

**BC Hydro - DRAFT FOR DISCUSSION PURPOSES**

***Please note that this term sheet is provided solely for the purpose of advancing confidential and without prejudice discussions. It is not an offer and does not create any legally binding obligations, rights or liabilities. It is not intended to be exhaustive or include all of the terms of an EPA. We do not have authority to enter into any EPAs on the basis of this term sheet, and any draft documents which may be circulated will remain subject to BC Hydro's review and approval in its absolute and unfettered discretion. No agreement will exist between us regarding these matters until we settle, and both parties have signed and delivered, final agreements reflecting or resulting from our discussions, which may be subject to additional conditions.***



# EPA Renewals Program Information Session #2 for EPA Holders

July 19, 2022

If you are having trouble with audio, you can dial in:

**604-343-0415**

**Conference ID#: 617 616 402#**

If you are still having trouble, please email

[IPP.Contract@bchydro.com](mailto:IPP.Contract@bchydro.com) for assistance.

# Welcome

- **Acknowledgements**
- **Introductions**
  - Attendees from BC Hydro:
    - **Heather Matthews**, Director of Generation System Operations
    - **Bruce Chow**, Manager, IPP Portfolio Management
    - **Alan Tan**, Contract Manager, IPP Portfolio Management
    - **Tanya Thomas & Vic Rempel**, Interconnections
  - Representatives from EPA Holders

# Welcome

## Purpose of today's meeting:

- To provide summary of Phase 1 and Phase 2 consultation
- To present updated EPA Renewal Program commercial offers and term sheet
- To provide update on Interconnections requirements
- To provide EPA holders with opportunity to ask clarification questions and provide feedback

# Agenda

<b>Report out on Feedback</b>	Bruce Chow
Commercial Offer & Term Sheet	Alan Tan
Interconnections	Tanya Thomas
Schedule, Process & Next Steps	Bruce Chow
Questions	All

## Phase 1 & 2 Complete

- **Phase 1: Information Session #1**
  - Virtual online meeting held on February 16
  - Attended by **38 participants** representing **18 of 19 expiring EPAs**
  - Information Session presentation and draft term sheet posted on BC Hydro website
- **Phase 2: Focus Group Sessions**
  - In March, conducted **10 focus group sessions** with reps from **15 EPAs**
  - Written feedback received from **7 IPPs representing 12 EPAs** and **CEBC**

## Feedback Received from Eligible IPPs

- **Length of the contract:** 20-year contract term needed for sustaining capital investment and financing
- **Definition of market-based pricing:** Need a specific pricing formula to assess commercial offer and determine ongoing viability of operations
- **Pricing adjustments:** Revenue stream will be uncertain and potentially inadequate with pricing adjustments for wheeling and losses, pricing caps, etc.
- **Value of environmental attributes:** Mid Columbia (Mid-C) market prices do not reflect value of environmental attributes
- **Timing of Renewal Program implementation:** Several EPA Holders believe implementation of EPA renewals program should be deferred until BCUC has approved 2021 IRP

## Program Objectives

- BC Hydro's principles for EPA Renewal Program:
  - Align with BC Hydro's needs for energy/capacity and current market conditions
  - Renew EPAs at cost-effective prices
  - Reduce complexity for both BC Hydro and IPPs
  - Utilize standard contract terms
- Consider IPP feedback and review program design



## Program Design Update

- Based on IPP feedback, we have reconsidered:
  - **Contract Term** – short term vs. long term
  - **Energy Price** – variable vs. fixed, pricing structure, pricing adjustments
  - **Term Sheet Finance-ability**

# Agenda

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Report out on Feedback

Bruce Chow

**Commercial Offer & Term Sheet**

Alan Tan

Interconnections

Tanya Thomas

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Schedule, Process & Next Steps

Bruce Chow

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Questions

All

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## EPA Renewal Program Disclaimers

