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Carbon Cap and Trade

Impacts of Ontario's Proposal for Business Leaders

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The purpose of this document is to provide an introduction to fundamental concepts of what cap and trade is and how business leaders should prepare for its implementation. This article summarizes recent global and economic developments; however we recommend that you consult an expert before embarking on any of the suggestion contained in this article.

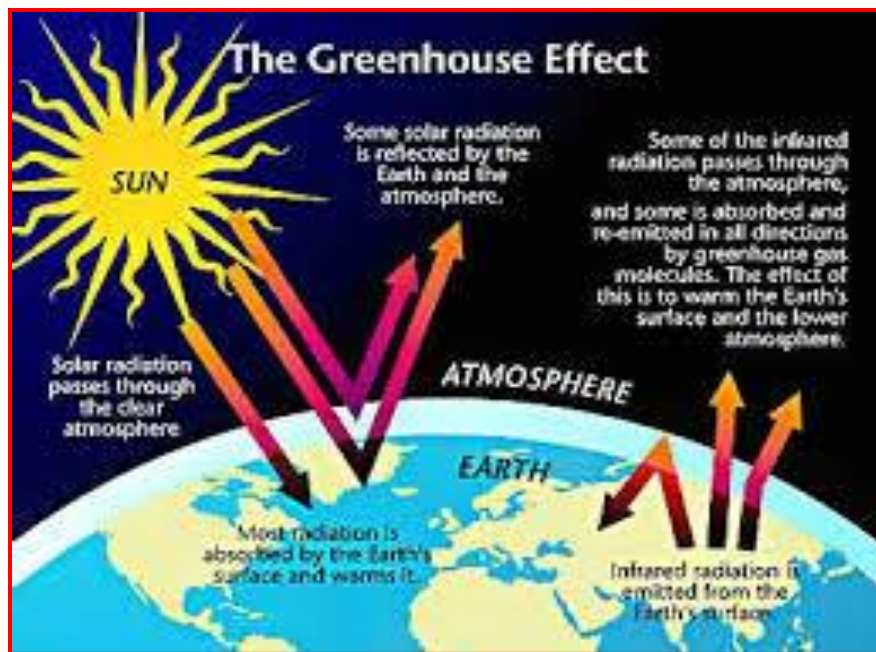
Introduction

What is Global Warming?

This is the phenomenon that has been and continues to be the greatest environmental danger that faces this planet. Due to the addition of chemical gases such as **carbon dioxide, (CO₂) methane (CH₄) and chlorofluorocarbons (CF₂Cl₂)**, the average temperature of the planet has risen and continues to rise.

These gases, similar to the transparent ceiling of a greenhouse, allow solar energy to enter the atmosphere, but then prevent some of this energy from escaping. As a result, this energy, in the form of heat, accumulates.

The prediction for this century is for the planet's temperature to rise from a minimum of 1.5 degrees Celsius to a maximum of 3.0 degrees Celsius.



Even if all greenhouse gas production ceased as of now, this increase in temperature would still occur. It is estimated that the removal of greenhouse gas molecules by the ecosystem may require over 100 years to achieve.

What is a positive feedback cycle?

This phenomenon is when an outcome, which is created by a chain reaction, accelerates the change that is being experienced. An example is the release of methane by melting permafrost.

Permafrost contains partly decayed frozen plant material. A product of this decomposition is methane. When melted, permafrost releases methane. As this methane enters the atmosphere, global warming increases. This increases the rate at which permafrost melts, that increases the amount of methane released. Methane gas molecules absorb approximately 29x more solar energy than carbon dioxide.

Once global warming starts, there is simply no “off” switch to stop it. For the foreseeable future, leaders need to consider the implications of global warming upon their commercial business ventures.



The above picture shows ignited methane gas escaping from the surface of a frozen lake.

Social/Political Outcomes of Global Warming

As **food security** decreases along with access to clean drinking water along with the increase of disease and millions of environmental refugees, one can expect more political upheaval within nations that lack the government institutions and self-governance traditions of more established nations.

An outcome of global warming is the occurrence of severe weather events such as hurricanes and cyclones. Such events could stress existing public infrastructure.

Leaders should reflect on the cost of doing business in an area that is undergoing either dramatic political or environmental change. Relocating assets to areas less affected by global warming would be prudent, as well as developing alternative power generation capacity to avoid excess dependence on public utilities.

How have governments responded?

Internationally, nations have agreed that lowering carbon emissions is a priority to reducing the rate at which the planet warms. Beginning in 1992 with the **Rio Summit**, followed by the **Kyoto Protocol** in 1997 and then the **Paris Agreement** of 2015, the objective of lowering carbon emissions is deemed necessary.

These agreements have spurred national, provincial, regional and municipal governments to begin to develop the actual mechanisms needed to achieve this goal.

There are two major initiatives: a carbon tax and/or a carbon cap and trade mechanism.

What is a Carbon tax?

When individuals, small businesses or large corporations obtain energy from using carbon based fuels, various municipal, sub-national and national governments have initiated a tax based on the amount of carbon dioxide produced.

