



Chuck Farmer  
Vice President, Planning, Conservation and Resource Adequacy  
Independent Electricity System Operator  
1600-120 Adelaide Street West  
Toronto, ON M5H 1T1

May 4, 2022

Dear Chuck,

This submission responds to the Independent Electricity System Operator's (IESO's) April 20, 2022 presentation, *LT RFP Engagement*<sup>1</sup>

Power Advisory has coordinated this submission on behalf of a consortium of renewable generators, energy storage providers, and the Canadian Renewable Energy Association (CanREA) (the "Consortium"<sup>2</sup>).

### **Clarity on Future RFPs and Other Procurement Initiatives Needed to Address Growing Supply Needs**

The Consortium continues to support IESO's Resource Adequacy Framework (the "Framework"). Within the Framework, the Consortium supports IESO's planned administration of multiple Request for Proposals (RFPs) to execute long-term contracts for projects to be developed to meet Ontario's growing supply needs. As shown in the graph below, Ontario requires significant amounts of supply (capacity and energy) – capacity needs exist now and increase once the Pickering nuclear generation station retires before 2026, and energy needs emerge in the mid 2020s and increase through the late 2020s into the 2030s.

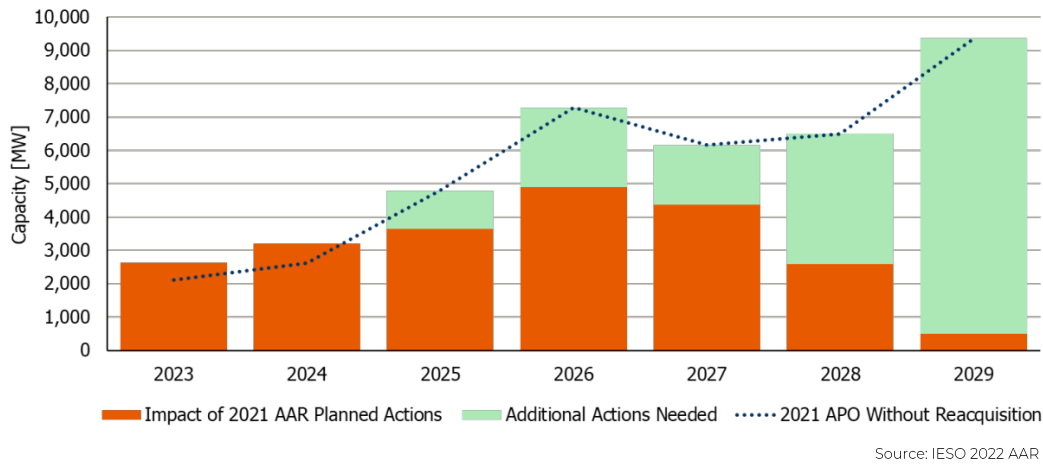
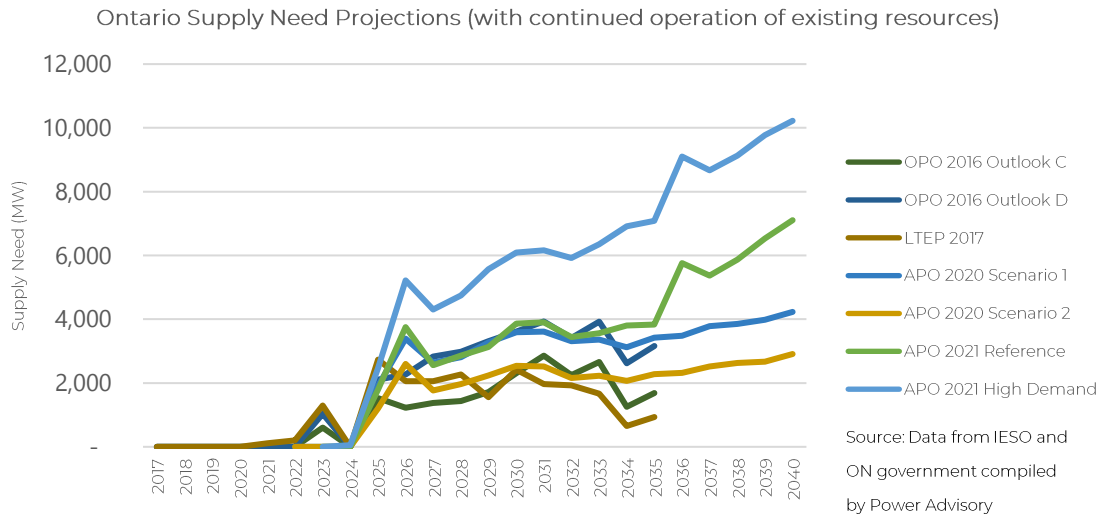
Within the April 2022 Annual Acquisition Report (AAR)<sup>3</sup>, IESO showed "Additional Actions Needed" to meet Ontario's growing supply needs (shown in the second graph below). The Consortium recommends that IESO provide needed clarity on the timing and supply (MW) targets for future RFPs to contract for to be developed projects. Since the Long-Term (LT) RFP stakeholder engagement was launched by IESO, procurement plans have changed (e.g., number of specific procurement initiatives, MW targets per procurement initiative, new non-RFP procurement initiatives, etc.) within a very short time. Developers and investors require clarity and certainty towards potentially positioning their efforts to help meet Ontario's growing supply needs.

