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Clean Energy Credits

Presentation for IESO Engagement Days

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Welcome and Introduction

- This webinar is conducted according to the [IESO Engagement Principles](#)
- This webinar will be recorded and available for viewing following this engagement
- All documents associated with this engagement can be found on the IESO Clean Energy Credits [engagement webpage](#)

Webinar Participation

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Agenda

1. Review Stakeholder Feedback
2. CEC Registry Features & Functionality
3. CEC Product Offering Options
4. Key Dates & Next Steps

Introduction & Background

- The Ministry of Energy asked the IESO to assess options for the establishment and ongoing operation and management of a registry to support the creation and/or recognition, trading, and the retirement of voluntary clean energy credits (CECs) within the province
- Supporting businesses in meeting their environmental, social and governance (ESG) targets is a key government policy objective
- The IESO is to report back on or before July 4, 2022 with detailed design options and recommendations, as well as potential benefits and projected costs of building and operating a CEC registry



1. Review of Community & Stakeholder Feedback

Initial Engagement Webinar

- The initial stakeholder engagement session on February 24th:
 - Introduced CEC credits registry and policy considerations
 - Sought feedback on key considerations
 - Launched survey of customer preferences

Community & Stakeholder Feedback

- IESO received feedback submissions from over 25 stakeholders including customers, generators, municipalities, indigenous communities, environmental groups, etc.
- IESO published written responses to feedback on April 19, 2022
- Published feedback responses were classified into three themes:
 - CEC product offering considerations
 - Registry design considerations
 - Other considerations

How IESO is using Feedback

- In today's presentation we have:
 - Highlighted key themes in the stakeholder feedback section
 - Incorporated stakeholder feedback in "registry features & functionality" and "product offering options"
- All stakeholder feedback will help inform options development for the July report back

Engagement Feedback: Common Comments & Themes

Feedback

IESO Response

Several respondents noted the importance of additionality, which means that credit purchases drive new investment and make a difference to Ontario's supply mix

This was the most commonly voiced comment through the feedback forms. IESO will include these concerns, and product offering options to address the concerns, in the report back to government.

The scope of the CEC market should apply to all non-emitting generating sources feeding both the transmission and distribution systems, and to both merchant and contracted power.

IESO agrees that all forms of clean generation should have the chance to participate (on a voluntary basis), regardless of where they are connected to the electricity system.

Corporate buyers expressed interest and in some cases preference for Power Purchase Agreements. Some stakeholders identified Global Adjustment as a barrier to financial PPAs, with one suggesting that PPA purchases should be subject to reduced GA charges.

IESO will explore the potential for PPAs in the report back to government for their consideration, including the implications of cost shifting (of Global Adjustment) from PPA customers to other ratepayers.

Engagement Feedback: Common Comments & Themes (cont.)

Feedback

Be aware of the risk of double counting Environmental Attributes (EAs) in a voluntary market lacking a Renewable Portfolio Standard. For example, if companies are retiring CECs to make their claims, then Ontario cannot use the same CECs to contribute to its % clean grid number. The sale of EAS associated with existing generation in Ontario will increase the emissions intensity of Ontario's electricity supply (i.e. the residual supply mix) for all customers that do not purchase EAs and have a negative impact on customers that are relying the existing emissions intensity of Ontario's electricity supply

IESO Response

IESO is investigating methods to account for CEC sales in our public reporting. IESO is also organizing a technical session with stakeholders who volunteered to discuss this topic in more detail. Stakeholder concerns about residual mix impacts from existing generator CEC sales will be included in the report back to government.

Customer Preferences Survey

- The IESO developed a survey of large customers to gain insight into CEC market demand, requirements and preferences
- The survey was conducted on the IESO's behalf by market research firm Ipsos between March 3rd, 2022 and March 25th, 2022
- The survey was sent to 121 companies and received 34 responses for a 28% participation rate
- Full detailed results will be posted to the IESO website as soon as they are available, high level findings are presented here

Survey Findings (1 of 5)

Clean/renewable electricity targets: The vast majority of organizations surveyed have implemented or plan to implement targets for clean/renewable electricity and nearly half report a long-term target of 100% clean/renewable electricity