A price for each metric tonne of CO₂ is imposed upon the individual or business. This price varies widely throughout the world from as little as 50 rupees in India, to approximately \$168 in Sweden.

In Canada, only three provinces have enacted a carbon tax: British Columbia collects \$30 per tonne, Alberta rate will rise to \$30 in 2017 from its current level of \$20 and Quebec currently charges \$3.50 for each tonne of CO₂

The amount of the carbon tax also depends on the type of fuel being utilized. For example, in British Columbia, gasoline is taxed at 6.67 cents per litre, jet fuel at 7.83 cents per litre and coal, depending on whether it is classified as low heat or high heat, either at \$52 per tonne or \$63 per tonne.

Proponents for the carbon tax say it is necessary as it provides an incentive for businesses and individuals to reduce their consumption of carbon. This decreases the reliance on traditional fuels and spurs the development of new greener fuel alternatives such as wind and solar.

Furthermore, the carbon tax can be revenue neutral as monies from this tax can be used to decrease effective tax rates for individuals, who due to their employment status, earn less money than other citizens. So the carbon tax while initially being applied to everyone and all businesses becomes effectively a “carbon shift” as people who earn less have the benefit of added tax relief.

Another alternative is to re-invest proceeds from this tax into the development of **renewable** energies, **geothermal** projects or the use of **biomass** as a source of energy

Detractors of the carbon tax say that the additional cost borne by businesses and individuals will see higher prices for consumer goods and this will cause a slowing of the overall economy and an increase in the unemployment rate as companies, due to a heavier tax burden, look for savings by reducing their individual work forces.

The benefit of a carbon tax, in theory, is that it forces people to reflect on their energy consumption habits and reduce their energy use so that their tax is also reduced. It also encourages the development of alternative energies and these technological advancements assist the economy to diversify, assisting its growth.

Business leaders, when faced with a flat carbon tax, to minimise its effect should consider first a carbon audit of all activities associated with its business. This information would be valuable to justify the amount of tax charged. Furthermore, energy sources that have a more favourable carbon pricing structure should be substituted. If possible, green energy alternatives should be utilized as this strategy would effectively reduce the on-going carbon tax payable. An additional benefit of substituting green energy alternatives would be a more favourable public image of the company that results with an increase to its business.

What is a Cap and Trade System?

A second system, besides a flat carbon tax exists, known as Cap and Trade. Government officials set a limit of carbon emissions that each industry can produce, thus “capping” the amount that can be released into the atmosphere. For each individual business within an industry, an emissions quota is provided in the form of carbon permits.

A theoretical example is the car manufacturing industry. The overall cap set by the government would equal the total emissions permits granted to Ford, Honda, Toyota, and General Motors and so on. Emission permits would be specific to the company.

If a company uses more carbon than it has permits for, a tax is charged on this excess in the form of the purchase of additional permits through government auction or from companies that have reduced their carbon pollution, thus having excess unused permits. For companies that reduce their carbon output, an additional revenue stream is created.

With each successive year, the overall cap is lowered providing incentive for businesses to invest in methodologies that reduce their carbon output.

In comparison to a flat carbon tax, the major advantage is that more incentive exists as businesses, by lowering their greenhouse gas production, can effectively reduce the tax paid on carbon use.

If a company's carbon use is less than the number of carbon permits granted than these excess permits can be sold creating an additional revenue stream.

The major disadvantage is that trading carbon makes it a commodity. And as with other commodities, carbon is exposed to price fluctuations, speculation and government policies.

For example, **carbon leakage** occurs when a business relocates to a jurisdiction offering more generous allowances or lower prices for carbon permits.

In Ontario, the carbon emissions threshold for mandatory participation in the cap and trade program is 25,000 tonnes. For businesses producing 10,000 to 25,000 tonnes, voluntary participation is possible.

Selling Carbon Permits

Ontario has agreed to join Quebec and California in forming the **Western Climate Initiative**. (WCI) This organisation is essentially a tracking system that monitors the sale of both carbon emission permits and offset allowances.

While there are numerous electronic databases, carbon trading mechanisms (called schemes) and brokers that offer the opportunity to trade carbon, it would be prudent for businesses in Ontario to limit their participation to the WCI.

The carbon market is not as highly regulated as other equity markets or financial institutions. Companies must note that trading schemes and databases not aligned with Ontario, despite promoting the sale of "registered" permits, may not have these permits recognized by the Province.

Long term speculation on carbon permits is not advised. Since November of 2014, the price of carbon permits has decreased 32%. As governments lower the cap each year, this will force companies to implement greenhouse gas reduction strategies that will create an oversupply of carbon permits. One can expect the price to reflect this oversupply.

Like other commodities, carbon permits can be shorted. This practice would require the knowledge and expertise of a broker experienced with the trading of carbon. As with any short play, there is excessive risk and it is not a recommended strategy.

What are Carbon Offset Credits?

