

Market Renewal Working Group

November 30, 2017

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Agenda

9:00 am - Introduction

9:15 am - LTEP and Market Renewal

9:45 am - SSM Preliminary Decisions

10:15 am - Break

10:30 am - ICA Stakeholder Engagement and Dispute Resolution Discussion

12:00 pm - Lunch

12:30 pm - Discussion with Leonard Kula (VP - Planning, Acquisition and Operations, and Chief Operating Officer)

1:00 pm - Stakeholder Engagement Moving Forward

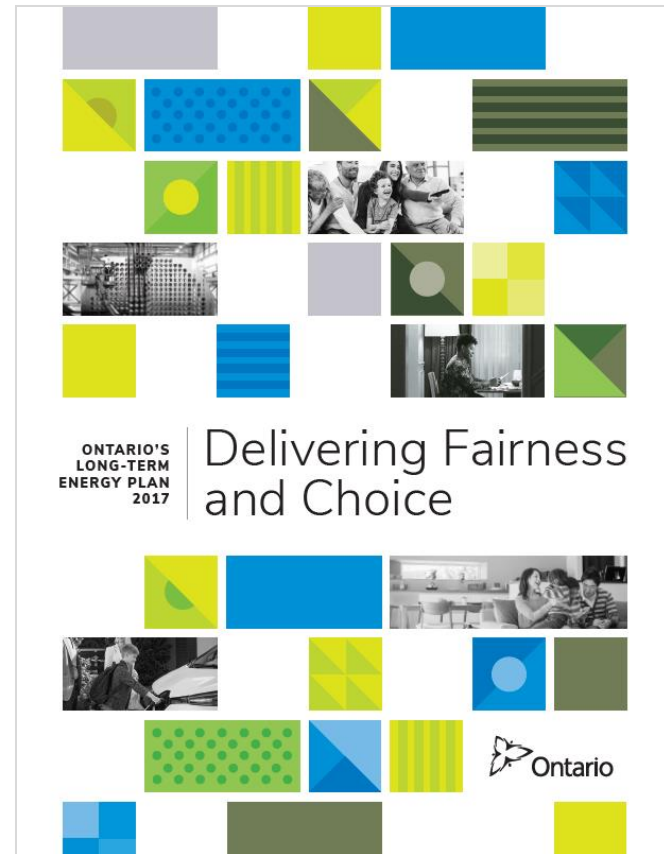
1:30 pm - Update on Enabling System Flexibility and Capacity Exports

2:15 pm - Non-emitting Resource Update

2:30 pm - Wrap-up

LTEP and Market Renewal

- 2017 LTEP has been published
- What are the MRWG members' perspectives on the document?
- What are the implications of 2017 LETP for Market Renewal?



SSM Preliminary Decisions

- Stakeholders have asked the IESO to bring forward preliminary decisions where possible
- In the materials for today's meeting, the MRWG has received a copy of the Single Schedule Market design tracker which identifies preliminary decisions and provides links to supporting rationale
- MRWG members are asked to please review the proposed approaches in advance of the meeting
- We would like to use the scheduled time to discuss any comments, questions or concerns the MRWG has related to these preliminary decisions

ICA STAKEHOLDER ENGAGEMENT AND DISPUTE RESOLUTION DISCUSSION

Today's Objective

To continue the dialogue regarding stakeholder engagement and dispute resolution processes for the Demand Curve and other ICA components:

Ensure common understanding of existing stakeholder engagement, rule amendment and dispute resolution processes in Ontario

Continue review of FERC jurisdictions for illustrative purposes

Enable MRWG members to provide informed input into the appropriate utilization of existing processes and whether implementing new processes would be appropriate to effectively implement and administer the ICA

Agenda

1. Key Concepts

- a) *Design Issue*
- b) *ICA Components*

2. Ontario Market Rule Framework – Market Rules and Market Manuals

- a) *Ongoing Stakeholder Engagement*
- b) *Amendments*
- c) *Dispute resolution*

3. Review of FERC Jurisdictions

- a) *Recap of October 18th presentation*
- b) *Dispute resolution*

Key Concepts – Design Issue

The stakeholder engagement and dispute resolution processes associated with administering the ICA will be dependant upon how the design is set out in the Market Rules and the Market Manuals, for instance:

- if a Market Rule contains both the **process** and the resulting **numerical value** used in the implementation of the ICA (e.g., if the process and value of Net CONE are in the Market Rules), changes to that **numerical value** *will* require a Market Rule amendment, in most cases, on an annual basis (and be subject to the associated stakeholder engagement and dispute resolution procedures for Market Rule amendments)
- if a Market Rule contains only the **process** for determining a numerical value used in the implementation of the ICA (e.g., if the process for how to determine Qualified Capacity is in the Market Rules), changes to that **process** *will* require a Market Rule amendment, but the **application** of that process (e.g., the calculation of Qualified Capacity) *will not* require a Market Rule amendment and *will* be subject to the dispute resolution provisions set out in the Market Rules

Key Concepts – Design Issue Cont.

- Which existing stakeholder engagement and dispute resolution mechanisms should be applicable to which ICA components?
- Are there any potential challenges with the existing mechanisms in relation to ICA-specific needs?
 - If so, are there any new ICA-specific mechanisms that should be considered that may be appropriate to effectively implement and administer the ICA?

Key Concepts - ICA Components

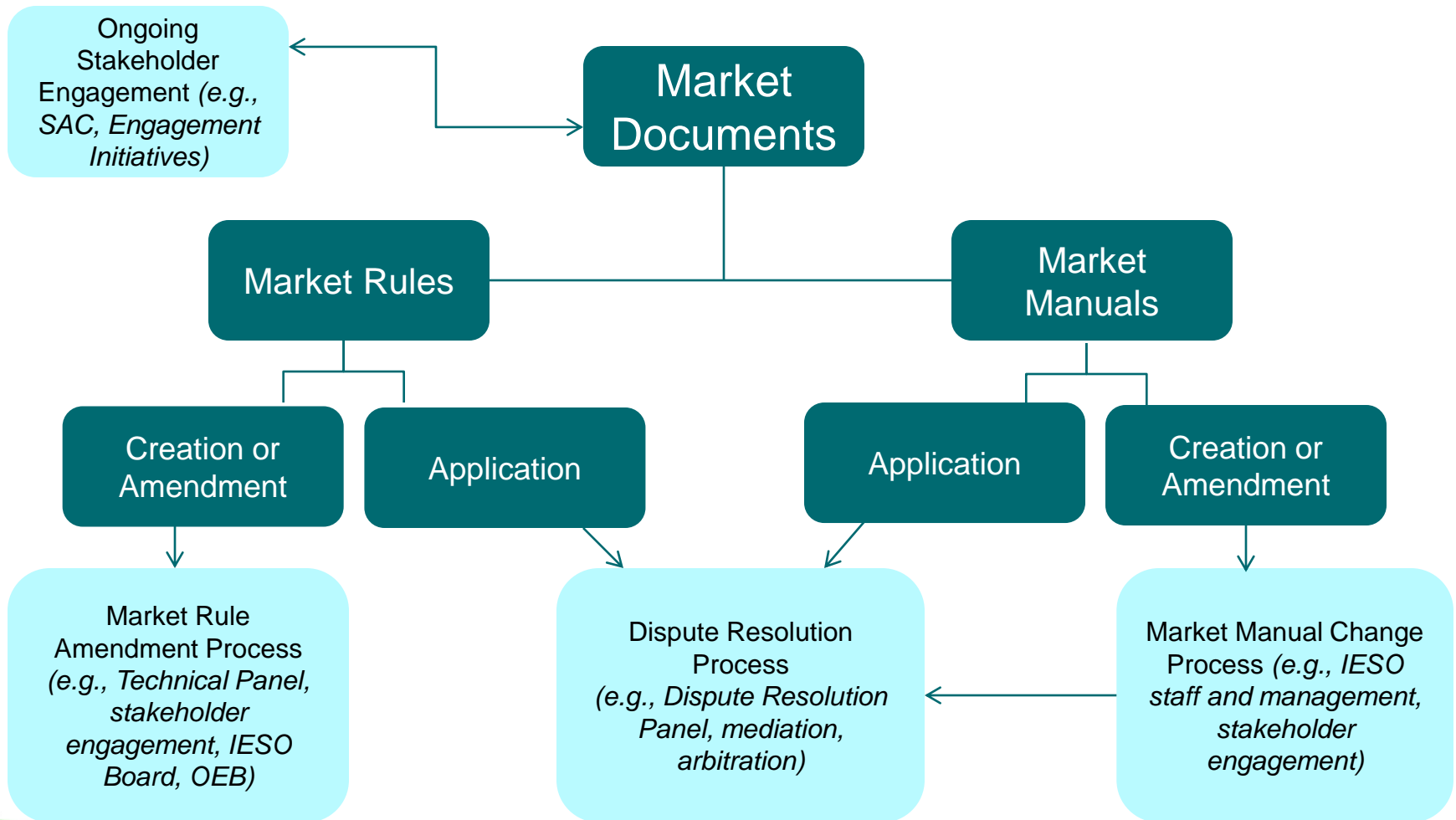
1. ICA Components other than Demand Curve Components

- a) General ICA rules (*e.g., which resources are eligible or ineligible*)
 - Would not be subject to annual review
- b) General ICA processes (*e.g., how Qualified Capacity will be determined*)
 - Would not be subject to annual review
- c) Resource-specific determinations (*e.g., the Qualified Capacity of a particular facility, charges related to Performance Assessments, etc.*)
 - May occur annually or as required

