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Renewable Electricity Program

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Background

- In January 2016 the GoA directed the AESO to:
 - Develop and implement a program to bring on new renewable generation capacity by 2030
 - Keep the cost of support as low as possible through a competitive process
 - Carefully manage and operate the program in concert with the retirement of coal generating units
 - Continue to work closely with government throughout the process
- In May 2016 the AESO submitted its recommendations, including:
 - Design of the Renewable Electricity Program (REP)
 - Form and content of the competitive process
 - Key features of the first competition, including a payment mechanism

REP Objectives

- The AESO was directed by the government to design the REP to meet the following objectives:
 - Maximize competitive tensions, to the extent possible, to drive down government cost of support for renewable generation
 - Ensure the performance and reliability of the Alberta Interconnected Electric System are not jeopardized
 - Encourage investment in Alberta's unique energy market
- In developing the program to meet these objectives, the AESO recognized industry's need to understand whether:
 - The objectives for each competition will remain mostly consistent
 - The majority of competitions will be fuel neutral
 - The volume being procured in any given competition will be relatively consistent



Overall Program Design

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Program Design

- The AESO designed the REP to be robust, flexible, sustainable and scalable over time
- Valuable input from industry and key learnings from other jurisdictions informed design of the program
- Key features:
 - A series of competitions will be held between now and 2030 to incent development of renewable generation projects
 - Existing, approved and planned transmission will be utilized first to minimize cost impacts to Albertans
 - The AESO will develop a reporting and recommendation process to track progress towards the 2030 target

Competitive Process Principles & Features



- Utilize competitive market forces to drive down the government's cost of support for renewable generation
- Be fair and transparent
- Be straightforward and efficient
- Remove barriers to entry, where appropriate, to maximize the number of competitors
- Allocate risk to those best able to manage it
- Utilize a 3-stage approach

Competitive Process Stages

REOI

Request for Expressions of Interest

- 4 – 6 weeks
- Attracts and gauges level of interest
- No obligation

RFQ

Request for Qualifications

- 4 – 6 months
- Pass/fail approach determines bidders qualified to proceed to the RFP stage

RFP

Request for Proposals

- 2 – 3 months
- Qualified bidders confirm no changes to RFQ submission
- Bidders submit final offers

REOI

Request for Expressions of Interest

- Important stage for timely and successful RFQ and RFP stages, especially for the first competition
- Provides early indicator of interest in investing in Alberta's REP
- Clear and transparent process allows interested parties to make informed decisions
- Provides an opportunity for industry feedback on the competition

RFQ Request for Qualifications

- Bidders must pay a non-refundable qualification fee to participate, a best practice to ensure the process is effective
- Bidders must describe their project teams
- Bidders must demonstrate their qualifications in three categories:
 - Project eligibility
 - Financial strength and capacity
 - Technical capability

RFQ Project Eligibility

- Does the project use technology meeting the prescribed definition of renewable?
- Is the project new or expanded?
- Is the project situated in Alberta?
- Is the project 5 MW or larger?
- Is the project likely to achieve a specified in-service date?
- Does the project require new transmission or distribution system investment?

RFQ

Financial Strength & Capacity

- Does the bidder have sufficient net worth relative to the proposed project size?
- Can the bidder confirm that no current or reasonably foreseeable event could have a material adverse impact on the bidder's current financial standing?
- Can a financial sponsor or guarantor provide confirmation of willingness to support the bidder?
- Can the bidder provide confirmation of the equity contribution and description of how the bidder intends to secure it in order to construct the project?

RFQ Technical Capability

- Has the bidder been involved in recent projects of similar size and/or complexity?
- Does the bidder have experience in each stage of project development (e.g. siting, stakeholder consultation, land acquisition), construction and operation?
- Has the bidder provided a narrative description of relevant experience?

