

# MARKETS



Denver, CO Meeting  
June 2, 2022



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keep the lights on today and in the future.*



SouthwestPowerPool



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Southwest Power Pool  
**WESTERN  
ENERGY  
SERVICES**

# WELCOME AND OVERVIEW

BRUCE REW

SPP SR. VP, OPERATIONS

# AGENDA – JUNE 2

8:00-9:00	General Session V – Governance Straw Proposal
9:00-10:00	General Session VI – GHG Tracking
10:00-10:30	Break
10:30-11:30	General Session VII – Resource Adequacy
11:30-12:00	General Session VIII – Closing Remarks
12:00	Adjourn

# **GENERAL SESSION V GOVERNANCE STRAW PROPOSAL**

# AGENDA – GENERAL SESSION V GOVERNANCE STRAW PROPOSAL

Review Governance Straw Proposal

Questions/Discussion

In-Person Attendees

Virtual Attendees

Next Steps/Schedule

# **MARKETS+ GOVERNANCE STRAW PROPOSAL**

# STRAW PROPOSAL – BALANCING INTERESTS

- Include consensus views from meetings and written comment responses to the maximum extent possible
- What FERC will approve
- SPP best practices
- Minimize impacts to SPP, Inc.



# GROUP CATEGORIES - DEFINITIONS

## Markets+ Market Participant (MMP)

- Executed Participant Agreement
- Contributes generation and/or load to market

## Markets+ Market Stakeholder (MMS)

- Executed Stakeholder Agreement
- Does not contribute generation or load
- Voting rights: MIP Selection Forum
  - Eligible for voting seat on MIP Nominating Committee, Working Groups & Task Forces
- Annual fee of \$5,000

## Markets+ Non-Voting Stakeholder (MNVS)

- Provide input at all stakeholder meetings
- No voting rights
- No annual fee





# PARTICIPATION PHASES – INCREMENTAL APPROACH

## Phase 1: Funded Investigation

Supportive entities that want to design Markets+ market operations and draft governing documents (FERC submittal)

Commit a non-refundable amount

## Phase 2: Implementation

Upon FERC approval, SPP acquires/modifies necessary software, hardware and related processes

Participating entities fully commit to fund efforts

Entities integrated into the system

## SPP Board of Directors (SPP BOD)

- Ultimate oversight of SPP's administration of Markets+
- Will give significant recognition to Markets+ Independent Panel (MIP) decisions
- Shall review and consider (after Markets+ Stakeholder process):
  - Material agreements and material changes to agreements
  - Markets+ budgets, any debt obligations related to Markets+ or material changes to SPP staffing
  - Appeals from the MIP (per MIP provision discussed later)
  - MIP decisions that have a material impact
    - Financial ramifications or corporate risk to SPP
    - Review shall be coordinated with the MIP

# SPP'S BOARD OF DIRECTORS



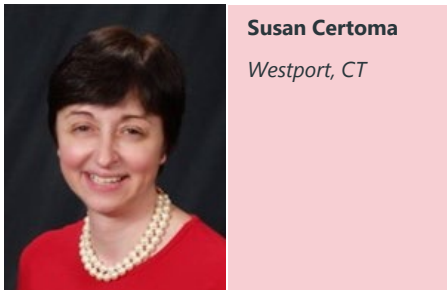
**Larry  
Altenbaumer,  
Chairman**  
*Decatur, IL*



**Barbara Sugg  
President & CEO**  
*Little Rock, AR*



**Bronwen Bastone**  
*Pelham, NY*



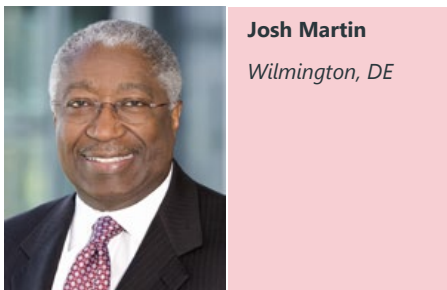
**Susan Certoma**  
*Westport, CT*



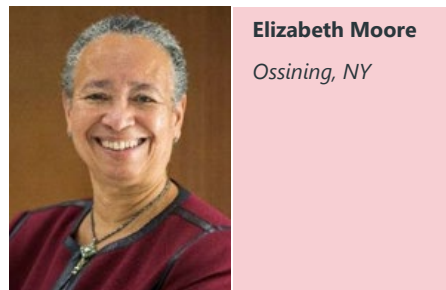
**Mark Crisson**  
*Coronado, CA*



**John Cupparo**  
*West Linn, OR*



**Josh Martin**  
*Wilmington, DE*



**Elizabeth Moore**  
*Ossining, NY*



**Ben Trowbridge**  
*Dallas, TX*

# SPP'S CORPORATE GOVERNANCE COMMITTEE

CGC Member	Company	Sector Represented
Barbara Sugg (Chair)	Southwest Power Pool	President of SPP (1)
Larry Altenbaumer (Vice Chair)	Southwest Power Pool	Chair of SPP Board (1)
Denise Buffington	Evergy Companies	Investor-Owned Utilities (1)
Mike Wise	Golden Spread Elec. Coop.	Co-operative Utilities (1)
Jason Fortik	Lincoln Electric System	Municipal Utilities (1)
Betsy Beck	Enel Green Power NA	Independent Power Producers/Marketers (1)
John McClure	Nebraska Public Power Dist.	State Power Agencies (1)
Steve Gaw	Advanced Power Alliance	Alternative Power / Public Interest (1)
Brett Leopold	ITC Great Plains, LLC	Independent Transmission Companies (1)
James Staggs	Walmart	Large/Small Retail Members (1)
Lloyd Linke	Western Area Power Admin.	Federal Power Marketing Agencies (1)

## Markets+ Independent Panel (MIP)

- Comprised of five persons
  - One is an SPP Independent Director, serves as MIP chair
  - Four are approved at MMP/MMS Selection Forum
- Recent and relevant senior level management expertise and experience: electric industry, markets, utility regulation
- Comply with SPP's standards of conduct [independent from MPPs]
- Four year terms, no term limits
  - Initial terms will be staggering
- Simple majority voting (no secret ballot)

## Markets+ Independent Panel (MIP)

- Highest level of Markets+ authority with SPP BOD oversight
- Actions taken will be filed with FERC, unless appealed [205]
- Absent appeal, SPP staff is authorized to submit regulatory filings
- Appeals:
  - Any MIP member may request review of MIP action or inaction
  - Only members of the MIP can appeal to SPP BOD

# SPP'S STANDING BOARD-LEVEL COMMITTEES

Finance Committee (9 members)		Human Resources Cmte. (9 members)		Strategic Planning Committee (13 or 14 members)		Corporate Gov. Cmte. (11 members)	
Sector	Representatives	Sector	Representatives	Sector	Representatives	Sector	Representatives
Board of Directors (1 serves as chair)	3	Board of Directors (1 serves as chair)	3	Board of Directors (1 serves as chair)	3 or 4	SPP President	1
Transmission owning member	3	Transmission owning member	3	Transmission owning member	5	SPP Board Chr.	1
Transmission using member	3	Transmission using member	3	Transmission using member	5	IOU	1
						Co-op	1
						Municipals	1
						IPP/Marketers	1
						State Agency	1
						Alt Pwr/Pub.	1
						ITC	1
						Retail	1
						Fed Agency	1



# MIP Nominating Committee

- Ten sector-based representatives (based on written comment responses):
  - MIP representative, who shall serve as chair
  - Independent power producers
  - Markets+ State Committee member
  - Public interest organizations
  - Cooperatives
  - Municipal utilities
  - Federal agency
  - Investor-owned utilities
  - Competitive marketers
  - Trade groups
- Election process mirrors SPP BOD process
- Approval: Each MMP and MMS votes at MIP Selection Forum

# Markets+ Participants Executive Committee (MPEC)

- **Each MMP will appoint a representative**
  - Senior-level management employee
  - Financial decision-making authority
- **Authority:**
  - Make recommendations to the MIP:
    - Proposed amendments to the Markets+ tariff (including the Participant Agreement and the Stakeholder Agreement)
    - Markets+ market protocols to support filed tariff
    - Administrative rate charged to market participants
  - Establish Working Groups and Task Forces
- **Voting structure: House and Senate**
  - House voting structure to be developed

## Working Groups and Task Forces

- MPEC may establish any Working Group or Task Force necessary to fulfill its mission
- Comprised of MMP and MMS representatives
  - MPEC chair appoints
- Simple majority voting

# APPEALS TO THE MPEC [MIP]

Any MMP or MMS who disagrees with an action taken or recommended by a Working Group or Task Force can appeal to the MPEC

Submit alternate recommendation

Within seven days of the Working Group or Task Force action or inaction

## Markets+ State Committee (MSC)

- One Commissioner from the utility regulatory commission of each state a Markets+ Market Participant has load/gen
- Provide advice to the MIP and the MPEC on all matters, including initiative prioritization and policy issues
- MSC will determine meeting schedule and voting structure
- Funding – SPP facilitates MSC’s retention of independent staffing
  - MIP annually approves the MSC’s budget
  - MSC budget costs allocated to MMPs
- Data access

# SPP STAFF INDEPENDENCE AND SUPPORT

Each Committee, Working Group or Task Force shall be assigned a SPP staff secretary

Non-voting, independent and impartial

Keep minutes of discussions, decisions and actions

SPP staff advises the MIP and MPEC of any budgetary impacts related to expected level of support

# GOVERNANCE REVIEW

- Upon MPEC request
- No later than three years after Markets+ launch



# SPP GOVERNING PROCESS (PLUS 3 OPTION)

## Bylaws

- SPP currently undergoing a comprehensive, holistic Bylaw review
- Markets+ to name a Liaison to SPP's Adaptive Governance efforts

