



MASTER OF PUBLIC POLICY

CAPSTONE PROJECT

Alberta's Carbon Policy: A Work in Progress

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Capstone Executive Summary

Alberta’s current carbon abatement policies have not achieved the goals set out by the provincial government’s climate change strategy. With the legislation expiring next year, a new policy must be introduced to help improve Alberta’s environmental stewardship. What has recently begun to be talked about is increasing the current 15\$ penalty levy to 40\$ and increasing emissions reductions from 12% to 40%. This is a move in the right direction but if it will be enough to help the government achieve their goals and what the impact on the industry will be is still uncertain. By closer examining the current Alberta levy, looking at other carbon policies from around the world and assessing any new proposal through the tax criteria’s of efficiency, administration costs and comprehensibility and compliance costs, one can better evaluate the potential impact of an increase to the current Alberta carbon reduction strategy.



The World has entered into a carbon restrained-environment. Carbon taxes have been introduced in Europe and North America; Presidents, Prime Ministers and Politicians from all around the globe are lining up to position themselves as green candidates. Even the more forward thinking resource companies are beginning to put a priority on environmental improvement. Nowhere will this be truer than the Alberta oil sands, the world's eyes are on this industry. Alberta must ensure that it is at the forefront of environmental stewardship and having a strong government policy to help deal with greenhouse gas emissions is vital. Alberta currently has a modest carbon tax based around a 12% emissions cut per facility that reaches a specific threshold of emissions and a penalty fee of 15 dollars for any emissions that cannot be achieved through efficiency or operational change. Unfortunately it has been shown that this tax will not be enough for Alberta to reach its overall emissions cuts that the government has promised.¹ Alberta will need to strengthen its existing policy in order to make real change and the idea of a 40/40 plan for Alberta has been suggested; this idea is to raise emission reductions to 40% and increase the penalty fee to 40\$. This paper will examine the impact of the suggested increased carbon levy, its impact on the economy, environment and the public. It will also look at the carbon taxes of British Columbia and Norway to draw on what has and has not been successfully in the past. The paper will then proceed to look at the potential impacts of the proposed 40/40 plan and how it may be implemented by evaluating its main objectives and examining it through the tax criteria's of efficiency, administration costs and comprehensibility and compliance costs. Finally the paper

¹ Alberta. Environment and Sustainable Resource Development. *2012 Greenhouse Gas Emission Reduction Program Results*. Web. 08 Sept. 2013. <<http://environment.alberta.ca/04220.html>>.

will comment on if the 40/40 plan is plausible and if there are any issues that the government must be aware of.

Literature Review

The majority of sources used throughout this paper were obtained online using peer-reviewed journals, relevant corporate and NGOs reports and direct government sources, all of which are available online. There were three main areas of study in this paper- Tax theory, current taxes and the potential 40/40 plan; each of which had a distinct group of both primary and secondary sources. The first area of study was research related to tax theory, both in the area of drawing on the theory of environmental taxes and also on the setting of the criteria's for evaluating the Alberta tax. Some of the sources used for this research was; Arthur Pigou, who is credited with creating the Pigovian tax; the concept of needing to tax negative externalities. To more modern sources such as Mintz and Olewiler's study on the implementation of new carbon taxes. By drawing on Academic sources, this paper was better able to draw from a large body of tax theory to evaluate and understand current tax structures and issues.

The second area of research was an evaluation of current taxes, here there was both a wide variety of secondary and primary sources to utilize. For primary sources, this paper drew heavily on government sources for data to examine current taxes. The governments of Norway, British Columbia and Alberta all had easily available and current information posted online. Some areas of this included emissions numbers, revenue collections, tax rates and compliance actions. By

using primary data from government it was possible to view real numbers and see the actual impact of these taxes. On top of data, this paper also relied heavily on private sector and ENGO reports on current taxes. These secondary sources written by experts offered an educated and insightful view on the current successes and failures of the tax. One issue that had to be accounted for when using these studies were that numbers varied greatly depending on biasness, political views and sector. It was necessary to view every source with some hesitation and ensure that numbers were not too extreme and also it was necessary to try to balance both sides.

The third area of study represented the most difficult area to find sources; because the 40/40 plan has yet to be finalized there were not as many sources on the subject. One area that was vital was media sources; this paper used these sources not for research purposes but to quote government and industry sources. By drawing on primary quotes it was possible to better try and chart what might occur in the future. Again a number of ENGO and Industry reports were vital to the research process. Both First Energy Capital and The Pembina Institute had begun to do research on the potential impact of the 40/40, and their research was integral in determining the impact of the increase in the carbon tax. It was also useful to use government sources and to use these numbers to calculate the potential impact of the 40/40, these primary numbers were important in better examining the increase in the Carbon Abatement policies.

Environmental Tax Theory

Before examining the current Alberta carbon levy it is necessary to briefly mention that there are many different forms of carbon abatement policies such as the Mintz-Olewiler approach similar to the tax introduced in British Columbia which puts the tax on the consumer at the pump. Or an approach similar to Alberta, where the tax is put on the producer for emissions released during extraction or a tax like in Norway that does both. The differences between these approaches will be highlighted later in the paper, for now the important thing about carbon abatement policies is that they are an attempt to internalize the cost of externalities. As Mintz and Olewiler explained in their paper, *A Simple Approach for Bettering the Environment and the Economy: Restructuring the Federal Fuel Excise Tax*,

The general principle of environmental taxation is to set the tax equal to the difference between the private marginal costs of producing and using the good, and the full social costs of production and consumption including all environmental consequences. In other words, the full environmental costs of a polluting activity should be reflected in the price.²

Although it would be very difficult to ever completely account for all the negative externalities that are associated with resource use, from the extraction to the consumer at the pump. There are

²Mintz, Jack, and Nancy Olewiler. *A Simple Approach for Bettering the Environment and the Economy: Restructuring the Federal Fuel Excise Tax*. Sustainable Prosperity, 2008. Web. 08 Sept. 2013. <<http://www.sustainableprosperity.ca/dl447&display>>.

ways to tax specific areas or groups of a society and introduce a price for carbon within this area and this in turn will reduce GHG emissions. Any government setting a policy must decide if they are to put the tax on the consumer or the producer. If it is a tax placed on the consumer it may be at the gas pump or a tax added on objects that use more energy such as bigger homes or larger cars. If it is placed on the producers then the most common form of taxation is to create emissions standards and any company, project or group who exceeds these standards are then forced to pay some form of penalty. Simply putting a price on carbon is likely to do little to decrease emissions without their being an incentive for industry to reduce the emissions on their own.

Here, two main theories have come forward on how best to encourage business to reduce emissions: carbon tax and a cap-and-trade system. At the heart of both of these policies is the idea that government will create standards that they believe to be acceptable and from there create a way for companies to either benefit from improving their performance or a mechanism of punishment for those who cannot. In a cap-and-trade system the government will decide how much emissions a certain group or industry is allowed to produce and give them an amount of credits which enables them to operate. If the operation exceeds their credits then they will be forced to buy credits from other companies who were able to cut emissions. This creates a positive incentive for companies to reduce emissions by using market-mechanisms and allowing private companies to do what is best for their business. This is different from a carbon tax where government changes a price to achieve a reduction in emissions (which is not known ex ante).

