



Carbon Market Best Practices for Mines

- * Opportunities for Mines
 - * Managing Legal and Business Risks
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November 13, 2024

The logo for "The Decarbonized Mine" event. It features the text "THE DECARBONIZED MINE" in large, bold, white, all-caps letters. Below it, in smaller white, all-caps letters, is "THE 13TH ANNUAL ENERGY AND MINES". At the bottom, in even smaller white, all-caps letters, is "TORONTO SUMMIT NOVEMBER 12-13". A white horizontal line is positioned between the middle and bottom lines of text.

THE DECARBONIZED MINE
THE 13TH ANNUAL ENERGY AND MINES
TORONTO SUMMIT NOVEMBER 12-13

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- Transacting in the Carbon Market
 - Compliance vs. Voluntary
 - General Product Types
 - Transaction/Contract Types
 - Exploring Opportunities for Mines
 - Crediting Mechanisms
 - Corporate PPAs
 - CFR Credit Development
 - Managing Key Risks
 - Regulatory Risks
 - Delivery Risk
 - Invalidation and Similar Risks
 - Reputational/Marketing Risks
 - Program Modification/Abandonment Risk
 - Credit/Counterparty Risks
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Transacting in the Carbon Markets



Technology Innovation
and Emissions
Reduction System

Gold Standard®



1. Avoidance Credits

- generated from GHG avoidance/displacement projects
- methodologies to generate credits will vary based on the project-type

2. Removal Credits

- generated from GHG removal/sequestration projects
- nature-based and non-nature-based projects

3. Allowances/Performance Credits

- compliance markets only
- represent a permission to generate a specified quantity of emissions and/or a reduction in emissions beyond a regulatory benchmark

4. Other Environmental Attributes

- e.g., renewable and clean energy certificates (RECs/CECs)
- e.g., Clean Fuel Regulation and Low Carbon Fuel Standard credits

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- Primary market
 - Sometimes involves offset project development agreements with a long-term offtake
 - Offtakes can be beneficial for developers in that they can guarantee future revenue stream, but generally carry more risk for buyers
 - Offtake variations, like carbon streams, increasingly common
 - Secondary market
 - Involves secondary trades of products already serialized on an established registry
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- Over the Counter
 - VCM still largely dominated by OTC trades
 - Primarily spot and forwards for physical delivery
 - Contracts typically bespoke (e.g., company-specific LFCs and master agreements, project-specific offtakes and streams, etc.)
 - ISDAs sometimes used
- Exchange-Traded
 - Generally reserved for well-established products
 - e.g., California Carbon Allowance Futures and TIER Futures trade on the ICE
 - Credits from leading VCM standards (Gold Standard, VCS) can be traded on electronic spot exchange, like Carbon TradeXchange

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Exploring Opportunities for Mines

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- Depending on jurisdiction and mine site, there may be opportunities for on-site offsetting projects, following approved offset methodologies
 - For mining facilities covered under compliance regimes, on-site abatement may also result in tradable performance credits
 - Some carbon removal technologies geared towards mining operations
 - e.g., air-to-rock mineralization in mine tailings

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- Allow the generators to hedge against future power price volatility
 - Allow corporate buyers to acquire environmental attributes, such as emissions offsets and renewable energy certificates
 - GHG Protocol allows for market-based accounting to Scope 2 emissions
 - Contracted environmental attributes can offset emissions calculated based on grid emissions intensity
 - Corporate PPAs can be physical or virtual
 - Environmental attributes can be sold bundled with or unbundled from power

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- CFR requires gasoline and diesel primary producers and importers to reduce the carbon intensity (CI) of the fuels they produce in or import into Canada.
 - CFR also establishes a credit market in which the annual CI reduction requirement could be met through the following categories of credit creating actions:
 - reducing the CI of the fossil fuel throughout its lifecycle,
 - supplying low-carbon fuels, and
 - supplying fuel or energy to advanced vehicle technologies.
 - The credit market open to primary suppliers of fossil fuels and other participants, referred to as voluntary credit creators, such as low-carbon fuel producers and importers
 - Under the CFR, by default, the credits are issued to the person that undertakes the credit creating activity
 - However, a third party can assume the role of credit creator by entering into an agreement under the CFR with the party that undertakes the qualifying activity

