CARBON REVENUE & CLEAN TECHNOLOGY FUNDS

Overview

A clean technology fund ("tech fund") can be established to achieve a number of climate change and greenhouse gas (GHG) reduction goals. Typically, a fund may be one or more of the following:

- A financing and technology innovation mechanism;
- A compliance mechanism under a GHG reduction regulation; and/or
- A compensation mechanism (e.g., funding for climate adaptation or resilience, socio-economic support programs to offset carbon costs or climate impacts etc.)

The following focuses on these mechanisms in a regulatory compliance context, though it is important to note that non-regulatory funds and other financing initiatives can also hold important lessons and models for future tech fund design and implementation.

Alberta offers an important Canadian working model of a tech fund in the context of a regulatory compliance tool under provincial GHG regulations. Covered entities can choose to make a compliance payment into the tech fund at a specified price per tonne of CO2e (currently set at $15/tonne). The fund is administered through the Climate Change and Emissions Management Corporation (CCEMC).
Saskatchewan has also developed a tech fund framework, with the intention of implementing the mechanism as compliance tool under its future provincial regulatory approach.
British Columbia has also signalled that a tech fund will likely be part of its new regulatory package for the province's growing Liquefied Natural Gas (LNG) sector.

Key Design Concepts

Collaboration, Harmonization, Innovation, Flexibility, Effective Access, Transparency, Shared Benefits

Pricing Structure

- The carbon price set for tech fund payments can impact both the use and the development of a GHG offset market (as another compliance option).
- Consistency in overall cost structures across jurisdictions could help encourage future.

Governance

- Funds are typically governed by Board of Directors – size and structure varies.
- Important to clearly define the intended goal(s) of the fund and shape board representation accordingly. Can include representation from government, industry or other stakeholders (community, NGOs, other sectors).

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Access to Funding

- Efficient processes to choose projects and disperse funds improves timeliness of investment and outcomes
- Flexible limits on funding to ensure adequate funding provided relative to total capital required and associated risk
- If a goal is to drive in-sector reductions and to incentivize early use by covered entities, a phased approach to tech fund access over time may be beneficial.

Funded Activity Scope

- The overarching goal of a tech fund directly impacts the extent to which firms that have contributed to the fund can expect to potentially shape or benefit from its use.
- Tech Fund may include a portfolio of projects across the technology development and deployment chain. Diversified activities could have multiple benefits, including:
    - Improve the viability of certain abatement options by moving them along a firm's Marginal Abatement Cost Curve.
    - Incentivize additional investments in higher risk and early R&D activities that would not otherwise be invested in, but could have transformative impacts over time.
    - Ensure healthy project pipeline across the development chain to achieve:
        - 'Quick wins' and near term emissions reductions by commercializing new low-carbon technologies.
        - Longer-term emissions reduction potential, social license, and additional sustainable development co-benefits.

Outcomes Achieved

- As the concept of a tech fund is still relatively new, there is still a good deal of "learning by doing".
- Tech fund investments can help drive additional emissions reductions, but also valuable role for adaptation, land use and forestry projects to help achieve broad climate goals.
- Continuous improvement should be built into the design through established milestones and/or review triggers to increase certainty for industry and government. Consistent evaluation of outcomes against objectives is critical.

Cap-and-Trade Auction Revenue & Funds

Auctions are one way of distributing allowances – with the revenue accruing to the system's regulating authority.

Most cap-and-trade programs sell some, if not all, allowances at auction (rather than freely distribute 100% to covered entities). An analysis by Resources for the Future (RFF) on the use of auction revenues (published in IETA's 2014 GHG Market Report, Markets Matter) found that nearly all market systems studied invested some carbon revenue in low-carbon R&D and support, such as renewable energy and energy efficiency.

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Smart use of auction revenues to support further mitigation and resilience projects.

Planned infrastructure investments that could lead to emission reductions or climate resilience (e.g. clean infrastructure funding, energy efficiency upgrades etc.) can be supported by auction revenues.

"Climate dividends" to support public buy-in for emissions trading and auctions.

Recycling auction revenue to consumers and business to incent greener choices or offset higher costs drives public support for carbon pricing. For example, RGGI uses a share of auction revenues to effectively provide a rebate on electricity prices.

Under the linked Quebec-California cap-and-trade models, allowance auction revenue channels into sub-nationally managed "green funds".

In **Quebec**, revenue generated by the carbon market is allocated to the province's Green Fund and re-invested for full implementation of Quebec's Climate Change Action Plan (CCAP 2013-2020). CCAP measures aim to reduce Quebec's GHG emissions, adapt to climate change impacts and accelerate the shift towards a "strong, innovative and increasingly low-carbon economy".

In **California**, the legislature and Governor appropriate auction proceeds for projects that support the goals of AB-32. Strategic investments are used to reduce state GHG emissions, providing net GHG sequestration, and support long-term transformative efforts to drive the state's clean energy economy. California's Legislative Analyst's Office (LAO) projects revenues from the state's allowance auctions in FY15-16 to be at least $2 billion – and potentially as high as $4.9billion.