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<sup>1</sup> See <https://ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Long-Term-RFP>

<sup>2</sup>The members of the Consortium are: CanREA; Axiom Infrastructure; BluEarth Renewables; Boralex; Capstone Infrastructure; Cordelio Power; EDF Renewables; EDP Renewables; Enbridge; ENGIE; Evolgen (by Brookfield Renewable); H2O Power; Kruger Energy; Liberty Power; Longyuan; NextEra Energy Canada; Pattern Energy; and wpd Canada.

<sup>3</sup> See <https://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Acquisition-Report>



Based on information to date, it appears that the following four procurement initiatives will be administered by IESO over 2022 and 2023 to help meet only a portion of Ontario's growing supply needs through to be developed projects:

- LT RFP 1 to procure 2,500 MW (effective capacity);
- LT RFP 2 to procure 1,500 MW (effective capacity);
- Expedited Procurement RFP to procure 500 MW to 1,000 MW (effective capacity); and
- One-off Forward Capacity Auction (i.e., enhance existing Capacity Auction) to procure 500 MW to 1,000 MW (unforced capacity (UCAP)) of upgrades from operating resources (e.g., generators).

The Consortium requests IESO responses to the following questions.

- Are all supply needs and procurement supply targets, not including the Forward Capacity Auction, all defined as effective capacity and not UCAP, and if effective capacity is this consistent with how effective capacity has been defined within established IESO power system planning documents (e.g., 18-month outlook, etc.)?
- Will any changes be made to the identified supply targets for LT RFP 1 (2,500 MW) and LT RFP 2 (1,500 MW)?
- Will the supply target for the Expedited Procurement RFP continue to be within a range of 500 MW to 1,000 MW, or will a single supply target be set and, if so, what will that supply target be?
- Will the supply target for upgrades to operating resources via a one-off Forward Capacity Auction continue to be within a range of 500 MW to 1,000 MW, or will a single supply target be set and, if so, what will that supply target be?
- Will the one-off Forward Capacity Auction procure UCAP, as done in Capacity Auctions as defined within the Market Rules, or will it procure effective capacity (not presently defined within the Market Rules)?
- Based on the AAR graph above, it appears that approximately 9,000 MW have been summarized as “Additional Actions Needed” while IESO’s planned procurement initiatives to date to procure to be developed projects totals approximately 6,000 MW, therefore how will the remaining 3,000 MW be procured and what procurement initiatives (e.g., RFPs, etc.) will be used to procure needed resources? And are these MW depicted in the AAR graph effective capacity or UCAP or something else?

### Scope and Timelines of RFQ and Expedited Procurement RFP

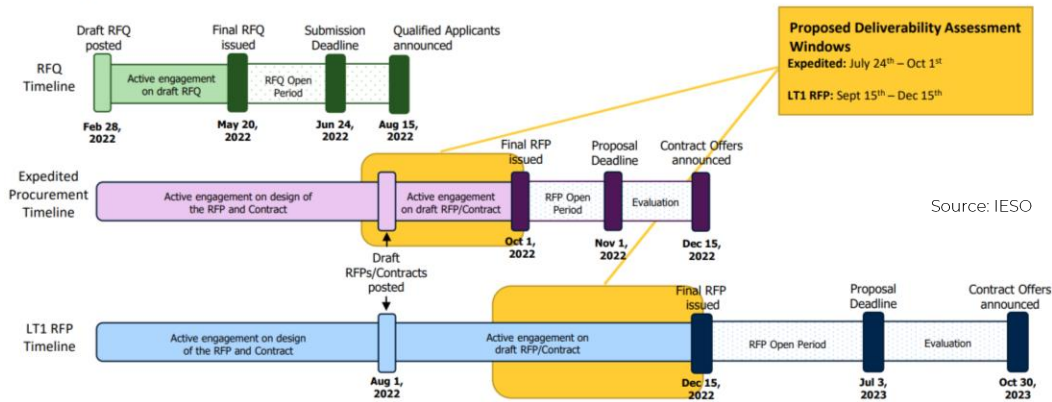
While the Consortium acknowledges benefits to administering Request for Qualifications (RFQ), the Consortium continues to believe that RFQ-like requirements could simply be included within RFPs. This will speed up administration and timelines to contract for needed supply resources.

For example, based on the graphic below from IESO’s April 20 stakeholder engagement meeting, more time is being spent to create and finalize the RFQ compared to the timelines being proposed for proponents to respond to the Expedited Procurement RFP.

Further, especially considering Ontario’s significant and growing supply needs, IESO should not solely ‘gate’ proponents through a single RFQ towards eligibility to participate within LT RFP 1, the Expedited Procurement RFP, etc. Flexibility should be granted for proponents that did not participate within the RFQ to be able to participate within subsequent RFPs with projects that meet respective requirements and criteria. This is especially so, considering competing jurisdictions (e.g., Québec, New York, etc.) with

significant project development opportunities to meet their supply needs and objectives. That is, Ontario is, and will continue to be in, competition for investment capital and project development with other jurisdictions over the next several years – well into the 2030s.