2. Demand Curve Components

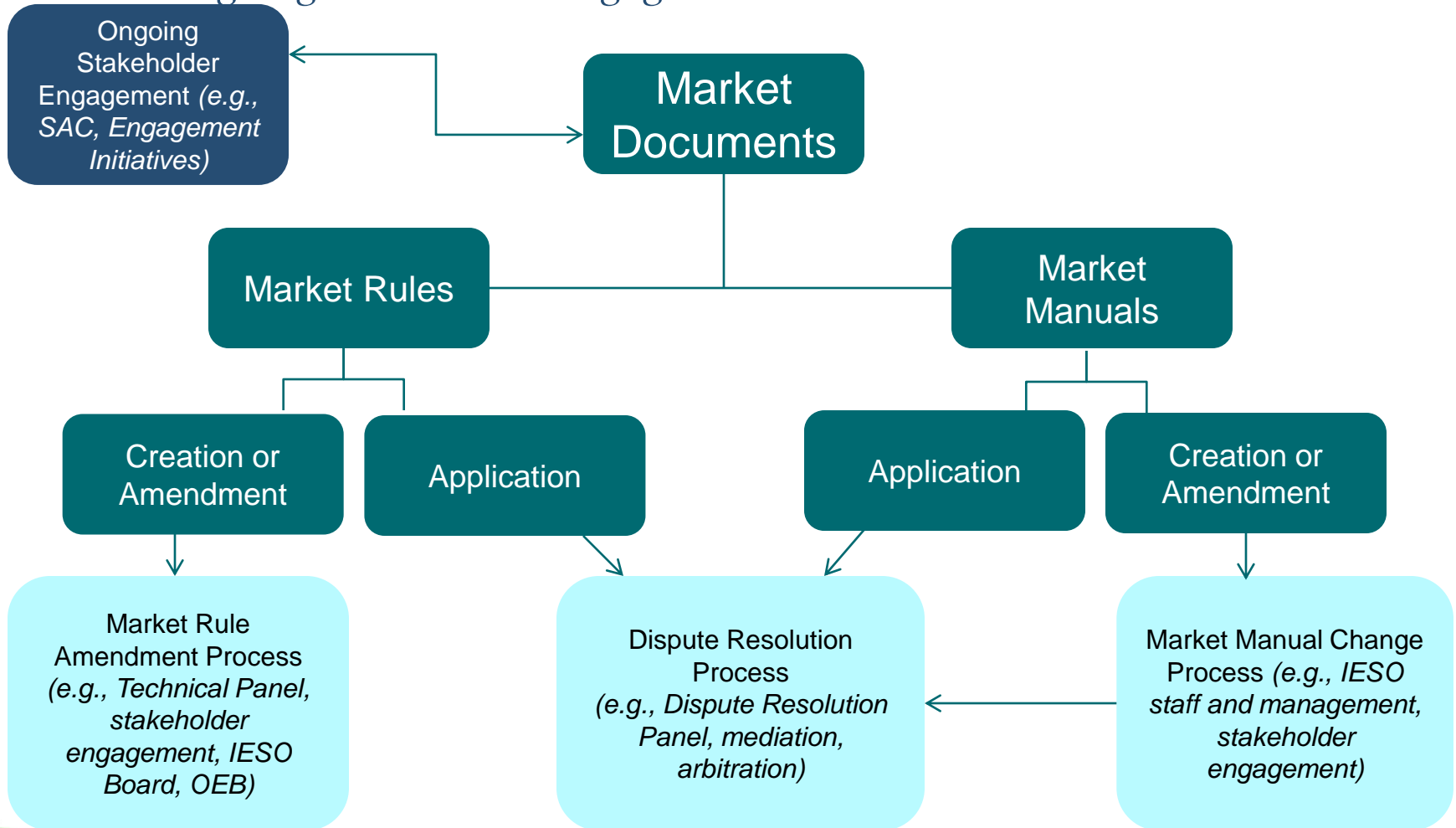
- a) Structure and basis for shape (*i.e., "how the curve is drawn"*)
 - Not expected to be subject to annual review
- b) Process for determining numerical values that feed into demand curve (*e.g., how Net CONE or Target Capacity will be calculated*)
 - Not expected to be subject to annual review
- c) Numerical values that inform demand curve (*e.g., Net CONE, Target Capacity*)
 - The **basis** for some, such as Net CONE, would be subject to review on a specified schedule (likely every 3 – 4 years), may be subject to annual mechanical adjustments (*e.g., adjusting for inflation*)
 - Others, such as Target Capacity, would need to be set annually

Ontario Market Rule Framework and Processes



Ontario Market Rule Framework and Processes

Part 1: Ongoing Stakeholder Engagement

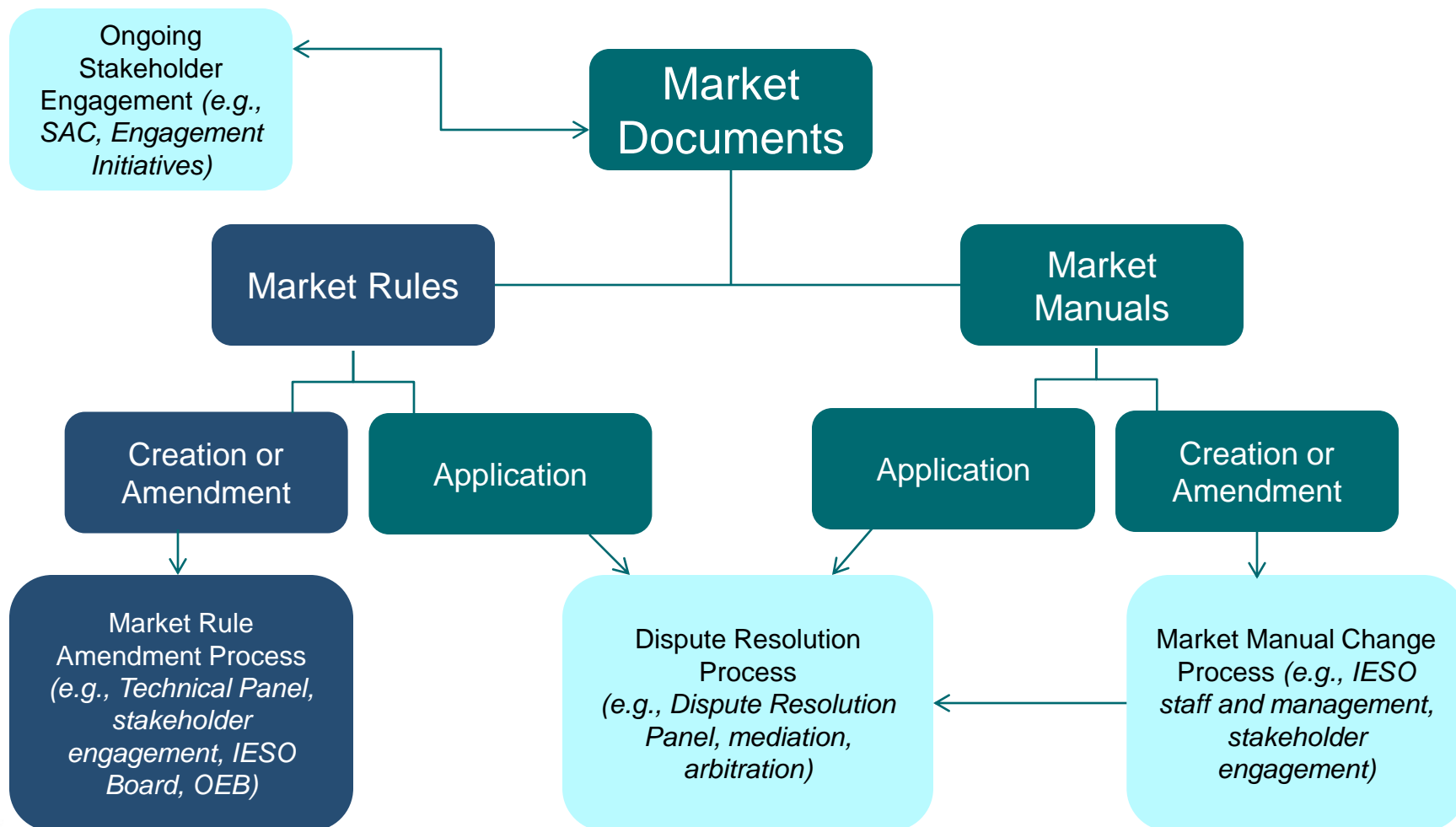


Ongoing Stakeholder Engagement

- Stakeholder Advisory Committee
 - A forum for members to be informed of IESO activities and to provide timely policy advice and feedback directly to the IESO Board
 - Members representing:
 - Generators
 - Consumers
 - Transmitters and distributors
 - Businesses and services (*e.g., wholesalers*)
 - Ontario communities (*e.g., municipal, indigenous*)
 - IESO
- Standing Committees and Working Groups
- Engagement Initiatives
 - Forums for design considerations to be discussed with stakeholders

Ontario Market Rule Framework and Processes

Part 2: Market Rule Amendment Process



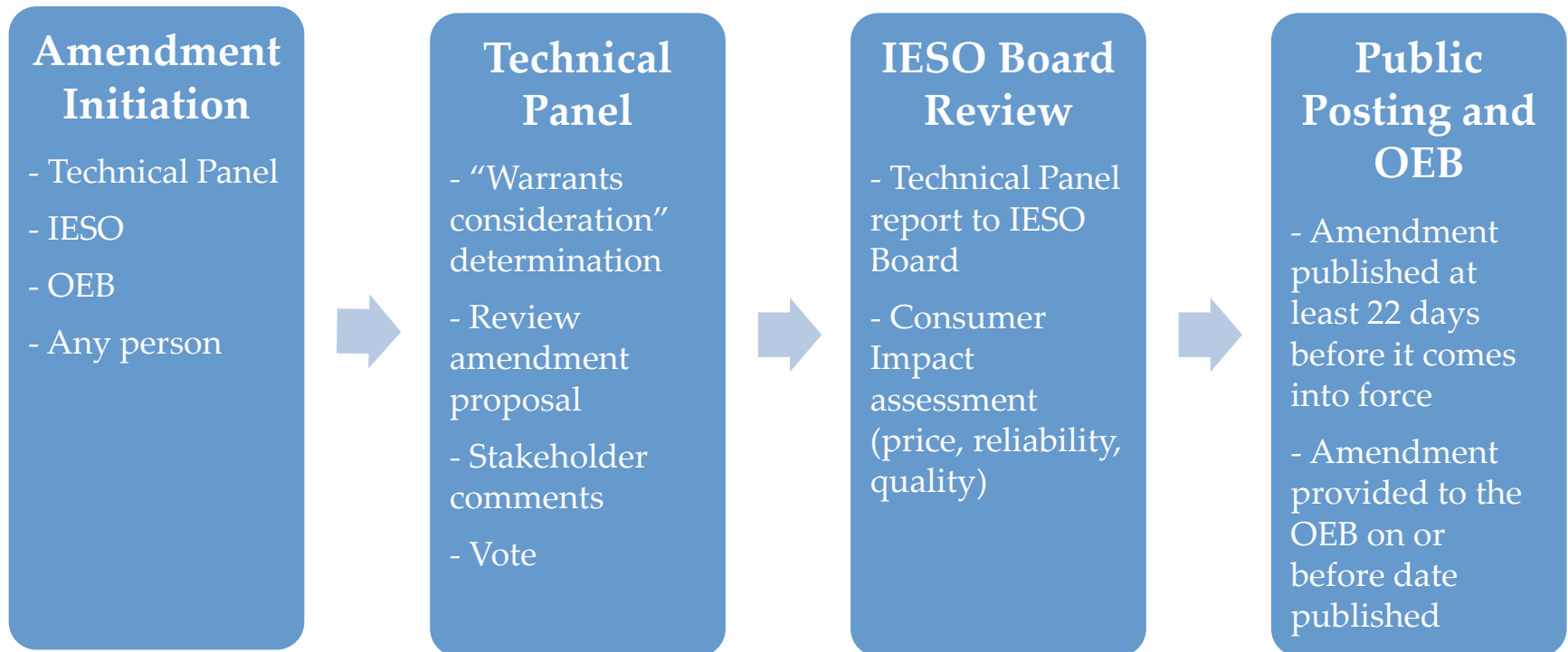
IESO Market Rule Amendments

Types of Amendments:

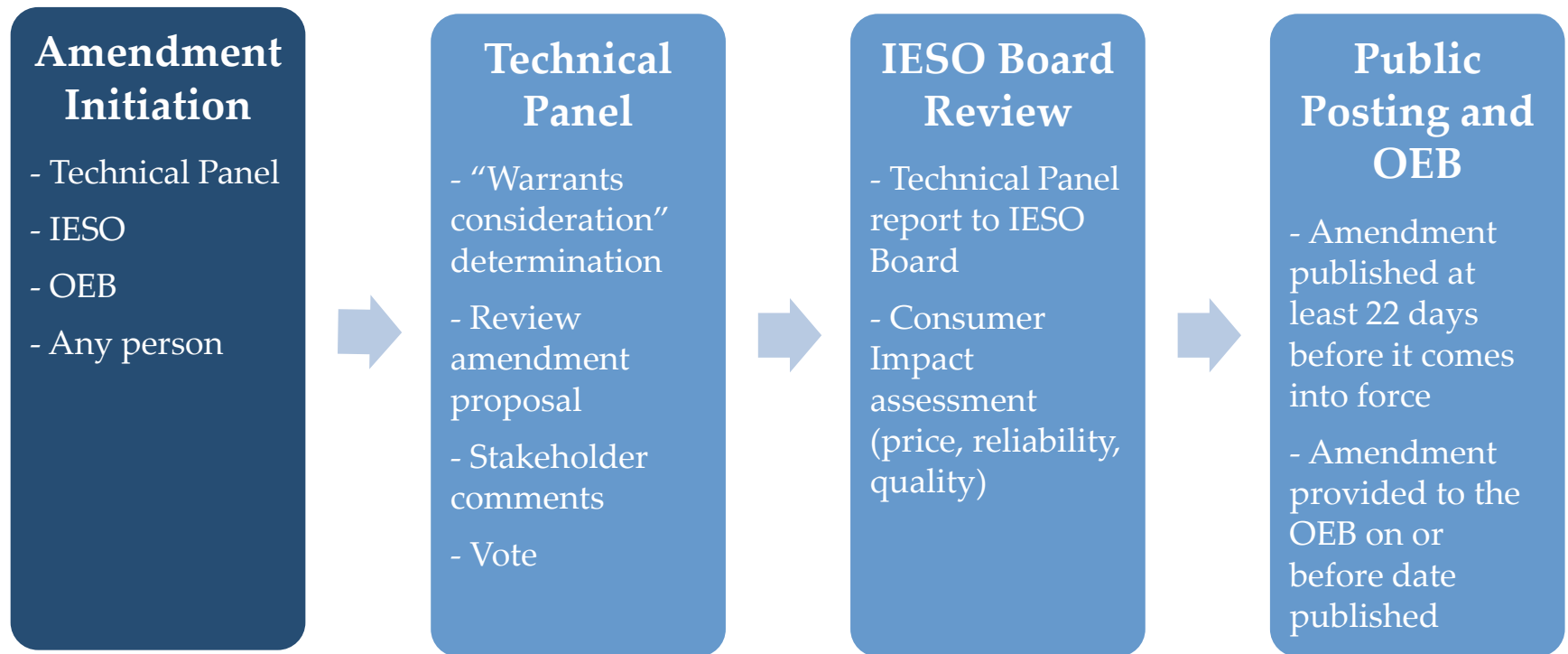
- General
 - Most amendments fall into this category
 - Follow the Technical Panel process, which typically takes 4-6 months, but may take longer for more complicated, numerous or involved amendments
- Urgent
 - Uncommon, amendment must satisfy at least one of five criteria specified in the *Electricity Act* (Section 34.1)
 - Follow an expedited process
- Minor
 - Correct typographical or grammatical errors, or to effect a change of a non-material procedural nature

Market Rule Amendment Process

(Market Rules, Chapter 3 and Market Manual 2, Part 2.3: Market Rule Amendment Procedure)



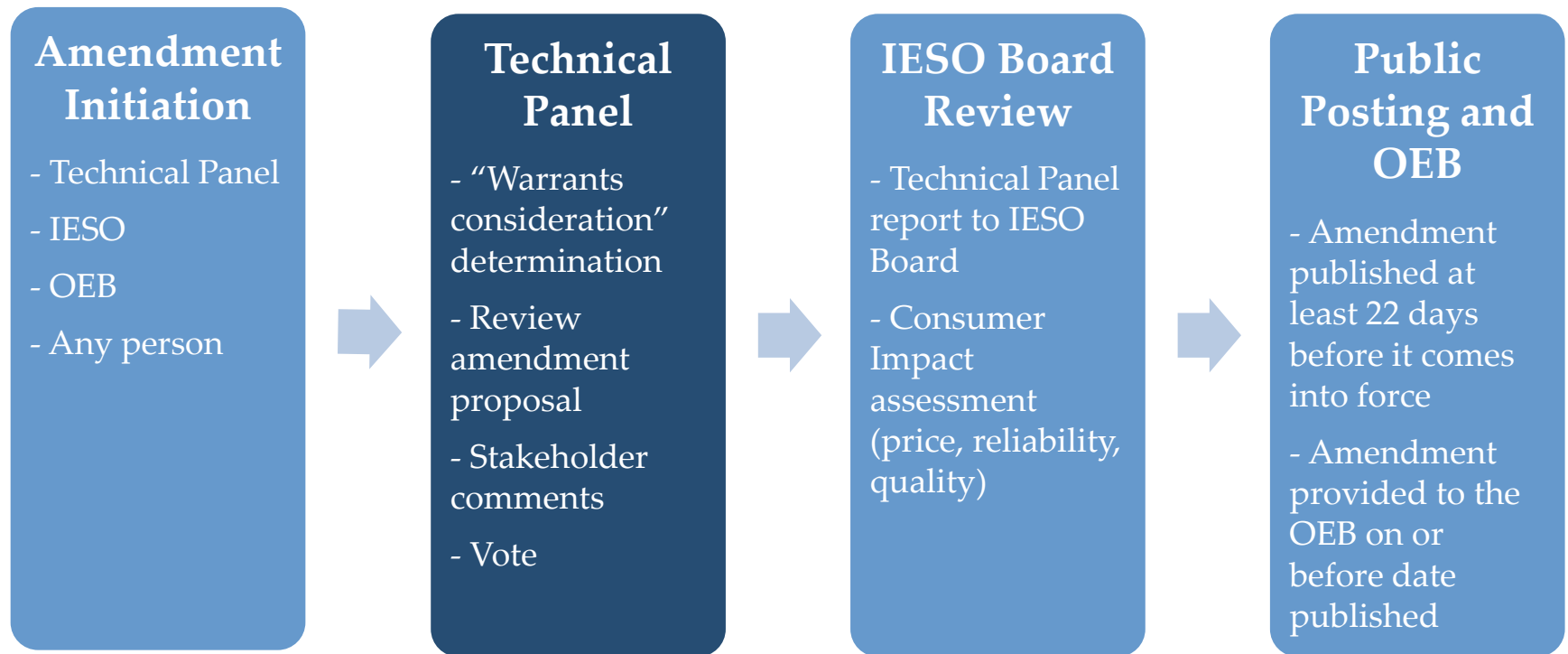
Market Rule Amendment Process



Amendment Initiation

- A Market Rule amendment may be initiated by IESO staff or the IESO Board, by order of the OEB or by any market participant or interested person
- For a market participant or interested person to initiate an amendment, must file an amendment submission with the IESO
- Amendments proposed by IESO staff are informed by ongoing stakeholder engagement, including policy discussions in SAC meetings and design discussions in stakeholder engagement initiatives
- Amendment may be drafted prior to amendment submission phase

Market Rule Amendment Process



Technical Panel

TECHNICAL PANEL

Market Participants (voting)

- Generators
- Transmitters
- Distributors
- Retailers or wholesalers
- Consumers
- Other (e.g. *Demand Response*)

IESO Member
(voting)

OEB Observer (non-
voting)

Authorized through the *Governance and Structure By-Law* and the *Terms of Reference* to review Market Rule amendments and provide advice and recommendations to the IESO Board

Technical Panel Meetings

- Meetings are open to the public to attend in person or by phone
- Meeting schedule and Minutes are posted on IESO website
 - Approximately ten per year
- OEB Observer present at meetings, but not a voting member

Technical Panel “Warrants Consideration” Determination

- Determination of whether the proposed amendment “warrants consideration” for one or more of the following reasons:
 - It identifies an error or inconsistency, either within the Market Rules or between the Market Rules and any applicable laws etc.
 - It identifies a reliability concern
 - It identifies impediments to, or means to enable, operations and market coordination with neighbouring jurisdictions
 - It identifies impediments to, or means to enable, making the Market Rules legally enforceable
 - It identifies ambiguity or confusion within the Market Rules that cause interpretation confusion and leads to poor coordination of implementation or to future disputes
 - It identifies means to better enable the market to satisfy the market design principles
 - It identifies ways to simplify the market and/or reduce participant or IESO costs
 - It enables the implementation of a deferred functionality
 - The expected or perceived benefits exceed the expected or perceived costs of implementation

Technical Panel “Warrants Consideration” Determination

- Technical Panel votes to determine whether proposed amendment warrants consideration
 - Generally inapplicable for amendment submissions originated by the OEB or the IESO Board or resulting from established stakeholder engagement initiatives
- If amendment is determined to warrant consideration, IESO staff gives notice of consideration of the proposed amendment to:
 - Market participants
 - IESO Board
 - Requesting person, if applicable
 - Dispute Resolution Panel, if applicable
 - Market Surveillance Panel, if applicable