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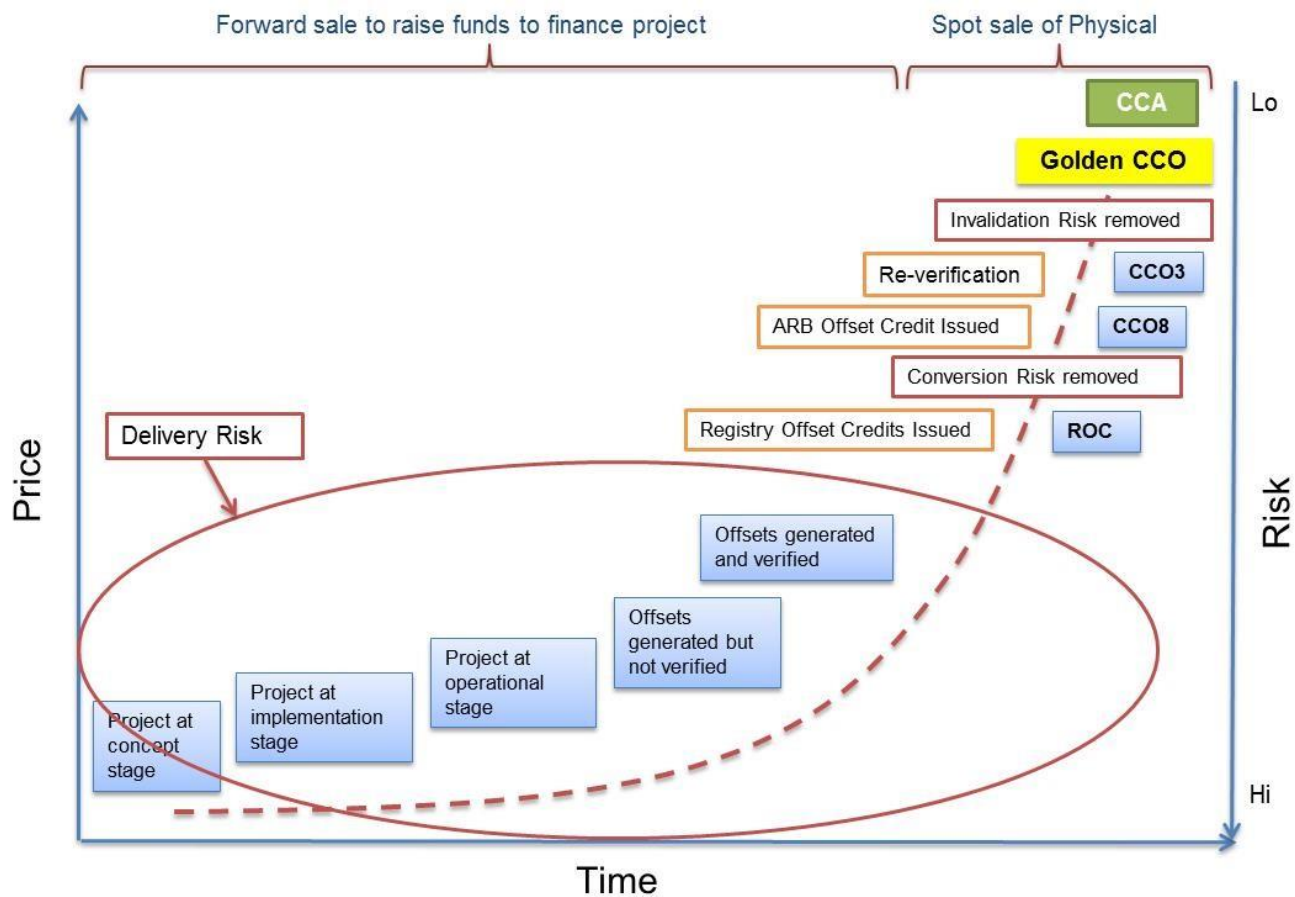
Managing Key Risks



- Integrity issues have plagued carbon markets, especially the VCM
- Not quite the “wild west” it used to be
- However, challenges remain to balance integrity and efficiency