### Expedited and LT RFP Procurement Timelines\*



The timelines for the Expedited Procurement RFP are extremely tight. Therefore, unless changes are made to provide additional time for developers and/or asset owners, along with their investors, to determine what projects may be able to participate within the RFP, only projects that will not trigger changes to permits and approvals, not require changes to connection assessments and associated connection agreements, etc. will potentially participate. At this time, it is not clear how many viable projects are in this situation and could therefore reasonably be expected to participate within the Expedited Procurement RFP.

### Same Technology Expansion and Forward Capacity Auction

IESO’s proposal to utilize an existing annual Capacity Auction to administer a one-off Forward Capacity Auction in 2023 to secure capacity supply for a three-year period from 2024 to 2026 will require amendments to the Market Rules. Amendments to Market Rules take time, as sufficient stakeholder engagement is required and adds risks to the process because the Technical Panel will necessarily opine on rule amendments then vote on rule amendments. Therefore, amendments to Market Rules introduces unnecessary risks to procuring needed supply.

The Consortium believes development of a Forward Capacity Auction is an unnecessary and unfocused initiative – especially considering procurement of needed supply resources are already being planned for through multiple RFPs. Further, the Consortium questions the potential success of a one-off Forward Capacity Auction considering that nearly all 28 submissions responding to IESO’s draft Incremental Capacity Auction (ICA) High-Level Design (i.e., a design for a Forward Capacity Auction) in 2019 called for the termination of the ICA because of the high likelihood of it failing to secure new supply. Mainly because of this position from most stakeholders, IESO terminated plans to implement the ICA.



The Consortium recommends that IESO simply include same technology expansions within respective RFPs and not pursue a one-off Forward Capacity Auction. Further, the Consortium notes that within the LT RFP stakeholder engagement meetings re-powering operating resources (e.g., renewable generators) has not been discussed in a meaningful or substantive way. The Consortium recommends that future LT RFPs must include re-powering operating resources facilitated by focused stakeholder engagement on this topic.

### **LT RFP 1 and Contract Design Commentary and Recommendations**

The Consortium offers comments and recommendations regarding the following LT RFP 1 and Contract design components and associated procurement process points. Within subsequent submissions, the Consortium will provide additional comments and recommendations on other LT RFP 1 and Contract design components.

#### Contract Payment Structure

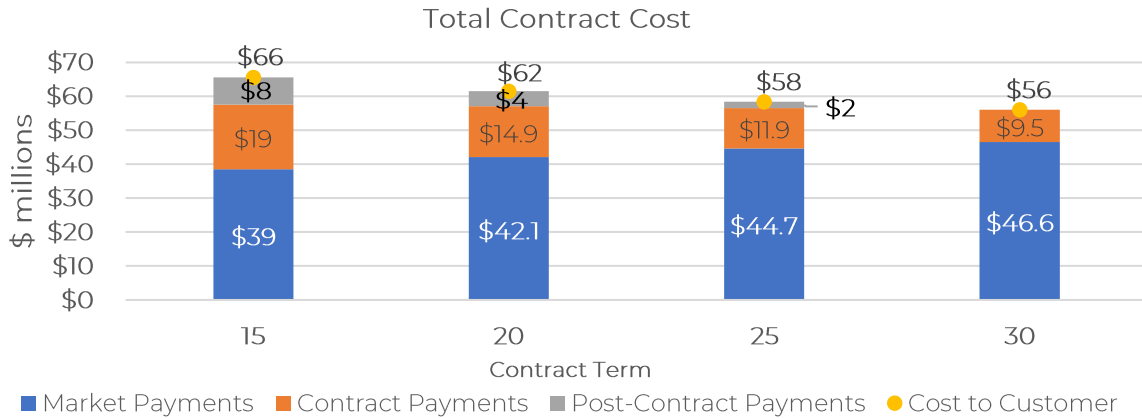
Based on IESO's revised position regarding payments under the LT Contract contained within the April 20 stakeholder engagement presentation, the Consortium applauds IESO for moving towards a bundled contract price (capacity and energy) and seemingly a contract-for-differences (CfD) payment structure based on a \$/MW-month or \$/MWh contract price. A CfD payment structure will be cost-effective for Ontario's electricity customers and will help ensure stable and sufficient contract revenues that will best facilitate the development and financing of needed supply resources.

The Consortium understands points IESO has raised regarding mechanisms to incentivize contracted resources (e.g., generators, energy storage) to follow market signals to produce energy when most needed and not produce energy during periods of much less need. The Consortium recommends that IESO continue to work with stakeholders in exploring additional contract mechanisms to provide such incentives (e.g., additional payments for producing energy during high demand periods when supply options are severely limited, etc.).

#### Contract Term Length

The Consortium applauds IESO for moving to a 15-year contract term length from the original position of a 7- to 10-year contract term length. However, the Consortium recommends that IESO allow for a contract term length of at least 20-years with potential for proponents to have options for additional contract term.