Another version of the tax is to assess a levy for emissions beyond a certain emission level and sets a determined amount of reductions and any company who does not reach the reduction must pay some sort of penalty. Many carbon taxes such as the one in Alberta does offer companies the ability to purchase credits from businesses who have voluntarily reduced their emissions which is similar to cap and trade. But no company would pay more than the set penalty and therefore the market is very limited and does not operate the same as under cap-and-trade.

The true difference between cap-and-trade and carbon tax lies in that under a cap-and-trade system there is a set level of emissions allowed but no set price and in carbon tax system there is no set limit on quantity of emissions but there is on price. The cap-and-trade system has had many issues that have prevented it from being viewed as a perfect system. Due to political problems and the uncertainty of price, cap and trade has not had the success that many had hoped for. Cap-and-trade appears to be a system that is complicated both for industry and government and with the Alberta oil industry putting a precedence on certainty and ease of compliance; cap and trade is not the choice for Alberta. It appears as though the government will choose to strengthen the current Alberta tax in an attempt for it to have a stronger effect. Before examining any potential impacts of increasing the levy it is necessary to take a closer look at the current Albertan carbon abatement policy.

The current Alberta policy has been called a number of different names from a carbon tax to a carbon levy. The majority of media has referred to the current system and also the newly proposed 40/40 plan as a carbon tax and some have begun to refer to it as a levy. In reality, the current system is not a tax but rather more of a set of regulations with a penalty fee and corresponding credit market. This complicated situation combined with the misuse of the term tax by the media has led to a situation where three or four words refer to the same policy. Throughout this paper, the words carbon tax, levy or carbon abatement policies all refer to the current structure of the Alberta policy.

Alberta Carbon Levy

On July 1st, 2007, Alberta became one of the first jurisdiction in North America to introduce a carbon levy or as it is referred often in the media a carbon tax. With the introduction of the Specified Gas Emitters Regulation, the government established that all major facilities who produce over 100,000 tonnes of CO₂ per year must reduce their emissions by 12% of 2005 levels.³ Companies can try to achieve these reduction cuts through improving their own practices and making their operations more efficient. If they cannot meet the 12% reduction, they have three options for compliance. The first is to purchase off-set credits, these credits can be

³ Specified Gas Emitters Regulation, Alta Reg 139/2007, s 5 Web. 08 Sept. 2013.
<<http://canlii.ca/t/5229t#sec5>>

purchased from other areas and sectors who have voluntarily reduced amount of emissions.

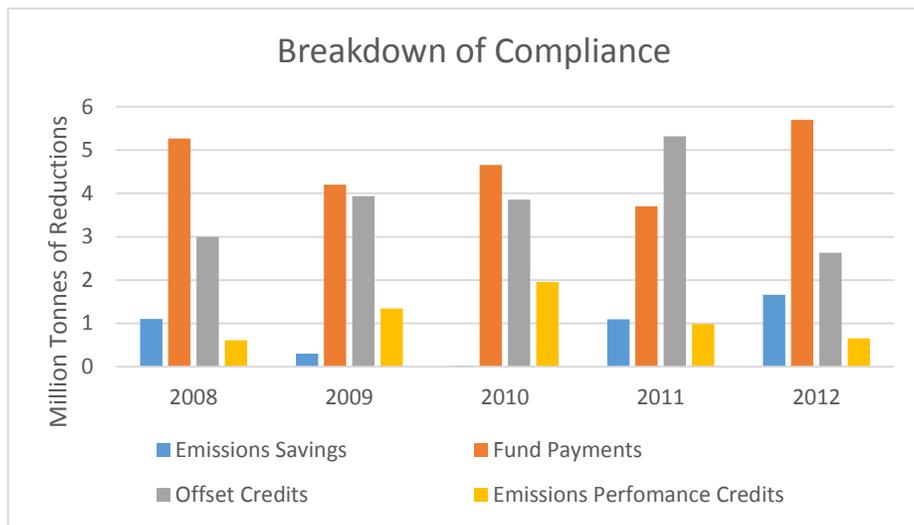
These credits must meet a number of qualifications in order to be approved by government,

- offset must originate from a beyond business as usual action (approved project-type) in a non-regulated sector or operation
- Result from actions taken on or after January 1, 2002;
- Occur on or after January 1, 2002;
- Be real, demonstrable, quantifiable;
- Not be required by law;
- Have clearly established ownership;
- Be counted once for compliance purposes;
- Be verified by a qualified third party; and,
- Have occurred in Alberta.⁴

Companies who are able to meet all of these qualifications then registry with the Alberta carbon credit registry and from there the credits can be bought and sold to companies that were not able to meet their own reductions. Many of the off-set credits have occurred from non-oil and gas operation such as agriculture and wind farms and also a large number of credits are given out for Carbon Capture and Storage. According to the government of Alberta, in 2012 a total of 2.63 million tonnes of emissions were reduced as a result of credit trading. Second, companies who out perform their emissions reductions are then given emission performance credits which they can use to save for future use and this in total has led to a 0.65 million tonne reduction in 2012. These two options combined with the 1.66 million tonne reduction from improvements at facilities has led to an overall reduction of 39.9 million tonnes in total since the introduction of

⁴ Alberta. Environment and Sustainable Resource Development. Alberta Offset System Offset Project Plan (Version 3, February 2013). Web. 08 Sept. 2013. <<http://environment.gov.ab.ca/info/library/8524.pdf>>. Pg,4.

the carbon levy.⁵ The third option for emissions compliance is companies can contribute 15\$ per tonne of GHG over their reduction targets to the Climate Change and Emissions Management Fund (CCEMF).⁶



This fund then transfers the money over to the Climate Change and Emissions Management (CCEMC) Corporation, who then funds projects who meet the set out conditions in the legislation.

(3) The Fund may be used only for purposes related to reducing emissions of specified gases or improving Alberta’s ability to adapt to climate change, including, without limitation, the following purposes:

- (a) energy conservation and energy efficiency;

⁵ Alberta. Environment and Sustainable Resource Development. 2012 Greenhouse Gas Emission Reduction Program Results. Web. 08 Sept. 2013. <<http://environment.alberta.ca/04220.html>>.

⁶ Alberta. Environment and Sustainable Resource Development. Climate Change and Emissions Management Fund. Web. 08 Sept. 2013 < <http://environment.alberta.ca/02486.html>>

⁷ Alberta. Environment and Sustainable Resource Development. Greenhouse Gas Reduction Program Web. 08 Sept. 2013 < <http://environment.alberta.ca/01838.html>>

