

Market Renewal Program and Electricity Supply Contracts

Webinar for Electricity Supply Contract Holders
(Market Participants)

October 31st, 2017

Agenda

- Purpose of this Webinar
- Market Renewal Program (MRP) Overview
- MRP and Electricity Supply Contracts

Purpose

- To provide Market Participant contract counterparties with background information about the MRP;
- To discuss, at a high-level, potential implications to existing contracts;
- To propose a framework and timeline for addressing these potential implications; and
- To seek feedback on the identified implications, principles and approach

What is Market Renewal?

- The Market Renewal Program (MRP) is the most ambitious set of enhancements to Ontario's electricity market design since our market opened in 2002. It will address known issues with our existing design and deliver ratepayer value by meeting system needs more cost-effectively.
- Market Renewal will deliver a market place that will send transparent price signals to meet different system needs. It will:
 - improve the utilization, scheduling and dispatch of existing assets in the day-ahead and real-time
 - increase competition among resources, with a goal to deliver greater efficiency and flexibility
 - achieve resource adequacy in more cost-effective and transparent manner that reduces and/or defers the need to build new resources
- Market Renewal is being designed to work effectively within Ontario's policy framework, while also preparing us for further changes in the sector.
 - For example, by sending clear price signals and lowering barriers to entry, it will better enable new emerging technologies and empower consumers to play a greater role in the sector

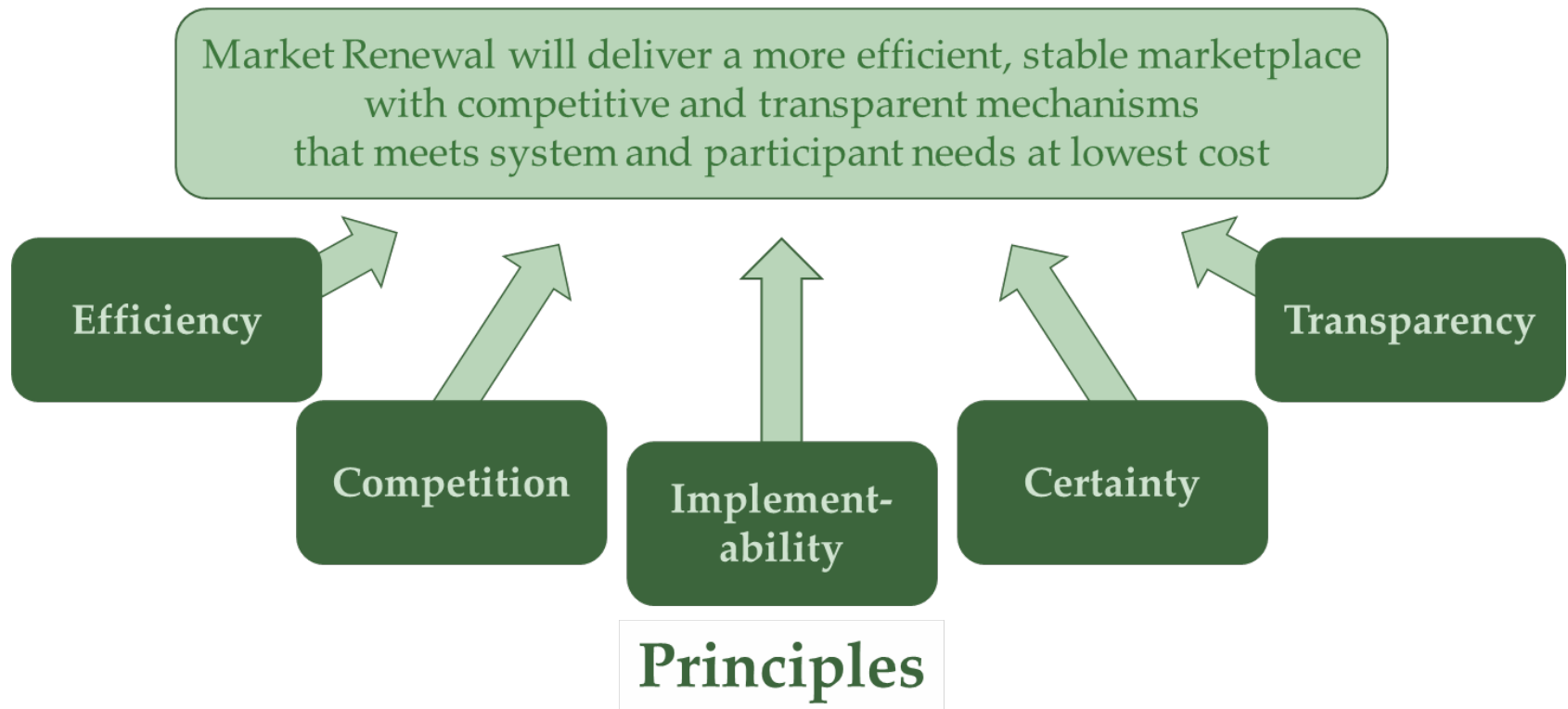
Market Renewal: A More Efficient Market

Market Renewal will drive a more efficient market structure to procure, commit, and dispatch needed resources

- Improve efficiency and transparency by sending effective price signals to enable informed decision making
- Ensure existing and new resources can recover many of their costs through market mechanisms
- Reduce administrative burden and reset boundaries between the markets and the participants

MRP Mission and Guiding Principles

The IESO has worked closely with stakeholders to develop an agreed upon mission and set of principles for Market Renewal



Meeting reliability needs and working within the given policy context are cornerstones of Market Renewal

Stepping Back: Why We Need to Renew the Market

IESO at Crossroads: Continue with Band-Aids or Fix the Foundation?

Current market design is resulting in **higher costs** and is **not sustainable**. In the past, the IESO has managed these through ad-hoc band-aid solutions. Market Renewal is fixing these inefficiencies and laying the foundation for future enhancements.

MDP_RUL_0002

GCG Audits

SGOL
MR-00235, MR-0260

Interim GCG Changes
MR-00356

Negatively-Priced Offers
MR-00370, MR-00239

Ramp-Down CMSC
MR-00373, MR-00374, MR-00414

CMSC on Interties
MR-00423, MR-00395

Self-induced CMSC
MR-00252

Ontario Market

Effective Date: December 2, 2015



Market Renewal	
Energy	<ul style="list-style-type: none"> • Single Schedule System • Day-Ahead Market • Enhanced Real-Time Unit Commitment
Capacity	<ul style="list-style-type: none"> • Capacity Trade • Incremental Capacity Auction
Operability	<ul style="list-style-type: none"> • More Frequent Intertie Scheduling • Investigate other opportunities

What are the current Inefficiencies in the Market?