Based on financial analysis considering risks that would require higher portions of equity needed to finance supply projects, therefore raising the cost of debt and weighted average cost of capital, longer term contracts help to de-risk projects resulting from more stable cash flow. The graphic below shows the results of our analysis. Clearly, costs to Ontario's electricity customers decrease the longer the contract term length.



Most contracts executed for generation supply in Ontario have been at least for 20-years based on past procurements administered by IESO, the former Ontario Power Authority (OPA), and the Ontario Electricity Financial Corporation (OEFC) – and length of contract terms for hydroelectric generators have typically been closer to, and some times longer than, 40-years. Length of contract terms are also typically at least 20-years within other jurisdictions. Listed below are a few examples:

- Hydro-Québec – up to 30-year contract term within recently announced RFPs (300 MW wind energy and 480 MW renewable energy), with 30-year contract term length expected for planned additional RFPs (1,000 MW wind energy and 1,300 MW renewable energy);
- Nova Scotia Government – 20-year contract term within present renewable energy RFP;
- Alberta Electricity System Operator (AESO) – 20-year contract term from previously Renewable Electricity Program (REP) RFPs (i.e., REP 1, REP 2, and 3 RFP; and
- New York State Energy Research & Development Authority (NYSERDA) – 20-year contract term for Indexed Renewable Energy Certificates (RECs).

#### 4-Hour Energy Production Duration – Mandatory Requirements vs. Rated Criteria

The Consortium supports Mandatory Requirements within LT RFPs. However, Mandatory Requirements should address project development specific requirements that can directly impact whether projects can be developed and financed within the timelines and terms and conditions contained in respective RFPs and contracts. Therefore, Mandatory Requirements should generally comprise of the following components:

- Siting and project location;



- Site control;
- Community/stakeholder engagement;
- Engagement with Indigenous Peoples;
- Permits and approvals; and
- Grid connection and assessments.

The Consortium recommends that desired attributes from projects (e.g., generators, energy storage) regarding resource availability, energy production (e.g., 4-hour energy production duration, etc.), and other performance attributes be included within Rated Criteria.

Considering unlikely participation of gas-fired generation projects within LT RFPs and planned development of northern hydroelectric generation projects and small modular reactor (SMR) nuclear generation projects will not be ready until the 2030s, resource options participating within LT RFPs seem lessened. Therefore, considering the significant capacity and energy supply needs within the 2020s into the 2030s, the Consortium recommends that LT RFPs be designed to enable maximum competition from as many resource types and technologies and not unnecessarily 'cut' projects from participating within LT RFPs due to overly stringent Mandatory Requirements.

#### Environmental Attributes

The Consortium supports IESO's Clean Energy Credit (CEC) initiative and looks forward to an Ontario CEC registry and framework that could be used to facilitate future bilateral transactions (e.g., corporate Power Purchase Agreements (PPAs)) of renewable energy and their environmental attributes (EAs) (e.g., RECs). Until such time that the CEC initiative has been implemented and the market becomes comfortable with its framework to facilitate corporate PPAs between suppliers and buyers, the value of EAs/RECs within Ontario will not be clear nor transparent.

Due to the lack of clarity of the value of EAs/RECs in Ontario, the Consortium recommends that any framework to address EAs/RECs within LT RFPs and Contracts be kept clear and simple.

For example, IESO should consider allowing proponents responding to LT RFPs to submit bid prices for EAs/RECs. IESO could then evaluate bid prices for EAs/RECs and potentially due so as a component within Rated Criteria. Further, EAs/RECs could be designed as a put option within Contracts. Under this design, contracted suppliers will have the right, but not obligation, to sell EAs/RECs to IESO at a contracted price (i.e., bid price for EAs/RECs). As per the Contract, if the supplier sells EAs/RECs at prices greater than the contract price, the supplier then chooses to not exercise the contracted put option. On the other hand, if the supplier does not sell EAs/RECs greater than the contract price, the supplier can choose to exercise the contracted put option and sell EAs/RECs to IESO at the contract price.



### Project Connection

As done within administering past RFPs (e.g., Large Renewable Procurement (LRP)) and other procurement initiatives (e.g., Feed-in Tariff (FIT)), connection data and information (i.e., MW by transmission zones, transformer stations, sub-stations) assists siting/sizing projects) must be provided early within procurement processes. Connection data and information are essential to effectively site and size projects.

To provide robust and clear connection data and information, early and consistent communication and coordination is needed between IESO, transmitters, distributors, and the Ontario Energy Board (OEB), where all of these entities must work together towards facilitating grid connection and development of needed supply resources within a timely manner and in accordance with procurement rules and requirements.

Therefore, for LT RFPs, the Consortium requests IESO to provide clarity and status updates on the following connection related areas:

- IESO determination of an 'acceptable' level of transmission congestion (e.g., for the FIT Program, OPA decided that transmission congestion be capped at 4% resulting from all contracted generators reaching commercial operation);
- Clear rules within LT RFPs to establish processes to manage connection queues, evaluation of connection of proposed projects, assignment of available connection to projects (e.g., Distribution Availability Test (DAT)/Transmission Availability Test (TAT), or similar), etc.; and
- Clear rules within LT RFPs are needed regarding when Connection Impact Assessments (CIAs) and System Impact Assessments (SIAs) can be initiated and completed (e.g., some past procurements included status of achieving CIAs/SIAs within Rated Criteria, other past procurements did not permit start of the process to achieve CIAs/SIAs).





