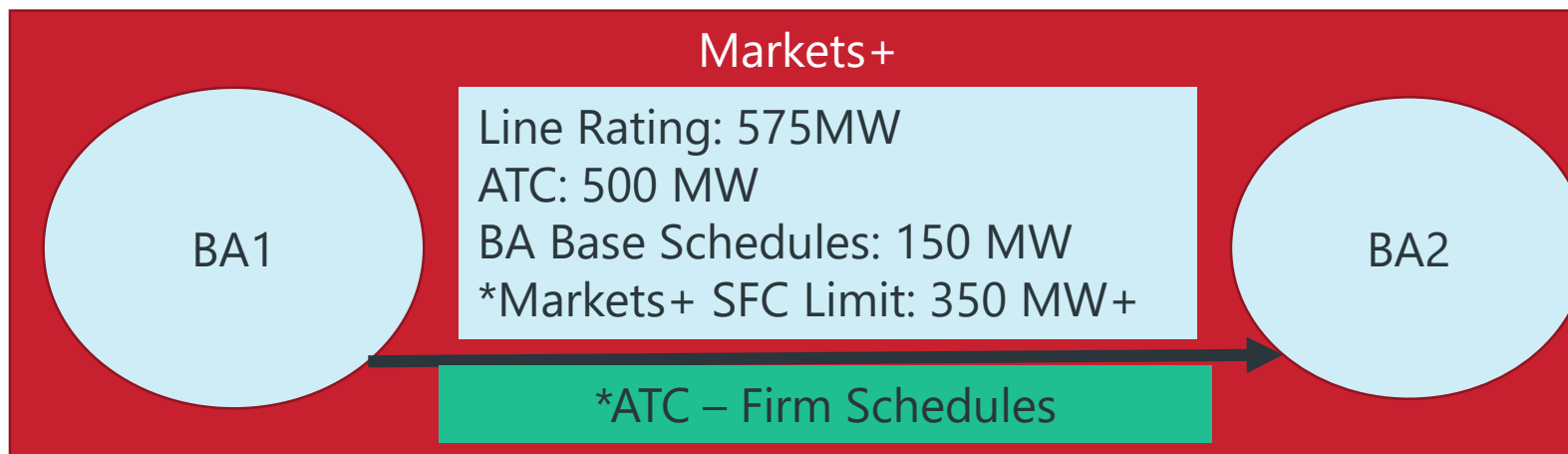
Load: 200 MW

MARKETS+ SCHEDULE OVERVIEW

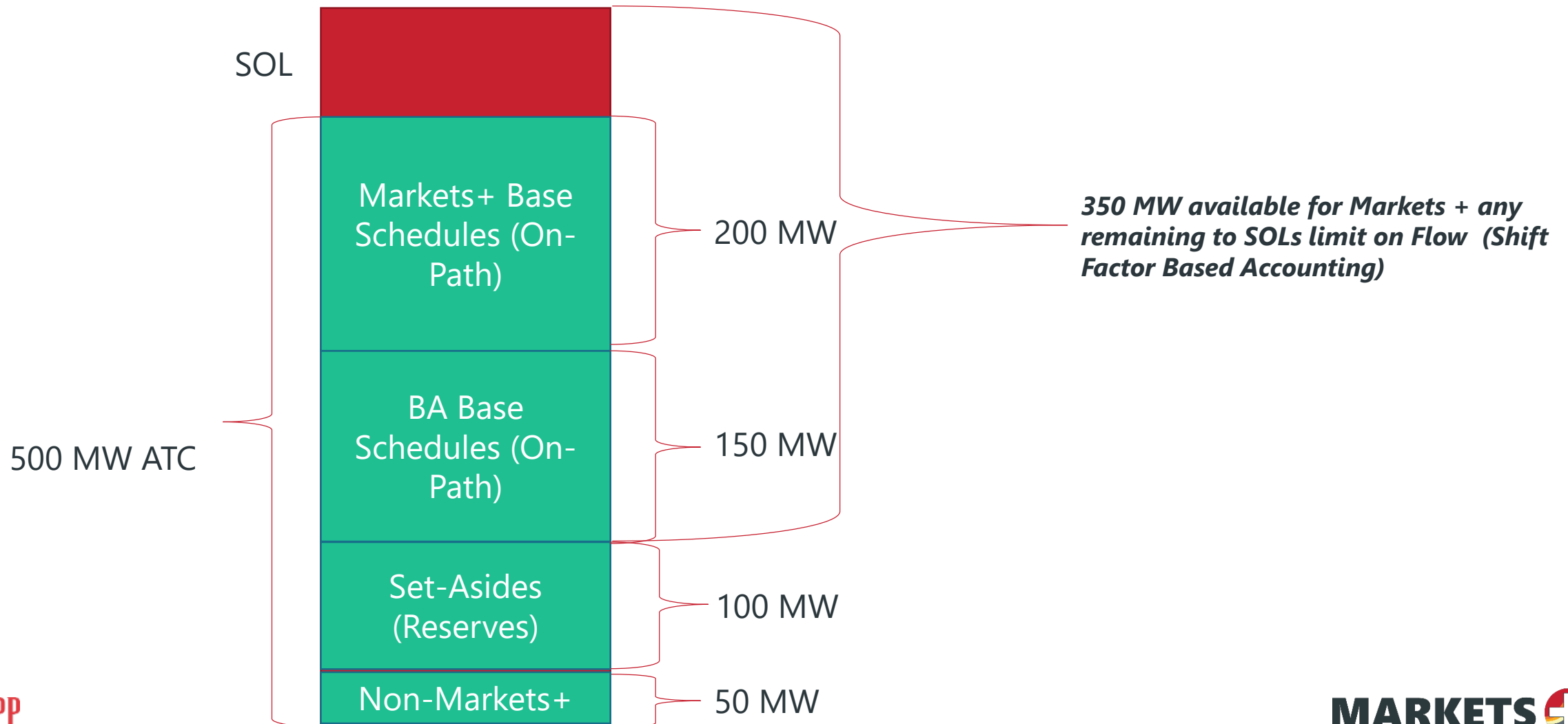


FLOW BASED OPERATION VS PATH BASED SCHEDULING

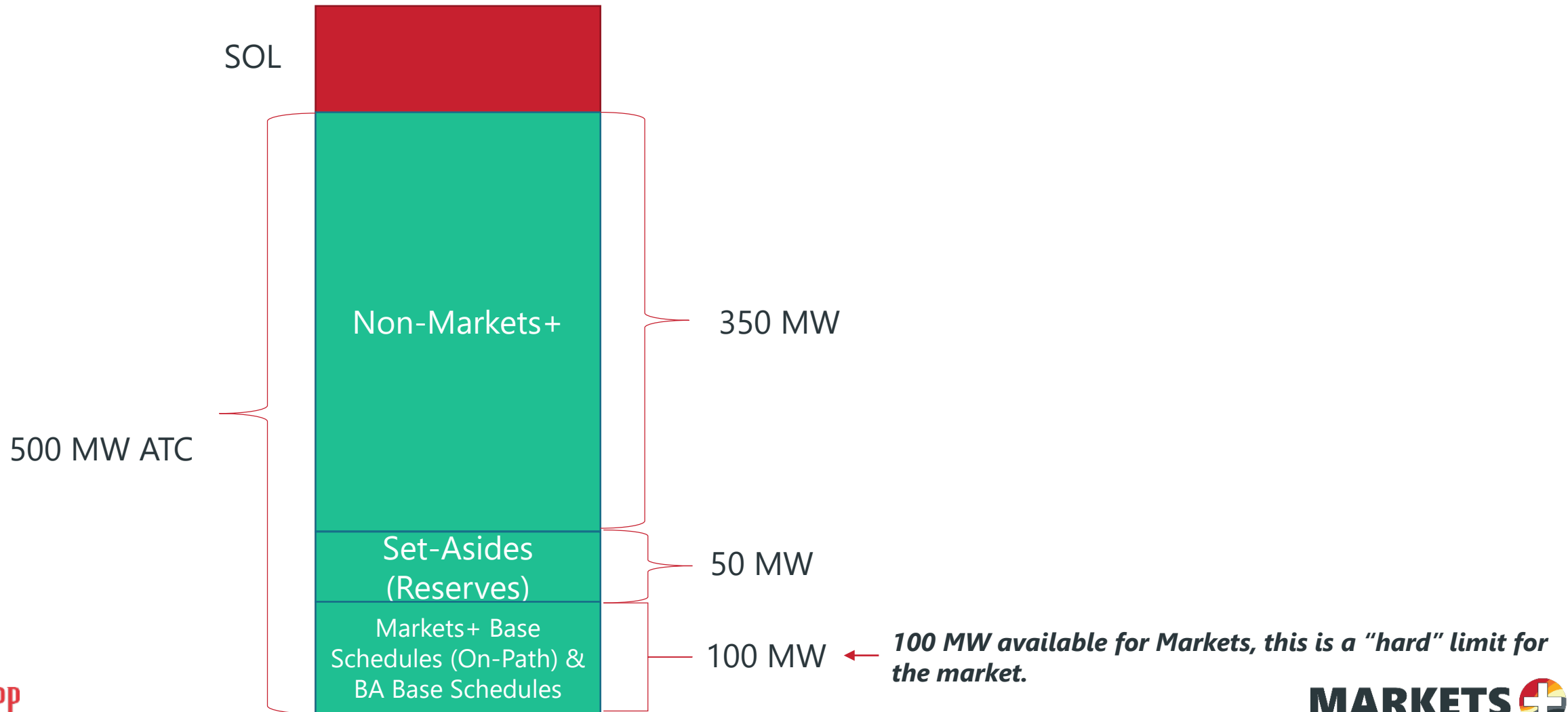
- Markets+ will operate using flow based calculation when calculating Dispatch
- BA will submit the remaining available capacity (ATC) and SPP will represent the remaining capacity available for market flow with a Service Flow Constraint



SERVICE FLOW CONSTRAINT INTERNAL LIMIT



SERVICE FLOW CONSTRAINT EXTERNAL LIMIT



BASE TAGS

- The concept of Base Tags results from transaction accounting that is entirely inside of a single BA.