- **Energy**

- **Two Schedule Pricing System**

- Out of market payments and gaming opportunities result in **higher costs**
 - Muted price signals send **inaccurate information** to consumers, suppliers and investors

- **Unit Commitment**

- Sub-optimal commitment decisions both day-ahead and real-time do **not utilize Ontario's fleet optimally**
 - Opaque, after the fact cost recovery **without competitive drivers**

- **Capacity**

- Locked in much of our capacity for long-term with **ratepayers bearing most of the market risks**
 - Procurements have **not fostered innovation** or unlocked broad range of capacity (e.g. imports, uprates, emerging technologies etc.)

- **Operability**

- Transformation of our generation fleet is leading to **operational challenges**
 - Forecast **inaccuracies** can lead to **reliability issues** if we over-forecast wind/solar output (and under-forecast demand)

Energy Workstream: Increased Certainty and Improved Asset Utilization

A Single Schedule is the enabling change that is needed to achieve further efficiencies in scheduling and optimizing energy and ancillary services

Day Ahead Market

Providing the opportunity for production and consumption decisions to be made with certainty day-ahead is beneficial to all market participants and the IESO

Enhanced Real Time Unit Commitment

Optimizing unit commitment over a longer timeframe based on a competitive platform, while ensuring commitment costs are transparent will ensure improved utilization of assets in real-time

Drive more certainty and participation into the day ahead

Optimize units over a longer timeframe based on competition

Capacity Workstream: Enhanced Competition and Transparency

- Introduce an incremental capacity auction to competitively procure incremental resources when they are needed based on a platform that is resource neutral
- Auctions have proven highly effective in achieving low cost outcomes in many markets across North America and Globally
- DR auction shows how the concept could work in Ontario



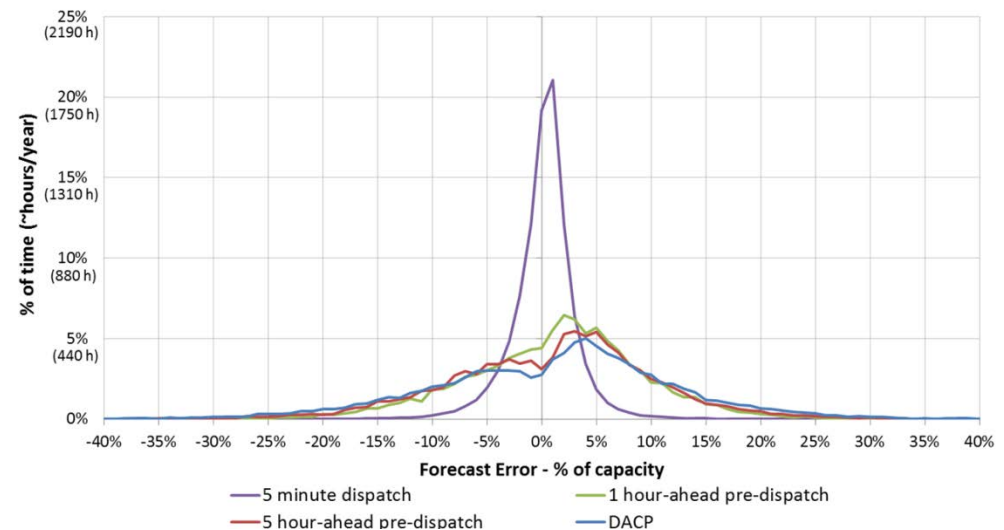
Ontario has used many different procurement mechanisms: competitive RFPs, standard offer and bilateral negotiations. Broad and open **competitive RFPs have yielded the best value** for consumers.

The DR Auction has been a first step in testing out an auction platform. It provides an annual mechanism for resources to compete transparently. It has attracted a number of **new entrants and innovative approaches**

A Capacity Auction will provide a **stable and enduring platform** where existing assets and new entrants can compete on a regular basis for incremental capacity needs. Transparent price signals will lead to **improved investment decisions**.

Operability Workstream: Increased Flexibility

- With a growing role for intermittent and decentralized resources, Ontario's electricity sector will require increased flexibility
- The IESO is working with stakeholders to identify solutions for near term needs through the Enabling System Flexibility engagement
- To meet longer term needs, Market Renewal will:
 - ✓ Introduce more frequent intertie scheduling
 - ✓ Explore additional opportunities to increase flexibility



How the Pieces Fit Together

The Market Renewal Program is a collection of a number of discrete projects that work together to improve the operation of our electricity markets

Incremental Capacity Auction (ICA)

- Developed to maintain resource adequacy
- The procurement mix drives day-ahead and real-time energy markets
- Occurs several years before operation

Day-Ahead Energy Market (DAM)

- Market to procure energy resources the day before operation
- Stabilizes real-time markets
- Generally occurs 24 hours before operation

Enhanced Real-Time Unit Commitment (ERUC)

- Re-optimize unit commitment for the real-time market over multiple hours to improve system efficiency
- Generally occurs 3-24 hours before operation

Single Schedule Market (SSM)