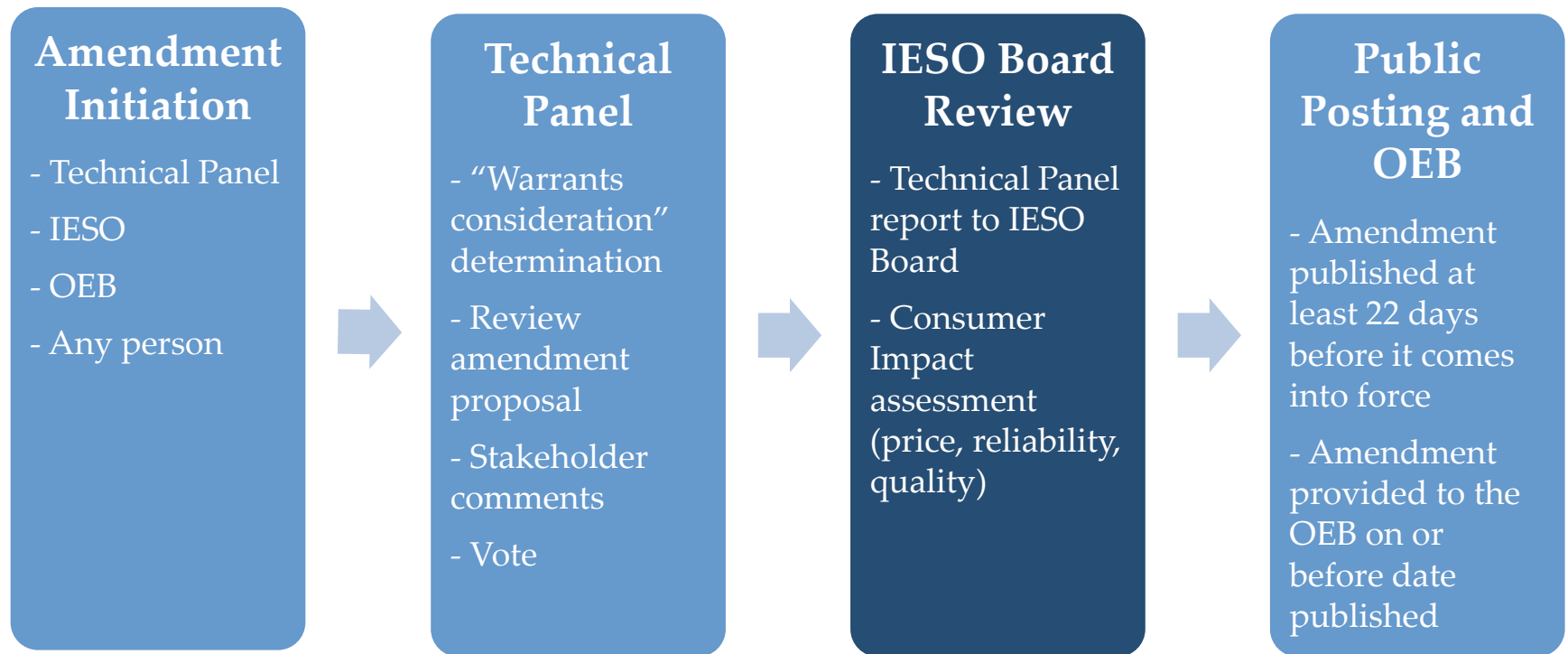
Technical Panel Review

- In one or more meetings, the Technical Panel reviews the proposed amendment, requests stakeholder feedback, reviews stakeholder submissions and revises proposed amendment language
 - Review focussed on ensuring that the language meets the final design intent (Technical Panel Terms of Reference)
- Technical panel votes on whether to recommend proposed amendment to the IESO Board
- IESO staff, with Technical Panel review, prepare a Report to the IESO Board with each member's rationale (if any) of their stated position of the proposed amendment

Technical Panel Recommendations to the IESO Board

- Technical Panel Report provided to the IESO Board by IESO staff
- IESO staff publishes proposed amendment
- IESO staff prepares an assessment of the impact of the amendment on the interests of consumers with respect to prices and the reliability and quality of electricity service, which is provided to the IESO Board and the OEB

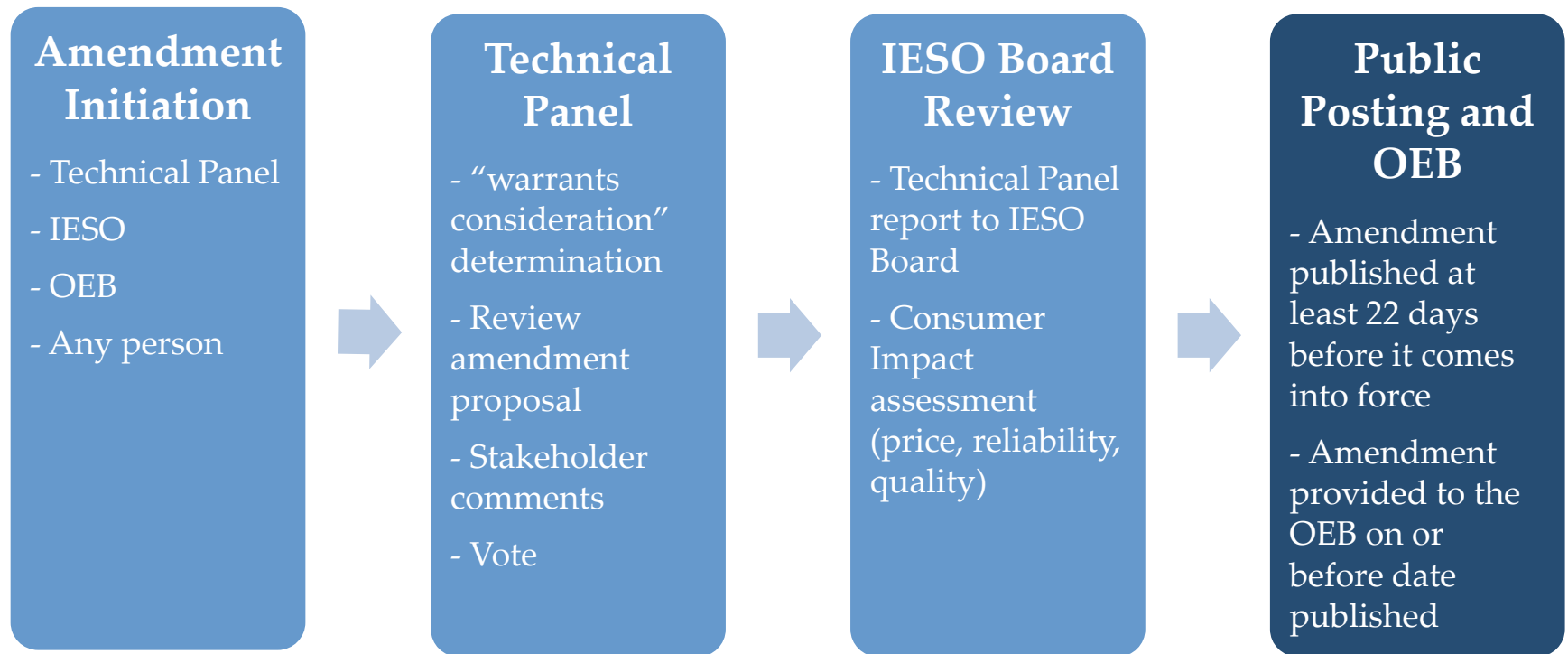
Market Rule Amendment Process



IESO Board Review

- Upon receipt of a Technical Panel recommendation to amend the Market Rules, the IESO Board may:
 - Approve the Market Rule amendment as proposed
 - Modify and approve the amendment
 - Reject the amendment or
 - Refer back to the Technical Panel for additional review
- Upon receipt of a Technical Panel recommendation not to amend the Market Rules, the IESO Board may:
 - Confirm the recommendation
 - Refer back to the Technical Panel for additional review or
 - Make such amendment to the Market Rules as the IESO Board deems appropriate and publish in accordance with the *Electricity Act*

Market Rule Amendment Process



Public Notification and OEB Filing

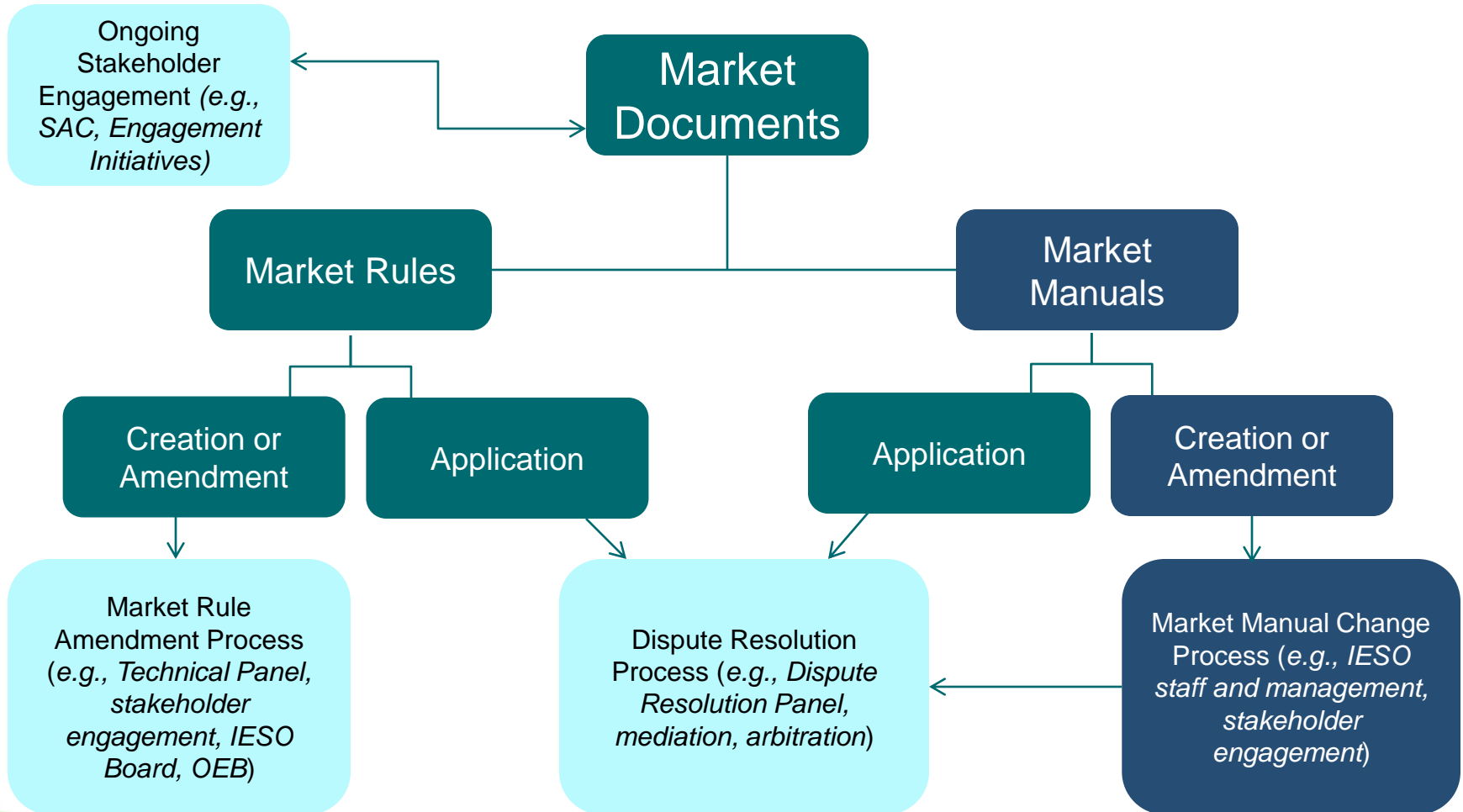
- IESO staff notifies all market participants and the requesting person, if applicable, of the IESO Board decision
- If the IESO Board decides in favour of the adoption of a proposed amendment, IESO staff also:
 - Prior to publication, provides the OEB with a summary of any stakeholder, IESO Board or Technical Panel comments with respect to the impact of the amendment on the interests of consumers with respect to prices or the reliability or quality of electricity service
 - Publishes a copy of the amendment and provides a copy of the amendment with the OEB, at least 22 days prior to effective date
- OEB may, without holding a hearing, revoke the amendment within 15 days after publication and refer back to the IESO for further consideration

Application for OEB Review of a Market Rule Amendment

- Any person may apply to the OEB for review of an amendment to the Market Rules (Section 33 of *Electricity Act*)
 - Must file application for review within 21 days of publication
 - Applicant has the burden of proof to demonstrate that the amendment is inconsistent with the purposes of the *Electricity Act* or unjustly discriminatory
- OEB may stay application of the amendment during review
- OEB must issue a final decision within 120 days
- If the OEB finds that the amendment is inconsistent with the purposes of the *Electricity Act* or unjustly discriminatory, the OEB may:
 - Revoke the amendment
 - Refer the amendment back to the IESO for further consideration