Unfortunately, some businesses cannot reduce their greenhouse gas emissions sufficiently to meet government reduction quotas. This may be due to the nature of the business, such as the operation of a transportation company, or the fact that the technology needed to reduce greenhouse gas emissions is not scalable or the cost of

implementing this technology is excessive. Thus, these companies face the possibility of purchasing additional carbon credits every year, either through government auction or from businesses with additional credits to sell.

There is a second mechanism available and that is the purchase of carbon offset credits. It is through this mechanism that businesses can become “**carbon neutral**”, that is the amount of greenhouse gases produced by the company equals the amount of greenhouse gases removed from the atmosphere.

Since global warming affects the entire planet, a reduction of greenhouse gases, no matter where it takes place, reduces overall global warming. So an environmental project in western Canada, or in Brazil or in China that is removing greenhouse gases from the atmosphere, say through reforestation, can issue registered carbon offset credits to businesses that invest in the project.

A business then can apply these carbon offset credit against their own production of greenhouse gases, lowering or eliminating the need for the purchase of additional carbon credits from government or other companies with excess credits to sell.

The locations for many of these carbon offset projects are in Third World countries on the African, Asian or South American continents. This is due to the project having a lower operating cost than a similar project in a developed First World nation.

Businesses in Ontario have to consider several implications before purchasing carbon offset credits.

Carbon offsets may be seen in a positive light if they fulfill the **Corporate Social Responsibility** (CSR) obligations as outlined by the Government of Canada. Investments in these projects assist Third World countries to grow and diversify their economies. A positive public image is created for the company.

The purchase of carbon offsets can be framed by the business as a short term solution that provides additional time for the company to implement local greenhouse gas reductions.

But a negative reaction is also possible as the local community may see the purchase of carbon offset credits as just a method to buy out of the responsibility to reduce greenhouse gases locally.

The cost of purchasing carbon offset credits may or may not be more expensive than carbon permits issued by the government. Ontario businesses that use only carbon offsets and fail to act on their own situations will always face increased tax costs, due to the fact that the cap for carbon is lowered each year by the government. As a result,

businesses that fail to act will be required to increase the number of carbon credits or carbon offsets purchased with each successive year.

As well, due to the number of carbon offset projects throughout the world, it is important for the government to recognize the project as legitimate as defined by the concepts of additionality and the gold standard.

What is Additionality?

It is important for Ontario businesses to address this concept of additionality. This means that the carbon offset project must remove greenhouse gases that are produced above and beyond the project's normal "business as usual" operations.

If a project by its nature already removes greenhouse gases, and a company buys offset credits from it to claim against its own pollution, if there is no additional increase in the removal of GHG by that project, then there is no benefit that the project can issue for the company to claim.

The previous baseline rate of removal has to be expanded. The difference between the original amount of GHG reduction and the new elevated amount of GHG reduction can then be claimed as an offset credit because the new level is additional. The overall amount of global greenhouse gas is reduced.

It is important for Ontario business leaders to inquiry if any carbon offset project meets this guideline.

What is the Gold Standard?

The Ontario government may require that carbon offset project meet the Gold Standard.

The Gold Standard was established in 2003 under the direction of the United Nations Clean Development Mechanism. It is now endorsed by approximately 80 NGO's providing certification for 1,100 projects in 70 countries.

The Gold Standard describes the benchmarks required for a project to meet not only for the removal of greenhouse gases but also wider sustainable beneficial environmental impacts as well.

For example, for a project to meet the Gold Standard, it must demonstrate:

- rigorous and regular measurement of objectives
- transparency and public sharing of data
- strong governance
- breadth of impact featuring both social and environmental dimensions
- higher credibility and protection against risk

It is imperative that if Ontario business leaders require the use of carbon offset credits, they ensure that the project selected must meet the Gold Standard. It is possible that carbon offset credits from projects not accredited with the Gold Standard, may not be recognized by the Ontario government.

Conclusion

The purpose of this report was to provide a condensed explanation of carbon trading and the upcoming cap and trade system to be implemented in Ontario.

Ontario business leaders should consider the following questions in their preparation for the impacts of global warming and the new reality of paying for their production of carbon dioxide and other greenhouse gases.

- a) What exposure do my businesses have to the environmental, social and political fallout from global warming? To protect these assets, what are our action plans?
- b) What is the amount of greenhouse gases produced from our annual audit?
- c) What technologies are available, and their implementation costs for each?
- d) What are our 1, 3 and 5 year plans for reducing greenhouse gas emissions?
- e) What will be the amount of tax payable for carbon credits at \$10, \$20 or \$30 per tonne? How will this affect our business?
- f) Through the WCI, what companies regularly trade carbon permits? Is this strategy an action that should be considered?
- g) What are the impacts to our business by purchasing carbon offset credits?

If asked forty years ago if the Berlin Wall would fall, or thirty years ago if the collapse of the Soviet Union would occur, or ten years ago what would be the impact of social media and the internet, very few people would have predicted these events and the impact of each.

Business leaders need to plan proactively for the impact of global warming and also how to respond to it by adapting to the new reality of being held accountable for the amount of carbon their businesses utilize.