## Corporate Governance Committee

- Markets+ to name a Liaison to CGC for purposes of nominating SPP Board members

## Members Committee Straw Vote

- SPP will pursue modification to practice of Members Committee conducting a straw vote on Markets+ agenda items before SPP Board consideration



# QUESTIONS/DISCUSSION

# NEXT STEPS SCHEDULE

KARA FORNSTROM, SPP

# GOVERNANCE DESIGN TEAM SCHEDULE

- June 24: Governance Design Team Webinar
  - SPP will present revised straw proposal
- July 15: Written Comments Due
- July 22: Governance Design Team Webinar
  - SPP to summarize written comments

# MARKETS



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# GENERAL SESSION VI GHG TRACKING

# **AGENDA – GENERAL SESSION VI GHG TRACKING**

**Background**

**Principles for Incorporating GHG-priority Programs into Markets+**

**Key Objectives**

**Design Proposal**

**Questions/Discussion**

**Additional Topics**

# TOPICS

1. Background
2. Principles for Incorporating GHG-pricing Programs into Markets+
3. Key Objectives
4. Design Proposal
5. Discussion Questions
6. Additional Topics

# BACKGROUND: GHG PRICING PROGRAMS

- The purpose of a GHG-pricing program is generally to reduce GHG emissions by imposing a cost of emissions from electricity generated within the GHG-pricing program's footprint
- GHG programs are intended to make low- or non-emitting resources relatively more economic than resources that emit high amounts of GHG emissions
- May also include rules applicable to imports in order to prevent "leakage"
  - Leakage occurs when electricity production shifts from GHG-emitting generating resources located within a jurisdiction applying GHG pricing to GHG-emitting generating resources located outside the jurisdiction (instead of reducing overall GHG emissions)



# BACKGROUND: POLICY FRAMEWORK IN CALIFORNIA & WASHINGTON

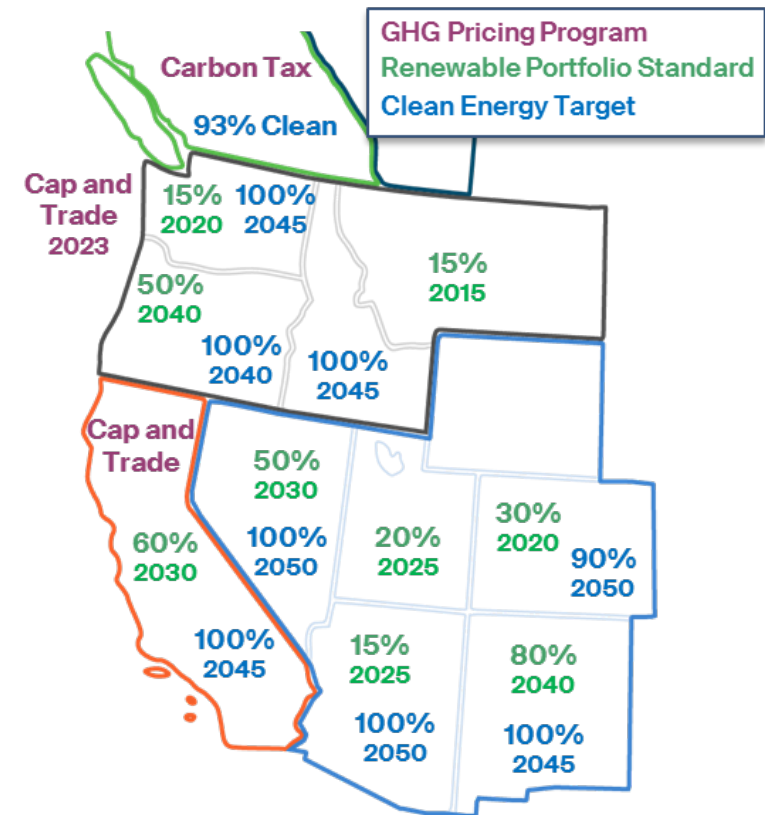
- California Cap and Trade in place since 2013, Washington Cap and Invest begins 2023
- Both programs apply to energy **generated** in the state or **imported** into the state
  - Both state program separate imports into 'specified' and 'unspecified' buckets
  - Specified imports are where the source of the import is known and unspecified imports are where the source of the import is not known
- Both programs regulate the "first jurisdictional deliverer" (FJD)
  - Whoever first delivers energy into the state (either the in-state generator or the importer) has a compliance obligation
  - Megawatt-hours and emissions associated with imports are reported and quantified (includes non-emitting imports)
  - Importers with a compliance obligation must purchase and retire allowances
    - one allowance per ton of GHG

# PRINCIPLES FOR INCORPORATING GHG PROGRAMS INTO MARKETS+

- It is up to each state or province to determine whether to implement a GHG-pricing program
  - Market design must not encroach upon state autonomy to adopt a GHG-related program and determine its associated rules
- Market design should accurately apply the provisions of each state or province's GHG-pricing program
  - But also recognize that market design can help to inform policy choices and vice versa, and harmonization of certain aspects of state GHG programs could enable improved efficiencies
- The organized market design should anticipate growing number of GHG-pricing programs, and that all GHG-pricing programs will likely evolve over time
  - Designing flexibility into the organized market will reduce the need for significant changes to the organized market design as GHG-pricing programs grow and evolve
  - A flexibly designed program may also be more able to accommodate clean energy or GHG policy frameworks that are not explicitly based on GHG pricing

# PRINCIPLES FOR INCORPORATING GHG PROGRAMS INTO MARKETS+

- Resources have multiple regions where their generation can be delivered and their associated clean attributes applied
- Includes committing supply to meet a variety of environmental programs
  - RPS, clean energy standards, product content disclosure, GHG pricing programs
- A durable market design must allow the seller to determine the quantity – if any – that *it wishes to* commit to deliver to another region (Seller Autonomy)



Graphic represents simplified summary of targets and commitments for each State/Province. Includes voluntary targets from large load serving entities within the region

# KEY OBJECTIVES FOR APPLYING GHG PRICING TO MARKETS+

## Within A GHG Zone

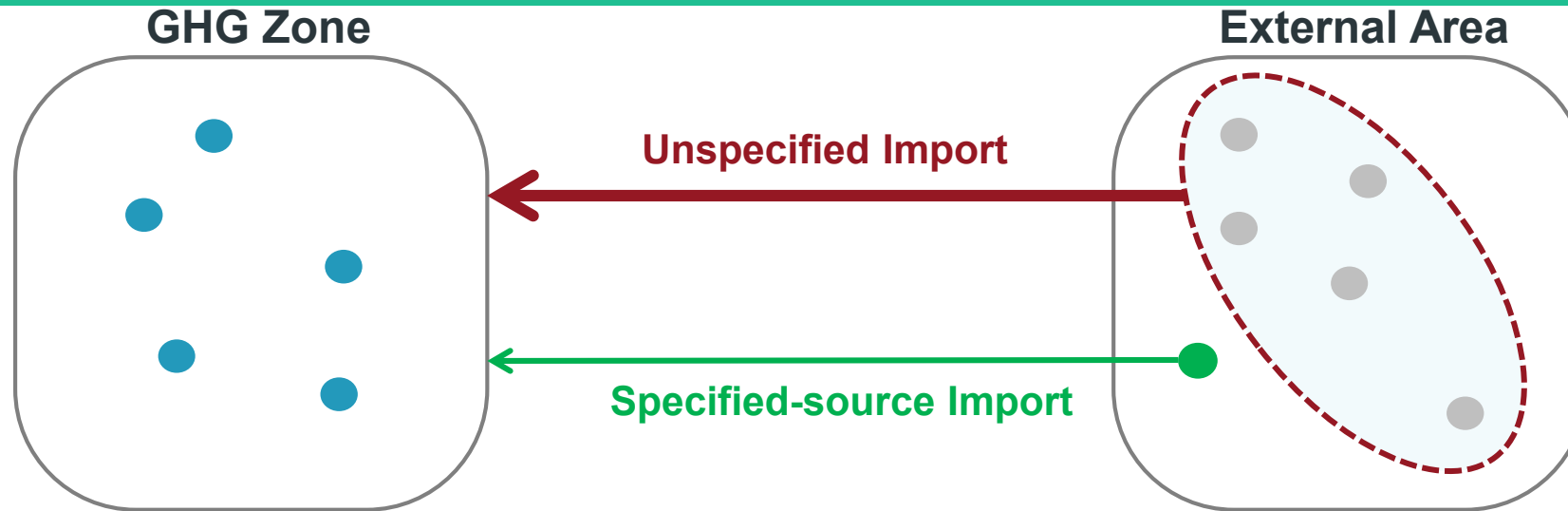
- **Include the cost of GHG emissions in the dispatch of generation** resources inside the GHG zone
- **Include the cost of GHG emissions associated with imports** into the GHG zone;
- **Enable market access** for low- or non-emitting resources outside a GHG zone to compete to sell their low- or non-emitting output into a GHG zone;
- **Ensure market prices in the GHG zone reflect the cost of GHG emissions**, encouraging low and non-emitting resources to be developed and available when they provide greatest value.