RFP Request for Proposals

- Bid security must be provided with submissions
- Bidders must confirm their project teams have not changed
- Bidders must demonstrate no material adverse impact on financial standing has occurred since the RFQ stage
- Bidders must submit a final binding offer (i.e. bid price)
- Winning bidder(s) will be selected based on lowest price

Payment Mechanisms Considered



- Three possible payments mechanisms were considered:
 - **Fixed Renewable Energy Credit (Fixed REC)**
 - Whereby winning bidders are paid a \$/MWh payment as bid, for renewable attributes produced
 - **Indexed Renewable Energy Credit (Indexed REC)**
 - Whereby winning bidders are paid a \$/MWh payment for renewable attributes produced – calculated as the difference between a strike price as bid and a reference price (e.g. pool price)
 - **Capacity Payment**
 - Whereby winning bidders are paid a \$/MW for capacity built, not for production of energy



Key Features of the First Competition

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Key Features of the First Competition

Key Features	Description
Key program dates	Launch REP in 2016; open first competition in Q1 2017
Competition stages	REOI, RFQ and RFP
Selection criteria	Based on financial strength and technical capability
Fuel type	Fuel neutral
Eligibility	New and expanded projects in Alberta only
Eligible size of utility-scale	5 MW or greater in size
Volume	Up to 400 MW of renewable capacity
Energization date	2019
Affordability threshold	Private cap that AESO and GoA may use to manage costs associated with each competition
Contract term	20 years
Connection to the transmission or distribution system	Must demonstrate ability to connect to existing transmission or distribution facilities
Payment mechanism	Indexed Renewable Energy Credit (Indexed REC)

Recommended Payment Mechanism

- The AESO recommended use of an Indexed REC for the first competition for the following reasons:
 - It is most likely to draw the highest number of competitors
 - It allows risk to be allocated to those best able to manage it, providing greater price certainty for investors
 - It is expected to minimize total costs of the first competition by putting significant downward pressure on bid prices
- The amount of the support payment will be the difference between the price bid and the pool price

Sample calculation

**BID
PRICE**

\$80/MWh

**REFERENCE
PRICE**

\$30/MWh

**SUPPORT PAYMENT
\$ VALUE**

\$50/MWh*

Additional Benefits of an Indexed REC



- Bidders will not have to assume the current pool price risk
 - Risk premiums that would otherwise be included in bid pricing will likely be avoided
- It provides developers and lenders with certainty to attract competitors and minimize financing costs
- The support payment has an automatic adjuster built in so when pool prices rise, the value of support payments falls
 - Should the pool price rise above a bidder's strike price, the generator will pay the Government of Alberta the difference
- It is expected to minimize program costs to Albertans and avoid windfall gains for investors and developers

Program Funding and Commercial Agreements



- Projects will be privately funded and procurement of renewable attributes will be funded by the Government of Alberta
- Program costs will depend on numerous factors, including:
 - Objectives of each competition
 - Portfolio of renewable projects arising from the program
 - Pool price
 - Cost of renewable technologies and changes to technologies over time
- Successful bidders will be awarded Renewable Energy Support Agreements (RESAs) in exchange for a project's renewable attributes
- The AESO will be the counterparty to RESAs with renewable generators
- Renewable Electricity Funding Agreements (REFAs) will govern the flow of funds between the government and the AESO
 - Support payments will flow through the AESO monthly to generators for renewable attributes produced

Timeline for the First Competition



- The AESO will initiate consultation with industry this fall regarding commercial terms, including the RESA
 - Visit www.aeso.ca on November 10, 2016 and give us your feedback
- In order for new renewable projects to be energized in 2019, timelines for each stage of the first competition may be expedited but are expected to be:
 - REOI: Q1 2017 (4 – 6 weeks)
 - RFQ: Q2 – Q3 2017 (4 – 6 months)
 - RFP: Q4 2017 (2 – 3 months)
- Winning bidder(s) expected to be selected by the end of 2017



Thank You

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