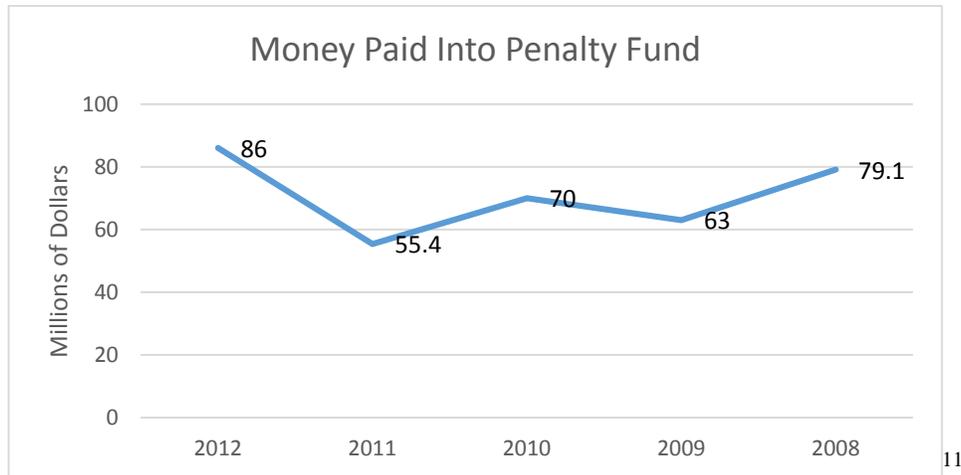
- (b) demonstration and use of new technologies that emphasize reductions in specified gas emissions in the discovery, recovery, processing, transportation and use of Alberta's energy resources;
- (c) demonstration and use of new technologies that emphasize reductions in specified gas emissions through the use of alternative energy and renewable energy sources;
- (d) demonstration and use of specified gas capture, use and storage technology;
- (e) development of opportunities for removal of specified gases from the atmosphere through sequestration by sinks;
- (f) measurement of the natural removal and storage of carbon;
- (g) climate change adaptation programs and measures;⁸

In 2012, the corporation received 86 million dollars from the CCEMF and in total have invested 182 million in a total of 39 separate programs. With the CCEMC stating that they achieve a leverage rate of 4 to1 for every dollar they spend, which means that the CCEMC is involved in close to a billion dollars of investment.⁹ According the CCEMC, the combined impact from all of the projects that they have invested will lead to a 7 million tonne reduction of emissions over the next ten years.¹⁰

⁸ Climate Change and Emissions Management Act, SA 2003, c C-16.7, s 1 Web. 08 Sept. 2013. <<http://canlii.ca/t/522kh#sec1>>

⁹ Alberta. Environment and Sustainable Resource Development. 2012 Greenhouse Gas Emission Reduction Program Results. Web. 08 Sept. 2013. <<http://environment.alberta.ca/04220.html>>.

¹⁰ CCEMC. Climate Changes and Emissions Management (CCEMC) Corporation 2013-2016 Business Plan., 2013. Web. 10 Sept. 2013. <<http://ccemc.ca/wp-content/uploads/2013/01/Business-Plan-2013-2016-v4-with-budget-Final.pdf>>.

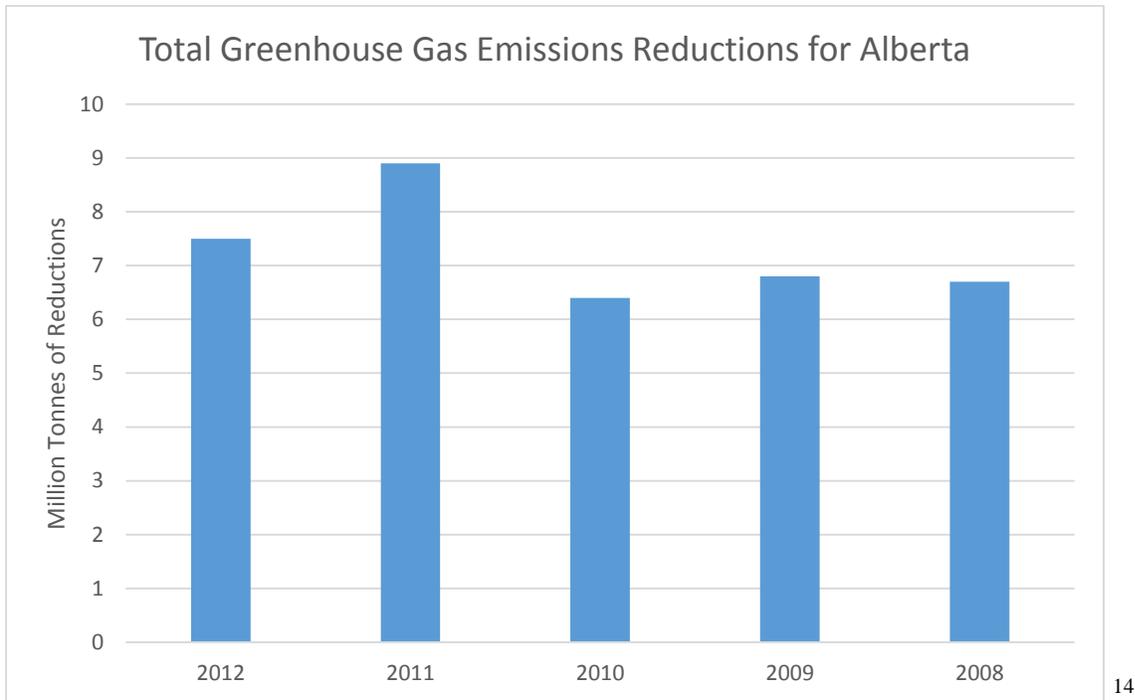


The Carbon tax has led to no decrease of CO₂ being released since 2008 but it has not come close to helping the province achieves its goals that it stated in its 2008 climate change strategy.¹² The Alberta government in their 2008 climate strategy set out a goal to reduce annual emissions by 20 MT by 2010. This goal was not achieved and it appears as though the Alberta government will miss their target of 50 million tonnes of annual reductions by 2020.¹³

¹¹ Alberta. Environment and Sustainable Resource Development. Greenhouse Gas Reduction Program Web. 08 Sept. 2013 < <http://environment.alberta.ca/01838.html>>

¹² Alberta. Environment and Sustainable Resource Development. Alberta's 2008 Climate Change Strategy, 2008. Web. 08 Sept. 2013. < <http://environment.gov.ab.ca/info/library/7894.pdf>>

¹³ Dyer, Simon, Matthew Bramley, Marc Huot, and Matt Horne. *Responsible Action? | An assessment of Alberta's greenhouse gas policies*. Pembina Institute, Web. 08 Sept. 2013. <<http://www.pembina.org/pub/2295>>.



*Excludes Payments into the CCEMC and includes recognition of cogeneration.

There are number of issues with the tax in its current form that have become evident in the last five years that need to be addressed; issues such as price, low reduction amounts and tax base have undoubtedly had their impact on the failures of the strategy but the underlining and overarching issue is the lack of clarity on the overall objective of the tax. If the objective is, as it appears in the media, is to improve the oil industry rather than reduce overall provincial emissions; than the current form of tax is a sound choice but there are many issues that need to be dealt with and the current structure needs to be improved.

¹⁴ Alberta. Environment and Sustainable Resource Development. Greenhouse Gas Reduction Program Web. 08 Sept. 2013 < <http://environment.alberta.ca/01838.html>>

One of the most glaring issues with the current carbon tax is the price, 15\$ per tonne has done very little to change the behaviour of the industry. This price has little impact on the economic modelling for most major oil companies. With a price so low many companies simply choose to pay into the technology fund or to buy even cheaper off-set credits, with their being little incentive to reduce emissions, the low price of carbon has led to very little overall reduction in emissions.¹⁵ Another issue is the reduction emissions level, at 12% many believe that this number does not put enough pressure on industry. If Alberta is serious about reducing GHG emissions and are willing to raise the price to a level that changes industries behaviour then there are many who believe we must raise reduction amounts in order to make substantial chance. In a report by the Pembina institute titled *Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies*, they say that by having 12% reduction means that only a very small amount of emissions have a cost and this leads any tax to be spread out and have a smaller impact. In order for the tax to be successful, reduction targets need to be much higher. These issues have shown to be true in the last five years but with outside pressure and the expiry of the Specified Gas Emitters Regulation act on September 1st, 2014, new regulations will soon be introduced and many of these issues will be addressed in the new regulations.¹⁶

Different Carbon Abatements Policies

¹⁵ Dyer, Simon, Matthew Bramley, Marc Huot, and Matt Horne. Responsible Action? | An assessment of Alberta's greenhouse gas policies. Pembina Institute, Web. 08 Sept. 2013. <<http://www.pembina.org/pub/2295>>.