## Outside A GHG Zone

- **Ensure the cost of GHG emissions are *not* included in the dispatch of generation** outside of GHG zones;
- **Ensure the cost of GHG emissions are *not* included in transfers** that occur entirely outside of GHG zones;
- **Ensure that market prices for electricity do *not* include costs of GHG emissions of resources outside the GHG zone.**

# DESIGN PROPOSAL

# GHG PRICING GENERALLY APPLIES TO THREE CATEGORIES OF ACTIVITY



## Generation within a GHG zone

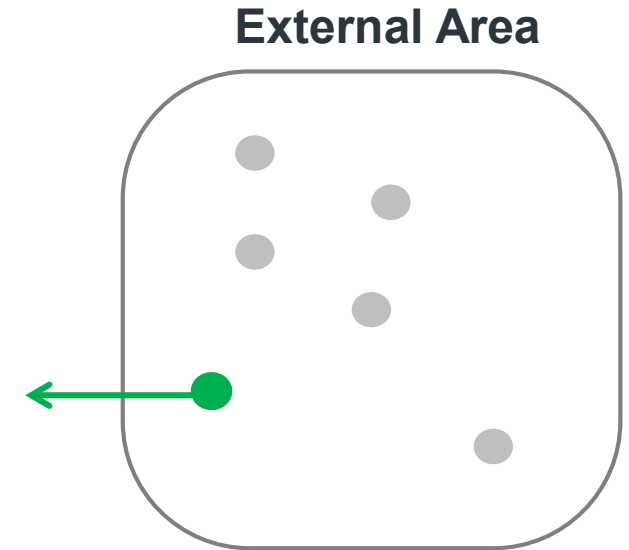
1. **Internal resources** include their GHG costs in their offer prices

## Imports into a GHG zone

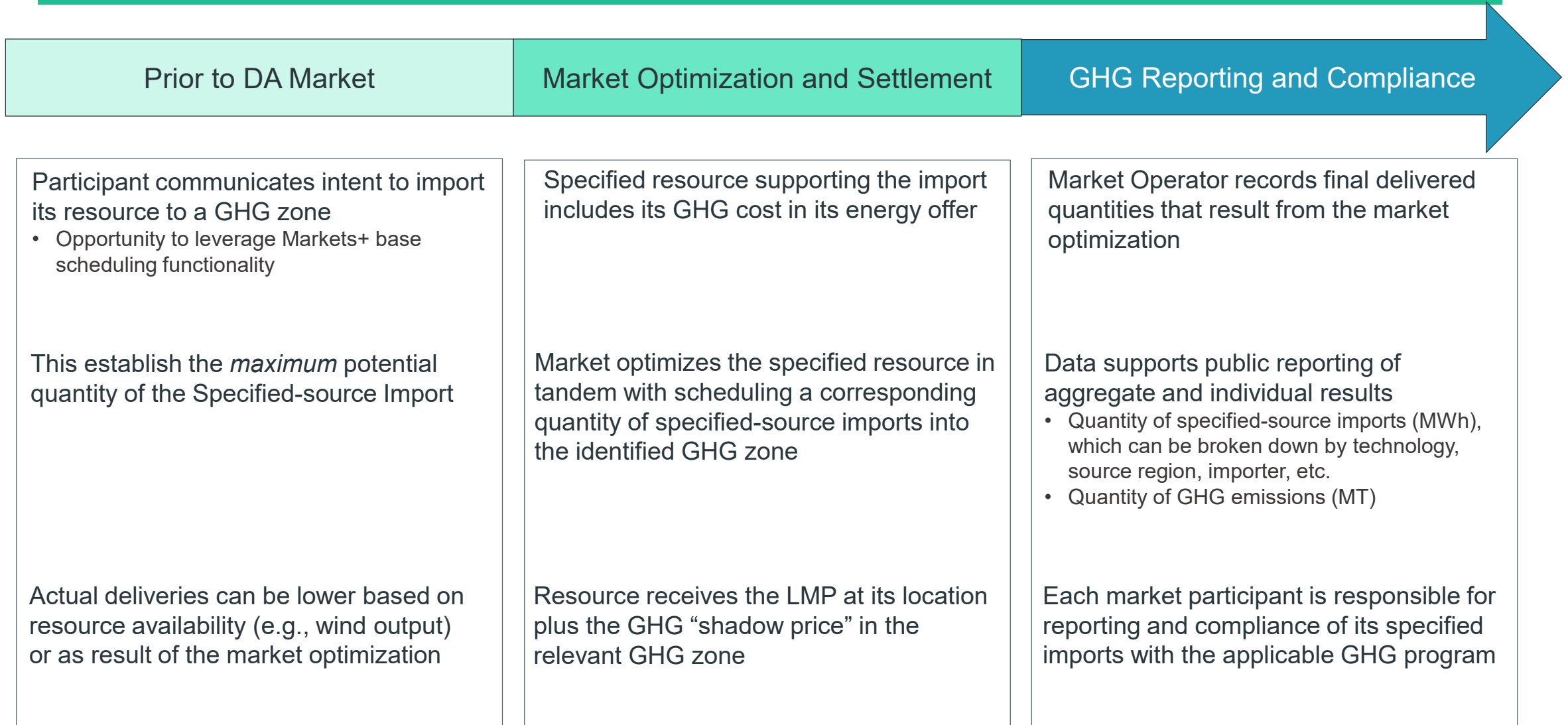
2. **Specified-source Imports** are transfers of specific resources to the GHG zone at a resource-specific GHG rate
3. **Unspecified Imports** are assigned a default GHG emissions rate associated with the aggregate surplus generation in the external region

# SPECIFIED-SOURCE IMPORTS

- Specified-source imports allow external resources to contribute toward meeting environmental goals and to access market opportunities to compete, on a non-discriminatory basis, to sell to the GHG zone
- Two important considerations for supporting for Specified-source imports
  - Identification of the specific resource (and its emissions rate)
  - Verification that the specified resource was imported to the GHG zone
- Once specified-source treatment is established, the market software dispatches the resource based on its costs (including GHG) in tandem with scheduling a corresponding quantity of specified-source imports into the GHG zone



# PROPOSED APPROACH FOR ENABLING SPECIFIED-SOURCE IMPORTS





# OVERVIEW OF MARKETS+ BASE SCHEDULING FUNCTIONALITY

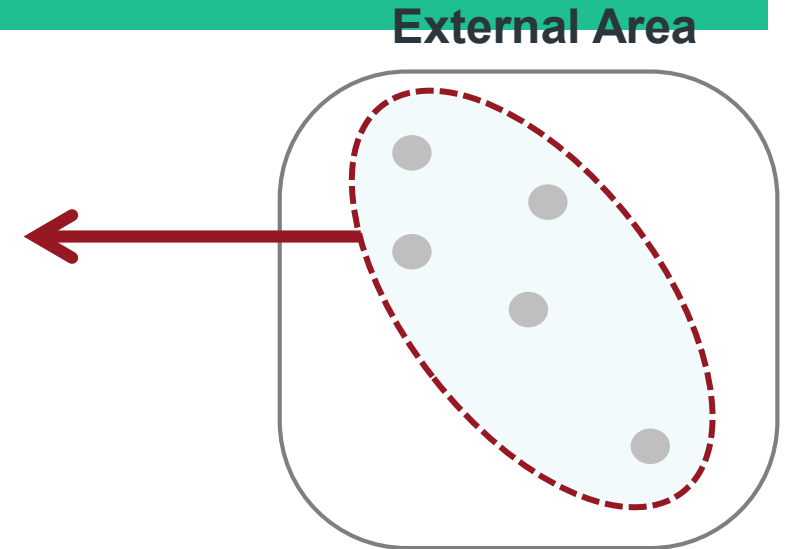
- Markets+ will support base scheduling functionality to enable physical scheduling of specific resources to specific loads (or regions)
- Markets+ base schedules are a reference point to demonstrate physical delivery, and are not equivalent to self-schedules
- For GHG purposes, Markets+ base schedules can be used to demonstrate the import of a specified-resource to another region (as opposed to simply selling at busbar)
- Participant has the ability to both deliver its energy to GHG-pricing zone and have its resource efficiently dispatched in the market

# VERIFYING SPECIFIED-SOURCE IMPORTS

- GHG-Pricing programs are intended to reduce emissions associated with internal generation and with energy imported into the GHG zone
- It is therefore critically important to establish that the specified resource was imported into the GHG zone
- Markets+ proposed base scheduling functionality could be used to communicate key information regarding the transaction
  - Cross-over discussion with the transmission availability design team

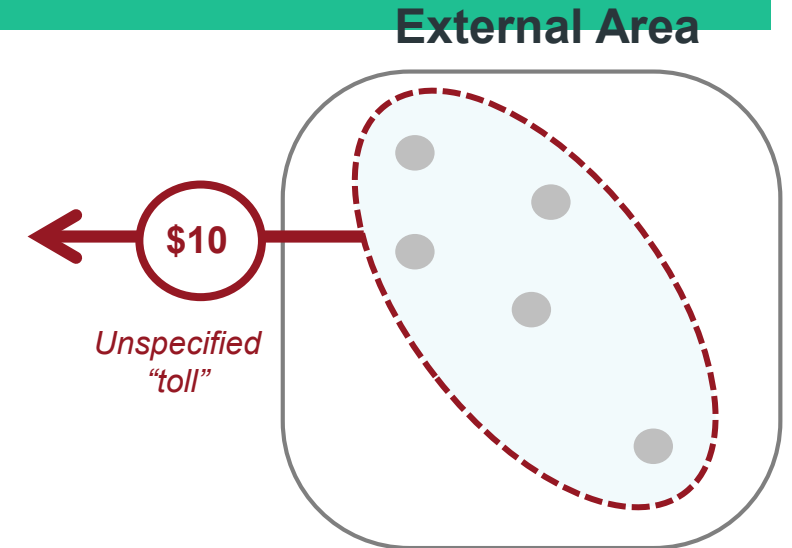
# UNSPECIFIED IMPORTS

- Unspecified Imports are imports that do not meet the GHG program requirements for Specified-source
  - Unspecified imports are not linked to any particular resource
- Existing GHG programs apply a single emissions rate to unspecified imports based on historical information regarding the type of generation that tends to be marginal in the region
  - *e.g., 0.428 MTCO<sub>2</sub>/MWh*
- Market optimization will use the relevant GHG program's default emission rate when evaluating unspecified imports into the GHG zone