Ontario Market Rule Framework and Processes

Part 3: Market Manual Change Process

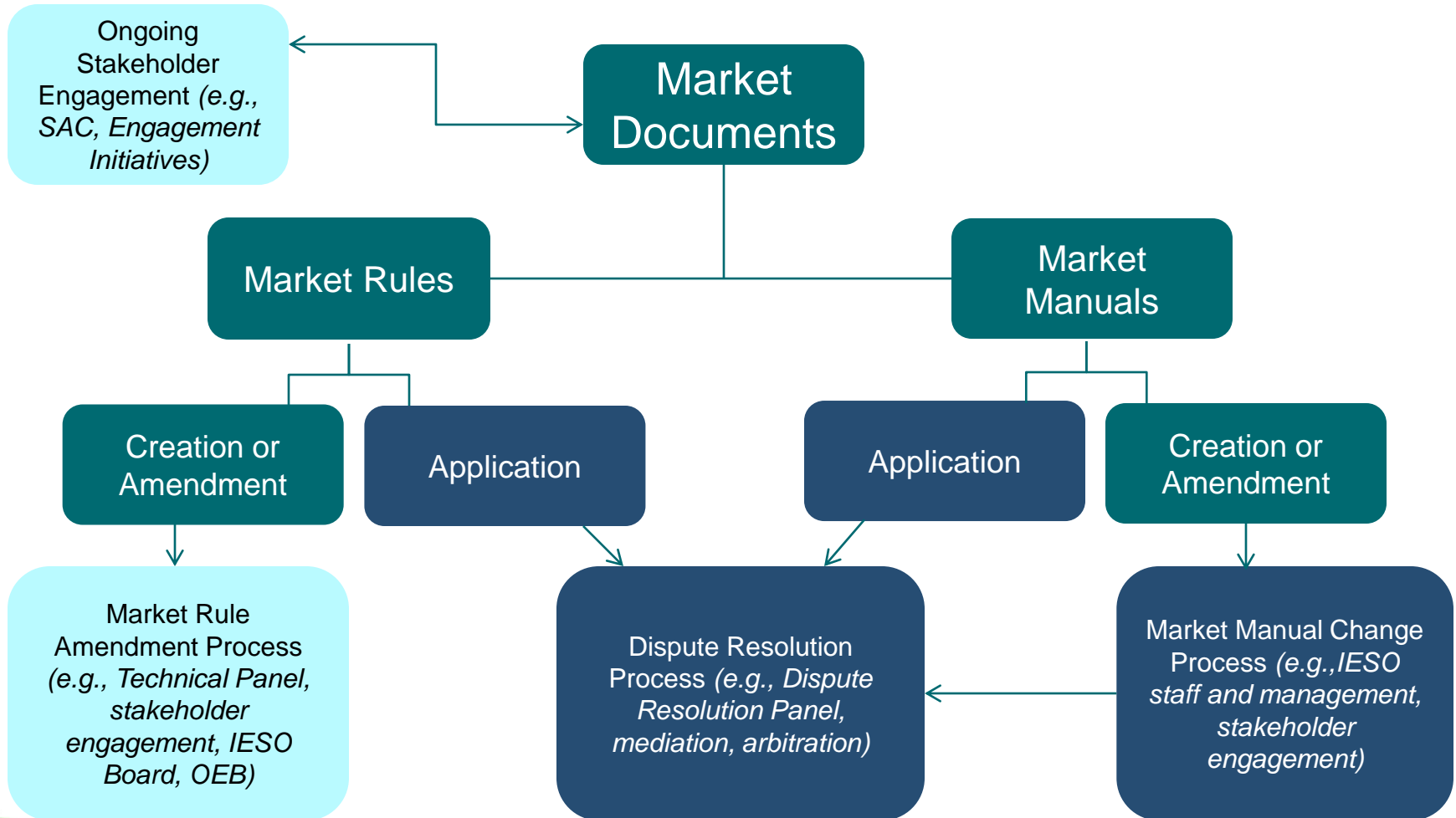


Market Manuals

- Generally, the Market Rules codify the rights, obligations and authorities of both the IESO and market participants and the Market Manuals augment the Market Rules by providing procedural and implementation details
- Revisions to Market Manuals are undertaken in accordance with Market Manual 2, Part 2.13: Market Document Baseline Management
- Market Manuals are not required to be reviewed by the Technical Panel and do not require approval by the IESO Board
- Market Manuals are publically posted for review and comment and are approved by IESO management

Ontario Market Rule Framework and Processes

Part 4: Dispute Resolution Process



Market Rule Dispute Resolution

- Market Rules contain a dispute resolution process for disputes that arise under the Market Rules and Market Manuals
- Dispute Resolution Panel
 - Authorized through the Market Rules and the *Governance and Structure By-Law* to mediate and arbitrate disputes
- Market Participants have appeal rights to the OEB if the subject of an order of the IESO under the Market Rules that requires payment in excess of \$10,000 or denies, terminates or suspends authorization to participate in the electricity market or grid
 - Must first follow Market Rule dispute resolution process
- Market Participants may elect to have the OEB make a determination and findings of fact with respect to an alleged breach of the General Conduct Rule

Market Rule Dispute Resolution (Market Rules Chapter 3, Section 2)

Notice of Dispute

Good faith negotiations

- 30 days
- Confidential and without prejudice

File with Secretary of Dispute Resolution Panel

Mediation

- One member of Dispute Resolution Panel
- Confidential and without prejudice

Arbitration

- Different member of Dispute Resolution Panel
- Issues binding order or decision

Other Recourse Mechanisms

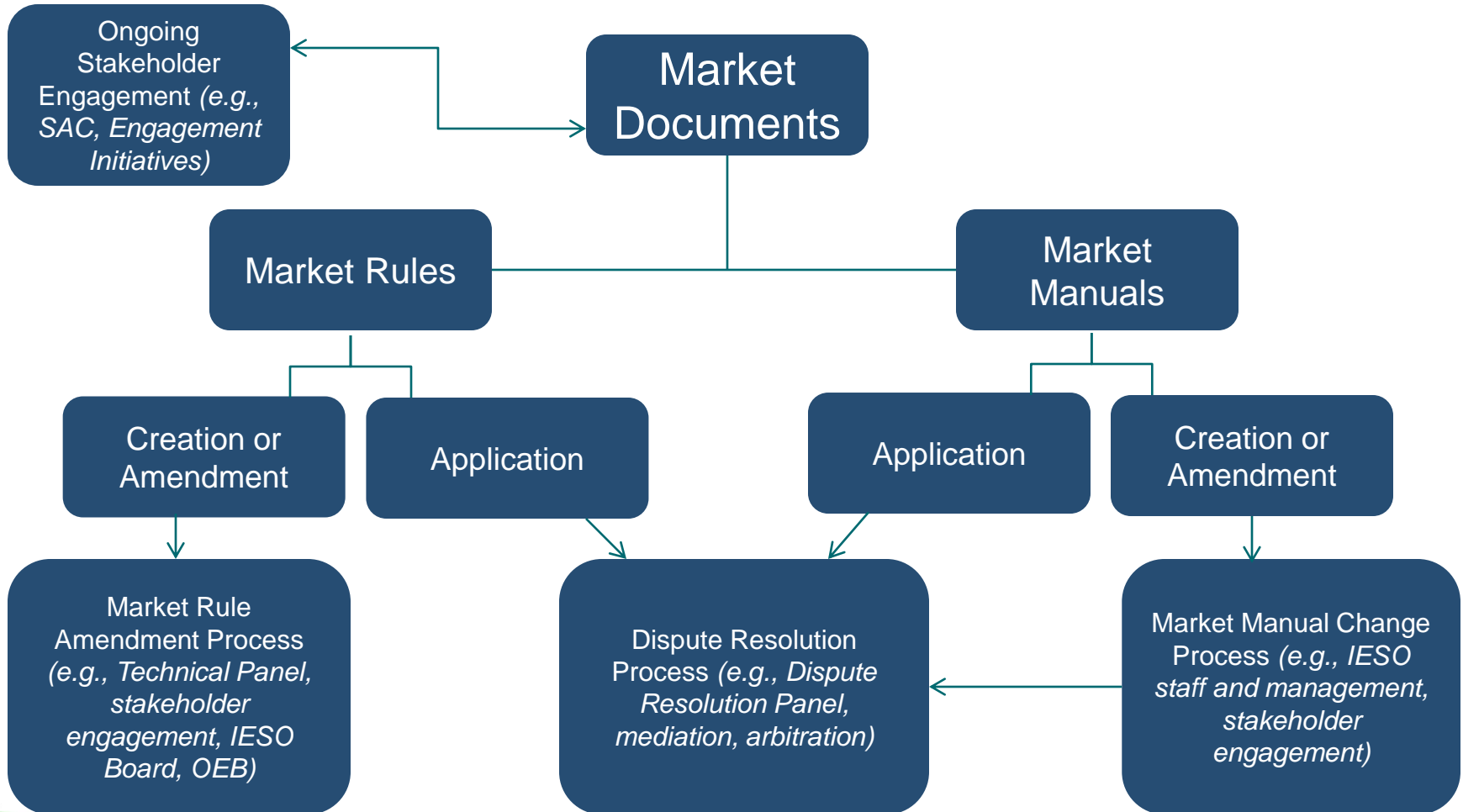
- In addition to the dispute resolution provisions, the Market Rules contain provisions for market participants to:
 - Request an exemption under the Market Rules (Chapter 1, Section 14)
 - Propose an amendment to the Market Rules (Chapter 3, Section 4)
 - As discussed earlier in this presentation

Application for OEB Review of an Existing Market Rule

- Any person who is directly affected by a provision of the Market Rules may apply to the OEB for review of a Market Rule (Section 35 of *Electricity Act*)
 - Market Participant must first follow review provisions in Market Rules
 - Ineligible if provision reviewed by the OEB within previous 24 months
- If the OEB finds that the provision is inconsistent with the purposes of the *Electricity Act* or unjustly discriminatory, the OEB will issue an order to the IESO to amend the provision

Ontario Market Rule Framework and Processes

Part 5: Design Issue Recap



Design Issue Recap

In development of the ICA for Ontario, it will be necessary to:

- Determine which existing processes should be applicable to which ICA components (*i.e., which ICA components, processes and/or numerical values should be contained in the Market Rules and which in the Market Manuals*)
- Identify any potential ICA-specific challenges with the existing Ontario construct in respect of stakeholder engagement or dispute resolution
- Consider what ICA-specific enhancements, if any, may be appropriate to address any such potential challenges

Illustrative Example – Other Jurisdictions

- For illustrative purposes, in order to help inform conversations of ICA design, we have reviewed stakeholder engagement and dispute resolution processes in three jurisdictions that are subject to FERC jurisdiction
 - NYISO, ISO-NE, PJM
- Review of stakeholder role in amendments to tariffs, particularly with respect to demand curve (October 18th MRWG meeting), stakeholder challenge to tariff proposals and dispute resolution under the tariffs

Other Jurisdictions - Recap of October 18th Presentation

- Demand curve design and description of the process for setting and resetting the Demand Curve are set out in tariffs (generally speaking, equivalent of “Market Rules” in other jurisdictions)
- Role of stakeholders, ISOs, independent consultants and FERC in setting and resetting the demand curve
- Stakeholder engagement framework
 - Tariff provisions regarding the Demand Curve in some cases establish specific stakeholder participation frameworks that differ somewhat from the general stakeholder participation models
- The proposal approved by the Board of Directors/ Managers in each jurisdiction is submitted to FERC for approval