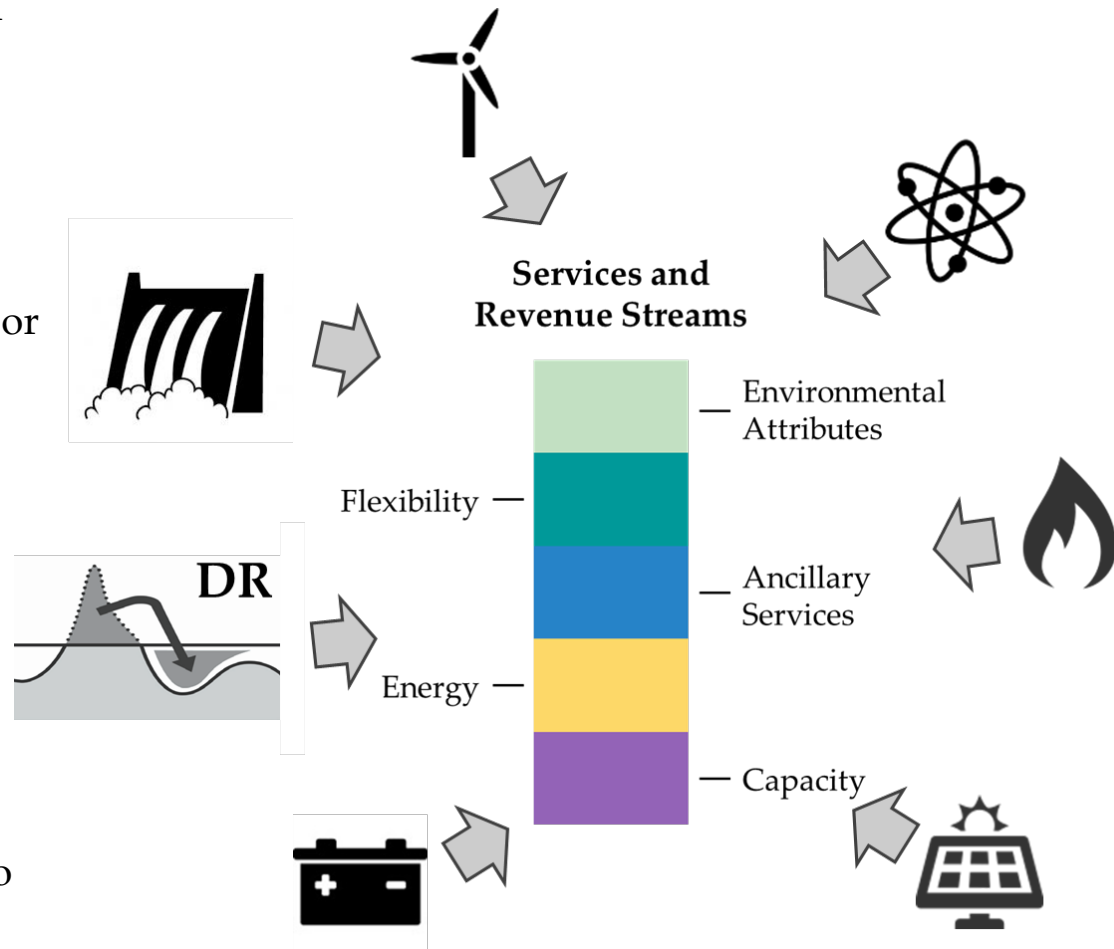
- Pricing reflects system constraints more transparently on a real-time basis
- Occurs 5-15 minutes before operation

Operability/Flexibility

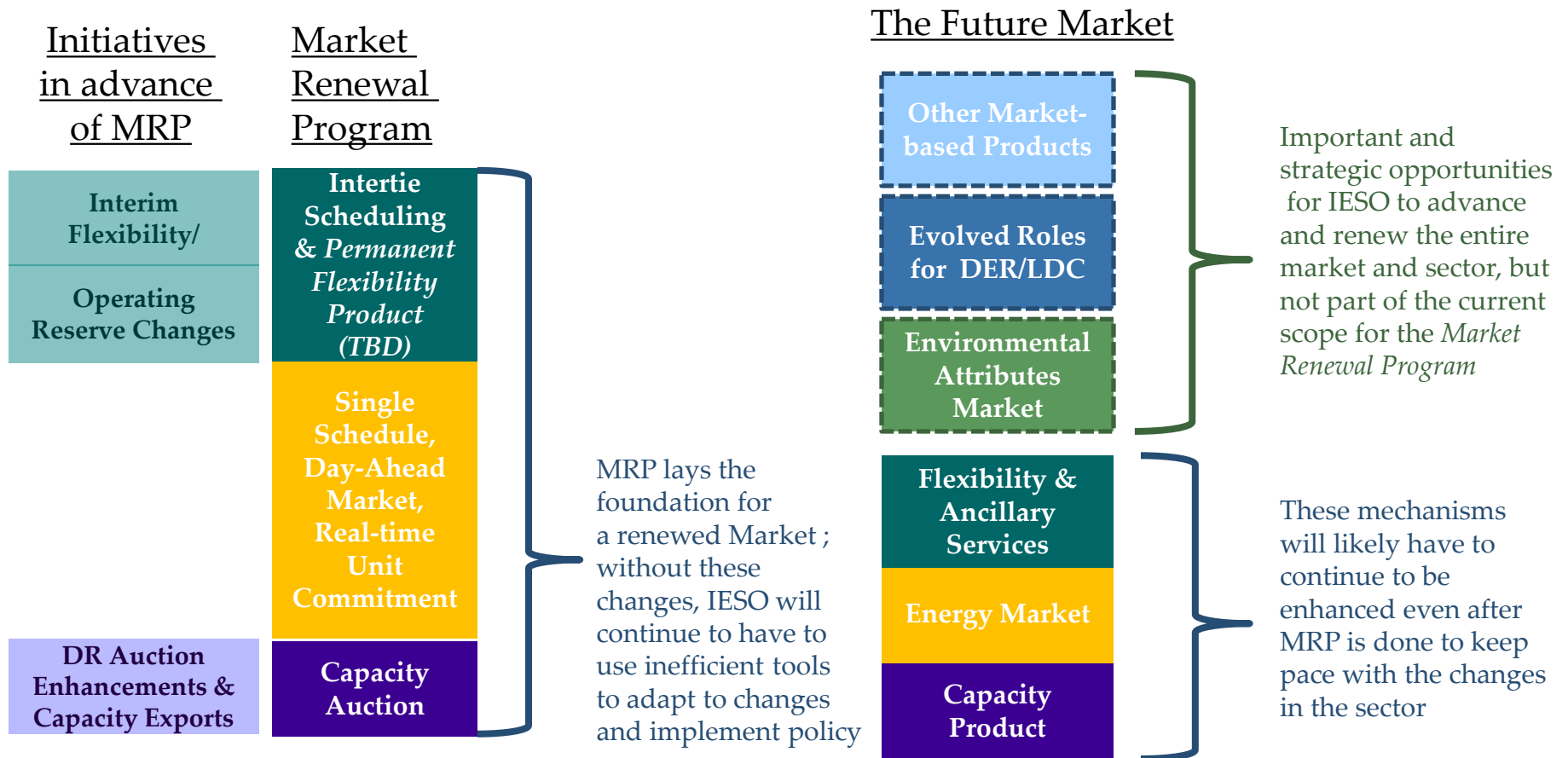
Defining Market Renewal

The Future Market

- Market Renewal will lead to a system with transparent revenue streams for needed services and provide an opportunity to re-align risk sharing
- All streams together will provide incentives for existing and new resources, rather than one single tool or program
- All resources should have the opportunity to compete and will earn more or less revenue depending upon how they can meet what the system actually needs
- Innovation and competition will drive cost-effective outcomes
- Other elements, foundational to the IESO, will likely need to be evolved to appropriately support the future market