GHG reduction targets: The vast majority of organizations surveyed have implemented or plan to implement targets for Scope 2 greenhouse gas emissions (GHG) reductions and over half report a long-term target of 100% GHG emissions reductions

Survey Findings (2 of 5)

Key customer priorities: Keeping costs reasonable ranks as the most important priority (35% rank 1st), followed by additionality (32%) and having a range of different types of credit options (18%)

Interest in different fuel types: Half expressed interest (ranking of 8-10 on 10-pt scale) in investing in solar (50%) through CECs, followed closely by hydroelectric (47%). Fewer expressed interest in wind (35%), bioenergy (32%) or nuclear (24%) while nearly half (47%) expressed interest in using energy fed into the grid from storage technologies

Survey Findings (3 of 5)

Minimum clean supply mix: Just under half of respondents (44%) feel CEC sales should be capped to ensure Ontario's supply mix has a defined level of cleanliness for all customers

How province should invest any CEC revenues: The majority (59%) think it is very important that the money generated through CECs be spent on new incremental clean generation for the province

Tracking Clean Energy Consumption: Amongst respondents who track the portion of their electricity demand supplied by clean energy generation, IESO data is the most common method for determining clean energy usage

Survey Findings (4 of 5)

Clean Energy Options: Respondents expressed high interest (8-10 on 10-pt scale) in the following clean energy options:

- Self-generation* (47% with high interest)
- Unbundled CECs (35%)
- Power Purchase Agreements (35%)
- Green pricing programs (29%)

Survey Findings (5 of 5)

Preferred Clean Energy Option: When asked to choose only one type of credit, respondents selected:

- Self-generation (29%)
- Power Purchase Agreements (24%)
- Unbundled CECs (18%)
- Green pricing programs (9%)
- Don't know enough/no opinion: (21%)

General: Opinions are mixed towards preferred vintage, timeframe to match with consumption, certification standards, and the furthest location they are willing to purchase due to more limited knowledge



2. CEC Registry Features and Functionality: Proposed Options

Determining Registry Features

- In this section the IESO outlines potential options for basic features and functionality proposed for an Ontario CEC registry based on two primary sources of information:
 1. Community & Stakeholder feedback
 2. Review of registry features and functionalities in other jurisdictions
- Proposed list of features would be starting point for the development of a CEC registry in Ontario

Registry Basic Features

1. Web-based tool accessible from standard internet browsers
2. Allow for creation, certification, tracking, transfer and retirement of CECs for voluntary market
3. Certification process for facilities should include location, capacity, facility name, facility owner, fuel source, commercial operation date
4. All Ontario-based non-fossil fuel generation eligible to enroll and certify

Registry Basic Features (cont.)

5. Each CEC should include the following information:
 - Unique identifying tag
 - Generating facility name
 - Generating facility location
 - Generation date
 - Fuel source
 - Facility commercial operation date
 - Third-party certification(s), if applicable
 - Data source (IESO meter data, self-reported, etc.)

Registry Basic Features (cont.)

6. The registry must provide a mechanism for tracking each CEC to verify the following:
- Creation date
 - Source of CEC
 - Ownership traceability
 - Current status (Retired, active, expired)

Registry Basic Features (cont.)

7. Registry must have documented operating procedures related to:
 - CEC creation, certification, tracking, transfer, and retirement
 - User registration and account structure
 - Data security and confidentiality
 - Errors/corrections
 - Dispute resolution
 - Methods to amend the operating procedures

Future potential features

- A few other design features were identified to meet the “future proof” requirement in the Minister’s January letter:
 - Compatibility with other North American credit registries
 - Accounts for future potential expansion to other markets
 - Hourly credit creation, tracking, and retirement
 - Based on core features of other registries
- The registry should be designed to allow for these features in the future, even if they are not available immediately



3. CEC Product Offering Options

CEC Product Offerings- Considerations

- Primary goal of CEC offerings is to enable economic development by introducing a tool to help companies meet their clean energy goals
- In order to achieve this outcome, IESO needs to understand companies' clean energy goals and determine how the registry can best assist consumers in meeting their goals
- Important design considerations include:
 - The treatment of existing asset environmental attributes
 - Managing competing community and stakeholder needs