The Consortium thanks IESO for on-going stakeholder engagement meetings regarding LT RFP 1 and other related stakeholder engagement meetings. We will be pleased to meet with IESO about this submission at a mutually convenient time.

Sincerely,

A handwritten signature in black ink, appearing to read "Jason Chee-Aloy", enclosed in a thin black rectangular border.

Jason Chee-Aloy  
Managing Director  
Power Advisory

cc:

Jordan Penic (IESO)  
Shawn Cronkwright (IESO)  
Katherine Sparkes (IESO)  
Barbara Ellard (IESO)  
Brandy Giannetta (Canadian Renewable Energy Association)  
Elio Gatto (Axiom Infrastructure)  
Roslyn McMann (BluEarth Renewables)  
Adam Rosso (Boralex)  
Greg Peterson (Capstone Infrastructure)  
Paul Rapp (Cordelio Power)  
David Thornton (EDF Renewables)  
Ken Little (EDP Renewables)  
Lenin Vadlamudi (Enbridge)  
Michelle Dueitt (ENGIE)  
Julien Wu (Evolugen by Brookfield Renewable)  
Stephen Somerville (H2O Power)  
JJ Davis (Kruger Energy)  
Deborah Langelaan (Liberty Power)  
Jeff Hammond (Longyuan)  
Cheryl Dietrich (NextEra Energy)  
Rob Campbell (Pattern Energy)  
Ian MacRae (wpc Canada)



# IESO LT RFPs and Contracts – Additional Recommendations

Consortium of Renewable Generators, Energy Storage Providers, CanREA

May 5, 2022



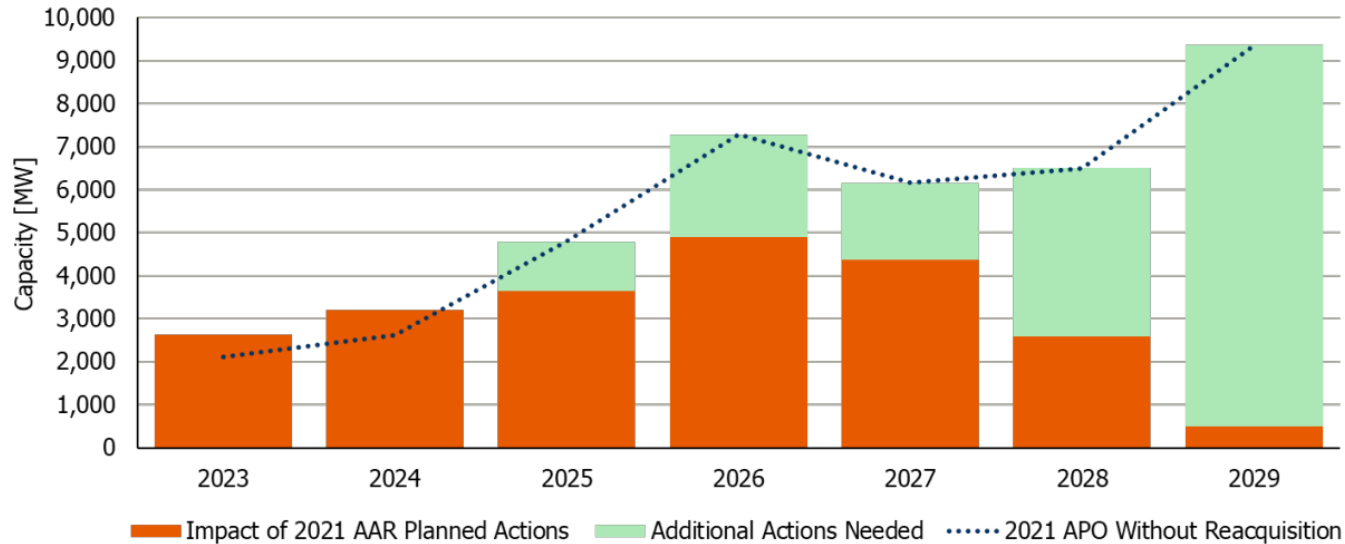
# Background, Objective, Recommendation

- Consortium provided rationale and recommendations for IESO to procure bundled electricity product in LT RFPs
- April 2022 IESO AAR projects up to 6,000 MW of new supply by approx. 2030
  - I. LT RFP 1 to procure 2,500 MW
  - II. LT RFP 2 to procure 1,500 MW
  - III. Expedited RFP to procure 500 MW to 1,000 MW
  - IV. Forward Capacity Auction to procure 500 MW to 1,000 MW operating resource upgrades
    - Supply needs increased since last forecast
    - LT RFPs to procure supply similarly to quantities procured in CES/RES RFPs and FIT
- Considering significant Ontario supply needs in 2020s/2030s, significant investment required – while other markets/jurisdictions procuring significant supply (e.g., Québec, New York, etc.) – lots of competition for investment

Consortium recommends key RFP and Contract provisions be designed within all RFPs (LT, Expedited Procurement) to enable greatest extent of competition while meeting supply needs (capacity, energy) and policy objectives (e.g., decarbonization, etc.)