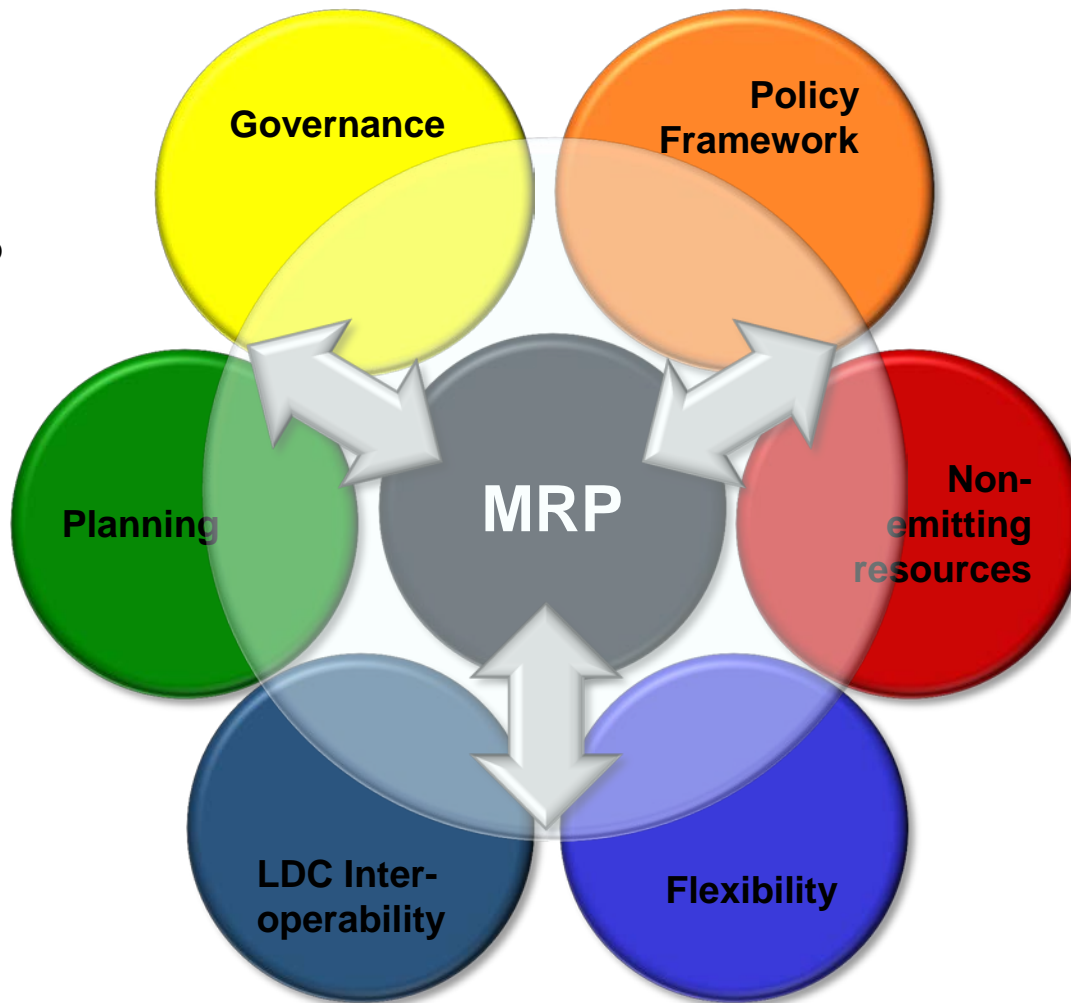


Defining the Market Renewal Program

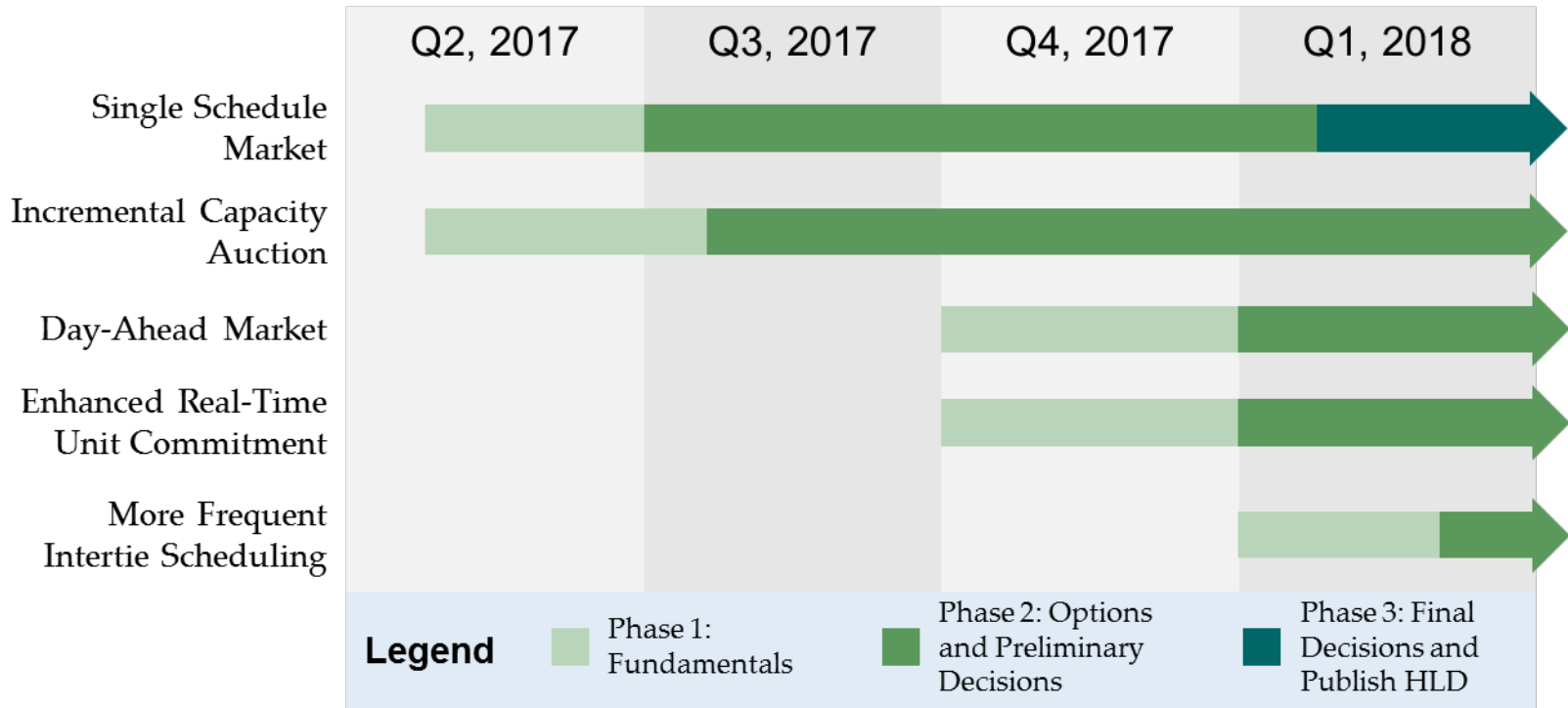


MRP: One Piece of the Puzzle

- Market Renewal is key to drive transformation of the IESO and the sector and ensure we meet system needs at lowest costs
- But other key issues need to evolve alongside MRP, for example:
 - ✓ Integration and operation of non-emitting resources and emerging technologies
 - ✓ Meeting emerging flexibility needs
 - ✓ Policy choices and frameworks
 - ✓ IESO-LDC Interoperability
 - ✓ Governance
 - ✓ Planning



