The Micro-Standing Offer Program and Standing Offer Program

Information Session

February 29, 2016

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Agenda

Welcome and overview	Paul Kariya, Les MacLaren, Brenda Hartley and Joanne McKenna (moderator)
Launch Micro-SOP	Alevtina Akbulatova
SOP changes to date	Dina Matterson
Coffee break	
SOP optimization	Kathy Lee Joanne McKenna
Closing remarks	Paul Kariya, Les MacLaren, Brenda Hartley and Joanne McKenna

Micro-SOP

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Micro-SOP

2014 engagement topics

1. Metering
2. Net-of-load
3. Price
4. Interconnection eligibility
5. Interconnection studies
6. Application and review process
7. Electricity Purchase Agreement (EPA)

Micro-SOP

Highlights

- Size: over 100 kW up to and including 1 MW
- Clean or renewable resources
- Open to First Nations and Communities
- For shovel-ready projects
- Net-of-Load
- Pricing to follow SOP pricing
    - Existing regional price structure for projects with target CODs until the end of calendar 2019, and then informed by SOP optimization process
- Energy volume to be included in SOP target volume of 150 GWh/year
- Simplified interconnections and metering

Micro-SOP

First Nations Eligibility Requirement

- A First Nation(s) wishing to participate in the Micro-SOP must provide evidence to BC Hydro that it:
    - has significant beneficial ownership and
    - will actively participate in the development, construction, or operation of the Project in a meaningful way.

Micro-SOP

Community eligibility requirement

- A community group wishing to participate in the Micro-SOP must provide evidence to BC Hydro that it has at least 50% control and beneficial ownership of the Project.
- Eligible community groups include:
    - Municipality
    - Not for profit community or cooperative group
    - Public sector
    - Agricultural sector

- First Nations and community groups can partner with private sector independent power producers for the purpose of developing a project that is submitted to the Micro-SOP.

Micro-SOP

Key differences from SOP:

- No time-of-delivery price adjustments
- Developers use a smart meter (where technically feasible)
- All projects must connect to BC Hydro's distribution system only
- Mandatory Screening Study for a flat fee; System Impact Study only required if triggered

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2014 engagement topics

1. Managing the 150 gigawatt hour per year target
2. Mandatory pre-application meeting
3. Commercial operation date (COD) deferral
4. Regional pricing
5. Network upgrades
6. Projects in the service area of other utilities
7. Examining the cluster rule
8. Promoting First Nations participation

Managing the target volume

Question	**What is your feedback on our design principles of consistency, fairness and simplicity?**
Decision	**Implement and make public a Target Volume Management System that is as objective and clear as possible – to provide certainty.**

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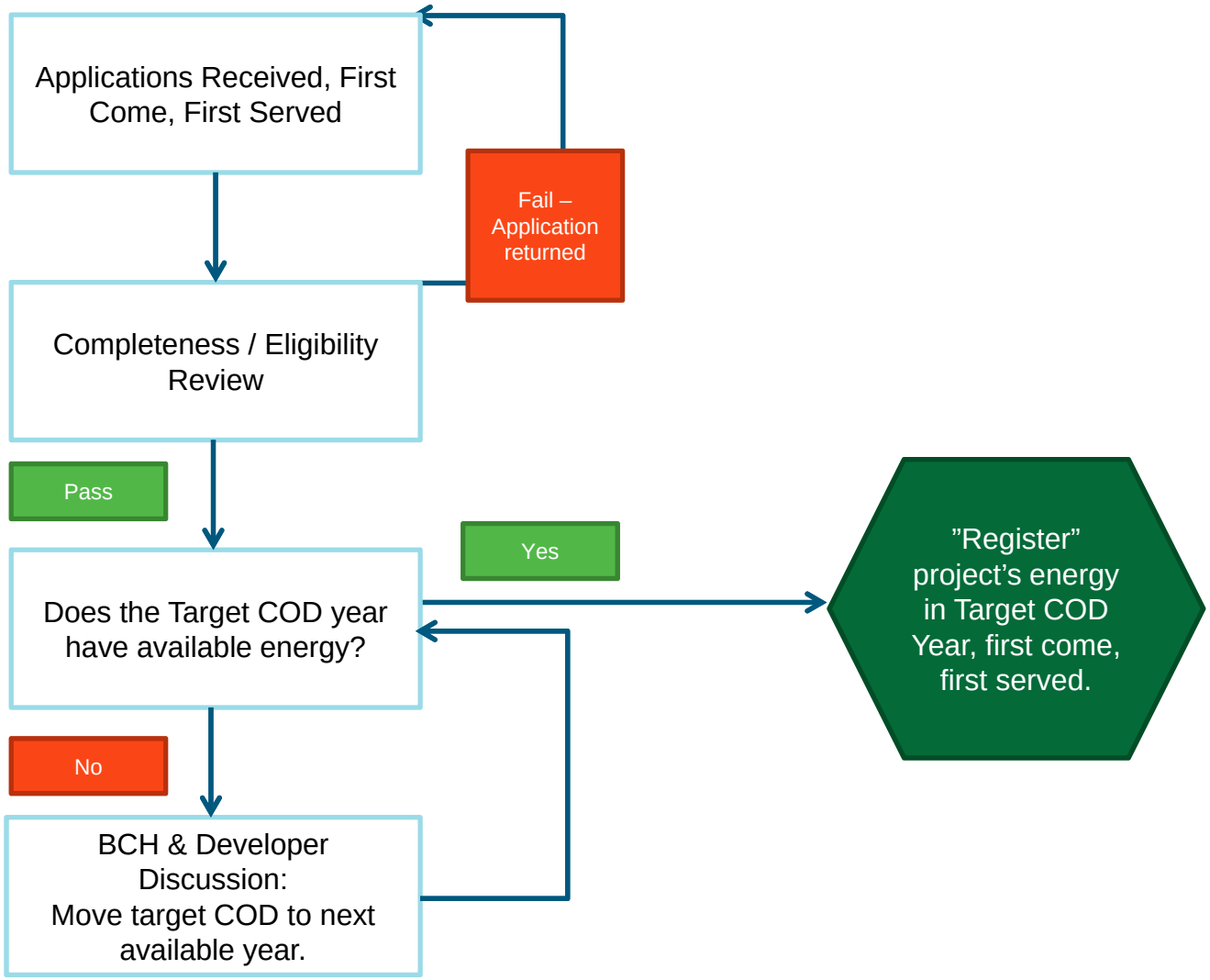
The Target Volume Management System