# Ontario Requires Supply – Need to Maintain Operating Resources and Build New Projects

- Capacity shortfall starts approx. 2025 and energy shortfall starts approx. 2027, even with all existing resources operating – shortfalls increase if resources retire post expiry of contracts and/or demand grows – IESO identified “Additional Actions Needed” – requiring multiple procurement processes (e.g., LT RFPs, etc.) and significant investment



Source: IESO 2022 AAR

# LT RFPs and Contracts – Key Terms and Conditions

# Enabling/Maximizing Competition and Meeting Multiple Objectives – Key Terms and Conditions

- Subsequent slides provide commentary and recommendations regarding key LT RFP and/or Contract terms and conditions
  - I. Contract Payment Structure
  - II. Contract Term Length
  - III. 4-Hour Energy Production Duration
  - IV. Environmental Attributes
  - V. Project Connection
  - VI. Phasing Resource Procurements

# I. Contract Payment Structure

# Contract Payment Needs to Ensure Projects Get Built, Address Risks, and Cost-Effective

- Stable/sufficient Contract revenues ensure projects get built, address market risks, cost effectiveness for customers
  - Contract design should strike balance – allocating risks between project developers/owners and customers – CfD payment structure best addresses these points
- IAM risky compared to other Canadian/U.S. markets (e.g., market structure, government intervention, MRP, etc.)
- MRP fundamentally reforms IAM design/rules, creating significant uncertainties and market risks
  - New pricing regime (i.e., LMPs), new scheduling/dispatch regime (i.e., DAM, up to 27-hour LAP, etc.), new market power mitigation framework (i.e., Conduct and Impact Test) – projects procured under LT RFPs face MRP uncertainties and market risks
- Contract payment structure with multiple settlements for multiple electricity products (e.g., energy, UCAP, etc.) introduces unnecessary complications, at best attempts to ‘mimic’ a single bundled Contract price
- From April 20, 2022 IESO LTI RFP presentation, Consortium applauds IESO for moving towards a bundled Contract price (capacity and energy) and seemingly CfD payment structure within LT Contracts based on \$/MW-month or \$/MWh
  - Different terms and conditions considering operational characteristics and economics of different resources (e.g., VGs, hydroelectric generators, storage, etc.) regarding CfD payment structure



## II. Contract Term Length

# Importance of Contract Term

- March 10, 2022 IESO presentation, IESO indicated LT Contract 1 will be 15-year contract term
- Proposed term inconsistent with past IESO/OPA Contracts – typically 20-years (40-years for some hydroelectric generators)
- IESO proposed term shorter than competing contracts from other jurisdictions
  - Up to 30-year contract term, re: Hydro-Québec's most recent RFPs (300 MW wind energy and 480 MW renewable energy), announced additional forthcoming RFPs (1,000 MW wind energy and 1,300 MW renewable energy)
  - 20-year contract term, re: Nova Scotia's present renewable energy RFP
  - 20-year contract term, re: AESO's previous REP 1, 2, and 3 RFPs
  - 20-year contract term, re: NYSERDA Indexed REC
- Longer terms cost-effective for customers and support project investment
  - Customers benefit from lower costs – capital costs amortized over longer time
  - Developers/asset owners benefit – financing projects easier, lower cost of debt (longer cash flow period)
- Following slide demonstrate total cost to customers, comparing 15-year, 20-year, 25-year, and 30-year contract terms
- Consortium recommends at least 20-year contract term for LT RFPs, with options for additional term

# Examples of Costs to Customers – Cost of Capital for Fixed versus Variable Contract Payments

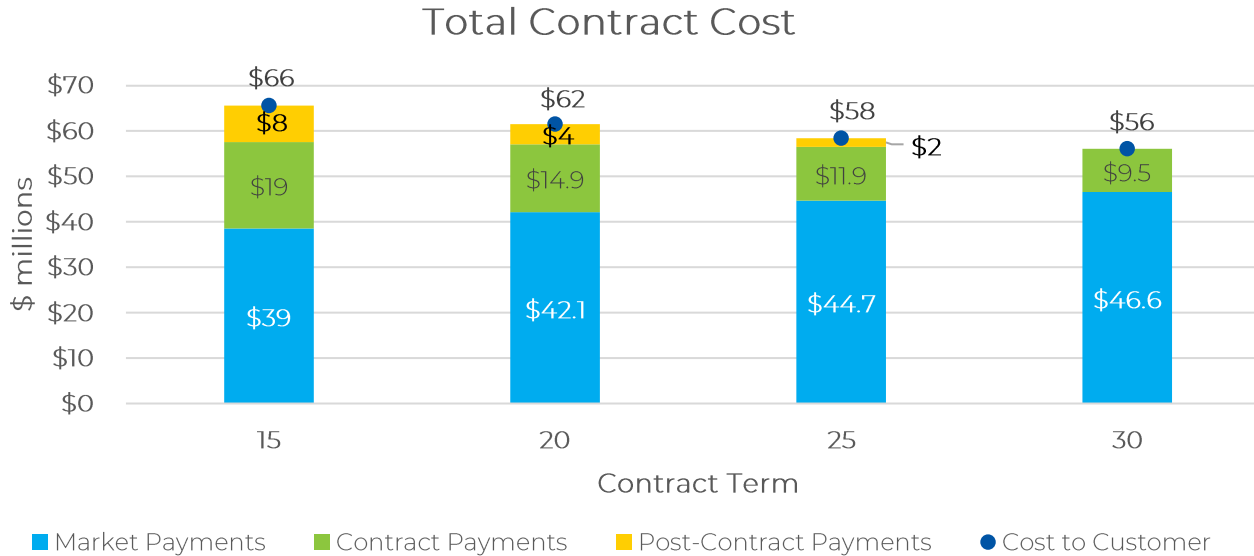
- CfD payment structure (with bundled electricity product) protects customers, ensuring sufficient revenues to generators
- Due to increased level of cash flow, CfD Contracts access lower cost of capital compared to fixed Contract payments
  - Fixed Contract payments (e.g., UCAP only), project developers provide more equity, accept higher debt costs
  - Wholesale market risks (e.g., MRP, etc.) require higher ROE – further increases after-tax WACC