# UNSPECIFIED IMPORTS

- The default GHG emissions rate is multiplied by the cost of GHG allowances to determine a “toll” for scheduling Unspecified Imports through the market optimization
- Example:
  - Assume unspecified rate = 0.5 MTCO<sub>2</sub>/MWh
  - Assume \$20 allowance cost
  - 0.5 MTCO<sub>2</sub>/MWh \* \$20 allowance cost = **\$10/MWh toll**
- Unspecified imports will only occur when the market price inside the GHG zone (which includes GHG costs) is higher than the market price in the non-GHG zone (which does not include GHG costs) by at least as much as the “toll” (e.g., \$10/MWh)



# MARKET OPTIMIZATION OF UNSPECIFIED IMPORTS



Internal generation: **\$60/MWh**

$\geq$

**\$10** + External generation: **\$50/MWh**

✓ Import occurs

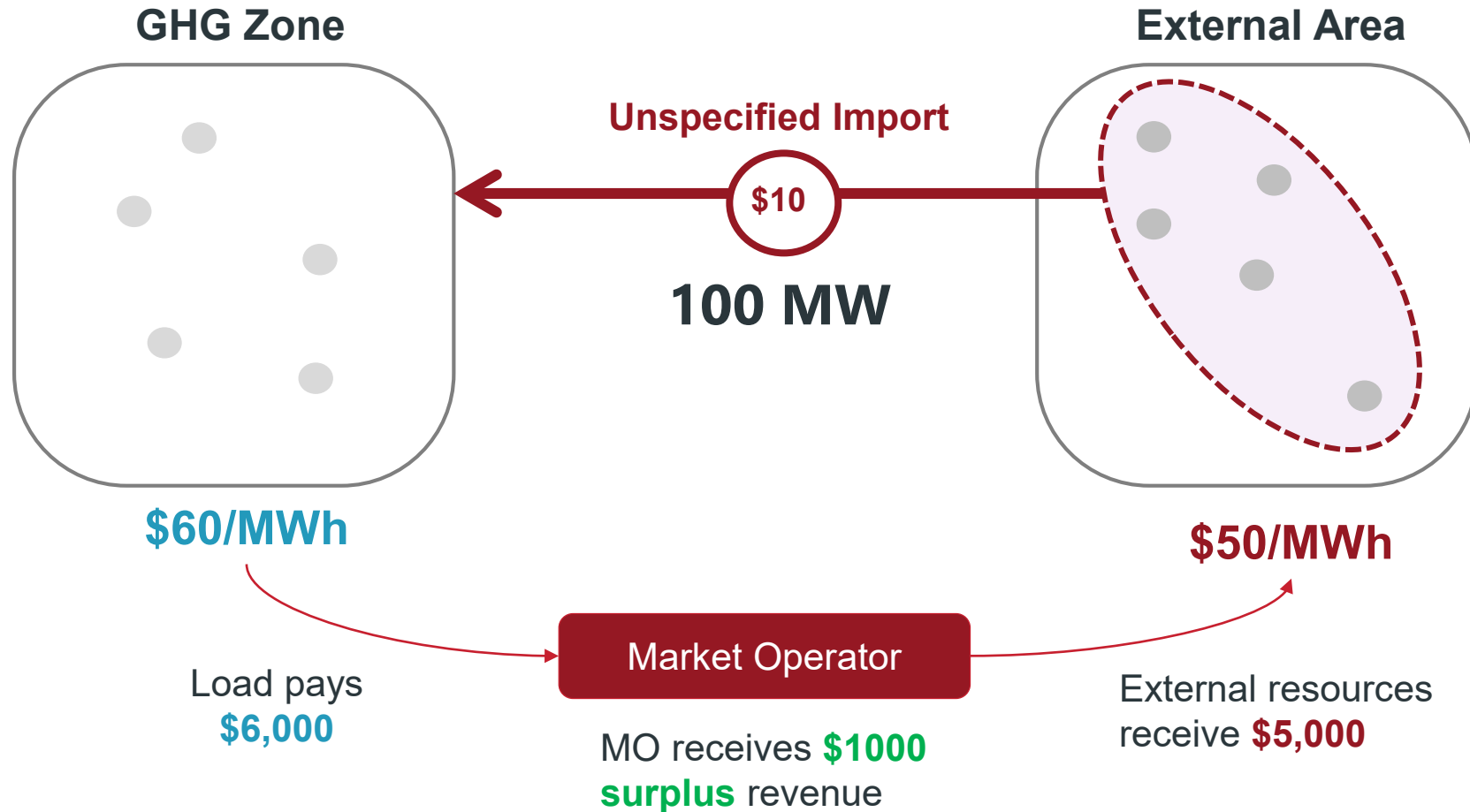
Internal generation: **\$55/MWh**

$<$

**\$10** + External generation: **\$50/MWh**

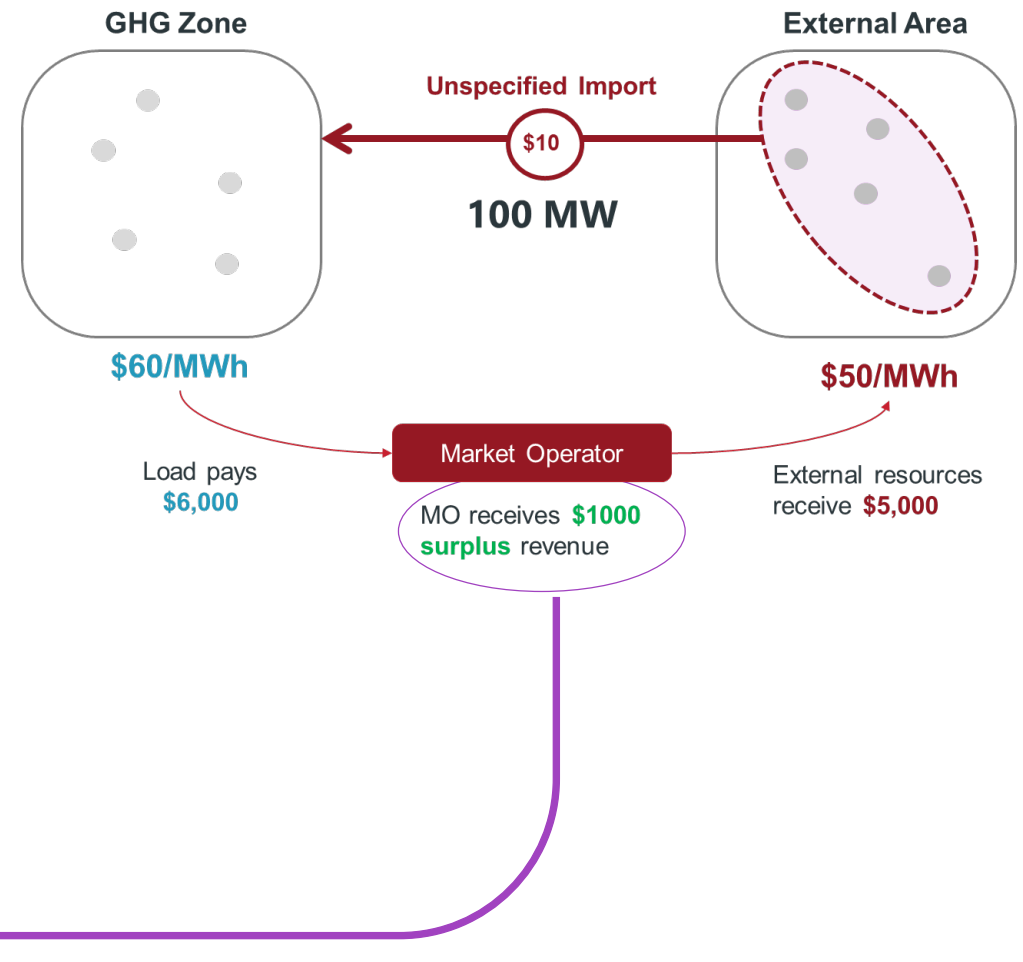
✗ No Import

# MARKET SETTLEMENT OF UNSPECIFIED IMPORTS

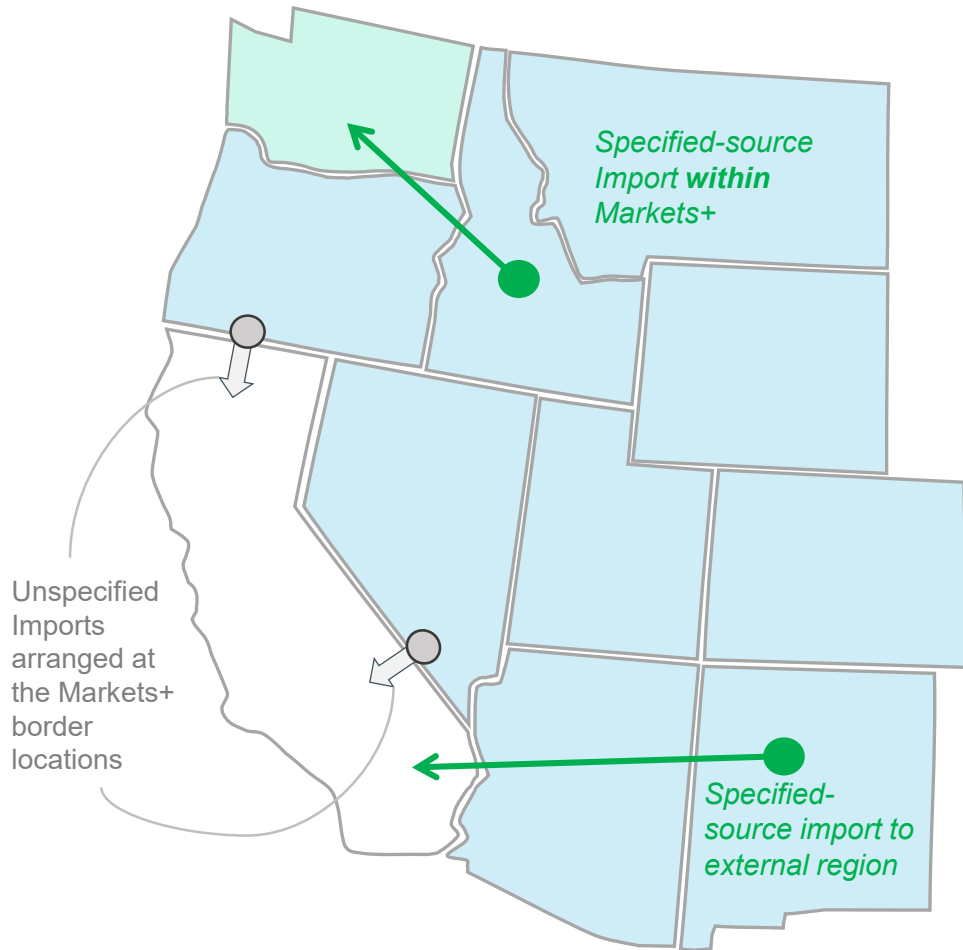


# COMPLIANCE FOR UNSPECIFIED IMPORTS

- Unspecified Imports are not linked to any particular resource and there is no GHG price paid to external resources
- When GHG zone is a net importer, price separation between zones will reflect the unspecified rate
  - Generators in non-GHG zone will receive a (lower) price that does not reflect GHG costs
  - Load in the GHG zone will pay a (higher) price that reflects GHG costs
- Surplus revenue collected by Market Operator fully funds GHG compliance requirements
  - $100 \text{ MW} * 0.50 \text{ MTCO}_2/\text{MWh} = 50 \text{ allowances required}$
  - $50 \text{ allowances} * \$20 \text{ per allowance} = \$1000$



# GHG PROPOSAL SUPPORTS SPECIFIED SOURCE EXPORTS TO CALIFORNIA



- GHG approach supports Specified-source Imports to a GHG zone within the Markets+ footprint
- It also enables Specified-source Imports to a GHG zone outside the Markets+ footprint (e.g., a Specified-source import to CAISO BAA)
- Generic exports from the Market+ footprint border locations (e.g., that are not base scheduled) would be treated as Unspecified Imports into California
  - The entity that purchases Markets+ energy at the border and imports it to California would be responsible for any GHG compliance obligations



# GHG APPROACH ENABLES COMPREHENSIVE REPORTING

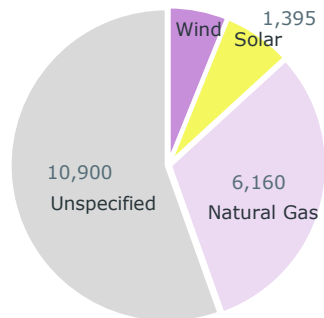
## Import Summary (MWh)

Type	Resource Name	Technology	Emissions Factor	Source Location	Importer	HE 7	HE 8	HE 9	...	HE 19	HE 20	HE 21	HE 22	Total