¹⁶ Specified Gas Emitters Regulation, Alta Reg 139/2007, s 5 Web. 08 Sept. 2013. <<http://canlii.ca/t/5229t#sec5>>

Before examining the potential new proposal that the Alberta government may introduce, it would be beneficial to examine other carbon abatement policies from around Canada and the World. Many different jurisdictions have tried a number of different approaches for reducing carbon emissions and they have had a varying degree of success. By evaluating other approaches, it is possible to see what may work for Alberta or to see what may not work; and the two best examples are the British Columbian and Norway carbon tax.

British Columbia Carbon Tax

The British Columbian tax was brought into effect on July 1st, 2008 and it was designed to be a revenue-neutral carbon tax placed on the consumption of fuel. It was introduced at a rate of \$10 per tonne of Carbon Dioxide Equivalent and this amounted to a rate of 2.4 cents per litre for gasoline and varied on other fuel sources. The carbon tax was also designed to increase by 5 dollars per year with it reaching a maximum of 30 dollars on July 1st 2012 which accounts to a rate of 6.67 cent per litre.¹⁷ Following this final planned increase the British Columbian government decided to examine the price and impact of the carbon tax as part of their budget 2013. Following the review the government decided to not change the tax rates, bases or where the revenue goes and has not mandated any further review for the next three years. This carbon tax appears to have been very successful for British Columbia in the period from 2008-2011, the province saw a 15.1% drop in fuel use covered by the tax. To eliminate other impacts such as an

¹⁷ British Columbia`. Ministry of Finance. *How the Carbon Tax Works*. Web. 08 Sept. 2013. <<http://www.fin.gov.bc.ca/tbs/tp/climate/A4.htm>>.

increase in gas prices, this number must be compared the rest of Canada which during this same period saw the rest of the country have an increase in fuel consumption by 1.3%.¹⁸

This dramatic difference of 16.4% is large enough to show that there was a substantial drop in gasoline consumption but how much and if the carbon tax was responsible is tough to determine. Following the introduction of the carbon tax, the world entered into a recession that may have influenced individual's consumption as well as slowed the economy and industry which in turn may have led to a drop in consumption. Although the overall success of the tax is still difficult to discern without more analysis and data, it does appear to have some beneficial qualities. A recent report by Nicholas Rivers and Brandon Schaufele from the University of Ottawa stated that the 7 cent increase in gasoline cost due to the tax had a five times larger impact on decreasing oil consumption than had the price been raised by the same amount due to normal price increase.¹⁹ According to the study the reason for this was because the visibility of the tax, people knew it was increasing and the media focused heavily on the increase of price which sent larger market signals than the traditional price increase.

¹⁸ Thiessen, Lee, and Tom Pedersen. B.C.'s Carbon Tax Is Driving down Emissions. Sustainable Prosperity, n.d. Web. 10 Sept. 2013. <<http://www.sustainableprosperity.ca/article3558>>.

¹⁹ Rivers, Nicholas, Brandon Schaufele. Carbon Tax Salience and Gasoline Demand, 2012. University of Ottawa. <<http://www.ie.uottawa.ca/dl110&display>>

Another important aspect of this tax was the promised revenue neutrality. When the policy was proposed the government promised that all monies collected would then be returned to British Columbians through tax rate decreases. According the 2013 British Columbia budget, in 2011/12 the BC Government collected a total of 959 million dollars as a result of the carbon tax and reduced taxes by 1.141 billion dollars.²⁰ The main use of this money was to reduce income tax by 5% for the lowest two brackets, a decrease of 1% for corporate taxes at the high end and a reduction of 2% for small businesses, and a 115 dollar rebate for low income citizens and a 200 dollar credit for rural British Columbians.²¹ The main promises of this bill which were to lower fuel consumption and GHG emissions and to keep it revenue neutral has been extremely successful and on top of this it appears as GDP growth has gone unaffected as BC has slightly outperformed the rest of the country.²²

It appears as though the British Columbian carbon tax has been a moderate success, it has achieved its set out purposes and has had as small of an impact as possible on the rest of society. But this does not mean that this is the model that Alberta should adopt, the issues in Alberta are much more complex and very different. Much of BC energy is hydro-electric while Alberta has a large oil and gas industry. If the goal of the Albertan government was to reduce overall GHG

²⁰ British Columbia. Ministry of Finance. Budget and Fiscal Plan 2012/13-2014/15. Web. 08 Sept. 2013. <http://www.bcbudget.gov.bc.ca/2012/bfp/2012_Budget_Fiscal_Plan.pdf> Pg,66.

²¹ Ibid, pg,67.

²² Thiessen, Lee, and Tom Pedersen. B.C.'s Carbon Tax Is Driving down Emissions. Sustainable Prosperity, Web. 10 Sept. 2013. <<http://www.sustainableprosperity.ca/article3558>>.

emissions for the province, the BC option very well could work. But the issue that Alberta is trying to deal with is GHG released during the extraction of oil and gas, and lowering the amount of fuel consumed province wide would do little to impact the oil industry. Rather Alberta must find a tax system that impacts industry and not the consumer.

Although the BC carbon tax would not work in Alberta there are a number of features that are of relevance to Alberta. The first is the revenue neutral aspect of the tax, currently the Alberta levy does not generate any money for general revenue and therefore cannot be used to lower taxes. But with an industry who is skeptical of an increase in the price of carbon and who is likely to complain that any increase will lead to lost revenue and potentially could make many projects uneconomically viable. A promise of lowering corporate taxes may make the industry feel more comfortable with the idea of an increased levy. Second, the planned increases of the tax was ushered in over a number years, the increases were mandated and publically available with their being a mandatory review period following the final increase. This may be an important tool for introducing a new tax in Alberta, with industry and ENGOs suggesting tax rates very different from one another it may be necessary to gradual increase price to determine the amount that works. These are two issues that will be very important in the discussion of the increasing the Alberta levy. The paper will go on to examine both of these ideas later on.