Cost of Capital Estimates	UCAP	CfD
% Debt	35%	80%
% Equity	65%	20%
Cost of Debt	6.0%	4.0%
ROE	12.0%	7.5%
Tax Rate	25%	25%
WACC	9.38%	3.90%

- Generators cannot effectively 'hedge' wholesale market risks due to design/structure of Ontario's electricity market (e.g., no liquid forward contracting opportunities with buyers, other jurisdictions (e.g., Québec, New York, etc.) providing more attractive and far less risky generation and storage development opportunities)

# Effect of Contract Term

- Longer contract term reduces overall cost to customers
  - Many examples exist where longer term contracts provide cost-effective value for customers
    - e.g., Bruce Power Refurbishment Implementation Agreement, Churchill Falls Contract



# III. 4-Hour Energy Production Duration

# Energy Production and Performance

- Ontario requires up to 6,000 MW by approx. 2030
- Considering questionable participation of gas-fired generation projects within LT RFPs and planned development of northern hydroelectric generation and SMR nuclear generation not being ready until 2030s, resource options participating within LT RFPs likely relatively low
- LT RFPs should be designed to not exclude viable resource options – Mandatory Requirements to evaluate proposed projects should focus on determining project 'go/no-go' potential
- Given this logic, requiring minimum 4-hour energy production duration from resources should not be a Mandatory Criteria, rather one of the Rated Criteria – *especially considering energy shortfalls starting approx. 2027*
- **Recommend resource availability, energy production (e.g., 4-hour energy production duration, etc.), other performance needs be included within Rated Criteria**
  - Rated Criteria weighted according to goals/objectives of RFP, meeting supply needs and policy objectives
  - IESO/stakeholders need to discuss all potential Rated Criteria, in combination with all potential Mandatory Requirements, for review of how best LT RFPs/Contracts will meet supply needs and policy objectives
    - EAs could potentially be included within Rated Criteria, helping to meet government decarbonization objectives

# IV. Environmental Attributes

# Treatment of EAs/RECs

- IESO indicated EAs/RECs will remain with contracted resources (e.g., generators)
- Considering this position, combined with IESO's engagement on CEC registry, appears to be openness for treatment of EAs/RECs with LT RFPs/Contracts
- Consortium recommends that framework for EAs/RECs within LT RFPs an Contracts be clear and simple
- Potential options:
  - A. Resources retains EAs/RECs, free to monetize – no specific LT Contract terms and conditions
  - B. EAs/RECs have floor price established through put option under LT Contract
  - C. EAs/RECs fully hedged under LT Contract via CfD settlement



# A. Resource Retains EAs/RECs

- IESO does not take assignment of EAs/RECs under LT Contract
- Resource retains ownership of EAs/RECs, free to monetize (e.g., contract within compliance/voluntary REC market)
- Main risk (but low) is inability to monetize EAs/RECs
- Issue is how EAs/RECs will be valued by developers at time of proposing projects within LT RFPs – especially without clarity on CEC initiative

## B. EA/REC Put Option

- LT Contract includes put option for EAs/RECs
  - Put option – contracted resources acquires right, but not obligation, to sell EAs/RECs to IESO at a specific strike price
- If contracted resource sells EAs/RECs at price greater than strike price, resource then chooses to not exercise put option
- If contracted resource does not sell EAs/RECs greater than strike price, resource can choose to exercise put option and sell EAs/RECs to IESO at strike price
- IESO obligated under LT Contract to purchase EAs/RECs at strike price if contracted resource provides notice of intent to exercise put option
- Put option effectively creates floor price EAs/RECs and resource free to sell EAs/RECs at prices greater than strike price
- Strike price could be set by IESO (same for all contracted resources) or projects responding the LT RFPs could bid strike prices for EAs/RECs (comprising part of the evaluation of proposals)
  - If bid, could comprise part of Rated Criteria