- Program itself does not create any legally binding obligations, rights or liabilities between the parties
- Program may be discontinued at any time
- Terms and conditions may be updated from time to time
- No agreement will exist between the parties until both parties have signed and delivered the final agreements
- Where there are differences between this presentation and Term Sheet issued by BC Hydro, Term Sheet shall prevail
- While program features discussed today are nearing finalization, final corporate approvals have not yet been received

## Commercial Offers

- EPA Renewal Program will provide two price offers with fixed contract terms:
  - **Offer 1:** Fixed 5-year term with variable price, based on day-ahead Mid-C index
  - **Offer 2:** Fixed 20-year term with fixed price, plus 50% CPI escalation
- Offers subject to price adjustments

## Offer 1: Energy Price (CAD Per MWh)

A. When Net Aggregate Power Flow during the hour is in **net export position**,

$$\text{Energy Price} = [ \{ (\text{Mid C Price}) \times (1 - \text{BC Losses}) \times (1 - \text{BPA Losses}) \} - \text{BPA Wheeling} ] \times \text{FX}$$

B. When Net Aggregate Power Flow during the hour is in **net import position**,

$$\text{Energy Price} = [ \{ (\text{Mid C Price}) \times (1 + \text{BPA Losses}) \} + \text{BPA Wheeling} ] \times \text{FX}$$

C. When Net Aggregate Power Flow during the hour is **neither in export position nor in import position**,

$$\text{Energy Price} = [ (\text{Mid C Price}) \times (1 - \text{BC Losses}) ] \times \text{FX}$$

In all cases:

- **Mid C Price** is either **Mid C Peak Price** or **Mid C Off-Peak Price**, as applicable
- **Maximum Energy Price** capped at **\$80/MWh (USD)**
- **Minimum Energy Price** is **\$0/MWh (USD)**
- **If Mid C is zero or negative, Energy Price** is **\$0/MWh (USD)**

## Offer 1: Energy Price cont'd

Where:

- **Net Aggregate Power Flow** is based on the net scheduled flows for both BC-US intertie and BC-AB intertie (<https://www.bchydro.com/energy-in-bc/operations/transmission/transmission-system/actual-flow-data/historical-data.html>)
- **Mid-C Off-Peak Price** = prevailing daily price for firm off-peak electricity reported on ICE for day-ahead Mid-C index<sup>1</sup>
- **Mid-C On-Peak Price** = prevailing daily price for firm on-peak electricity reported on ICE for day-ahead Mid-C index<sup>1</sup>
- **BC Losses** = project specific line losses based on location in BC Hydro system
- **BPA Losses** = 1.95% for Sept. to May and 2.31% for June to Aug. for line losses on Bonneville Power Administration system<sup>2</sup>
- **BPA Wheeling** = \$5.65/MWh (USD)<sup>2</sup>
- **FX** = Bank of Canada daily average rate for CAD/USD

Note 1: Mid-C index is based on ICE (Intercontinental Exchange) index

Note 2: BPA Rates as at Oct 1, 2021, updated when new rates provided by BPA



## Offer 2: Energy Price (CAD per MWh)

- Energy price for each MWh of Eligible Energy:

$$\text{Energy Price}_n = [ \{ \$58 \times \{ 1 + 50\% \times (\text{CPI}_{\text{Jan 1, } n} / \text{CPI}_{\text{Jan 1, 2023}} - 1) \} \times (1 - \text{BC Losses}) \times \text{TDF} ]$$

where:

- **Energy Price** is in \$CAD / MWh
- **TDF** = for each hour, applicable % On-Peak or Off-Peak from Time of Delivery Table
- **n** = year in which energy price is effective
- **CPI<sub>Jan 1, n</sub>** = CPI for December in year immediately prior to year **n**
- **BC Losses** = project specific line losses based on location in BC Hydro system