Norway Carbon Tax

Norway has always been held as an example of how to deal with oil resources, the way they have handled oil revenues is something Albertans should be jealous of. This was no different for environmental regulations, Norway was one of the first countries to introduce a carbon abatement policy in 1991 when they introduced a CO₂ tax. This tax was put on both the consumption of fuel by the consumer and on the offshore extraction of oil and gas. The current tax on gasoline consumption is 222 Norwegian Krone per tonne of CO₂ which is equivalent to around 38 dollars Canadian and the tax on resource extraction was recently doubled to the amount of 410 Krone per tonne of CO₂ which equals around 70 dollars Canadian.²³ In the time since this tax was introduced the Norway tax system has become more comprehensive and complex, they have taxes on fuel consumption by consumers, a tax on industry and they must also operate within the European Union's emission trading scheme. There are many different rates and also a number of exemptions and tax credits that have led to a very complicated and expensive system. The majority of exemptions are for industries that need to compete internationally and would be gravely affected by an increase in price. Many critics have claimed that this tax has not worked as emissions in Norway have increased by 15% since 1991, although this number may make it appear as though the tax is not working, in truth when you compare to the fact the Norwegian economy has grown by 70% in that time and when you compare it to other European countries' emission growth, the carbon taxes in Norway have had some effect.²⁴

²³ Norway. Ministry of Finance. -Green Taxes 2011. Web. 10 Sept. 2013.

<<http://www.regjeringen.no/en/dep/fin/Selected-topics/taxes-and-duties/green-taxes-2011.html?id=609076>>.

²⁴ Johnson, Keith. "Emissions Impossible: Norway Taxes Carbon, Emissions Rise." The Wall Street Journal. 30 Sept. 2008. Web. 10 Sept. 2013. <<http://blogs.wsj.com/environmentalcapital/2008/09/30/emissions-impossible-norway-taxes-carbon-emissions-rise/>>.

The majority of revenue that is collected from these taxes is directed towards general government revenue. It is challenging to see exactly where this money goes but it is likely that it has had many positive impacts for the people of Norway, high government spending with average tax rates, no national debt, a wealth fund of over 700 billion dollars and a strong pension fund are all aspects that revenue from the CO2 taxes have likely helped to fund. Recently following the announcement of increasing the price of carbon for oil production, the Norwegian government created a fund to help protect forests in the developing world and also a technological fund to help foster green technology.²⁵

Often Alberta is compared to Norway, similar population, both jurisdictions are heavily dependent on oil revenue and they produce a similar number of barrels per day, Norway at 1.9 million barrels per day and Alberta at 1.7 million barrels. But there are a number of difference that prevent Alberta from enacting the same policies that the Norwegians have used. The first is federalism, the CO2 tax was implement by the national government who had the legal ability to issue a blanket mandate on the entire nation. This is not possible in Canada, where due to jurisdictional issues all government policy must be held in light of how ten provinces will act. The jurisdictional debate would lead to provinces arguing for standards, exemptions and taxes

²⁵ Norway. Ministry of Environment. The Government Is following up on the Climate Agreement. Web. 10 Sept. 2013. <<http://www.regjeringen.no/en/dep/md/press-centre/Press-releases/2012/the-government-is-following-up-on-the-cl.html?id=704137>>.

that suit their specific needs the best and it would make the process complicated, adversarial and inefficient.

Another strong difference between Alberta and Norway is that in the Scandinavian country, the largest producer of Oil, Statoil is an organization 67% owned by the government and with this company conducting 60% of oil production in Norway it makes introducing taxes and emission standards on the industry much more easy.²⁶ In Alberta, it is a number of privately owned corporations and it is much tougher to implement regulations. In almost all aspects of policies in Canada someone will eventually bring forward a comparison to one of the Scandinavian countries if it be about healthcare, immigration or social policies. This is no different for the environment, with Norway having one of the strongest carbon abatement policies in the world, it is often used by ENGOs and environmentalists as a benchmark. Although the Norway system has been successful, it would be very hard for this to be implemented in Alberta due to jurisdictional and ownership issues.

Another problem with this tax system is that due to the varying tax rates and exemptions it is very confusing and costly tax structure that costs business and government time and money. Because of this and other issues that will discussed later, Alberta's new levy should be simple

²⁶ Stat Oil. *Top 20 Shareholders*. Web. 10 Sept. 2013.
<<http://www.statoil.com/en/InvestorCentre/Share/Shareholders/Top20/Pages/default.aspx>>.

and have blanket standards and cut offs that are easy to understand and simple to implement across the industry.

40/40 Plan

There has been no firm word from the Alberta government on the date or the structure of the new carbon tax but the benchmark of a new 40/40 plan has been what the media and industry have begun to focus on. Details of the actual workings of the tax have yet to be released but many assume that the new plan will be structured similarly to the current levy and the only difference will be an increase in the price of the penalty levy from \$15 to \$40 and increasing the reduction amount to 40%. These numbers are a significant increase to the current prices we have but if the structure remains the same it is possible to look not only at past issues but to account for and try to evaluate the future impact of the tax and how it may operate. The best way to examine the likelihood of a successful tax is to highlight the intended objectives of the tax and to evaluate the tax in light of the concepts of efficiency, comprehensibility and compliance and administration costs. By taking a closer look at how the current tax fared in these areas and then using current data to shed light on the potential impact of the 40/40 plan, one will be better able to prepare for the future.

Economic Efficiency

An important aspect of the overall efficiency of the carbon tax is the reduction amount, an increase by 25% is a very sudden jump and ensuring that companies will be able to achieve this number is vital. According to research conducted by IHS CERA, over the next two decades

greenhouse gas emissions from SAGD facilities likely could see a decrease in overall emissions from technological improvement ranging anywhere from 5% to 20% and mining operations could see a further 5% decrease of current levels.²⁷ This combined with the uncertain future and success of Carbon, Capture and Storage which for five years was a focal point of the Alberta government's strategy to reduce emissions;²⁸ it may be difficult for many companies to achieve emissions reductions through technological and procedural change. If overall emission reduction levels are too high than this will become a very inefficient system that could potentially destroy the industry.

According to a study conducted by the School of Public Policy at the University of Calgary by Trevor Tombe and Jennifer Winter entitled *The Importance of Policy Neutrality for Lowering Greenhouse Gas Emissions*, in a threshold specific system like Alberta, having the option to pay a penalty fee helps to reduce inefficiency and mitigate large negative economic affects. By allowing companies who cannot reach their emissions cuts through physical practices to pay a fine then overall reduction is not as important as companies can achieve cuts regardless of technological advances. But as the research says if the fine is too small this may lead to companies simply paying the fine rather than attempting to reduce emissions.²⁹ If the objective

²⁷ IHS CERA. Oil Sands Technology Past, Present, and Future, 2010. Web. 08 Sept. 2013.

<<http://a1024.g.akamai.net/f/1024/13859/1d/ihsgruop.download.akamai.com/13859/ihs/cera/Oil-Sands-Technology-Past-Present-and-Future.pdf>>. Pg.4.

²⁸ Alberta. Environment and Sustainable Resource Development. Implementing Carbon Capture and Storage. Web. 08 Sept. 2013. <<http://environment.alberta.ca/0922.html>>.

²⁹ Winter, Jennifer, and Trevor Tombe. The Importance of Policy Neutrality for Lowering Greenhouse Gas Emissions. School of Public Policy, Web. 10 Sept. 2013.

of the current system was to only raise revenue for a technology fund then a simple flat environmental tax would be better but as the goal is a physical reduction in emissions we must create a penalty large enough to encourage change of practices but that still allows companies an alternative route that is still efficient.