Specified-Source	Resource A	Wind	0	Oregon	Seller X	100	100	100	100	70	80	90	100	1200
Specified-Source	Resource B	Solar	0	Nevada	Seller Y	50	60	70	100	85	50	20	0	1395
Specified-Source	Resource C	Natural Gas	0.397	Arizona	Seller Z	385	385	385	385	385	385	385	385	6160
Unspecified	n/a	Unspecified	0.428	Unspecified	n/a	900	1100	1100	900	600	600	600	600	10900
Total Imports to GHG Zone						1435	1645	1655	1485	1140	1115	1095	1085	19655

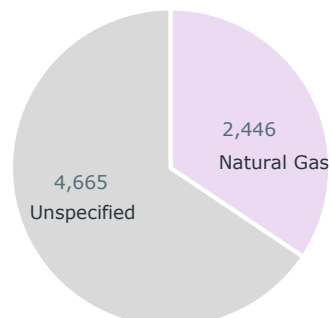
## Emissions Summary (MTCO2)

Type	Resource Name	Technology	Emissions Factor	Source Location	Importer	HE 7	HE 8	HE 9	...	HE 19	HE 20	HE 21	HE 22	Total
Specified-Source	Resource A	Wind	0	Oregon	Seller X	0	0	0	0	0	0	0	0	0
Specified-Source	Resource B	Solar	0	Nevada	Seller Y	0	0	0	0	0	0	0	0	0
Specified-Source	Resource C	Natural Gas	0.397	Arizona	Seller Z	153	153	153	153	153	153	153	153	2446
Unspecified	n/a	Unspecified	0.428	Unspecified	n/a	385	471	471	385	257	257	257	257	4665
Total Emissions						538	624	624	538	410	410	410	410	7111

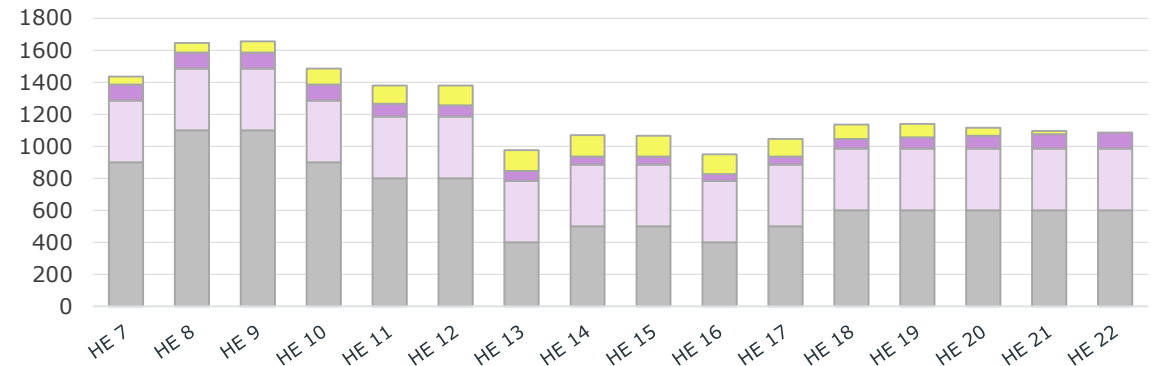
Import Quantities



Emissions



Hourly Import Summary By Technology



# ACCURATELY DETERMINING THE GHG RATE FOR IMPORTS

## UNSPECIFIED IMPORTS

- Under an organized market design, all generation simultaneously dispatched (at bus bar) to serve all load
  - Unspecified imports can be generally expected to reflect the aggregate excess generation in the external area
  - Cannot be accurately “linked” to any particular generation resource(s)
- The Import GHG Rate for unspecified imports generally seeks to represent the generation expected to marginal in the region
- The Import GHG rate is defined by the GHG program, and is generally a single rate
  - A more finely-tuned calculation of Import GHG Rates could be developed, provided that the increased granularity does not compromise accuracy

# ACCURATELY DETERMINING THE GHG RATE FOR IMPORTS

## UNSPECIFIED IMPORTS



### Inaccurately Low Import GHG Rate

e.g. all imports treated as clean generation

- GHG “leakage” as electricity production (and emissions) shift outside the GHG zone.
- Clean and low-emitting generators outside GHG zone receive suppressed value for GHG attributes.
- Higher-emitting generators outside GHG zone benefit from increased opportunity to sell into GHG zone.
- Market prices in GHG zone do not accurately reflect GHG costs, weakening incentives for clean resources