## Offer 2: Time of Delivery Table

Month	On-Peak	Off-Peak
Jan	131%	99%
Feb	104%	83%
Mar	89%	74%
Apr	63%	59%
May	38%	50%
Jun	79%	67%
Jul	131%	99%
Aug	142%	108%
Sep	129%	102%
Oct	123%	93%
Nov	137%	101%
Dec	150%	109%



## BC Transmission Losses

- Project specific line losses based on location in the BC Hydro system

Region	Energy Losses
Lower Mainland	0.00%
Peace River	11.87%
Central Interior	7.70%
Selkirk	4.48%
North Coast	7.41%
Vancouver Island	-3.80%
East Kootenay	6.86%
Kelly Lake Nicola	4.27%
Revelstoke Ashton Creek	4.48%

## Updates to Term Sheet

- Extracts of Updates to February 2022 Term Sheet

Key Terms	
<b>Contract Term</b>	• <b>Offer 1</b> (5 years) <u>or</u> <b>Offer 2</b> (20 years)
<b>Pricing</b>	<ul style="list-style-type: none"> <li>• <b>Offer 1:</b> Variable price based on day-ahead Mid-C index with price ceiling and floor, plus adjustments per <b>Offer 1 Energy Price</b> (slide 12)</li> <li style="text-align: center;"><u>or</u></li> <li>• <b>Offer 2:</b> Fixed price at <b>\$58/MWh</b> (CAD), plus escalation at 50% CPI per year starting January 1, 2024, plus adjustments per <b>Offer 2 Energy Price</b> (slide 14)</li> </ul>
<b>Energy Profile</b>	• Seller may choose not to generate during freshet
<b>Outages</b>	<ul style="list-style-type: none"> <li>• Seller to provide prompt notice of forced outage</li> <li>• Seller to provide 30-day notice prior to planned outage</li> <li>• Seller required to attest Seller's Plant was operational and not in Outage for payment for Deemed Energy</li> </ul>

## Updates to Term Sheet (cont'd)

Key Terms	
<b>Curtailment for Emergency</b>	<ul style="list-style-type: none"> <li>• Curtailment for safety or system reliability issues (Emergency Conditions) at any time and Seller must comply with directions</li> <li>• No payment or liability during an Emergency Condition</li> </ul>
<b>Deemed Energy (Turn-Down Period &amp; BC Hydro System Constraint)</b>	<ul style="list-style-type: none"> <li>• BC Hydro has right to turn down all or portion of Seller's generation</li> <li>• Seller may decline due to operational, technical, regulatory or fuel storage constraints</li> <li>• BC Hydro will pay for Energy that could have been generated and delivered to the POI but for:               <ul style="list-style-type: none"> <li>• the Seller's compliance with a turn-down request (Turn-Down Energy), net of avoided costs.</li> <li>• a BC Hydro system constraint (Constraint Energy), only after the first 72 hours of a continuous BC Hydro system constraint</li> </ul> </li> <li>• BC Hydro will not be required to pay for any Deemed Energy (Turn-Down Energy or Constraint Energy) when Seller is in an Outage, not operational, or not capable of operating</li> </ul>

Power smart

## Updates to Term Sheet (cont'd)

### Key Terms

<b>Revenue Metering</b>	<ul style="list-style-type: none"><li>• Seller to install/update metering or other metering equipment at Seller's cost as BC Hydro determines may be required</li><li>• Seller will ensure that Seller's Plant is equipped with SCADA capability that is functional at all times and maintained in good operating condition</li></ul>
<b>Suspension of Payments</b>	<ul style="list-style-type: none"><li>• If Seller's metering, SCADA or telecommunications system has not electronically transmitted information directly or is transmitting intermittently for a continuous period of 60 days, or if there are outstanding interconnection issues that are required for compliance with the interconnection agreement, invoice payments will be suspended by BC Hydro until issues are resolved</li><li>• Interest on overdue invoices will <u>not</u> accrue while payments are suspended</li></ul>
<b>Invoices and Payment</b>	<ul style="list-style-type: none"><li>• Seller to provide invoices (including backup documentation in electronic format) for delivered energy for preceding month and for deemed energy for month that precedes preceding month by 15<sup>th</sup> day of each month</li><li>• BC Hydro will pay undisputed amounts within 30 days</li><li>• Invoice disputes can be raised within 36 months</li><li>• Interest on overdue payments for undisputed amounts will accrue at prime plus 2%</li></ul>