 - No “BA” schedules are created from these tags
 - TSR is required for the use of transmission
 - Subject to curtailments in UFMP
 - Firm or Non-Firm service
 - Not included in Markets+ Obligation
 - Not included in calculation of Service Flow Constraints
 - BSS may be available in Transmission Settlements

BA BASE TAG DETAILS

TSR

- TBD on usage for Congestion Rights
- Proof of transmission rights and deliverability
- Path Based
- No GHG impact since it doesn't leave a BA

Tag

- TBD on usage for Congestion Rights
- TBD on usage for GHG

BSS

- Consider BSS to facilitate the financial settlement of these types of transactions

BA BASE SCHEDULES

- Bilateral Transaction between BAs entirely inside the Markets+ Footprint
 - Not used to calculate the Markets+ Obligation
 - Subject to curtailment for UFMP
 - Used in Day Ahead for unit commitment decisions to net BA sufficiency calculation
 - Used in BA sufficiency calculation
 - Used to determine the SFC limit between BAs

BA BASE SCHEDULE DETAILS

TSR

- TBD on usage for Congestion Rights
- Proof of transmission rights and deliverability
- Path Based
- GHG

Tag

- TBD on usage for Congestion Rights
- TBD on usage for GHG

Schedules

- Ignored in the Markets+ Optimization of Dispatch
- Used to calculate the available capacity for Markets+ flow between BAs
- Specified Source for GHG calculation