CEC Product Offerings- Design Principles

- Basic product offering principles include:
 - Any non-fossil fuel generation
 - Located in Ontario
- There is a need to explore the types of CECs that could be made available to interested buyers and how those CECs could be made available for purchase
- The following slides highlight CEC product options for both existing and new resources

CEC Product Offerings- Main Options Identified

1. Unbundled CECs from existing Ontario-based assets
 - Distribution/allocation options:
 - a) Free distribution
 - b) Direct IESO sale
 - c) IESO releases EAs for others to sell
2. Unbundled CECs from new/re-contracted assets
3. Bundled CECs
 - a) Power Purchase Agreements
 - b) Green Pricing Programs
4. Hybrid arrangements

Option 1: Unbundled CECs from Existing Assets

- Ontario is forecast to have ~130 TWh of clean supply per year for the foreseeable future
 - IESO has ownership of approximately 50% of the clean supply EAs produced, with most of the remaining owned by OPG
- Options to distribute EAs resulting from existing assets/generation are:
 - a) Free distribution
 - b) IESO direct sale to buyers
 - c) IESO release EAs to others for sale

Option 1a: Free Unbundled CEC Distribution

- The IESO (or the Government of Ontario) could retire all EAs resulting from existing generation/assets on behalf of customers in proportion to the load of each customer
 - If Ontario supply is 90% clean, all customers entitled to credits equal to 90% of their demand
 - For example, a customer consuming 10,000 MWh/year would have 9,000 CECs retired on their behalf at no charge
- Distribution could occur through a registry, public posting/attestation, or other mechanism

Option 1a: Free Distribution- Benefits & Challenges

Benefits

- No issue with residual supply mix for existing customers. Customers would continue to benefit from existing grid average emissions intensity associated with Ontario's clean supply mix
- Companies with clean energy targets get most of the way there without incremental cost
- No risk of "greenwashing"
- No risk of double-counting

Challenges

- By itself (i.e. without the creation of incremental additional CECs) no mechanism/credits available for customers that want to achieve 100% clean/renewable energy targets
- No direct ratepayer monetary benefit (i.e. retiring credits for free will not result in CEC sales revenue; but may provide economic development benefits associated with attraction of new/expanded businesses to Ontario)

Option 1b: Direct Sale of Existing Asset EAs

- IESO (and other generators) could sell the existing EAs from existing generation/assets to customers
- This option would require decisions on where proceeds should flow
 - Directly to ratepayers? Towards new clean power purchases?
- Wouldn't necessarily need to sell all existing asset EAs
 - Sales cap could be identified to either maximize monetary return (through limited supply) or ensure clean supply mix floor

Option 1b: Direct Sale- Benefits and Challenges

Benefits

- Monetize existing assets
- Enable customers to meet clean energy goals at reasonable cost

Challenges

- Potential conflict of interest if IESO were to sell CECs it owns and administer a CEC registry
- Residual supply mix impacts for existing customers (i.e. grid emissions intensity will go up for all customers that don't or can't purchase CECs)
- No additionality
- Sale of EAs at cost less than paid for by ratepayers
- Risk of "greenwashing"

Option 1c: IESO Release Existing Asset EAs for Sale

- There is a potential conflict of interest if IESO were to sell EAs in competition with others on a CEC registry it administers
- Conflict of interest could be avoided if IESO released its claim on EAs
 - Either back to generators or to third-party for sale in a profit-sharing arrangement
- Same questions/issues exist as for direct IESO sale to customers:
 - Where do proceeds flow?
 - How many EAs should be released for sale?