Other Jurisdictions - Recap of October 18th Presentation

- FERC process for reviewing and approving Demand Curve is generally the same as the FERC process for reviewing and approving other proposed tariff filings (Section 205 of *Federal Power Act*)
- Upon receipt of a Section 205 Filing, FERC may:
 - Allow filing to take effect without extensive review (no express approval)
 - Routine filings with no objections
 - Review and approve the substance of the filing
 - Test: just and reasonable
 - Conditional approval of filing requiring a “compliance filing”
 - Reject filing

Other Jurisdictions - Stakeholder Challenge of Filing at FERC

- Stakeholders may object to a proposed Demand Curve filing during FERC review
- NYISO and PJM
 - Comment period during which any interested party may comment on proposal
 - In its order addressing the merits of the proposal, FERC will generally address the arguments of intervenors
- ISO-NE
 - Comment period during which any interested party may comment on proposal
 - In addition, if a sufficient number of stakeholders object to the proposal, NEPOOL is entitled to file have a competing proposal filed with FERC (provided at least 60% of participants vote in favour)
 - “Jump ball” process

Other Jurisdictions – Dispute Resolution

- Disagreements with respect to tariff proposals or amendments are resolved through the stakeholder and FERC processes previously discussed
- Each ISO includes alternative dispute resolution provisions in its tariffs
 - Aimed at avoiding litigation and pursuing resolution in an efficient and cost-effective manner
- Disputes relating to the implementation of the capacity auction are subject to the usual avenues for resolution, including the stakeholder input processes, adjudication at FERC and the dispute resolution provisions in the tariffs
 - NYISO has specific procedures to address disputes concerning the development of regional load growth factors during the demand curve reset process, which have not been used

Questions for Market Renewal Working Group

- What are the considerations that should be taken into account in deciding which ICA components (including which processes and/or numerical values) should be documented in the Market Rules and which in the Market Manuals? Are there any overarching principles that should be applied in making this determination?
- Are there any ICA components for which we should consider implementing ICA-specific mechanisms for stakeholder engagement and/or dispute resolution? If so, what specific mechanisms should be considered and for which components?
- Is there any additional information the MRWG requires in order to provide input?

Stakeholder Engagement Moving Forward

- The IESO is committed to working collaboratively with stakeholders to develop Ontario's new market design
- We recognize that the current approach is taking a major commitment from stakeholders particularly with the number of SEs and other meetings (e.g. NER-SC, contracts, etc.) growing
- How can we improve upon the current process to maintain a collaborative approach while not overburdening stakeholders?



UPDATE ON ENABLING SYSTEM FLEXIBILITY

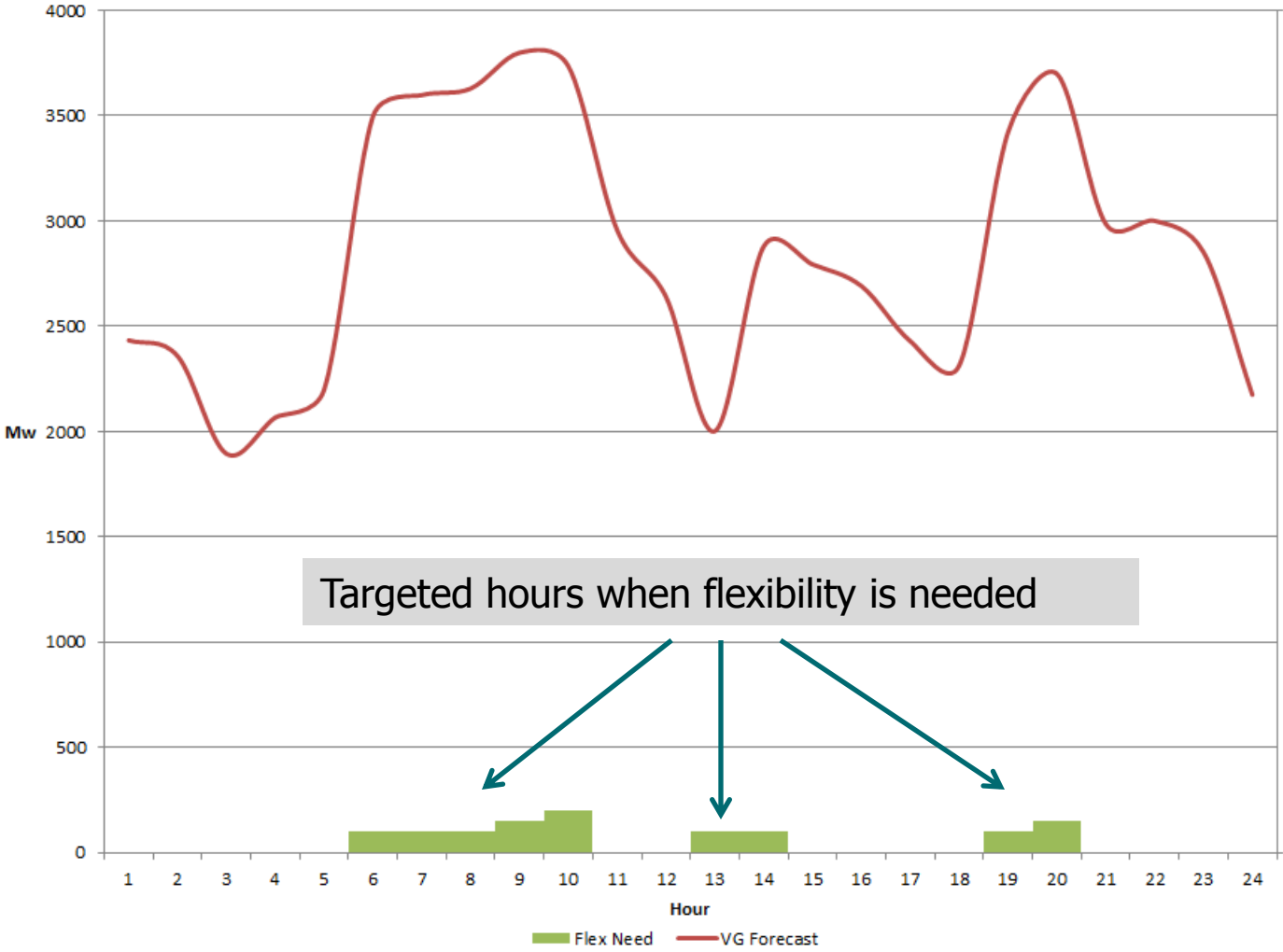
Recap: Nature of Flexibility Need

- Flexibility is the capability of the system to respond to intra-hour differences between expected supply/demand levels and actual production/consumption
- Flexibility need is influenced by forecast uncertainty of variable generation and demand
 - Large over-forecasts of variable generation and under-forecasts of demand within hour of dispatch are of concern
- Forecast improves significantly in the 30-minute timeframe
 - Resources already on-line or able to start up and synchronize within 30-minutes can provide flexibility
- Current measures to increase flexibility include:
 - Manually committing/constraining resources
 - Adjusting variable generation and demand forecasts
 - Curtailing exports

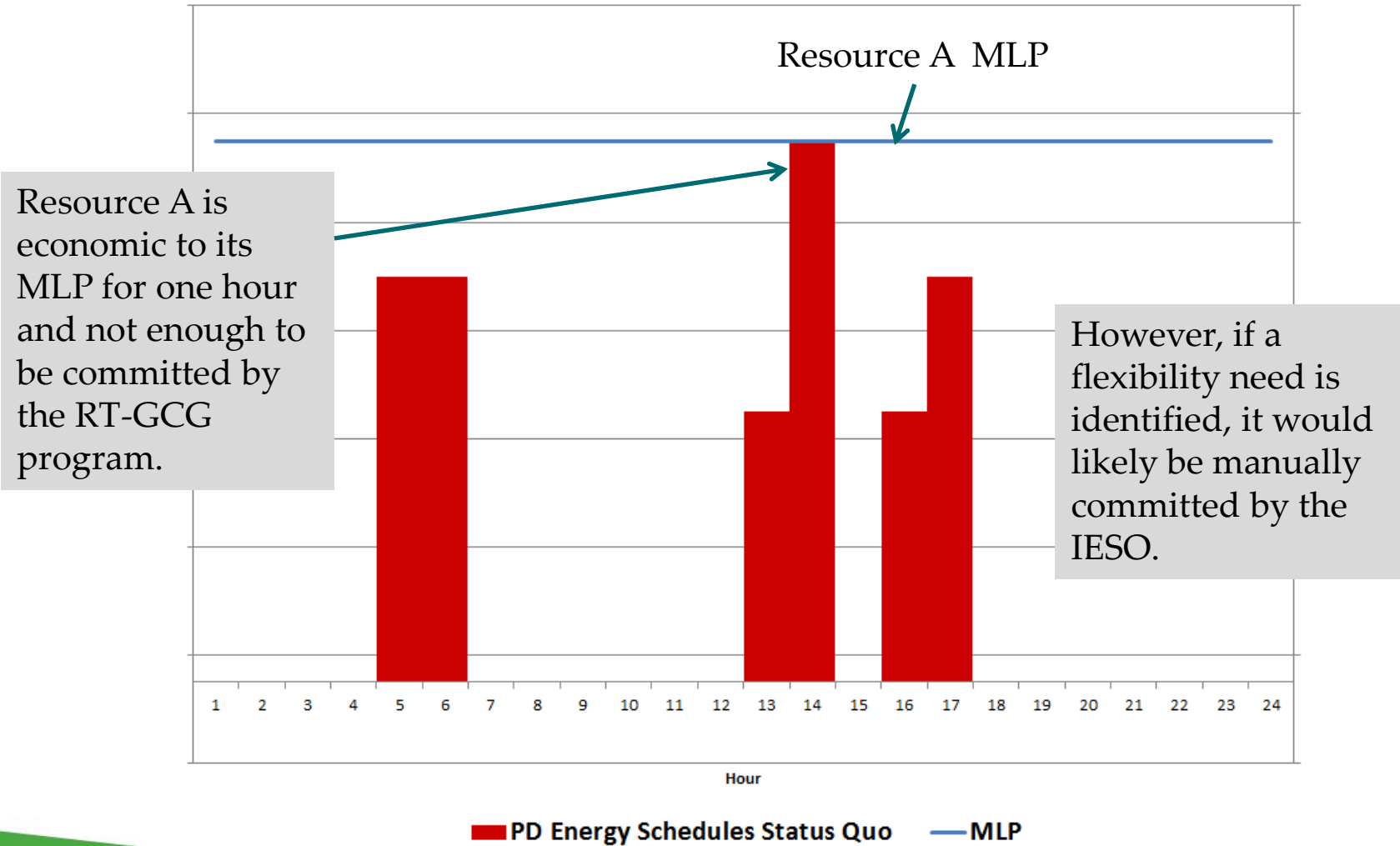
Proposed Interim Solution

- Flexibility need represented as additional 30-minute OR can be determined many hours ahead of real-time dispatch
 - Allows resources time to adjust offers to provide flexibility
 - Increases transparency of flexibility need
- Pre-dispatch/day-ahead commitment processes can be used to economically schedule resources to meet additional 30-minute OR requirement for flexibility
 - Leverages current market processes and existing resources for flexibility
 - Increases efficiency of meeting flexibility needs
- Resource commitments may result to provide flexibility and additional 30-minute OR scheduled can also be activated for flexibility if required