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Mandatory Pre-application Meeting

Question	**Should a pre-application meeting be mandatory?**
Decision	**Keep status quo: Remains optional, but is highly recommended, particularly to discuss interconnection information.**

Commercial Operation Date (COD) deferral

Question	**Should BC Hydro be able to defer project CODs up to 3 years before an EPA (and not at all after an EPA)?**
Decision	**COD deferral now captured by Target Volume Management System**

- **Allow developers visibility to see years with available volume so they can make an informed submission.**
- **If BC Hydro needs to defer the developer's Target COD post-application, BC Hydro can defer to the next, closest-possible year with available volume.**

Regional pricing

Question

Regional pricing structure vs. a single ‘postage-stamp’ rate?

Decision

- **Maintain current regional pricing structure until end of 2019 or until available volume is fully subscribed.**
- **For COD’s after 2019 we will move to postage-stamp rate.**
- **Base price of SOP will be informed by SOP optimization process.**

The cost of network upgrades (NUs)

Question

How can BC Hydro create more certainty around cost of NUs? Should outside funding sources be used to cover the costs of NUs?

Decision

- **Do not divert any existing funding sources**
- **Focus on providing cost information as early as possible (e.g. at pre-application meetings)**
- **Expect a realignment of the SOP and interconnections processes**

Projects in the service area of other B.C. utilities

Question	**Should we exclude projects in the service area of other B.C. utilities from participation in the SOP?**
Decision	**Exclude customers of other B.C. utilities from participating in the SOP**

Project Cluster Rule

Question	**What factors should BC Hydro consider when applying the project cluster rule?**
Decision	**New wording in SOP Rules provides greater clarity around how BC Hydro will apply the project cluster rule.**

First Nations participation

Question **Should a flexible/prescriptive approach be used to promote First Nations participation?**

Decision

- **Continue to follow current SOP practices for First Nations participation as these practices seem to be working.**
- **Going forward, we'll focus on working with First Nations interested, but less experienced, in participating in the clean energy sector.**

Other changes

- Existing generation removed from SOP eligibility
- Streamlined EPA with only 3 appendices
- Added hourly energy delivery caps to EPA stipulating what BC Hydro will purchase
- Customer-based generation in SOP will receive an EPA with “net-of-load” language
- 72-hour COD test language to be added back into EPA

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Further SOP Optimization

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SOP optimization

Why now?

- We have an obligation to optimize the value we receive from our resource acquisitions, including those from the SOP
- Current SOP prices were informed by the Clean Power Call in 2010
- Recent technological advancements have led to a decline in the cost of developing new clean energy resources
- Will consider evolving system characteristics:
    - Utilities along the Pacific Northwest, including BC Hydro, have an oversupply of energy during the freshet period
    - We're also expecting to be in need of new capacity resources in the near and long-term

Freshet

What is it?

- ~90% of our generation is produced by hydroelectric facilities
- Snowmelt in the late spring/early summer results in peak inflows into the system. This is referred to as the freshet, and generally takes place between May and July.
- The low value of freshet energy to the system is the result of the following conditions:
    1. Minimum generation requirements (e.g. Minimum flow requirements at BC Hydro facilities, and take or pay delivery contractual obligations with IPPs)
    2. Low spring and summer load
    3. Depressed energy market prices

Capacity

- Capacity is our ability to meet demand at any point in time
- We consider dependable capacity when planning our resource supply
    - Maximum output (measured in MW) that can be reliably supplied during periods of high load, taking into account the physical and fuel constraints of equipment
- We expect to be in need of new capacity resources in the near- and long-term.
- Resources that are non-dispatchable (intermittent) typically have low dependable capacity and therefore, lower value from a system perspective.