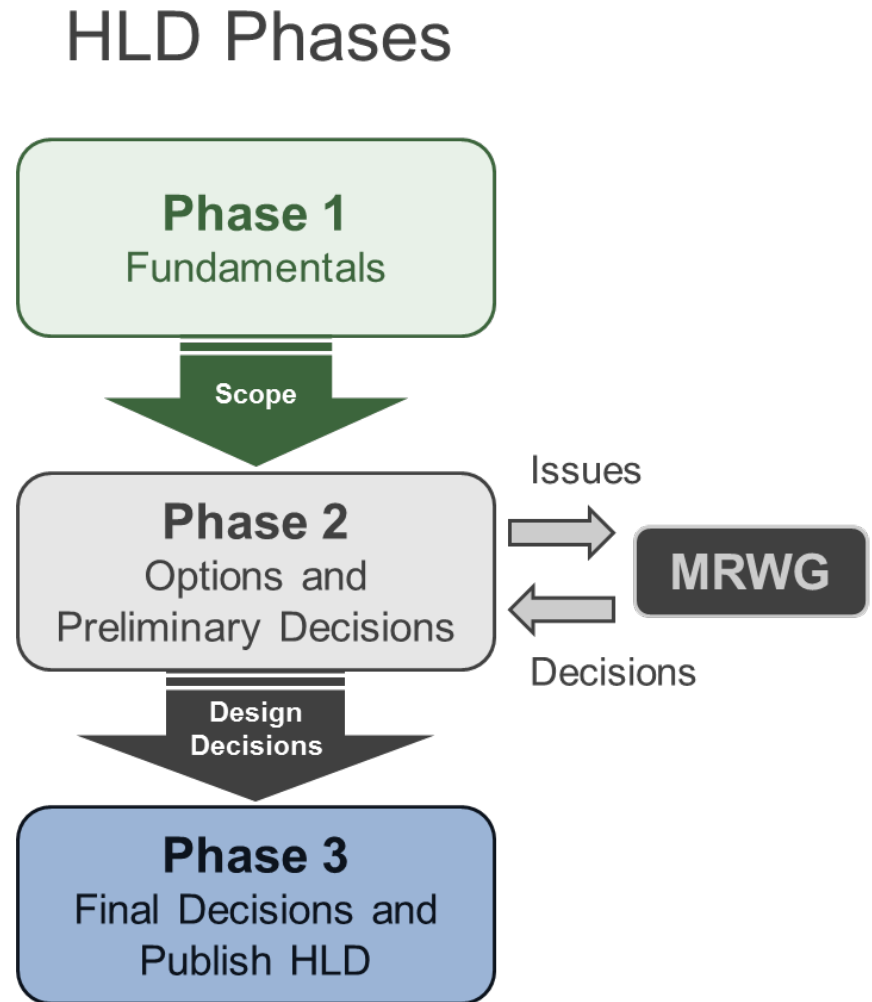
Design Progress



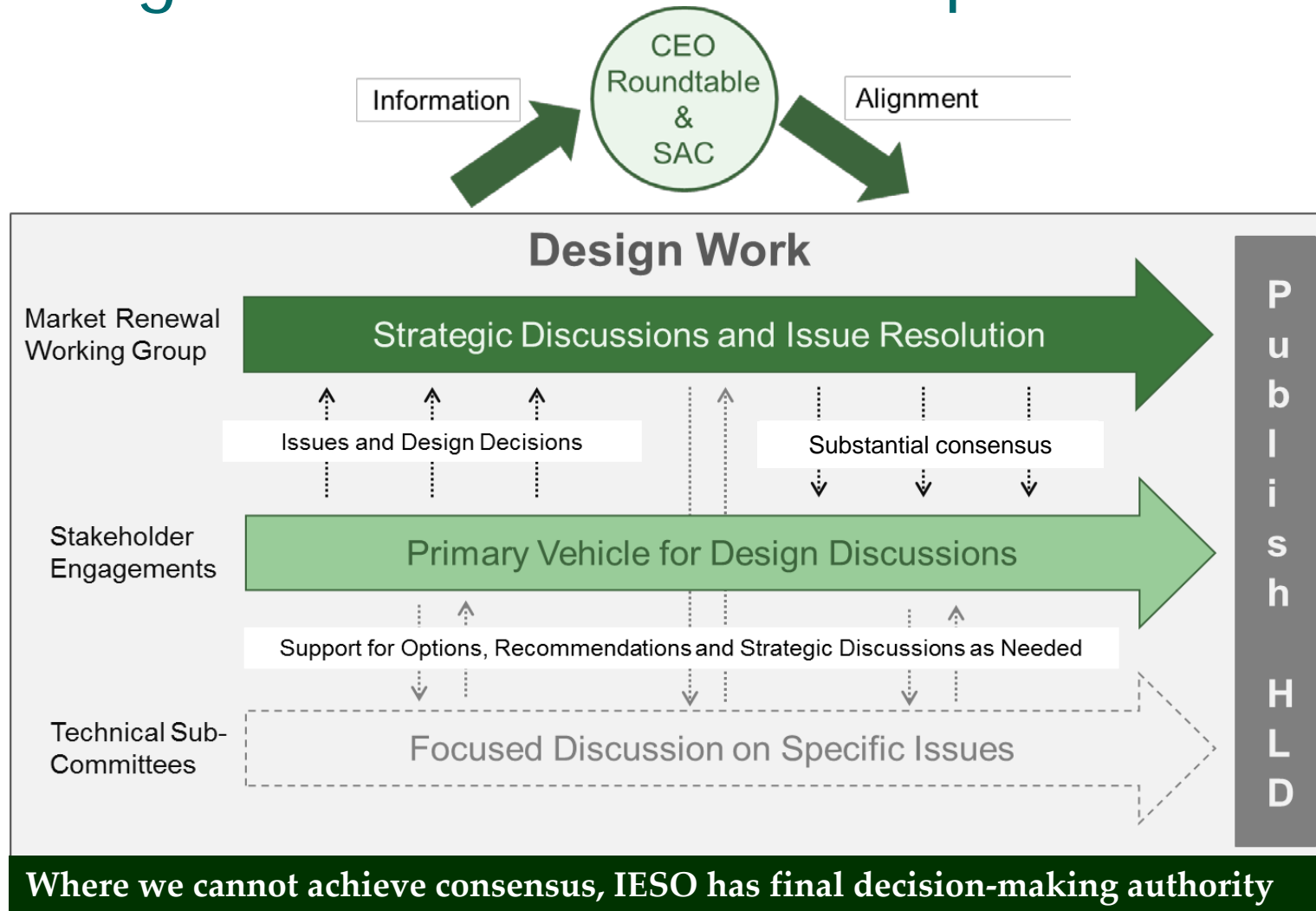
- Completed Phase 1 for the Single Schedule Market (SSM) and Incremental Capacity Auction (ICA)
- Targeting Q2/Q3 2018 for completion of SSM and ICA High Level Designs (HLDs)