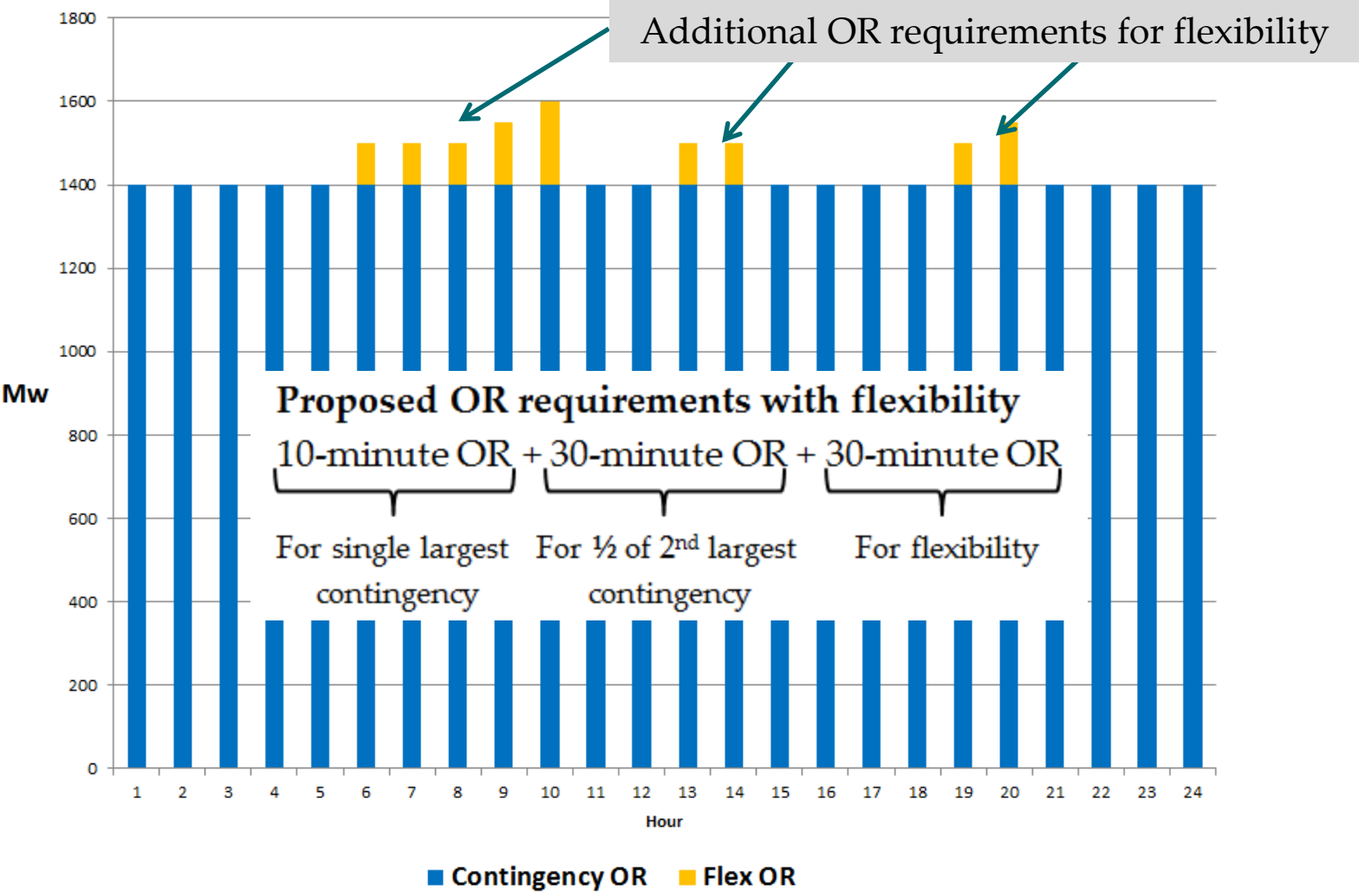
Example: Flexibility Need in Multiple Hours



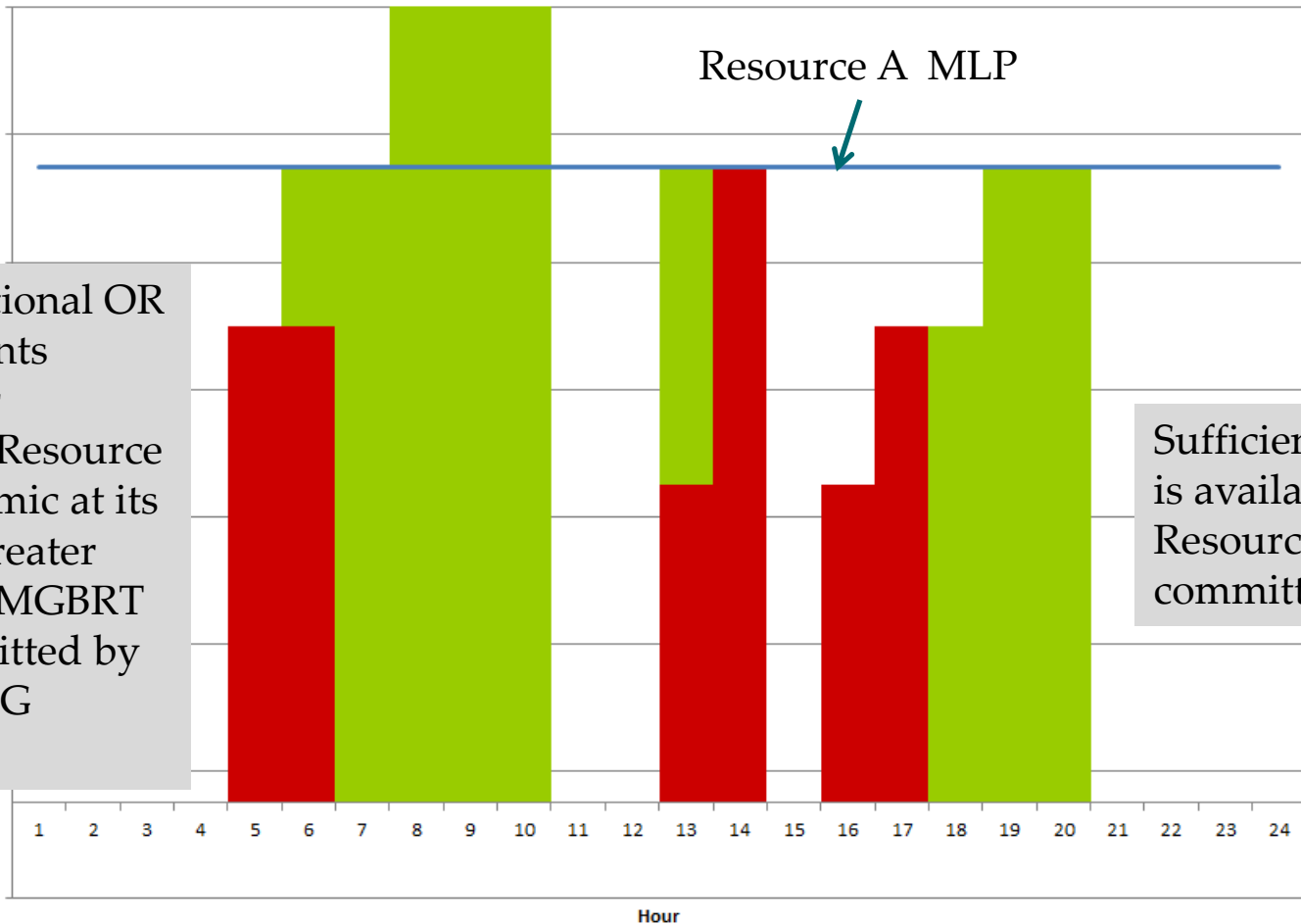
Example: Current Means to Increase Flexibility



Example: Scheduling Extra OR for Flexibility



Example: Resource Commitment for Flexibility



With additional OR requirements needed for flexibility, Resource A is economic at its MLP for greater than ½ its MGBRT and committed by the RT-GCG program.

Sufficient flexibility is available with Resource A committed.

■ PD Energy Schedules with Flex OR ■ PD Energy Schedules Status Quo — MLP

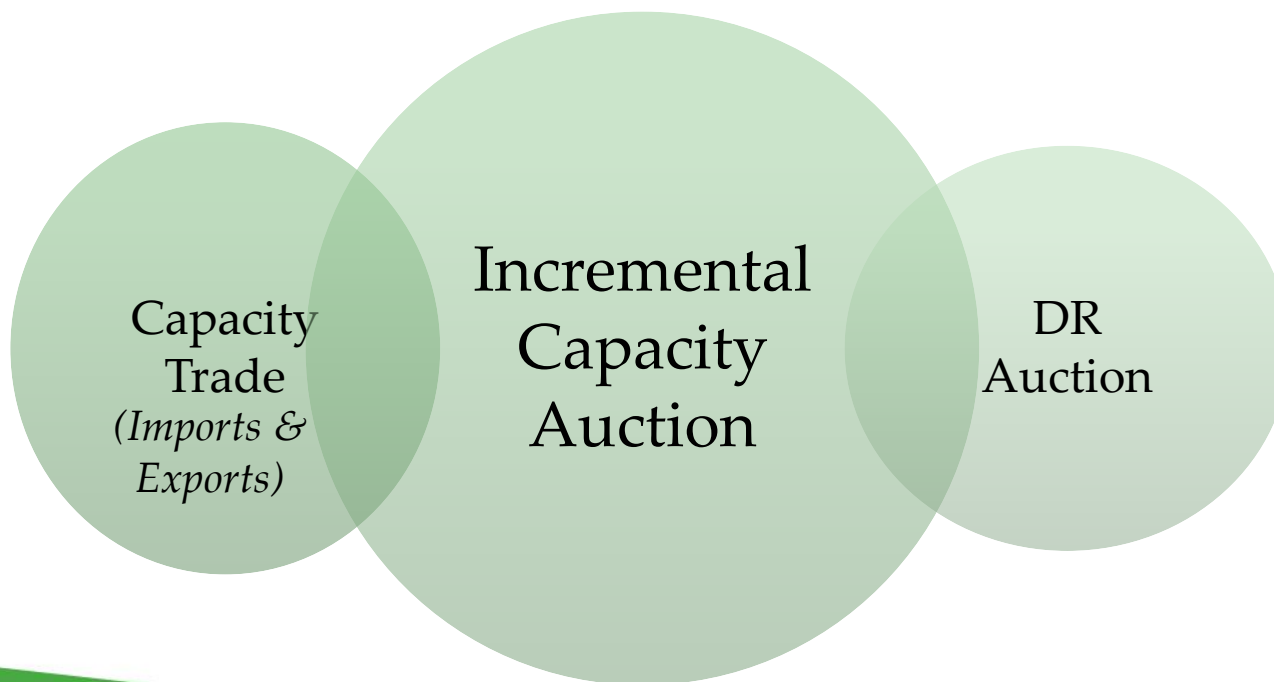
Next Steps

- Proposed Market Rule and Market Manual changes to be presented at next stakeholder engagement meeting in December
- Anticipate ability to schedule 30-minute OR for flexibility in 2018 Q2

UPDATE ON CAPACITY EXPORTS

Capacity Trade and the MRP

- Development of the ICA will need to integrate both the DR Auction and the existing and upcoming work related to Capacity Trade
 - Capacity Exports, through the Enabling Capacity Exports project, was launched as a standalone stakeholder engagement; will be brought under the broader Market Renewal umbrella going forward



Capacity Exports

- Projections are that Ontario will have sufficient capacity to meet planning needs in most periods until the early/mid 2020's
- Neighbouring or nearby jurisdictions have different ways of securing capacity (i.e., auctions and/or contracting) which can include imports
- Creates the possibility for Ontario-based resources to export capacity by participating in auctions, contracts, etc.

