**Understanding Carbon Pricing**

**What is the purpose of carbon pricing?**

In economic theory when the cost of something increases, the demand decreases. By attaching a price to the burning of fossil fuels, governments give the emitters of greenhouse gas (GHG) pollution the financial incentive to reduce emissions. The goal of a carbon price is often to maximize the reduction of GHG pollution with a view to mitigate climate change, foster the development of non-emitting energy industries and minimize the economic costs of energy adjustment.

**When did carbon pricing begin?**

Some European countries have had a carbon tax since the early 1990s. The Western Climate Initiative is a cross-border, market-based program for reducing emissions and offers support for the implementation of state and provincial greenhouse gas emissions trading programs. The Initiative began in 2007 with California, Quebec and a few other North American jurisdictions. The World Bank claims that by 2017 there will be 40 national or subnational jurisdictions which put a price on carbon covering nearly 15% of global emissions.

**How does a carbon tax work?**

A carbon tax is simply a levy on the burning of fossil fuels. The breadth of the tax can vary. Carbon can be taxed wherever it is combusted or particular sectors can be targeted. Most emissions are taxed by raising fuel prices. Revenue from a carbon tax can be used to reduce other taxes (personal, business), thus making it “revenue neutral”. The hope is that households will shift consumption patterns, including greater conservation, energy efficiency and the adoption of lower-emitting fuel sources. Likewise, it is hoped that large industrial emitters invest in carbon-reducing technologies such as carbon capture and storage. Higher prices on carbon-intensive energy products increase the demand for green energy, thus making lower-emissions technologies more cost competitive, which speeds up the process technological adoption.

**How do cap-and-trade programs work?**

Cap-and-trade programs include both a market mechanism and regulatory oversight. Government creates a market by turning GHG emissions reductions into commodity. The government must decide which sectors will participate and it must set the overall emissions cap for each industry, as well as the highest and lowest price for a permit. Government raises revenue by selling permits at auctions, while companies attempt to purchase the fewest number of permits needed to cover their annual emissions. Enforcement of the emissions cap (including fines and sanctions) means that emissions must fall by a set amount, which incentivizes firms to invest in low-carbon energy. At year-end, regulated companies submit verified emissions reports and surrender permits equal to the emissions. Each year emissions are reduced as the government lowers the cap, issuing fewer permits and raising the minimum permit price.

**Did you know?**

Sweden implemented a carbon tax in 1991 that is credited with helping develop a national green energy industry and a 20% reduction in carbon emissions. Sweden achieved its 2012 Kyoto target and, despite costing $140 per tonne, its carbon tax has not undermined prosperity. Swedish Gross Domestic Products has more than doubled and the country ranks fourth in the world in economic competitiveness.
Carbon taxes versus cap-and-trade

The advantages of a carbon tax include:
• Relative simplicity of the system;
• It is easy for citizens to understand;
• Households and industry pay the same tax and thus have more incentive to participate;
• Government tax revenues are easier to predict.

The major drawbacks of a carbon tax include:
• The absence of an emissions cap;
• Unpredictability around the timing and level of emissions reductions (if any).

The advantages of a cap-and-trade system include:
• A clear environmental objective;
• Greater certainty around the GHG reduction target;
• Self-adjusting prices means the carbon market can respond to the volatility of the boom-bust cycle.

Major drawbacks of a cap-and-trade system include:
• Less certainty about carbon tax revenue;
• Large portions of emissions are omitted from the tax (households, for example);
• Greater complexity around implementation and monitoring.

Sources: The Canadian Encyclopedia; Energy-Exchange; David Suzuki Foundation; Unifor Research Department.