MARKETS+ BASE SCHEDULES

- Bilateral or Spot Market imports, exports, and wheels with respect to the Markets+ footprint
 - Used to calculate available capacity for service flow constraints to respect non-market respective allocations
 - Subject to Curtailment under UFMP
 - Used in Unit Commitment Calculations
 - Used in BA sufficiency calculation for participating BAs
 - Some tags may create both BA Base Schedules and Markets+ Base Schedules if they cross through multiple participating BAs before leaving the Markets+ footprint

MARKETS+ BASE SCHEDULE DETAILS

TSR

- TBD on usage for Congestion Rights
- Proof of transmission rights and deliverability
- Path Based
- GHG

Tag

- TBD on usage for Congestion Rights
- TBD on usage for GHG

Schedules

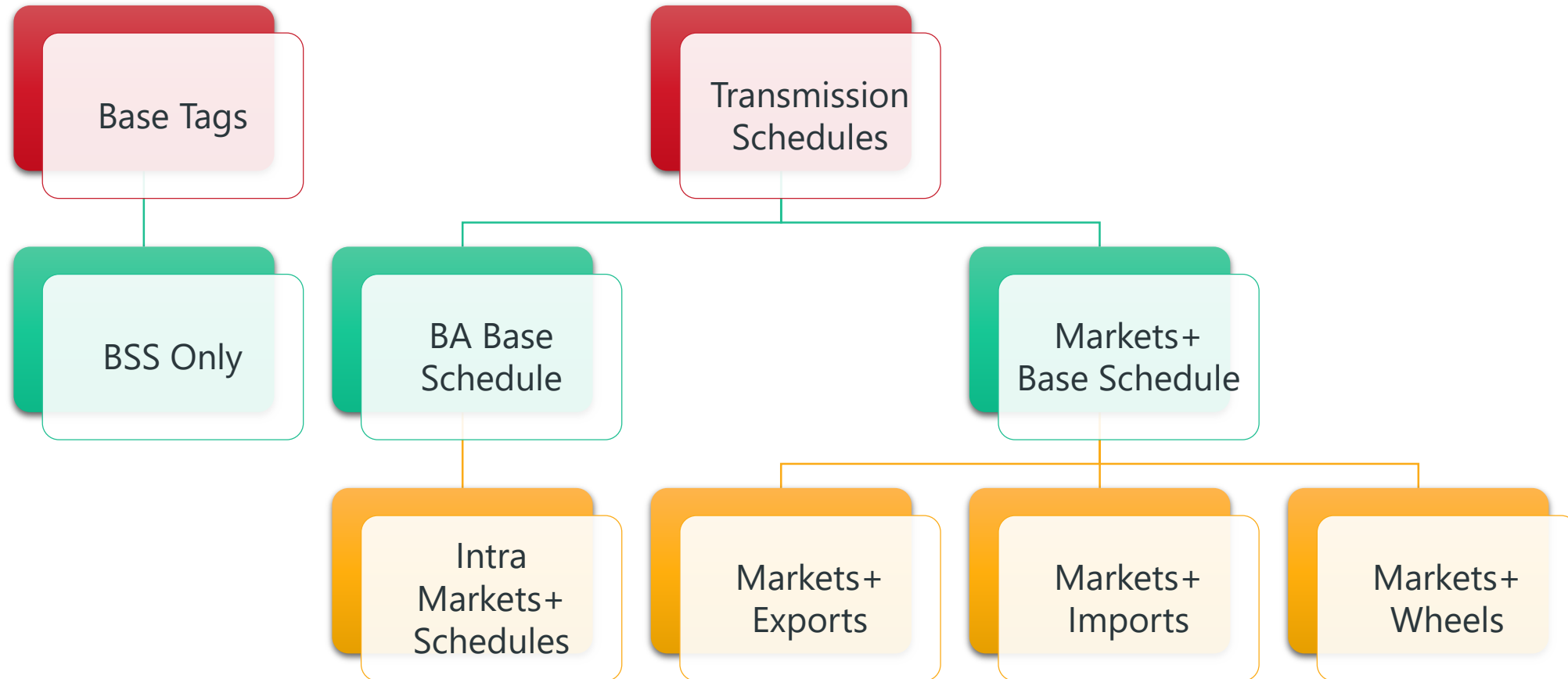
- Included in Markets+ Optimization of Dispatch
- Used to calculate the SFC available capacity for Markets+ flow
- Specified Source for GHG calculation

