Economics and Environmental Policy Research Network

Research Symposium

February 27th – 28th, 2020

Session Notes for Parallel Session #6: Climate Policy: Investment, Cost and Competitiveness Outcomes

1. State of Existing Research and Discussion Context

This session sought to explore innovation and investment in clean technology.

Key themes discussed in the session include:

- **Carbon Pricing and Tax Incentives:** Carbon pricing can be viewed as the stick, while tax incentives can be used as carrots to promote research and development in clean technology.
    - **Challenges:**
        - If carbon pricing is implemented poorly, it can result in carbon leakage whereby a carbon-producing industry simply moves to a less stringent jurisdiction but continues to produce carbon.
        - Carbon pricing alone may not be stringent enough, and thus other instruments may be needed in addition to carbon pricing.
    - **Opportunities:**
        - Tax instruments and incentives can reduce the price of technology, thereby stimulating the creation of new technology in Canada, which can in turn be sold to other markets.
        - Federal and/or provincial governments can incentivize clean technology in Canada through a number of different strategies, depending on the specific problem that is to be addressed:
            - *Investor Tax Credits:* The investor in clean technology qualifies for a tax credit to be applied to their personal income tax.
            - *Flow-Through Shares:* When a firm is not making profit and therefore cannot claim tax credits, they have the option to pass through the credits to investors in exchange for a premium price for equity investment.
            - *Accelerated Capital Cost Allowance for Clean Technology:* This is offered by the federal government and is not specifically for start-ups but to help any firm that wants to buy a clean technology.
            - *Import Tariff Elimination:* This is the elimination of tariffs on imports that are used by clean technology manufacturers (e.g. thermostats).

- **Canadian Clean Tech Growth:**
    - **Context:** The Canadian federal government currently has cleantech growth mandates, specifically looking at how to help Canadian cleantech companies to scale up, to get their technologies adopted, and to export their technologies into international markets.
    - **Challenges:**
        - Implementing clean tech tax credits would require a significant level of rigor to identify what is to be covered/included.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada / Environnement et Changement climatique Canada
SSHRC CRSH

        - Extensive consultations with clean tech firms have indicated that access to financing for large-scale, capital-intensive projects is a gap. Initiatives that help bring in significant private sector sources of funding could help.
        - Some companies, particularly those striving to scale-up, may not know when to bring new skills into the organization, particularly at the C-Suite level. Many inventor-CEO firms flounder, as they do not have the right skill set to advance marketing, sales, financial reporting, etc.
    - **Opportunity:**
        - Compared to the Canadian average, clean tech jobs in Canada are higher paid, more often full-time, and more inclusive to disadvantaged groups.

- **Intellectual Property:**
    - **Challenges:**
        - It's not well understood how intellectual property and clean innovation intersect.
        - Firms with less stringent intellectual property protection practices may be more susceptible to losing their technological edge, which is an impediment to realizing the benefits of their innovation through commercialization.
        - Knowledge gaps exist.
        - Up to now there has been an inconsistency in the language used.
        - There is an emphasis on patents to measure clean innovation but no ownership of the data.
        - Copyright issues and technological shortcomings also pose challenges.
        - Finally, there is a lot of discussion on the ownership of Indigenous traditional knowledge.

- **Competitiveness:** Debates on environmental policy often center around the idea of how environmental regulations might affect the competitiveness of domestic industry. Industry competitiveness reflects the incidence of environmental policy.
    - **Challenges:**
        - Competitiveness can have many different definitions, features, and dimensions.
        - If regulations are unilaterally imposed in only one country, then they may create a relative cost-shock by raising domestic costs relative to unregulated foreign producers.
    - **Opportunity:** Exports capture an important dimension of competitiveness: the relative cost-shock caused by regulation.

Some of these themes were then explored more specifically as applied to the case of renewable energy:

- **Private Investment in Renewable Energy:** Such investment requires risky, large, and long-term financial commitments going forward. Around 40% of total investments currently come from state-controlled sources that have the potential to shift investments into the kind of directions that are desired.
    - **Challenge:** The private sector will not be the one to initiate the long-term and risky financial commitments required.
    - **Opportunity:** Within the low-carbon transition, our ultimate desired endpoint is clear, which can help governments and other relevant actors know their responsibilities and the best decisions to be made.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada
SSHRC CRSH

2. Research Questions Identified

- **How do the suggested tax measures interact with other policy and program incentives to lead to higher levels of clean tech innovation, adoption, and export? What is an optimal policy mix?**

- **What is the most effective way for green government spending to facilitate employment transitions to a low-carbon economy so as to ensure that the standard of living of affected groups is maintained?**

- **How will artificial intelligence affect the labour market in the future?**

- **Given the difficulties many growing companies have in knowing when to bring new skills into the organization, what guidance can be developed about the critical skills necessary at different stages of a company's growth?**

- **Will international environmental regulations affect the export decisions of manufacturing plants?** For exports, it will matter what other countries want from their imports. The ability to comply with international market requirements and regulations will determine whether domestic manufacturing plants have an international market for their goods.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada
SSHRC CRSH