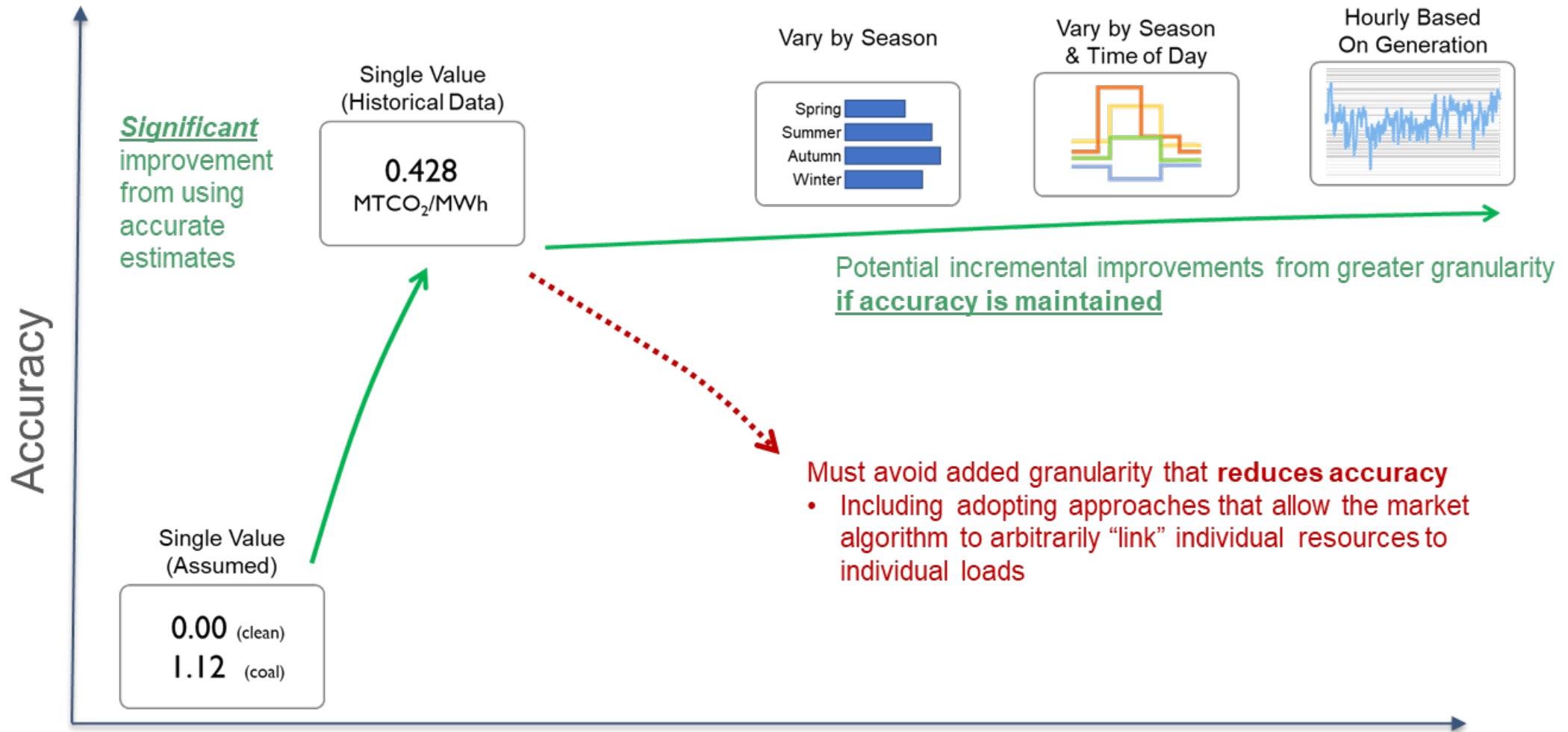
### Inaccurately High Import GHG Rate

e.g. all imports treated as coal generation

- Opportunities to reduce GHG emissions through import substitution are not realized.
- Consumers in GHG zone face excess costs to achieve environmental goals.
- Clean and low-emitting resources outside GHG zone have limited access to opportunities to sell into GHG zone.
- Higher-emitting generators inside GHG zone benefits from reduced imports.
- Areas outside GHG zone may experience export bottlenecks, oversupply challenges, and suppressed market prices

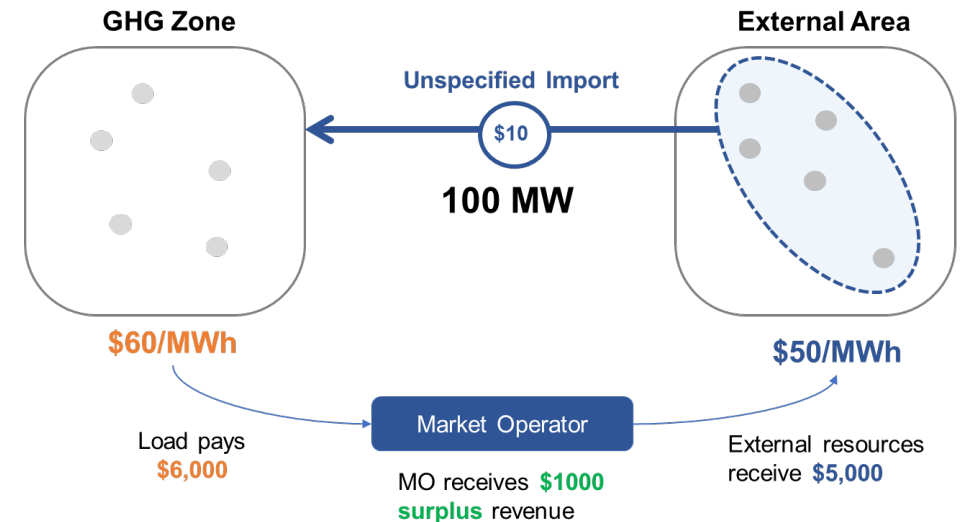
# ACCURATELY DETERMINING THE GHG RATE FOR IMPORTS

## UNSPECIFIED IMPORTS



# COMPLIANCE FOR UNSPECIFIED IMPORTS

- Must define the entity that will assume responsibility for reporting and compliance for unspecified imports
- Entity will also receive the surplus market revenues associated with unspecified imports
  - Allowance obligation is fully funded by market revenue received from Market Operator
- Multiple choices for determining reporting entity
  - Third party (in exchange for a fee?)
  - Allocation to load in GHG zone
  - Market Operator itself



# IMPLEMENTATION APPROACH

- Unspecified imports can be implemented as enforcing a market constraint on the quantity of unspecified imports into a GHG zone:

Unspecified Imports  $\leq 0$ , where:

$$\text{Unspecified Imports} = [\text{Load}] + [\text{Specified Exports}] + [\text{Losses}] - [\text{Internal Generation}] - [\text{Specified Imports}]$$

- Constraint can be relaxed at a penalty price that is set equal to the unspecified toll rate
- For example, assume toll is equal to \$10/ MWh
  - Unspecified imports would only be scheduled—i.e., the constraint would only be relaxed—if the value of electricity in the GHG zone was at least \$10/MWh more than the cost of producing additional electricity in the non-GHG zone

# FOR DISCUSSION: SUCCESS CRITERIA

1. Accurate accounting for GHG emissions associated with generation and imports into the GHG zone including minimizing any shift of emissions from the GHG zone to the non-GHG zone without reducing overall emissions
2. Market prices in the GHG zone that reflect GHG pricing policies and that will provide clear and transparent price signals to incentivize clean resources
3. Opportunity for clean and low-emitting resources outside the zone to be imported and receive a price that reflects the value of their GHG attributes
4. Ensuring that similarly situated resources (inside and outside the GHG zone) are treated comparably
5. Ensure GHG pricing is not applied to resources in external regions
6. Provide granular, objective, and verified data for enhanced reporting
7. Ensure sellers maintain autonomy to choose where to deliver their output
8. A simple technical design that can leverage Markets+ base scheduling functionality

# QUESTIONS/DISCUSSION



# ADDITIONAL TOPICS

- Verifying Specified-source Imports
- Accommodating Multiple GHG-Pricing Zones
  - Independent GHG-pricing zones (operates as two zones)
  - GHG-pricing zones that mutually recognize each other (creates one zone)
- Special Case – Splitting resource output between GHG-zone and non-GHG zone
  - Multiple potential solutions to address this complex case
- Setting The Unspecified Rate
  - Should be determined by each applicable GHG-pricing program
  - Discussion of single static rate vs static shaped rate vs dynamic rate

# NEXT STEPS

KARA FORNSTROM, SPP

# MARKETS



Morning Break

10:00 – 10:30



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# GENERAL SESSION VII RESOURCE ADEQUACY

# AGENDA – GENERAL SESSION VII

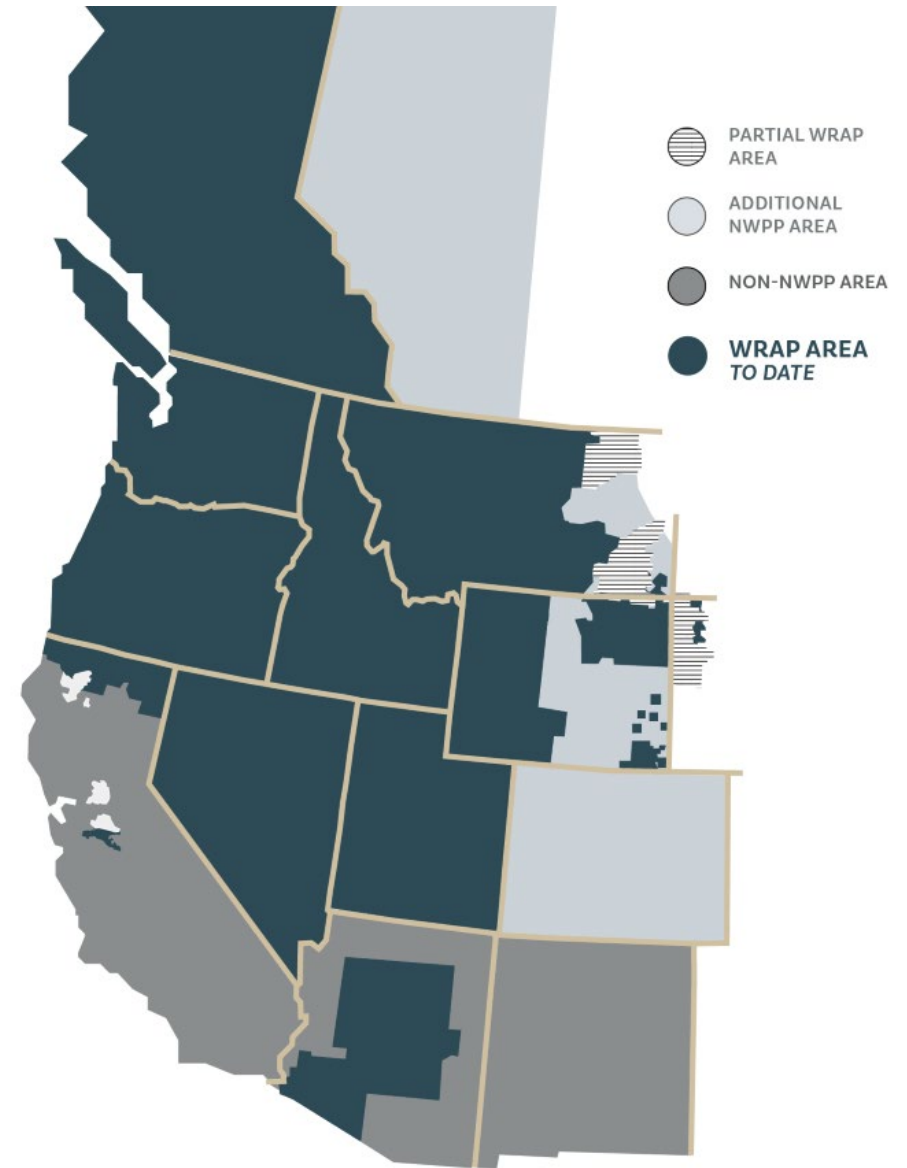
## RESOURCE ADEQUACY

Western Power Pool Remarks	Sarah Edmonds, WPP CEO
Questions	
Exploring Compatibility between WRAP and Markets+	Powerex
Questions/Discussion	