Capacity Export Project Overview

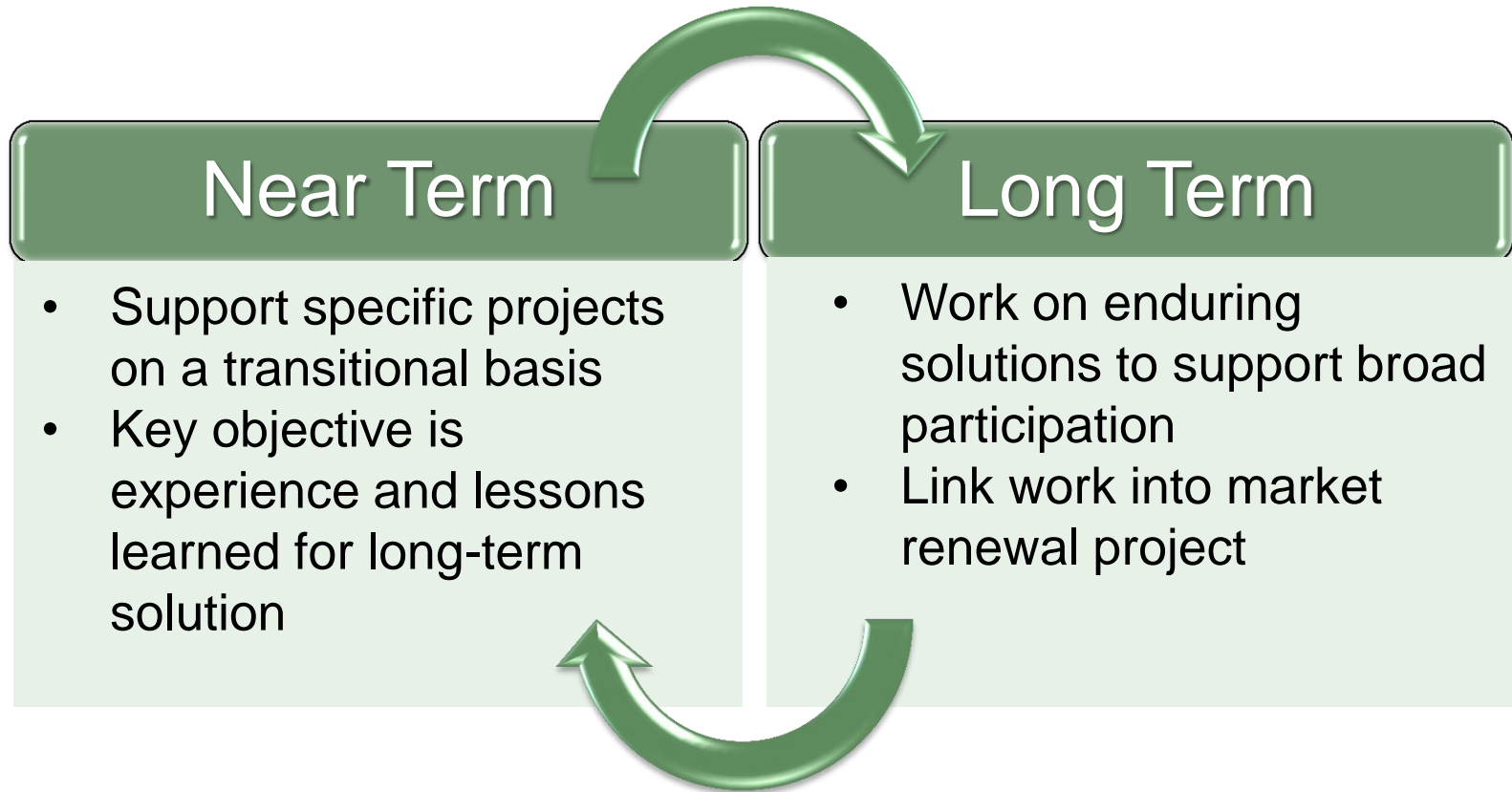
- The Enabling Capacity Exports program will enable Ontario based resources to export their capacity
- Enabling capacity exports:

Provides Ontario based resources an opportunity to monetize capacity not required for Ontario planned adequacy during certain periods

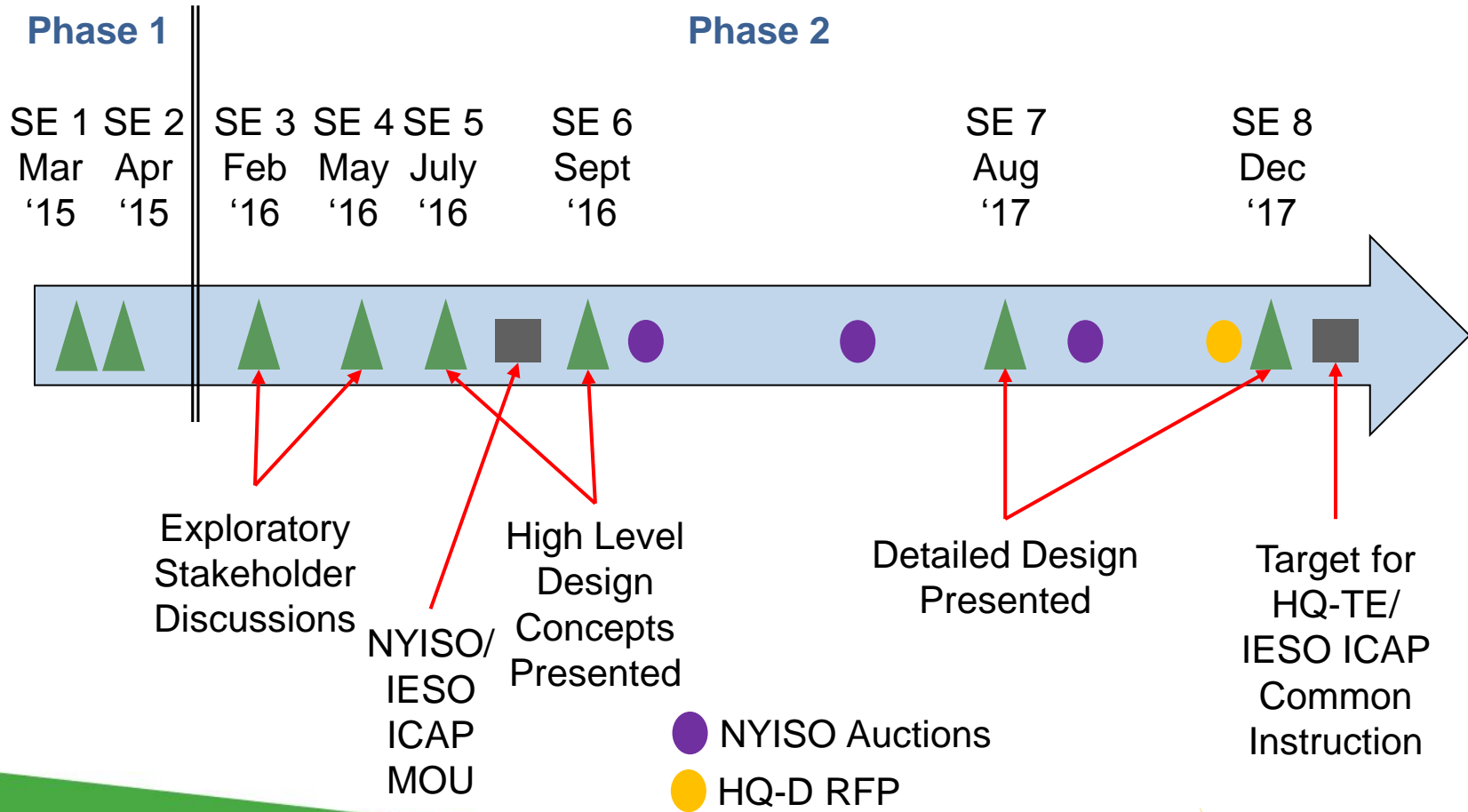
Offers an alternative to facilities that would otherwise choose to idle or shut down due to Ontario market conditions

Improves the efficient utilisation of assets regionally

General Workplan



Capacity Exports to Date



Quebec

- Discussions with HQ occurred in 2016, which laid a good foundation for the current discussions
- Since mid-August, the IESO has been speaking with HQ-TransEnergie and HQ-Distribution concerning a reliability based capacity export arrangement
 - The same basis as the existing NYISO pilot
- Any agreement as to how capacity will be managed will be between the IESO and HQ-TransEnergie as the system operators and reliability coordinators

Quebec

- Current status
 - The basis for a Common Instruction with HQ-TE has been agreed to. It incorporates all of the same principles as the NYISO arrangement
 - HQ-D released an RFP for capacity on November 13
 - One participant from Ontario was approved to respond to the RFP based on criteria which have been discussed at the Capacity Exports SE meetings
- Next steps
 - Continue discussions towards completing and executing a formal Common Instruction with HQ-TE by year end

Pilots and the Phased Implementation Approach

- An overall principle of the Enabling Capacity Exports initiative has been a controlled, phased approach to implementation. This allows lessons learned over time to inform the design
- The pilots have been an important aspect of this approach
- Direct and continuing involvement with NYISO and HQ have allowed the development of an in-depth understanding of what is required to facilitate capacity exports on an ongoing basis

Pilots to Date

- NYISO Auctions:

Auction	ICAP MW	Number of Participants
Winter 2016/17	89	1
Summer 2017	128	2
Winter 2017/18	128	2

- HQ RFP

Winter 2018	125	1
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MISO

- The IESO has been in contact with MISO to discuss possible capacity exports
- MISO has multiple priorities, stakeholder processes and timelines for resource registration that make having an agreement in place for the next auction in April unlikely
- A plan for moving forward will be discussed in mid-December

NER-SC Update

- First meeting of the non-emitting resource subcommittee was held on Nov. 2; next meeting scheduled for Dec. 7
- Working to finalize administrative items: terms of reference, work plan, co-chair etc.
- Focus on information gathering and sharing, seeking effective approaches to do this
- Recognize ambitious scope of work and aggressive timeline, beginning to address research questions now
- Will report back on work plan at next MRWG meeting

Wrap-up

- Thanks for your participation
- Next meeting is December 21
- Any final comments or questions?