The price of the penalty levy is one of the key criteria's in the implementation and evaluation of this system. Determining the impact of penalty fee and its interaction with the emissions reduction level, the deadweight loss and the overall economic shift it creates is vital in examining its success. When a normal tax is introduced it will inevitably change the price of business for individuals and companies and this shift can lead to inefficiencies and economic losses. This is an important issue in conversations about income versus sales tax or HST versus PST. In these situations the main goal of all governments should be to achieve revenue goals while limiting the amount of economic inefficiencies and try to create a tax that will have as small an impact on the behaviours of business and individuals. This goal and belief is different for a carbon levy, the purpose and objective of this levy is to specifically change the behaviour of business and introduce a higher cost for buying the credit and encourage physical reductions.

If the Alberta government is truly attempting to reduce carbon emissions than it must increase the price to a point that creates economic losses for companies that forces them to respond. With

this being said, the Albertan oil industry is extremely important to the province and the economy and the government must walk a thin line in regards to not to ruining the profitability and vitality of the industry. This area only gets further complicated because of the lack of historical information on the effects of environmental taxes. There are only a handful of taxes like the Albertan model in the world and they have had varying degrees of success in regards to limiting carbon emissions. And if one goes to industry, NGOs or academia you will find conflicting reports and data that drastically differ from each other.

Narrowing down and determining an effective price range is the first step in properly implementing a tax. At the high end, you have ENGOS saying \$40 will not be enough and on the other end you have industry who have claimed that the current tax has already made things less profitable. One of the most important issues for determining the efficiency of this tax is the price of the penalty levy. The two main issues when determining a price is to try and model the cost per barrel and try to determine how this may effect profit and cost benefit-analysis. Second the government must determine at what price a significant enough market signal gets created that will lead to a substantial change in business practices. In terms of the 40/40, the Pembina Institute has appraised that this will lead to an average increase in cost per barrel of \$1.50 and then following interaction with other taxes it would drop to an average of 75 cents per barrel.³⁰ These numbers from Pembina are similar to the appraisal done by First Energy Capital who

³⁰ Dyer, Simon. Pembina Institute. *What You Need to Know about Alberta's 40/40 Carbon Pricing Proposal*, Pembina Institute, Apr. 2013. Web. 10 Sept. 2013. <<http://www.pembina.org/blog/707>>.

stated that an increase to 40 dollars would lead to an increase of 80 cents per barrel after all taxes are accounted for.³¹ Compared to the profits that many oil companies make per barrel, an increase in 80 cents may seem to be insignificant but according to the First Energy report, it could have a major impact on NPV.

For example, a three times SOR project, with \$17 per bbl operating costs (WTI US\$95 per bbl, WCS Diff. 20 per cent and Henry Hub \$5 per mcf), would see reduction in its before tax NPV-10 per cent by 15 per cent (assuming after-tax free cash flow of \$12 per bbl over the project's life). For most producing large scale oil sands assets, the NPV-10 per cent reduction as a result of such a change would be in the order of two to three per cent, says the report.³²

These numbers show that at 40 dollars it does have an impact on net present value and this in turn could affect the profitability of certain operations. This may lead to a further push on organizations to find more efficient and cheaper means to reduce emissions. But if this price and reduction level is enough to achieve overall emission goals is yet to be determined. At the end of the report First Energy Capital said that although raising the price to 40 dollars may hurt economic activity, they believe that external benefits such as pipeline approvals outweigh the

³¹ First Energy. *Is A More Punitive Carbon Tax On its Way?* Report, 2013. Web. 08 Sept. 2013. <http://www.airwaterland.ca/issues/article.asp?article=dob%5C130409%5Cdob2013_a90040.html>

³² First Energy. *Is A More Punitive Carbon Tax On its Way?* Report, 2013. Web. 08 Sept. 2013. <http://www.airwaterland.ca/issues/article.asp?article=dob%5C130409%5Cdob2013_a90040.html>

cost. Many claim that this tax is too high and will slow down economic growth and force companies to pay more for environmental practices. But this is exactly the objective of the tax, to change behavior and to cover the cost of externalities. If a strong carbon price is introduced companies will either need to avoid carbon intensive operations or to change practices and technologies.

Many of the big players in the Alberta oil industry have already realized the need to properly evaluate the cost of projects including environmental costs and have begun to use a shadow price. In a recent report released by Sustainable Prosperity, they interviewed ten large oil companies operating in Alberta; they found that all ten companies used some form of carbon pricing higher than the current levy when evaluating projects.³³ The report then went on to say that the price of carbon in organizations ranged anywhere from 15 to 68 dollars, saying that “the primary factor determining the shadow carbon price among the companies interviewed was the expectation of a legislated carbon price...”³⁴ With the 40/40 plan gaining traction since April of 2013, it is likely that the many of the oil companies have already begun to use a shadow price of at least 40 dollars. This shows that companies are willing and capable of dealing with an increase to 40 dollars. On top of this, the increase is a move in the right direction and will undoubtedly lead to the reduction of more carbon. Many ENGOs will argue for higher a penalty rate with groups like the Suzuki foundation claiming that in order to make real change, the levy would

³³ Sustainable Prosperity, Shadow Carbon Pricing in the Canadian Energy Sector. Sustainable Prosperity, 2013. Web. 08 Sept. 2013. <http://www.sustainableprosperity.ca/dl1015&display> Pg,1.

³⁴ IBID. Pg,7.

need to be above 100 dollars.³⁵ Although this number may be extreme, a 40 dollar levy will be an improvement and it will allow companies and government to adjust and evaluate how things operate at that price and this could lead to an increase of the cost in the future depending on the findings and if the governments has achieved overall reductions levels. The claim that an increase in carbon will cost industry money and change practices is true but this is the intended objective of the tax. Unlike most other taxes its goal is not to have as small of an impact but rather an impact that does drastically change industry and encourage them to cut as many emissions physically as possible but still allows for an efficient but costly alternative.

Comprehensibility and Compliance

Another important criteria when examining the Alberta carbon levy is comprehensibility and the impact this will have on compliance costs; determining the correct tax base and creating a simple tax code is vital to the success of the levy. Under the current system only facilities that produce over 50,000 tonnes a year must report and only those that produce over 100,000 tonnes are mandated to reduce emissions. According to the numbers released by the Alberta government in 2011, a total of 164 facilities produced over 50,000 tonnes and were required to report emissions and of those facilities, 103 reached the 100,000 tonne threshold and were required to cut emissions.³⁶ All 164 facilities, in total produced 123.3 million tonnes of emissions and the 103

³⁵ Climate Leadership Economic Prosperity. Rep. David Suzuki Foundation, 2009. Web. 08 Sept. 2013. <<http://www.davidsuzuki.org/publications/reports/2009/climate-leadership-economic-prosperity/>>.

³⁶ Alberta. Environment and Sustainable Resource Development. Alberta Environment and Sustainable Resource Development: Report on 2011 Greenhouse Gas Emissions, May 2013. Web. 08 Sept. 2013. <<http://environment.gov.ab.ca/info/library/8849.pdf>> Pg, 6.