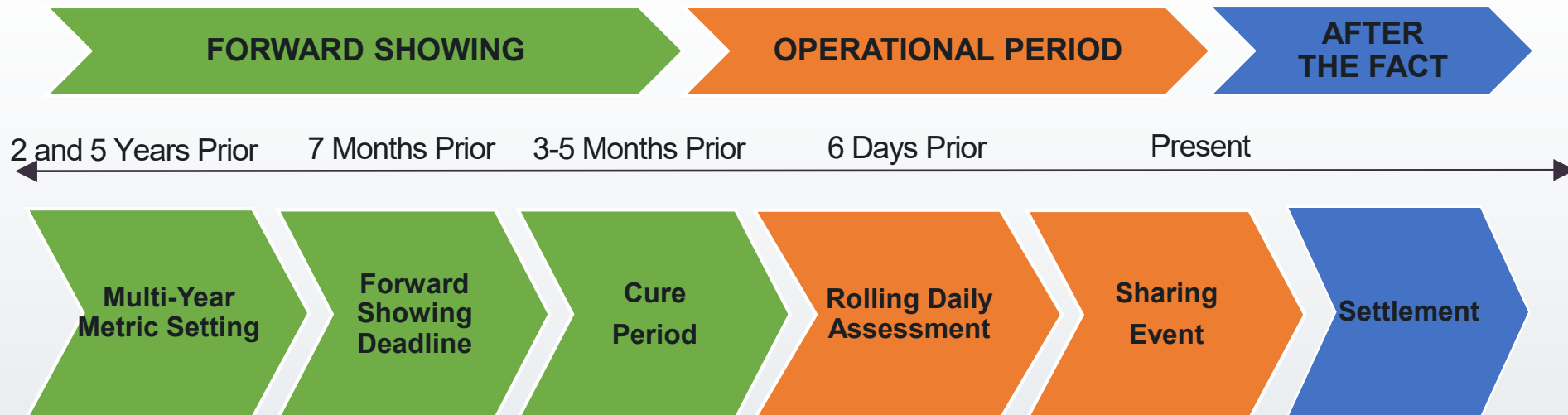
# *SPP Markets+* *June 2, 2022*

Sarah E. Edmonds  
President, WPP

*WPP is a trusted partner and provider of West-wide grid integration services*



# PROGRAM FRAMEWORK: TWO SEASONS (WINTER & SUMMER)





# CURRENT PHASE ACTIVITIES



PO = Program Operator

LOLE = Loss of Load Expectation

ELCC = Expected Load Carrying Capacity

# QUESTIONS/DISCUSSION

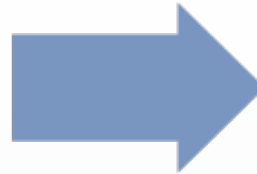
# Exploring Compatibility Between WRAP and Markets+

# WRAP Conceptual Framework

## Forward Planning Timeframe *Year- & Season-Ahead*

**7 months ahead of each season:** WRAP members must demonstrate they have procured the required quantity of credited capacity from identified physical resources and the transmission service necessary to enable delivery to load.

- Common planning standard (1 day in 10 years)
- Objective supply crediting methodology
- Clearly defined deliverability requirements for internal and external resource adequacy resources



## Operational Timeframe *Day-Ahead & Real-Time*

**WRAP operational program provides WRAP members priority access to all WRAP supply** (required + voluntary) to meet reliability needs

- WRAP communicates the amount of capacity that each member **must make available** to other members, or that may be requested from other members, based on anticipated conditions
- Members can **voluntarily make additional** capacity available to other members

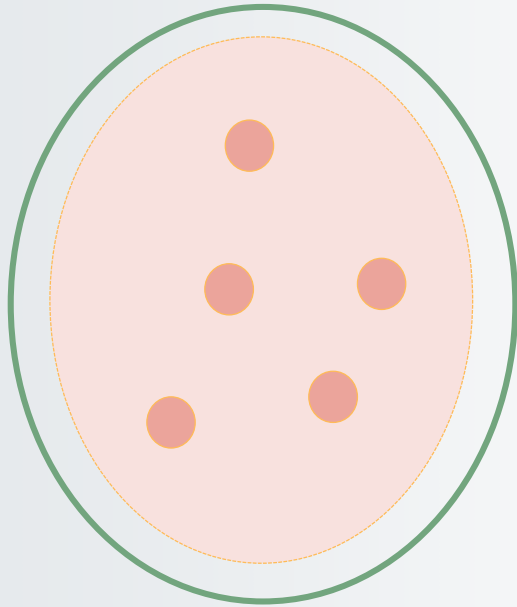
# Objectives for Compatibility Between WRAP and Markets+

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- » Markets+ must be designed to *be compatible with* WRAP
- » Markets+ and WRAP should *leverage each other* to increase reliability and economic benefits of both Markets+ and WRAP
- » Markets+ and WRAP *must respect* each program's autonomy and separate governance frameworks

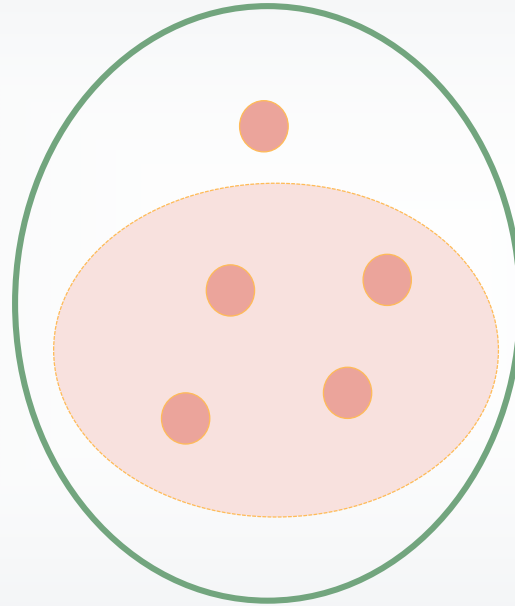
# Alignment between RA Programs and a DA/RT Market Footprint

## Ideal



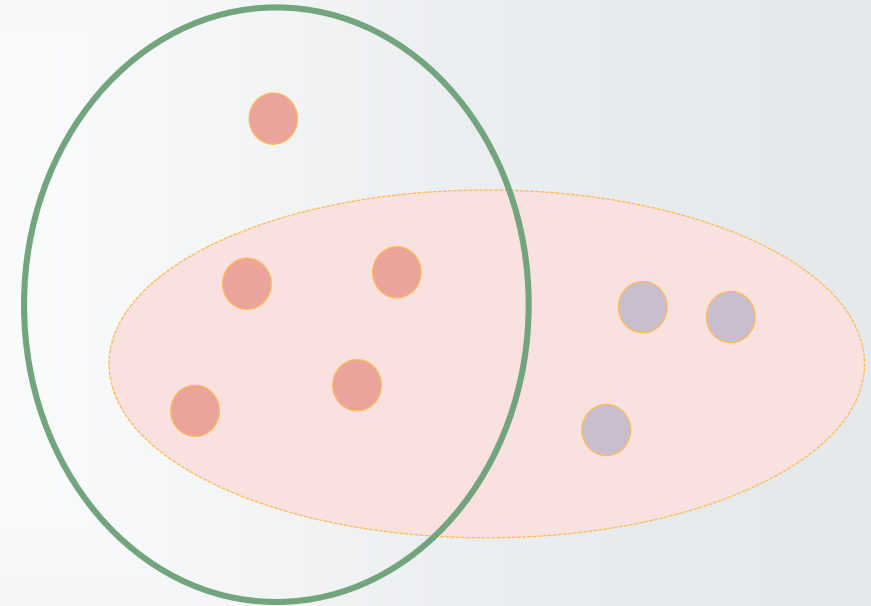
*RA and market footprints are fully aligned*

## Workable



*All participants in organized market meet a common RA standard*

## Challenging



*All participants in organized market **do not** meet a common RA standard*

# Resource Adequacy Proposal for Markets+

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- » Participation in Markets+ would require that an entity meet an RA requirement which is defined by WRAP
- » Entities that participate in WRAP would be determined to have met the Markets+ RA requirement
- » Entities that don't participate in WRAP would be required to demonstrate that they meet the WRAP metrics on a standalone basis

# Opportunities for Markets+ to Support and Enhance WRAP

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- » Enable more efficient real-time dispatch of WRAP resources to WRAP load
- » Unlock additional transmission capability in:
  - WRAP Operations, improving reliability
  - WRAP Forward Showing, enabling a lower PRM
- » Ensure WRAP members are assured priority access to WRAP supply right through real-time
  - Also increases diversity benefits that can be included in forward showing requirements



# Expanding Priority Access of WRAP Supply to WRAP Members

	WRAP Operational Program	Markets+
DA Holdback Requirement	Yes	Yes
Voluntary Supply Prior to T-90	Yes, some	Yes, all
Voluntary Supply after T-90 and throughout operating hour	No	Yes

# Markets+ Can Improve Efficiency of WRAP Operational Program

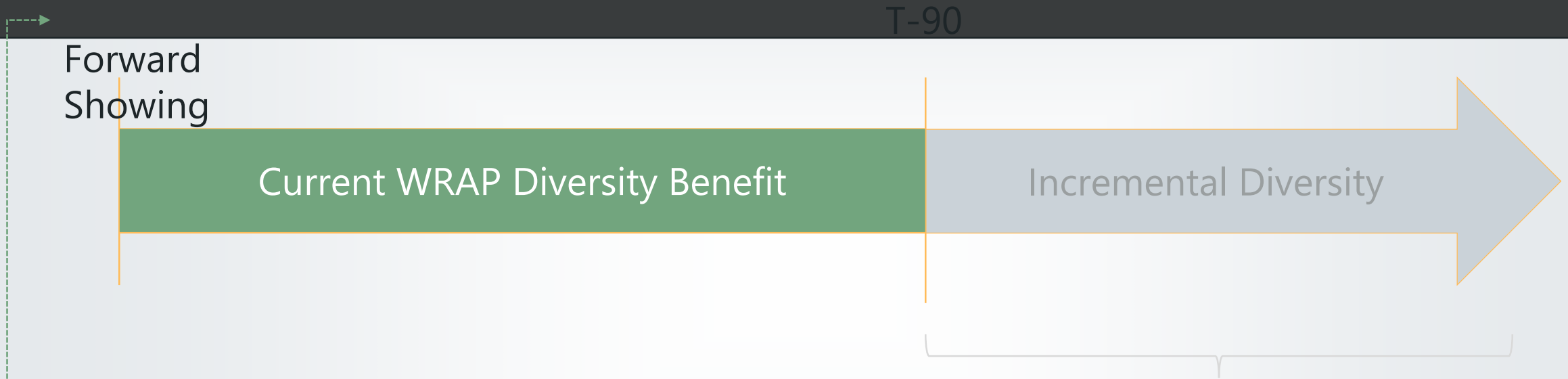
## WRAP Operational Program

- Ends at T-90
- Relies on contract path rights and contract path scheduling
- Uses predefined hubs to enable delivery
- Uses bilateral exchanges in advance of operating hour

