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#### Alberta's Renewable Energy Market – Developing Contract Issues

Robert Millard (TransAlta) Ian Clarke (TransAlta) David Eeles (Norton Rose Fulbright) Lincoln Mitchell (Norton Rose Fulbright)

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# Agenda

- 1. Renewables Proliferation in Alberta (Introduction)
- 2. Force Majeure
- 3. Environmental Attributes
- 4. Ethical Procurement



- 5. Integrating Storage into Renewable Generation
- 6. Conclusion



## **Renewables at a Glance (Global)**



- We are seeing a significant shift in power generation by fuel type.
- Renewables show greatest growth, while coal is showing a significant drop-off.
- Across every geographical region, renewables are increasing their share of power generation (most notably in Europe).



#### **Global Investment in Renewable Power**

Global energy supply investment by sector







 Investment in renewable generation is increasing, but the rate of investment needs to increase significantly in order to achieve the commitments under the Paris Agreement.

 The expected increase in electrification (e.g., electric vehicles) will further drive development of renewable power.



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Note: STEPS = Stated Policies Scenario, SDS = Sustainable Development Scenario, NZE = Net Zero Emissions by 2050

#### **Corporate Power Purchase Agreements (PPAs)**

#### Global Corporate PPA Volumes (2010-2021)



Source: BloombergNEF. Note: Onsite PPAs excluded. APAC volume is an estimate. Pre-reform PPAs in Mexico and sleeved PPAs in Australia are excluded. Capacity is in MW DC.



- Increase in renewable investment is being driven by motivated buyers of renewable electricity, including corporate off-takers.
- Globally, the volume of generation represented by corporate PPAs has more than doubled between 2018 and 2021 (from 13.6 GW contracted to 31.1 GW).
- Alberta has also seen a significant amount of activity from corporate off-takers, in large part due to the fact it is a de-regulated market.



#### **Contractual Arrangements for a Renewable Project**

- The **Corporate PPA** secures a revenue stream, which provides the developer with sufficient revenue certainty to proceed with developing a project.
- The developer enters into a **material supply agreement** with the original equipment manufacturer (for instance, a turbine supply agreement for a wind project), which represents a significant portion of the project costs.
- Developers often enter into an **engineering**, **procurement and construction agreement** (EPC), which provide a specified scope of construction activities.
- These key project agreements each need to be consistent and aligned with one another, or the developer risks being exposed to significant risks.



#### **The Operation of a Corporate PPA**



PPA price incl. certificate price minus price payable to developer

- Corporate PPAs (in Alberta and across North America) are often "virtual" PPAs. These are non-physical contracts, where electricity is not physically delivered by the generator to the offtaker.
- These agreements have certain principal characteristics.
- This arrangement provides the off-taker with the environmental attributes from the renewable project along with a financial hedge on the price of electricity, whereas the developer receives price certainty for the duration of the contract.



# Force Majeure in a post-COVID world

• Pre-2020, claims were generally rare and limited to on-site events.

#### Post-2020, claims have become much more common and involve events across the globe.

- Supply chains are susceptible to disruption.
- How can project owners contractually protect themselves from unforeseen events?

#### Figure 2. Supply-Chain Disruptions By Sector

In the last week, did this business have domestic supplier delays? (percentage saying yes)



Sources: U.S. Census Bureau; CEA Calculations.



## What is force majeure?

- Contractual tools to allocate risk of supervening events:
  - No force majeure clause = no force majeure relief
  - Clause can be drafted however the contracting parties wish
  - Governed by general contractual interpretation principles
- Typically contains the following elements:
  - general definition of force majeure
  - list of specific types of events that may be included (triggering events)
  - list of specific types of events that are excluded
  - notice requirements (time limits and information)
  - forms of contractual relief
  - mitigation obligations



To his horror, Steve realizes he is the only cosplayer at the corporate law conference.



## What is the threshold for force majeure?

- Did the supervening event "prevent", "hinder" and/or "delay" the contractual obligation?
- What steps must the claiming party take to overcome a supervening event and are there any mitigation obligations on the part of the claiming party?
- "On the one hand, the supplier should not be able to cancel a contract merely because an expected profit will not occur as a result of new events. On the other hand, the purpose of the term is to protect the supplier from effects that are, in terms of what is commercially feasible or reasonable, out of his control."



#### **Read your contract!**



# **Alignment of project contracts**



- Renewable developer stuck in the middle between the PPA off-taker and the major project contractor.
- PPA likely contains milestone dates (target and guaranteed COD) that the developer must meet.
- Developer negotiates milestone dates in its construction and supply contracts to ensure the PPA dates are met.
- Ensure that any force majeure claim by a contractor to project developer can be flowed through to the PPA.
- Alignment of triggering events.