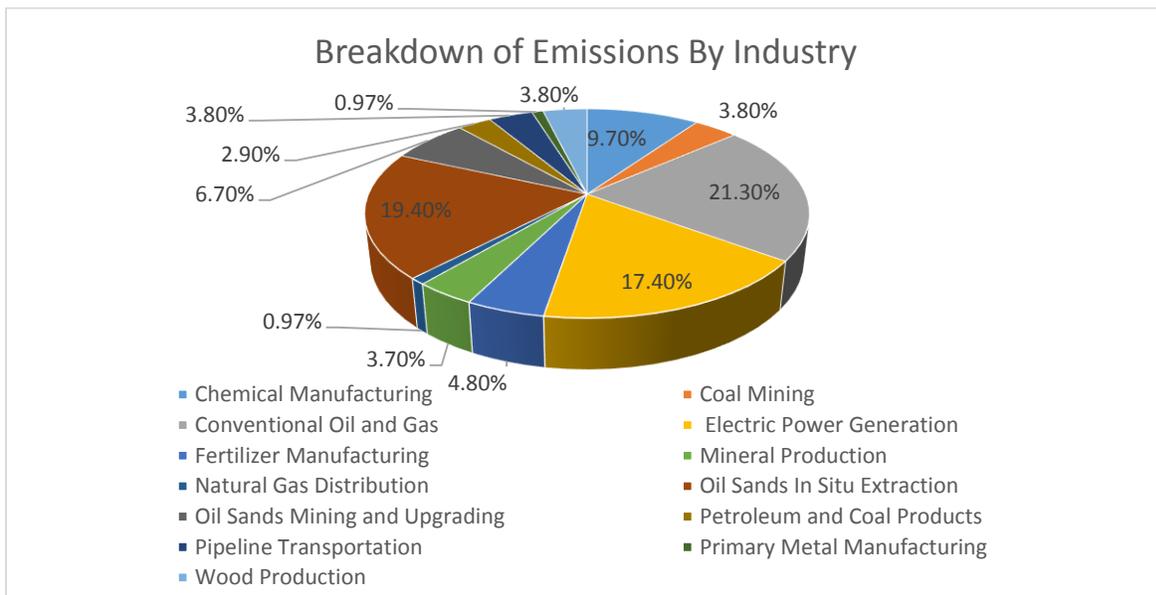
facilities over the threshold combined for a total of 120.1 million tonnes.³⁷ As Andrew Leech says in an article for the *Canadian Tax Journal*, “The SGER threshold is set such that changing it would not have a significant impact on covered emissions; reducing it by half or doubling it would change covered emissions by less than 10 percent.”³⁸ Reducing the cut off amount for emissions reduction would lead to an additional 3.2 million tonnes being covered, this may be something the government should look at but if the Alberta Government was truly interested in creating substantial change, then they would need to begin to look at reducing the threshold below 50,000 tonnes. This will present many difficulties for industry and government due to the fact that currently facilities under 50,000 do not report emissions and therefore it is very difficult to determine how much greenhouse gases are out there to be taxed and what impact it may have on industry.

A second issue with lowering the threshold is that the economics for small oil companies are much different and it is possible that these producers would not be able to as efficiently carry the cost of the extra taxation or reduction as the larger players.³⁹ Determining and setting a proper threshold and creating a clear and simple tax base will be essential in reducing emissions. One dimension that may further complicate the levy and is often forgotten in the discussion about the 40/40 plan is that the oil industry is not the only group who is affected by the Alberta levy. The

³⁷ IBID. Pg, 6.

³⁸ Leach, Andrew. "Policy Forum: Alberta's Specified Gas Emitters Regulation." *Canadian Tax Journal* 60.4 (2012) Web. 08 Sept. 2013. <http://www.ctf.ca/ctfweb/CMDownload.aspx?ContentKey=627262ae-a1ab-45b0-9248-251ceaf8af13&ContentItemKey=84006530-80aa-4549-9930-c6dcb3e7b758>. Pg,10.

100,000 tonne limit is not specific for the oil and gas industry, the 103 facilities that reported in 2010 were broken down by the Alberta government into 13 separate categories⁴⁰. Of these 13 groups, four sectors were responsible for 75% of all individual facilities that reported over 100,000 tonnes totalling 77 out of 103 total applicants and a total of 87.6% all reported emissions.^{41 42}



As technologies and in particularly the cost and size of R&D research differs greatly across industries, it is likely that the more we increase the reduction amounts and the higher the penalty

⁴⁰ Alberta. Environment and Sustainable Resource Development. Alberta Environment and Sustainable Resource Development: Report on 2011 Greenhouse Gas Emissions, May 2013. Web. 08 Sept. 2013. <<http://environment.gov.ab.ca/info/library/8849.pdf>> Pg, 16.

⁴¹ IBID. Pg.17.

⁴² Alberta. Environment and Sustainable Resource Development. Alberta Environment and Sustainable Resource Development: Report on 2011 Greenhouse Gas Emissions, May 2013. Web. 08 Sept. 2013. <<http://environment.gov.ab.ca/info/library/8849.pdf>> Pg, 16.

price goes, the higher the chance that it may negatively impact certain industries harder than others. This may lead to the implementation of having different standards, prices, rates or reductions levels for certain industries. And then this may lead to the issue that has occurred in Norway, the creation of a complex and confusing system. The more exemptions and rates that are introduced the less efficient and successful shall be the system.

So Alberta must examine the objectives of this tax and must decide if the objective of this tax is to lower overall greenhouse gas emissions of the province or if it is to only improve the emissions standards of the oil and gas industry. Depending on the objective, determining which sectors should be included in the tax and then creating one blanket regulation and price is important. If one looks at the media and the political situation, it appears as though the objective of this tax is to better the image of the oil sands but that is not the case as this tax will impact other industries and this may lead to an insignificant amount of time being spent looking into the impact on non-oil and gas sectors. This could be a costly error if allowed to occur, particularly when the electricity generation and the potential impact it may have on electricity prices for the consumer is examined. Alberta must ensure that they create a comprehensible system that covers a large portion of emissions but at the same time that it remains simple and uniform. The experience from Norway shows that a system that becomes too complicated due to exemptions, differing rates and regulations lead to higher compliance costs and a less effective system.

Administration

Determining the role of government in the handling, enforcement and collection of revenue is an area that can greatly impact how well the system will operate. For the current climate change strategy, administration costs of increasing the numbers to 40/40 would be very little.

Administration costs for most taxes are in the range of 1%⁴³. This is very minimal and therefore, this tax will have the added advantage of being able to use the already existing system in place, leading to a small amount of increased administration cost. Another important aspect of administration costs is compliance and monitoring costs. This again will have a minimal impact on the costs of increasing the levy for government. Due to the fact that currently under the SEGR, companies are required to conduct their own monitoring and they are also responsible for creating the most efficient way of achieving emissions cuts themselves; the costs for government are again very small.