## Markets+

- Continues through real-time
- Respects contract path rights and contract path scheduling through base schedules, while improving efficiency through flow-based transmission use
- Supports delivery across entire market footprint
- Ongoing automated SCED dispatch of WRAP supply (and additional voluntary supply) to maintain reliability

# Markets+ Can Unlock Additional Diversity Benefits



Markets+ can unlock diversity after T-90 and throughout the operating hour

Additional diversity can be reflected in forward showing requirements

# Opportunities for WRAP to Support and Enhance Markets+

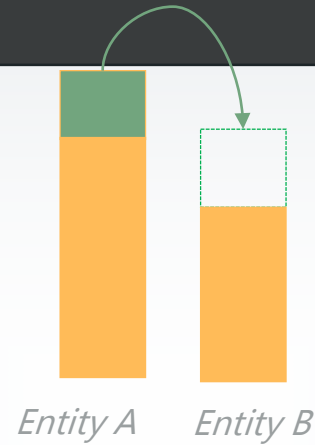
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- » Ensure sufficient resources are made available to Markets+
  - WRAP requirements can be used to determine DA must offer quantities
- » Provide assurance that all participants are bringing their fair share of supply
- » Greatly reduce complexity and practical challenges of DA/RT resource sufficiency tests

# WRAP Can Ensure Sufficient Resources Are Made Available to Markets+



WRAP program determines DA must offer quantities for Markets+ (*Own demand + WRAP holdback obligation - WRAP holdback rights*)



DA market optimization produces market awards for physical capacity, energy and flexibility

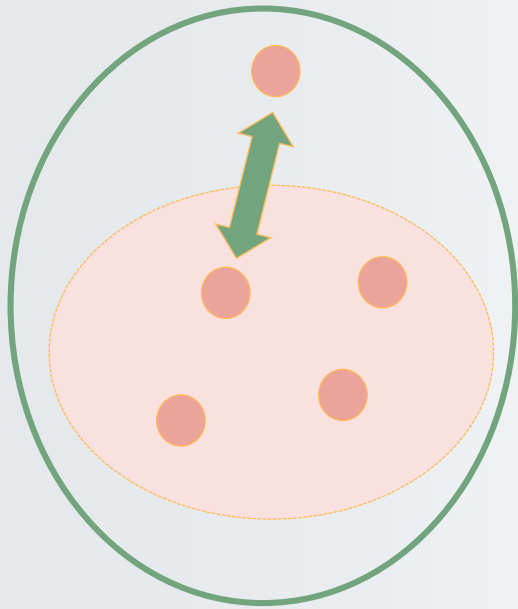


DA Market awards used to determine **real-time** must offer requirements

*Approach can ensure availability of WRAP supply to maintain reliability while allowing for most efficient unit commitment and use of WRAP resources in operating timeframe*

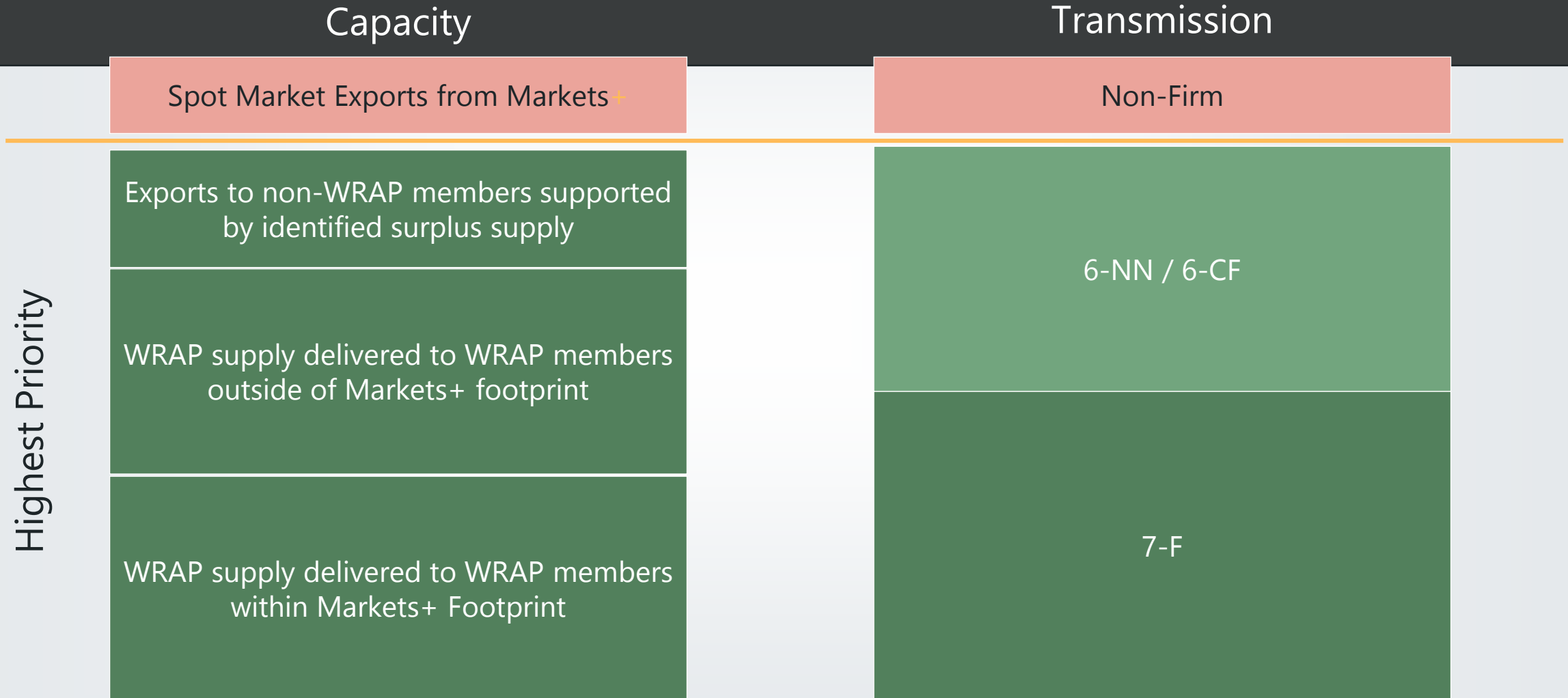
# WRAP Deliveries to Non-Market Members

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- » Base scheduling functionality could be used to set aside capacity and transmission to support high priority WRAP commitments
- » DA market optimization could schedule an automated market capacity award (import or export)
- » Energy deliveries could then be enabled in real-time using the base-scheduled capacity and transmission (as needed)

# Determining Priority of Capacity and Transmission in Markets+



# Other Considerations

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- » Enabling reciprocity between two comparable RA programs
  - e.g., WRAP and SPP RTO RA Program
- » Consideration of differences in the types of entities that are participants in WRAP vs Markets+
  - e.g., LRE vs Market Participant
- » Exploration of necessary tariff provisions under each of the WRAP and Markets+ tariffs to achieve this proposal
  - While recognizing and respecting the individual WRAP and Markets+ governance frameworks



# QUESTIONS/DISCUSSION

# MARKETS



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# **GENERAL SESSION VIII CLOSING REMARKS**

# 2022 MARKETS+ GOAL AND SCHEDULE

- Draft Service Offering – End of September
  - Written Comment Period
- Final Service Offering – Mid-November
  - Will Not Include: Market Protocols and Tariff Language
- Commitment to Investigate – Q1 2023
  - Financially Binding to Scope Implementation
- Stakeholder Process to Develop Market Protocols and Tariff Language
- Participant Agreement Execution – Fund Implementation

# GOVERNANCE DESIGN TEAM FUTURE MEETINGS

- Webinar: June 24      10:00 am – Noon Mountain
- Webinar: July 22      10:00 am – Noon Mountain

# TRANSMISSION AVAILABILITY DESIGN TEAM FUTURE WEBINARS

- June 15                    10:00 am – Noon Mountain
- June 29                    10:00 am – Noon Mountain
- July 20                     10:00 am – Noon Mountain
- August 3                   10:00 am – Noon Mountain

# MP/PF DESIGN TEAM FUTURE MEETINGS

- Webinar: June 28, 2022      9:00-11:00 Mountain
  - Next steps on Congestion Rents & Additional Thoughts from SPP
- Targeting July for price formation deep dive meetings
- Webinar: July 19, 2022      9:00-11:00 Mountain

# FUTURE DEVELOPMENT UPDATE MEETINGS

- Webinar                      July 6                      10:00 am – Noon Mountain
- In-Person                      August 9-10                      Portland
  - Format – Workshop Issues
  - In-person Only
  - Registration will announced via Markets+ Exploder
- Webinar                      August 17                      10:00 am – Noon Mountain
  - Portland Meeting Summary



# QUESTIONS/DISCUSSION

# MARKETS



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