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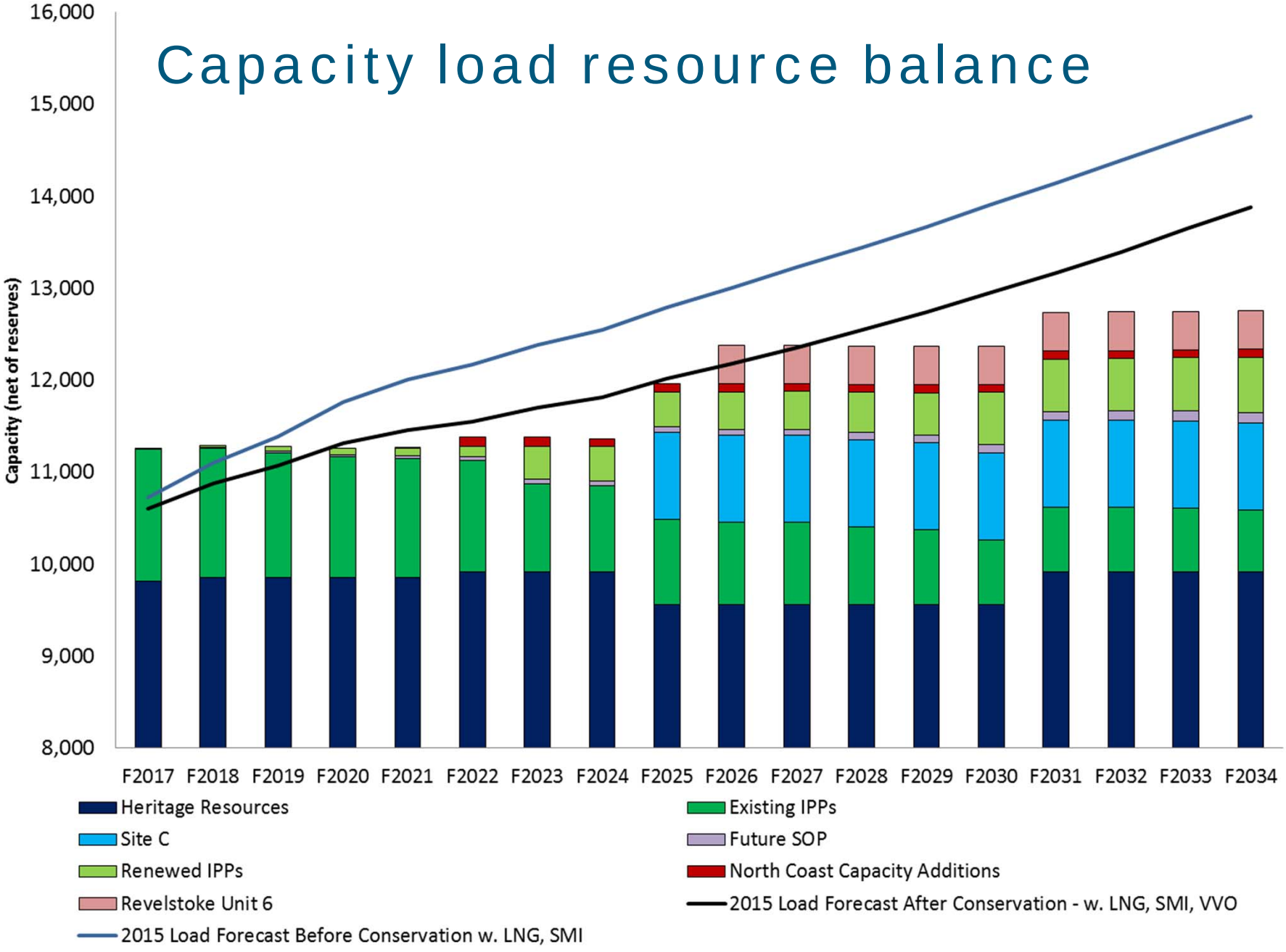
Capacity load resource balance



Capacity characteristics

- Looking for the maximum capacity a facility can sustain for:
  - 16 hours/day
  - 6 days/week (Mon to Sat)
  - Three periods of 2 consecutive weeks from Oct to Apr

- This is consistent with the requirements in the Load Curtailment pilot program

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SOP optimization timeline

Managing SOP applications during the optimization

- Targeting **completion of review by March 2017**
- **New** price effective for fulfilling available energy volume in 2020 and beyond
- **Existing pricing maintained** in effect for available energy volume through 2019 or until available energy volume is fully subscribed

SOP Optimization

What will it look like?

- Structure to be agreed upon by the Province, Clean Energy BC and BC Hydro
- Objective is to determine appropriate price signals that reflect the value of different project attributes, and to focus on acquisitions that better fit the system:
    - Freshet consideration
    - Capacity consideration
- Sign-up to the SOP mailing list to receive updates

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