## Updates to Term Sheet (cont'd)

Key Terms	
<b>Termination</b>	<ul style="list-style-type: none"><li>• Either party can terminate EPA due to counterparty bankruptcy/insolvency, payment defaults &gt;60 days or material default of covenants, representations and warranties</li><li>• BC Hydro can terminate EPA if Seller does not deliver energy for 365 continuous days and Seller's inability to deliver is not caused by BC Hydro or Force Majeure events, unless Seller demonstrates that Seller is working diligently to cure default</li><li>• No termination payment by BC Hydro</li></ul>
<b>Seller Termination Payment</b>	<ul style="list-style-type: none"><li>• If Seller is in material default of EPA and BC Hydro exercises its termination right, Seller will pay Termination Payment equal to greater of:<ul style="list-style-type: none"><li>a) amount equal to the positive amount, if any, by which BC Hydro's Economic Losses and Costs exceed aggregate of BC Hydro's Gains for remaining term of EPA; and</li><li>b) \$4,000 x annual contracted capacity x years remaining before EPA expires</li></ul></li></ul>

# Agenda

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Schedule, Process & Next Steps	Bruce Chow
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Questions	All
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## Interconnection Update

- Projects with existing Interconnection Agreements not required to enter into new interconnection agreement
- At this time, no requirement to undertake interconnection study or gap analysis study
- If specific technical requirements for project needed, Interconnections Team will coordinate with IPP separately from EPA Renewal Program
- IPPs should direct specific inquiries about interconnections, including Revenue Metering, directly to Interconnections Team

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Questions	All
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## Schedule

- Phase 1 – February 2022 – Information Session #1
- Phase 2 – March 2022 – Focus Groups on Draft Term Sheet
- ➔ Phase 3 – July 19, 2022 – Information Session #2
- Phase 4 – August 2022
  - IPPs submit initial feedback/questions
  - BC Hydro available for clarification meetings, if required
- Phase 5 – Early September 2022 – IPPs submit final written feedback/clarification requests (no later than **September 15, 2022**)
- November/Ongoing – Implementation/Renewals

## EPA Renewal Process

- Complete **Confidentiality and Non-Disclosure Agreement**
- Complete **Permits** review
- Complete **Indigenous Relations** review
- Complete **Revenue Metering** review
- Submit **Seller's Plant Description** for EPA appendices
- **Customize EPA form** to align with project and legal entity
- **Execute EPA**
- **Execute ancillary agreements** (e.g., Electricity Service, Meter Lease, E-Meter Agreements)
- **BC Hydro to File EPA with BCUC** under section 71 of UCA

## Next Steps

- **BC Hydro issues draft Standard Form of Contract**
- **IPPs to submit feedback/clarification questions**
- Written feedback can be emailed to [IPP.Contract@bchydro.com](mailto:IPP.Contract@bchydro.com) with subject line “**EPA Renewals**”

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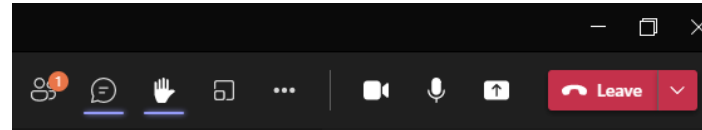
Schedule, Process & Next Steps	Bruce Chow
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<b>Questions</b>	All
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## Questions?



Please raise your hand if you want to comment or ask a question.

Questions and feedback can also be emailed after the session to [IPP.Contract@bchydro.com](mailto:IPP.Contract@bchydro.com) with subject line “EPA Renewals”