# C. EA/REC Hedge via CfD Settlement

- LT Contract provides hedged value for EAs/RECs by establishing hedge price for EAs/RECs
- If contracted resource can sell EAs/RECs at prices greater than hedge price, resource pays difference between sale price and hedge price to IESO
- If contracted resource does not sell EAs/RECs for prices greater than hedge price, IESO 'tops up' sale price to hedge price
- EA/REC hedge price could be set by IESO or bid through proposed projects (comprising part of evaluation of proposals)
  - If bid, could comprise part of Rated Criteria

# Comparative Analysis of EA/REC Options and Recommendation

	Option A – Resource Retains EAs/RECs	Option B – EA/REC Put Option	Option C – EA/REC Hedge
Advantages	<ul style="list-style-type: none"> <li>Resource retains upside</li> <li>No administrative burden</li> <li>Resource does not need to disclose EA/REC sales to IESO</li> </ul>	<ul style="list-style-type: none"> <li>Resource assured floor price on sale of EAs/RECs</li> <li>Resource has right to exercise</li> </ul>	<ul style="list-style-type: none"> <li>Resource insulated from downside risk and assured a price for EAs/RECs</li> <li>Certainty of EA/REC price</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>Resource fully exposed to downside risk if EAs/RECs not sold profitably</li> </ul>		<ul style="list-style-type: none"> <li>Resource does not get any upside benefit of EA/REC sales</li> <li>Administrative burden</li> <li>Resource will have to disclose information to IESO</li> </ul>

- Option B – EA/REC Put Option and proposed projects bid strike price, should be considered

# Contractual Treatment of EAs/RECs in Other Jurisdictions

- BC Clean Power Call – generators own EAs/RECs (called Green Attributes)
- Alberta REP 1, 2 and 3 RFPs – EAs/RECs assigned to AESO
- Hydro-Québec 300 MW Wind and 480 MW Renewables RFPs – EAs/RECs assigned to Hydro-Québec
- Nova Scotia Renewables RFP – EAs/RECs assigned to Nova Scotia Power

# V. Project Connection

# Connection Data/Information, Queues, and Evaluation

- Connection data/information (i.e., MW by transmission zone, transformer stations, sub-stations) assists siting/sizing projects
- Coordination needed between IESO, transmitters, distributors – as done for past procurements (e.g., LRP, FIT, RES, etc.)
- IESO to determine ‘acceptable’ levels of transmission congestion
  - i.e., no specific rule/criteria/standard resulted in < 4% used within past procurements
- Clear rules within LT RFPs need to establish process to manage connection queues, evaluate connection of proposed projects, assign available connection to projects (e.g., DAT/TAT)
- Clear rules within LT RFPs needed regarding CIAs/SIAs
  - e.g., some past procurements included status of achieving CIAs/SIAs within evaluation, other past procurements did not permit start of process to achieve CIAs/SIAs
- Recommend connection data/information tables (MW) be available ASAP, establish clear rules regarding evaluation of projects and process to manage connection queues and assignment of available connection, leaving process to apply for CIAs/SIAs to post contract awards

# VI. Phasing Resource Procurements



# Managing Risk Through Phasing Procurements

- Risk IESO tries to procure a large portion of 4,000 MW to 6,000 MW (effective capacity) (potentially 5,000 MW to > 10,000 MW installed capacity) within few procurements with large MW targets
- This will 'lock' significant portion of supply to same Contract price, and terms and conditions
  - e.g., conditions to procure needed supply 'stressed' at this time – inflation, rising interest rates, supply chain constraints, etc. – all mean likely higher bid Contract prices with potential added risk premiums to account for multiple uncertainties
- Procuring all needed supply in few large portions will strain specific components of developing projects (e.g., permitting, approvals, connection assessments, etc.)
- Phased approach to procuring needed supply better path forward (e.g., 2x RFPs per year over 3-year period, before going to once a year or every other year)
- Consistent contracting of needed supply resources also allows IESO to adjust MW targets to account for changes (e.g., lower or higher demand, etc.)
- Phased approach mutually beneficial for resource developers/investors, IESO, process managers, policymakers, etc.

# Recommendations and Next Steps

# Recommendations

- LT Contracts should be structured as CfDs with a \$/MW-month or \$/MWh bundled Contract price (capacity and energy) with different terms and conditions commensurate with operational characteristics and economics of specific resources (e.g., VGs, hydroelectric generators, storage, etc.) regarding CfD payment structure
- Rated Criteria, not Mandatory Requirements, should include resource availability, energy production (e.g., 4-hour energy production duration, etc.), other performance needs, along with other criteria
- Framework for EAs/RECs within LT RFPs and Contracts should be clear and simple, and further explore Put Option with potential inclusion within Rated Criteria
- Connection data/information tables (MW) available ASAP, establish clear rules regarding evaluation of projects and process to manage connection queues and assignment of available connection, apply and completion of CIAs/SIAs post contract awards

# Next Steps and Other Considerations

- Forthcoming additional recommendations on LT RFP/Contract key terms and conditions, etc.:
  - Mandatory Requirements and Rated Criteria
  - Connection rules and process
- RFPs/Contracts rather than Forward Capacity Auction
- Re-powering renewable generators and participation within future LT RFPs
- Leveraging CEC initiative to help meet supply needs and other objectives (e.g., decarbonization, economic development) through Corporate PPAs



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