Phases of High Level Design

- SE Meetings are the primary vehicle for design discussions
- Phase 1 will outline design elements, provide education, and define scope
- Phase 2 will explore options for the design elements and develop preliminary decisions
- Phase 3 will finalize decisions for all design elements and complete the High-level Design (HLD) document
- Throughout this process, we are looking for stakeholders to actively and collaboratively work with us on the design



Design Phase: Roles and Responsibilities



More Information

IESO Market Renewal Webpage

www.ieso.ca/market-renewal

MRP AND CONTRACTS

General Principles

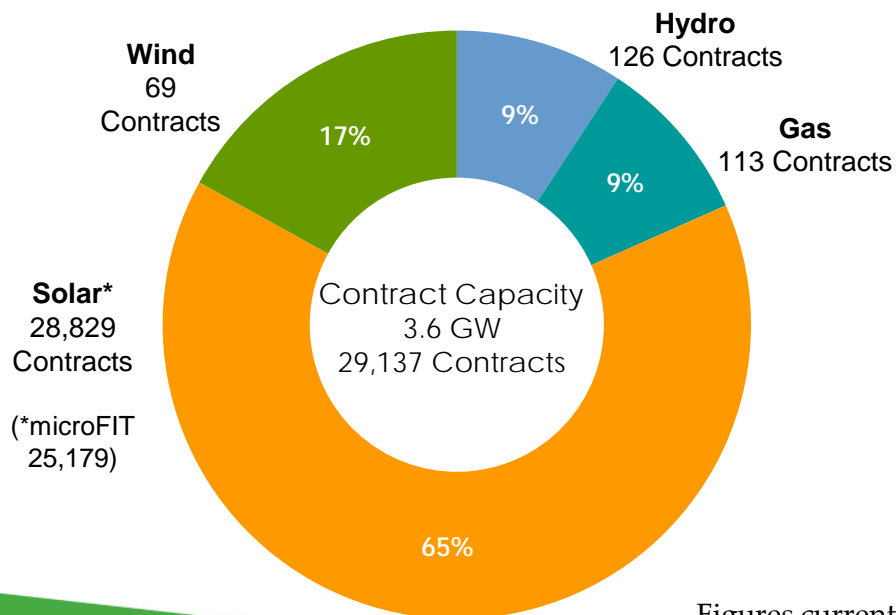
- The MRP is focused on improving the efficiency of Ontario's electricity markets, and is not targeting to extract value from contracts
- The vast majority of MRP implications may result only in mechanical contractual changes and only some may require more complex solutions
- The IESO will continuously work with our contract counterparties to understand contract implications, and address these changes throughout the design of the MRP

Existing Contracts

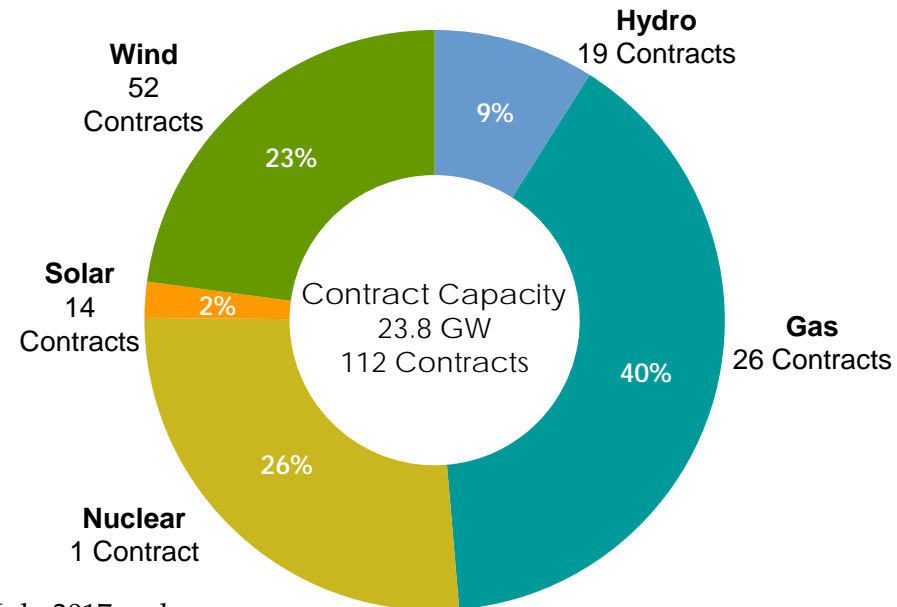
- For context, IESO's supply portfolio is currently comprised of the following contracts:

Total Contracts	Total MWs
29,249	27,402

Non-Market Participants



Market Participants



Figures current as of July 2017 and change on a continuous basis.

High Level Contract Implications

- There is a general sense of potential impacts and who may be affected
- There is still not a clear sense of specific impacts and how various individual contracts will be affected

Initiative	Anticipated Impact	Concerned Parties
SSM	<ul style="list-style-type: none"> • Replacement of HOEP with new energy price 	<ul style="list-style-type: none"> • All contracts, except for microFIT
DAM	<ul style="list-style-type: none"> • Participation in the day-ahead market • Changes to Exhibit J for gas-fired contracts • Potential other changes - TBD by design 	<ul style="list-style-type: none"> • Limited to Market Participants (gas-fired and potentially others - TBD by design)
ICA	<ul style="list-style-type: none"> • Allow for non-contracted capacity to participate in ICA 	<ul style="list-style-type: none"> • Limited to Market Participants (likely not all - TBD by design)
ERUC, MFIS, Others	<ul style="list-style-type: none"> • Likely limited if any, but unknown at this time (design not started) 	<ul style="list-style-type: none"> • Unknown at this time (design not started)

Renewable PPAs – Specific Comments

- FIT, LRP, RES, HCI, etc. – Wind, Solar, Hydro, Biomass

SSM

- Mechanical replacement through price evolution of HOEP for most contracts, but expect that certain specific complications may emerge
- E.g. FIT Contract definition of HOEP *“has the meaning given to it by the IESO Market Rules or shall mean any replacement thereof or successor thereto”*

DAM

- Design decisions related to renewables participation to be determined
- Most contracts do not specifically reference a DAM, however general IESO market rule change provisions usually exist

ICA

- Anticipated that Market Participants with contracted facilities will be allowed to offer incremental capacity
- Specific complexities will need to be worked through to calculate incremental capacity and segregate related energy from the PPA's

Deeming CES Type Gas Contracts – Specific Comments

- CES, ACES, CHP, CHPSOP, etc.