Option 1c: IESO Release EAs- Benefits and Challenges

Benefits

- Monetize existing assets
- Enable customers to meet clean energy goals at reasonable cost

Challenges

- Residual supply mix impacts for existing customers (i.e. grid emissions intensity will go up for all customers that don't or can't purchase CECs)
- No additionality
- Sale of EAs at cost less than paid for by ratepayers
- Risk of "greenwashing"

Option 2: Unbundled CECs from new or re-contracted assets

- Over the coming years, IESO will administer a number of procurements to re-contract existing generation and procure new generation
- Under the Medium-Term RFP contract, the IESO will not possess environmental attributes of generation
 - Possession of EAs for Long-term RFP is still to be determined
- EAs from these attributes could be available as unbundled credits

Option 3a: Bundled CECs- Power Purchase Agreements

- Many stakeholders expressed interest in direct Power Purchase Agreements between customers and generators
- Currently no legal barrier to these arrangements for Class A/B customer; Global Adjustment (GA) was flagged as an economic barrier
 - Feedback suggested that clean energy purchased through a PPA should be able to avoid all GA or be subject to reduced GA
 - Careful design required to avoid shifting costs to other customers
 - Would require amendment to Ontario Regulation 429/04

Option 3a: PPAs- Benefits and Challenges

Benefits

- Additionality- will incentivize new clean generation
- Potential ratepayer benefit through lower capacity needs and energy costs
- Aligns with customer desire for bundled products
- Could expedite/provide additional solutions to near-term reliability needs if customers and generators can expedite deals/construction of new clean assets

Challenges

- GA allocation- identified by stakeholders as an existing economic barrier to PPAs; if consideration was made to reduce GA for PPA purchases, careful design required to provide net benefit for ratepayers (i.e. ensure that customers pay for their share of any benefits they accrue from the costs included in GA)

Option 3b: Bundled CECs- Green Pricing Programs

- Many communities and stakeholders expressed interest in Green Pricing programs
- There are many forms that such a program could take, but the basic principles would be:
 - Utilities and/or government agencies contract with new clean generation
 - The new energy is sold bundled with CECs to customers
 - Customers pay for new energy costs through their electricity bills

Option 3b: Green Pricing Programs- Benefits and Challenges

Benefits

- Additionality- will incentivize net new clean generation
- Potential ratepayer benefit through lower capacity needs and energy costs
- Aligns with customer desire for bundled products

Challenges

- Potentially administratively complex, requiring incremental staff, regulations, settlement impacts etc.

Options Assessment

CEC Option	Leads to Additionality	Bundled Product Available	Monetize Existing Investments	Residual Supply Mix Impact	Risks
1a: Unbundled CEC-Free Distribution	No	No	No	No	No mechanism to achieve 100% renewable/clean
1b: Unbundled CEC-IESO Sale	No	No	Yes	Yes	IESO conflict of interest; "greenwashing"
1c: Unbundled CEC-IESO Release EAs	No	No	Yes	No	Sale of EAs below purchase price; "greenwashing"
2: Unbundled CEC- MT-RFP, LT-RFP	Yes	No	No	Yes	None identified
3a: Power Purchase Agreement	Yes	Yes	No	No	GA allocation & potential ratepayer impacts
3b: Green Pricing Program	Yes	Yes	No	No	Program design and regulatory complexity

Option 4: Hybrid Arrangements

- A combination of options may help address different customer needs and policy priorities
- For example:
 - Limited sale of existing generator EAs
 - Free distribution of remaining EAs
 - Green pricing program



4. Next Steps & Feedback

Work Plan

Date	Activity
Early May, 2022	<ul style="list-style-type: none">• Technical session discussion groups
May 5, 2022	<ul style="list-style-type: none">• Deadline for feedback
June, 2022	<ul style="list-style-type: none">• Responses to feedback published
July 4, 2022	<ul style="list-style-type: none">• Report submitted to Minister
Q3 2022	<ul style="list-style-type: none">• Stakeholder engagement webinar on report findings

Technical Sessions

- IESO has organized technical sessions on the following topics:
 - Residual supply mix and double counting
 - Experience of existing brokers/sellers of EAs
 - Registry technical details
 - Needs and experiences of large buyers
 - Energy storage discussion
- If you would like to join one of these discussions, email engagement@ieso.ca

Feedback Sought

- IESO is looking for feedback on the following topics through the engagement feedback form:
 1. Are there any registry features missing from the proposed list, either basic requirements or future functionality?
 2. Has IESO identified the right set of CEC product offerings? Are there any missing?
 3. Are there benefits/challenges to any of the proposed CEC product offerings that have not been covered?
 4. Which CEC option(s) works best for your company? For Ontario?
 5. What are the most relevant findings from the CEC customer survey?

Thank You

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