- In Canada, carbon credits and similar environmental products are characterized as intangible commodities (an asset), not directly subject to securities/derivatives/commodity futures regulation
 - Spot transactions not captured
- However, instruments linked to these products can engage regulation
 - e.g., exchange-traded futures contracts
 - e.g., OTC derivatives, with cash settlement or forward settlement
- The OTC derivatives regulatory framework will generally not capture a contract or instrument for delivery of a commodity, other than cash or currency, that:
 - is intended by the counterparties, at the time of execution of the transaction, to be settled by delivery of the commodity, and
 - does not allow for cash settlement in place of delivery except where all or part of the delivery is rendered impossible or commercially unreasonable by an intervening event or occurrence not reasonably within the control of the counterparties, their affiliates, or their agents
- Registration as a dealer or adviser may be required where a firm holds itself out as being engaged in the business of trading or advising in securities, commodity futures contracts or derivatives (other than excluded derivatives)

Delivery Risk



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- Can include contractual protections addressing the following:
 - Settlement disruption events (e.g., registry issues)
 - Failure to deliver some or all of the product
 - Failure to receive some or all of the product
 - Generally, provide opportunity to cure failure to deliver/receive, failing which non-defaulting party can calculate losses based on mark-to-market value at the time, plus any reasonable costs and expenses

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- Carbon offsets are subject to invalidation risks
 - e.g., an auditor finds an error in a verification report that resulted in an over-issuance of credits
 - Some carbon offsets also subject to related risks
 - Reversal
 - Double Counting
 - Leakage
 - Risks vary by product type, methodology, jurisdiction and market
 - Addressing risk requires:
 - Focus on high-quality credits
 - Appropriate diligence of credits/underlying projects
 - Robust contractual provisions addressing invalidation events, where market will allow
 - Often remedy is replacement or cash substitution, being mindful of maintaining intent to physically settle
 - Some insurance options available

- Offsets have always been a source of criticism
 - e.g., environmental integrity, double counting, etc.
 - In the early days, there were cases of fraud
 - There have also been invalidation events and criticism of published protocols
- Even higher-quality credits are not immune
 - e.g., recent study of California forestry offsets that claimed 29% over-crediting (totaling 30 MtCO₂e, worth ~\$410M)
 - e.g., recent study of Quebec reforestation protocol suggesting it fails to properly account for permanence and forest albedo
- Generally higher risk with developing country projects, where compliance with host country regulations and human rights standards may be a concern
- Consider project-specific reps and termination rights

CANADIAN DRIVERS SET TO GO CARBON NEUTRAL WITH SHELL

Nov. 12, 2020

Calgary, AB – Shell will become the first retailer in Canada to offset carbon dioxide (CO₂) emissions from customers' fuel purchases at Shell service stations across the country. The offsets cover all emissions from the production through to the use of the fuel.

**“Driving carbon-neutral” is impossible
with fossil fuels**

Complaint to the Competition Bureau of Canada against Shell's misleading
promotion of forest-based “offsets” as sustainable, climate action

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- Consider any claims that are being supported by the retirement of carbon credits
 - e.g., emissions reduction or co-benefit claims
 - Consider association with underlying offset project, particularly if buying sole-source offtake
 - Ensure “credit” being purchased includes the rights, and is backed by the reps, to support these claims
 - These concerns will gain prominence if and when new reporting rules require disclosure about carbon credit usage (e.g., ISSB/CSSB exposure drafts)

- Program modifications are common
 - Rule changes to address methodological issues, verification procedures and other “growing pains”
- Rule change risk can be addressed through contractual provisions
 - Regulatory continuing provisions
 - i.e., are the reps re program compliance made as of the trade date or the delivery date or both?
 - Program modification provisions
 - costs of program pre-delivery program modifications can be allocated to either party
 - clean break if rule change makes transaction impossible

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- Program terminations have occurred
 - Ontario's sudden suspension of trading and subsequent *Cap and Trade Cancellation Act* (2018)
 - Other abandonment risks on the horizon
 - 2025 federal election
 - Program abandonment can shutter a market, leaving stranded credits, with no avenues of cost recovery, especially for market participants
 - Some agreements will include contractual protections
 - e.g., Abandonment of Scheme provisions in ISDA Annex

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- Credit risk may be a concern depending on counterparty
 - For buyers with credit risk, sellers often ask for either pre-payment or some form of security, especially for long-term forwards and development offtakes
 - LC or parental guarantee common
 - Sometimes existing credit support between the parties can be extended to the carbon market transaction

Questions?

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