SSM

- Mechanical replacement through price evolution of HOEP
- Contracts generally contain Section 1.8: *Evolution of the IESO-Administered Markets* and concepts of “*Price Evolution Event*” or “*Introduction of LMP*”

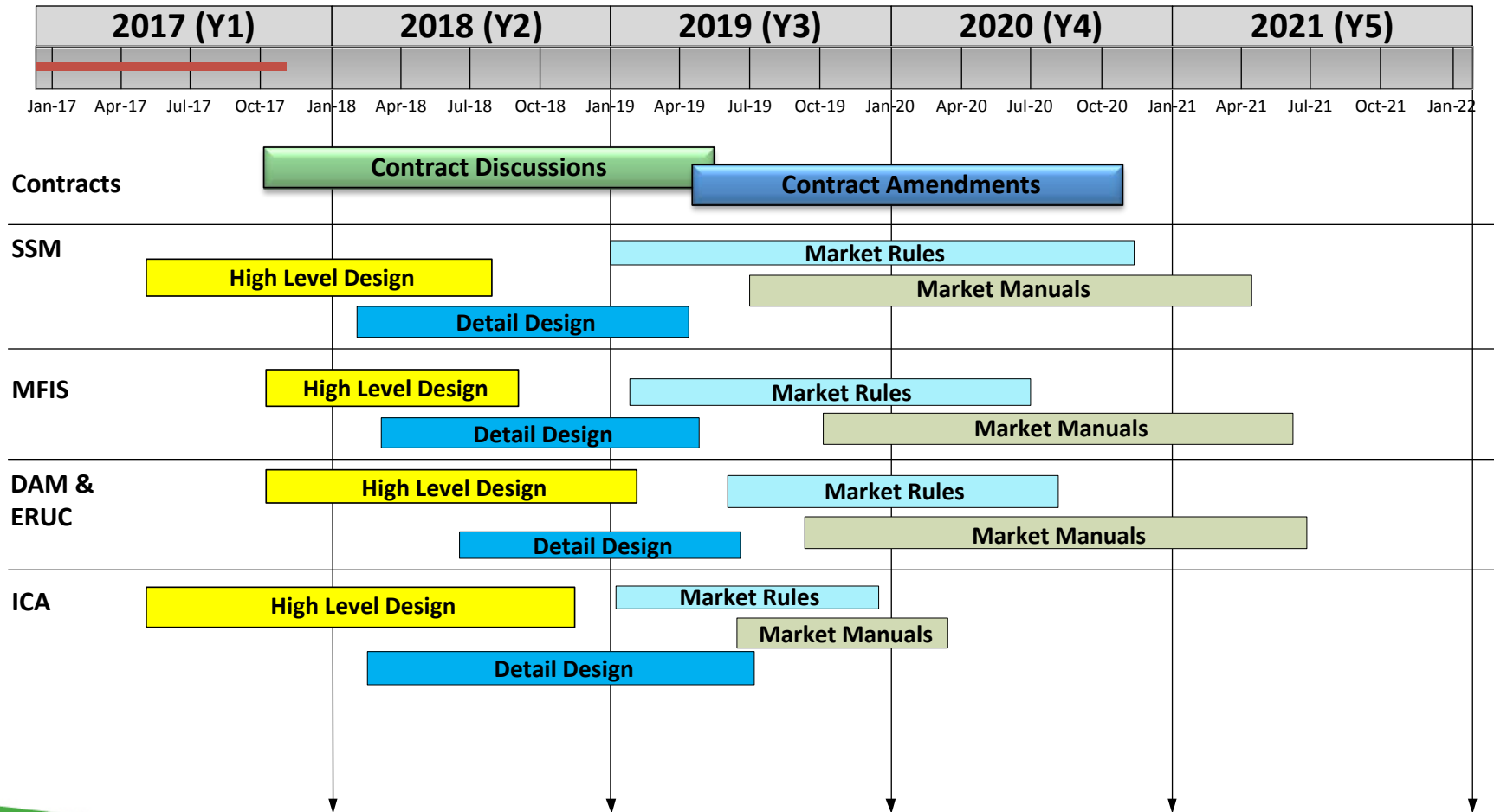
DAM

- Anticipate participation from gas-fired facilities that are Market Participants
- Contracts generally contain Section 1.7: *Introduction of the Day-Ahead Energy Forward Market*