# **Alignment of project contracts**

- Alignment of notice requirements
- Alignment on contractual relief
- Alignment on termination rights





# **PPA-specific considerations**

- Triggering events:
  - transmission outages
  - curtailment orders
  - interconnection delay
  - main power transformer failures
  - serial defects
- Relief:
  - Pre-COD schedule relief
  - Post-COD relief from producing electricity and delivering environmental attributes





#### **Environmental Attributes**

- Following discontinuance of the Renewable Electricity Program, Alberta has seen a significant increase in virtual PPAs
- Virtual PPAs are largely financial instruments/hedges (title to electricity is <u>not</u> transferred)
- Title to environmental attributes (EAs) is transferred to the off-taker
- Off-takers use EAs in two markets:
  - Compliance markets (regulated by government authorities)
  - Voluntary markets (not regulated by government authorities)



#### **Environmental Attributes**

- EAs are intangible attributes associated with green electricity generation
- RECs are tradable instruments which represent certain environmental attributes:
  - 1 REC = generation of 1 MWh of renewable electricity
  - WREGIS issued RECs are commonly used in Alberta
- Offsets are also instruments which represent certain environmental attributes:
  - -1 offset = reduction in 1 metric tonne of carbon
  - TIER offsets are commonly used in Alberta
- Tracking systems, such as WREGIS or the AEOR, verify EA generation, issue RECs/offsets and ensure EAs are not double counted



### **Environmental Attributes (PPA Considerations)**

- Definition of EAs should be considered carefully to ensure all necessary attributes are transferred and to avoid unintended transfers:
  - Off-takers may want rights to 'future attributes'
  - Developers may want to exclude attributes related to grid reliability and/or battery storage
- Tracking system registration:
  - Developers usually required to register the project with a tracking system and transfer RECs/offsets to the off-taker
  - Off-takers want firm obligations on developer to generate a specific form of REC/offset
  - Developers resist guarantying that the project can be registered with any particular tracking system
  - Commercially reasonable efforts standard may be used



# **Environmental Attributes (PPA Considerations)**

- Multiple off-takers/PPAs on single project:
  - Developers need to ensure PPAs do not conflict with respect to obligations to generate RECs/offsets
  - Often not possible to register a single project with two tracking systems but that is changing
- Changing tracking system:
  - Off-takers often want the ability to require or request that the tracking system be changed
  - Can cause issues if other off-takers do not want the change
  - Consider change mechanisms carefully
  - Need to deal with increased costs



# **Environmental Attributes (PPA Considerations)**

- Key takeaways:
  - Creation and transfer of EAs is a central element of PPAs
  - Off-takers need to ensure they are receiving RECs or offsets which meet their needs (voluntary/compliance markets)
  - Developers need to ensure they have sufficient: (i) flexibility to deal with changes to tracking system requirements and (ii) alignment across all PPAs on a project
- No one-size fits all solution
- May need to explore various options





## **Ethical Procurement - Introduction**

- 2021 Sheffield Hallam University Report: "In Broad Daylight – Uyghur Forced Labour and Global Solar Supply Chains"
- The solar industry is particularly vulnerable:
  - 95% of solar modules rely on the same primary material – solar grade polysilicon
  - 45% of the world's polysilicon supply is produced in China's Xinjiang region.
- June 2021 the US bans imports of silicon materials produced by Hoshine Silicon Industry Co. Ltd. and its subsidiaries





International Labour Organization



#### **Ethical Procurement – Forced Labour**

S-211

Senate Private Bill

An Act to enact the Fighting Against Forced Labour and Child Labour in Supply Chains Act and to amend the Customs Tariff

<sup>Sponsor</sup> John McKay (Scarborough–Guildwood)

- Definition of Forced Labour: "all work or service which is extracted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily." – International Labour Organization
- Customs Tariff (Canada) import prohibition on goods produced wholly or in part with forced labour
- Bill S-211 "An Act to enact the Fighting Against Forced Labour and Child Labour in Supply Chains Act and to amend the Customs Tariff (Canada) ("Forced Labour Act")



## **Ethical Procurement – Contracting Considerations**

- Pre-contracting due diligence
  - Developer Policies / Codes of Conduct
  - Supply chain due diligence
    - o Officer's certificates
    - o Audit reports
- Evolving Contract Provisions
  - International standards regarding human rights
  - Specific representations and warranties
  - Reporting and indemnity obligations
  - Tracking Protocols





#### **Integrating Storage and Generation**



- Renewable generation is intermittent and subject to variability – which has potential impacts on reliability.
- Battery Energy Storage Systems (BESS) can provide a potential solution to addressing some of the challenges presented by intermittency of renewable generation.
- Alberta has demonstrated a strong interest in storage.
- Bill 22 encourages energy storage by providing a regulatory framework that governs such projects.



## **Storage and Generation (Contracting Considerations)**

- Historically PPAs have been silent on adding a BESS to a renewable project. Developers are now contemplating adding a BESS at the outset of a project (or reserving their rights to do so at a later date).
- Key Additional PPA issues:
  - Product: Integrated project or separate projects?
  - Payment Mechanism: Is the reference price determined at time of charging (or discharging)?
  - Control: Is developer entitled to control discharge?
  - Performance Guarantees: Energy capacity, maximum charging, availability and discharge rates
  - Operational Requirements: Operating parameters to ensure adherence to OEM requirements
- Developers of renewable projects will need to carefully consider the implications of potentially adding a BESS at a later date and should work with off-takers to ensure rights and benefits associated with a co-located BESS are well defined and understood.

#### Conclusion

- Renewable development is expected to continue at significant pace.
- Contracting issues for renewable projects are novel and continue to develop at a pace equal to that of technological and regulatory change.
- The complexity of renewable projects need to be understood in the terms of the PPA, and require coordination and alignment between the various contracts (EPC, PPA and Supply Agreements).
- The increasing trend of co-locating storage will present various contracting challenges for the developer, which need to be anticipated in order to mitigate any unintended consequences.