BA CAPACITY TAGS/SCHEDULES

- Could be imported from WRAP or submitted by the BAs to represent firm import/exports for BA sufficiency calculations
 - Part of the set asides used to adjust ATC in available transmission for service flow constraint limits
 - This capacity is expected to be available for Markets+ optimization, so it is not included in Markets+ Obligation calculations

*Set Asides such as operating reserves are included to adjust available capacity to Markets+ to ensure deliverability

BA VS MARKETS+ BASE SCHEDULES



TRANSMISSION INFORMATION

- Balancing Authorities/Transmission Operators will provide hourly information prior to the market run:
 - Net Scheduled Interchange
 - Markets+ Base schedule information
 - Transmission set-asides (non-capacity tag reserves etc)
- SPP will be the scheduling agent for Markets+
 - Update Dynamic Schedule for Markets+ flow between participating BAs

TRANSMISSION USAGE

- TSPs within this Markets+ Footprint will maintain their OATT and administer their OASIS.
- TSPs will continue to sell Transmission Service as they do today
- Markets+ will utilize available transmission to meet the regional load obligation economically and reliably.
- Markets+ Dispatch will utilize Market Transmission Service to account for market flow on transmission within the Markets+ footprint

MARKETS+ IMPORT TAG TRANSACTION

- Markets+ import tags only describe those tags that come into the Markets+ footprint from an external entity (ex. CAISO). Can sink in any Markets+ BA
- Import tags are identified to the market system by the first scheduling entity that is a Markets+ BA.
- The interface point at the Markets+ border is used to determine the LMP to settle the import tag.
- The Markets+ system does not recognize or use generation that originates outside of Markets+ for systems or settlements.
- The Markets+ system does not deliver external generation to a specific load inside of the footprint. The load is served by market dispatch
- The Markets+ systems use the "Sink" on the tag as a reference to determine the Market Participant for settlements.

MARKETS+ EXPORT TAG TRANSACTION

- Markets+ export tags only describe those tags that leave the Markets+ footprint from an internal entity. Can source from any Markets+ BA.
- Markets+ export tags are identified to the system by the last scheduling entity that is a Markets+ BA.
- The interface point at the Markets+ border is used to determine the LMP to settle the export tag.
- The Markets+ system does not recognize or use loads that receive generation from Markets+ for systems or settlements (Markets+ will not settle with external parties).
- The Markets+ systems use the "Source" on the tag as a reference to determine the Market Participant for settlement.
- The export tag does not directly impact the commitment or dispatch of an individual generator/resource.

MARKETS+ WHEEL THROUGH TRANSACTION

- Markets+ wheel through tags originate and terminate external to the Markets+ footprint but cross boundaries between BAs and TSPs inside Markets+
- Markets+ systems do not use external sources or sinks on wheel through tags
- The interface point for the entry of the tag and the exit of the tag (Markets+ footprint) are used to determine the LMP difference as needed for settlements

MARKET TRANSMISSION SERVICE

- Used to compensate TSP for usage of the transmission system to facilitate market flow via dynamic tags
- Markets+ use of MTS in the DA will be compensated at the MTS rate
- Markets+ Dispatch utilizes the lowest priority transmission service in real time to make use of all available transmission capacity
- Not a replacement for point to point or network integrated transmission service
- Can not be used for off system sales or purchases

QUESTIONS/DISCUSSION

**RECEPTION
5:30 – 6:30**

ATRIUM

MARKETS



*Working together to responsibly and economically
keep the lights on today and in the future.*



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