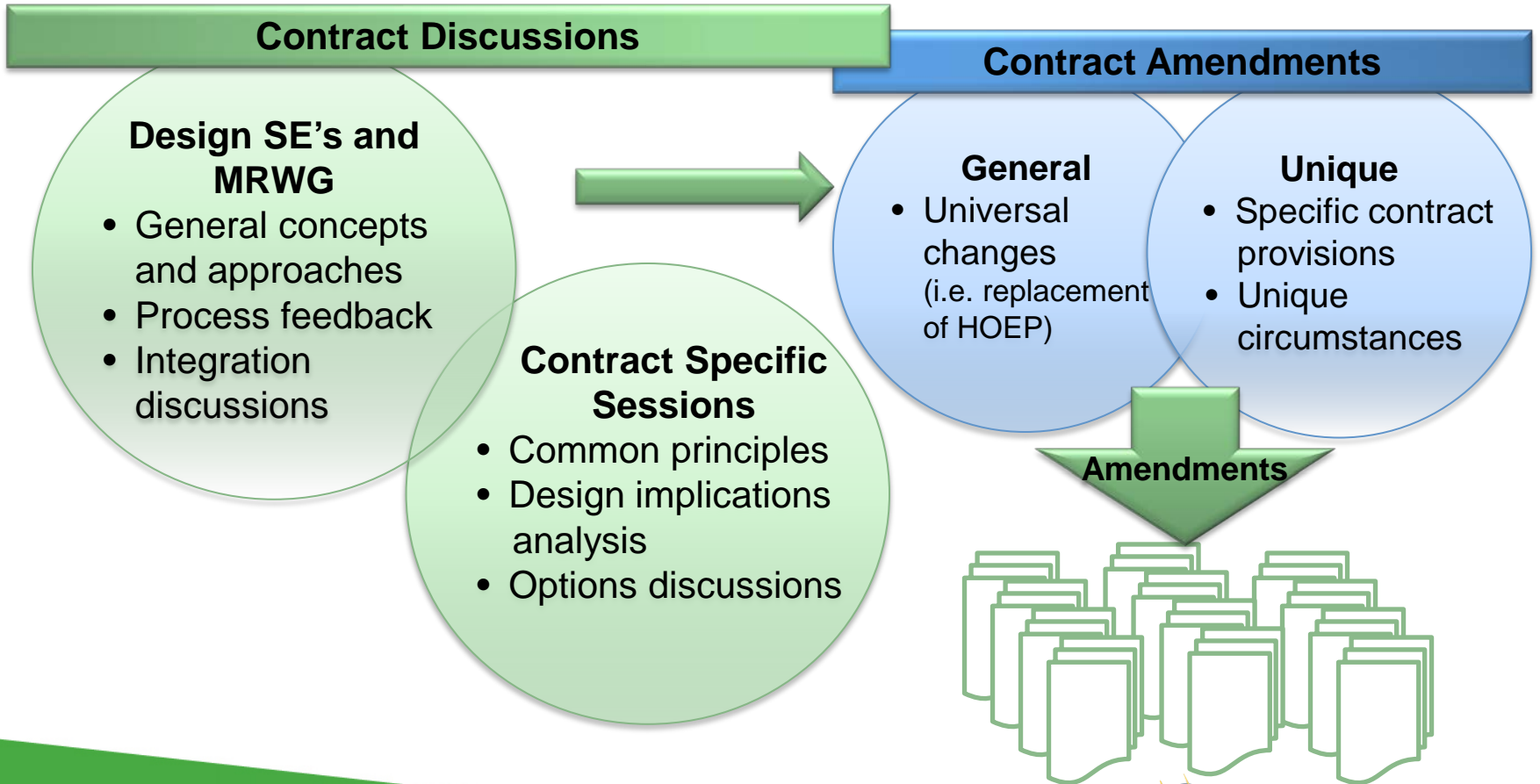
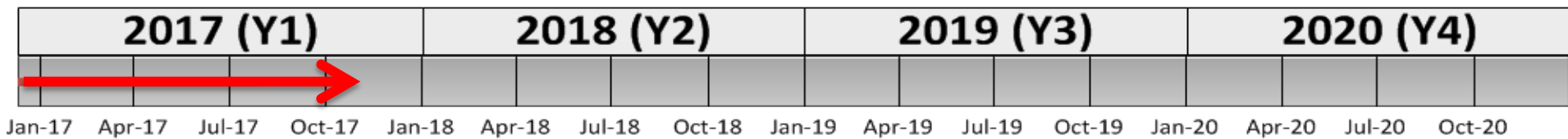
ICA

- Applicable to interested parties and no requirement to participate
- Contracted capacity is not expected to be eligible to participate

Market Renewal Anticipated Road Map

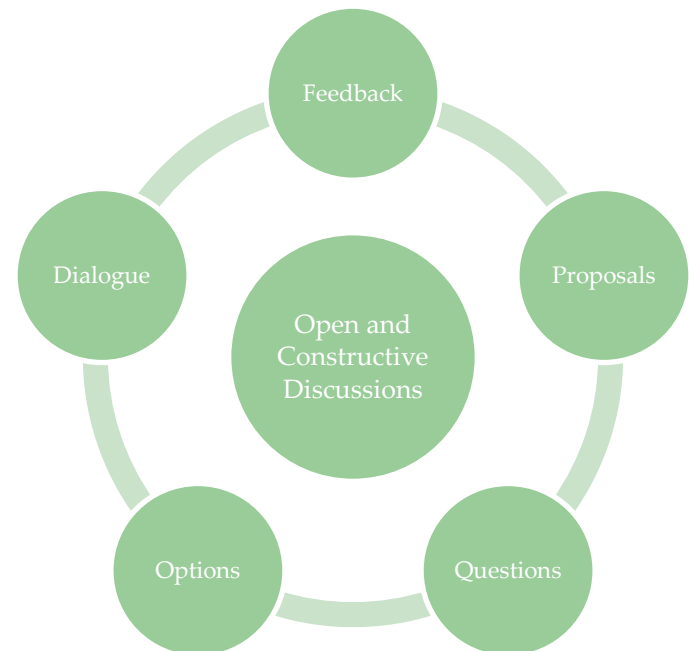


Parallel Process With Market Renewal Design



Contract Implications General Discussions

- Will be done in parallel with MRP design work
- Focus will be on general contract implications
 - **Collaborative and general in nature:** address common aspects and not specific contract matters
 - **Open Forum:** discussions are removed from any contract negotiations
 - **Transparent and not confidential**
Summary of discussions shared in a transparent manner with all stakeholders



Contract Amendments Specific Discussions

- Meant to address specific contractual matters for individual contracts and groups of contracts similar in nature
 - Each type of contract (and in some circumstances each contract) can differ in many ways
 - Confidentiality provisions in contracts will have to be respected
 - Our experience has shown that applying identical amending language does not work for all contract counterparties
- Amending agreements will likely be worked on in parallel during the MRP implementation phases, but may not be finalized until market changes take effect



Questions for Stakeholders

- IESO is looking for feedback on the following questions:
 - What contract issues do stakeholders see as priorities to be addressed now and what issues are dependent on actual designs/market rules?
 - What is/are the best forum(s) and processes to discuss Market Renewal and contract questions? (open engagement, small committee, sector-specific, bilateral?)
- Please send feedback by **November 24**

Feedback

- Feedback on the questions in the last slide and questions/comments/feedback on Market Renewal and contracts on a *general level* can be submitted to engagement@ieso.ca
- Questions/comments/feedback specific to *individual* contracts can be submitted to mr.contractmanagement@ieso.ca

Next Steps

- IESO will review and respond to feedback
 - Webinar recording will be posted on IESO Market Renewal Webpage
- The IESO's Contract Management group will continue to participate in Market Renewal stakeholder engagements;
- The IESO will work with stakeholders to identify, track and address contract implications; and
- The IESO encourages Market Participant contract counterparties to continue to participate in Market Renewal stakeholder engagements

QUESTIONS & COMMENTS