When examining the costs of a tax system, where the revenues ends up is important to the evaluation of the system. Currently, the government has little to do with revenue other than to collect money from the penalty fund and transfer it over to the CCEMC. The government is not responsible for the money and the CCEMC is an arm's length group who are not responsible to government but only their guiding principles and board. The question of if this is an appropriate use of funds is a debate that must occur. The CCEMC has been a successful enterprise up to this

⁴³ Kerr, Heather, Kenneth J. McKenzie, Jack M. Mintz, and Brian J. Arnold. Tax Policy in Canada. Toronto: Canadian Tax Foundation, 2012. Print. Pg,2:7.

point, they have been very good at leveraging private money and also have led to a reduction in 7 million tonnes in emissions since their creation. This is no small number and the CCEMC does deserve credit for doing a good job under current regulations. However, if the government was to move to the 40/40 plan, revenue would increase drastically and quickly. How much money will be generated from the increase is difficult to determine. Numbers reported have ranged anywhere from 450 million to 1.5 billion dollars per year by 2020.⁴⁴ The \$1.5 billion was calculated by looking at the total level of emissions of facilities producing over 100,000 tonnes which was 120.1 million tonnes. Then a 40% reduction number was calculated which in total amounted to 48 million tonnes. This number was then multiplied by the percentage of cuts that were achieved by paying the penalty fee, which in 2011 which was 75% of emissions cuts and this number was multiplied by the \$40 dollar penalty.

$$120.1 \text{ MT} \times 0.40 = 48,041,200 \text{ MT} \times 0.75 = 36,030,900 \times 40\$ = 1,441,236,00\$$$

The \$1.5 billion estimate is undoubtedly high because many companies currently simply choose to pay the 15 dollars rather than attempting to change practices. This would likely change if the penalty price was to increase, leading to a lower number of emissions cuts being achieved through the CCEMC. This coupled with the hope that technological advances that will occur

⁴⁴ Kline, Jesse. "Carbon Tax Inflation Is Not the Answer to Alberta's issues." Editorial. National Post April 17, 2013. Web. 08 Sept. 2013. <<http://fullcomment.nationalpost.com/2013/04/17/kline-on-a-carbon-tax/>>.

both from the CCEMC and through private R&D, will also lead to a substantial decrease in total emission reductions achieved through payments into the fund.

Regardless of the exact number that will be raised by the 40/40 plan, revenue from the tax will increase, going from 86 million currently to at least 400 million per year by 2020.⁴⁵ The CCEMC would likely be able to handle an increase in budget by carrying a number of small changes such as increasing individual grants, which currently has a ten million dollar cap.⁴⁶ It would also be very easy for the organization to increase the number of grants given out in total. The government may also choose to use some of this increase in revenue for other areas. They could choose to use this money to add to general revenue, to put into the heritage fund and the area most commonly suggested with climate policies, tax cuts. In British Columbia, due to the fact that the tax was imposed on consumers, the government promised that their carbon tax would be revenue neutral and promised to lower a number of personal taxes on the individual and corporate tax for businesses. With the Alberta levy being focused on industry and with them carrying the majority of the cost of the tax, a reduction in income tax would simply be a transfer of wealth from corporations to individuals. This would not be politically possible and therefore any tax reductions would need to be based around industry in the form of corporate tax reductions. Although many may argue to use some of the revenue for these tax cuts; corporate

⁴⁵ Kline, Jesse. "Carbon Tax Inflation Is Not the Answer to Alberta's issues." Editorial. National Post April 17, 2013. Web. 08 Sept. 2013. <<http://fullcomment.nationalpost.com/2013/04/17/kline-on-a-carbon-tax/>>.

⁴⁶ CCEMC. Climate Changes and Emissions Management (CCEMC) Corporation 2013-2016 Business Plan, 2013. Web. 10 Sept. 2013. <<http://ccemc.ca/wp-content/uploads/2013/01/Business-Plan-2013-2016-v4-with-budget-Final.pdf>>.

tax reductions would likely reduce some of the incentive to improve practise and would decrease the potential amount of emissions cuts. If companies can account for some portion of their capital lost to the penalty levy being returned to them through lower taxes than they may use this to justify increasing output or not trying to change behaviour. Both of these issues compromise the overall strength of the levy and when you include the lost advantage of using the money to further reduce emissions through the CCEMC; it is a corporate tax cut may be costly.

Alberta must decide if the objective of this tax is really about reducing greenhouse gas emissions or about creating a system that appears to reduce emissions while protecting oil companies' profits. The current system appears to belong to the latter but if we move forward and decide reductions are more important than larger profits, the government must introduce a stronger system. It is difficult to say what combination of emissions reduction levels and penalty price will be needed to create a system that works but a 40/40 plan or something similar is a move in the right direction. When deciding how to implement the new policy, government would be smart to take into account a number of issues that occurred with the current system and try to improve on the issues.

Policy Implications

Setting Strong and Achievable Numbers.

The first priority of the government should be to ensure that they introduce a reduction level and prices that works; it must reduce emissions at a level that can reach stated climate policies objectives and it must also not be too inefficient or burdensome to ruin the industry and lead to

locational effects that may see some of industry move to other places.⁴⁷ Determining the correct combinations is beyond the scope of this paper and very well may be beyond the scope of all economic analysts but what can be seen is the current plan is not working.

There is also no guarantee that the proposed 40/40 plan will be enough to reduce carbon emissions; finding the right numbers will be a challenge but one idea that may help with this can be taken from the British Columbia tax. BC created a legislated and visible incentive plan that was available for everyone to see and understand. This offered two great advantages for the government and industry; the first was that this allowed a chance for small changes to be introduced that allowed government, industry and the people to examine the impact of the tax and properly evaluate what numbers worked and what did not. This is much more effective than simply choosing a static number and waiting six years to begin the debate on if it is working. The second advantage to this option is the fact that the increase is mandated in earlier years so it gives business enough time to respond to these price signals, thereby lowering overall compliance costs, which in turn makes it much more efficient for industry. As carbon taxes around the world have shown, there is no definitive answer to what levels and rates work but using a gradual approach may help. This could take the form of a tax that begins at 25 dollars and 25% reduction and gradual increase over three years to reach the 40/40 or it begin at the 40/40 mark and increase from there. Also important to this is that there is an expiration of the

⁴⁷ Kerr, Heather, Kenneth J. McKenzie, Jack M. Mintz, and Brian J. Arnold. Tax Policy in Canada. Toronto: Canadian Tax Foundation, 2012. Print. Pg, 2:11.

legislation; so at the end of the increases, governments, ENGOs and industry have a chance to re-evaluate the final numbers and determine if they are acceptable, currently this already exists but it is important that it occurs again.

Threshold Adjustments

Lowering the threshold to 50,000 tonnes will not create a significant impact on overall reductions; but as these companies are already responsible for monitoring and reporting of emissions, it would be very easy and costless for government to lower the threshold and bring a total of nearly 3 million more tonnes of emissions under regulation to cut. Under the current system this would have led to the reduction of 360,000 tonnes or following the current model of how emission reductions were met, an additional 3,240,000 dollars to the CCEMC and a reduction of close to a 100,000 more tonnes of emissions.⁴⁸ This is equivalent to the removal of one new large emitter. If the tax was to be increased to 40/40, the lowering of the threshold would lead to the reduction of 1,200,000 million tonnes in total through penalty payments and emission reductions. These numbers are by no means insignificant and the government should examine the idea of the lowering the threshold. However, governments must be careful when examining lowering the cut off level to any point lower than 50,000 tonnes. As facilities this size do not currently report emissions it is likely this will lead to higher compliance costs for these facilities. And as the economics for smaller facilities and companies are different, these may lead to a tiered rate system that is avoidable.

⁴⁸ Alberta. Environment and Sustainable Resource Development. Greenhouse Gas Reduction Program Web. 08 Sept. 2013 < <http://environment.alberta.ca/01838.html> >

Electricity Generation

The oil and gas industry is not the only group that falls under the jurisdiction of the SEGR. There are many separate industries that are impacted by this tax and each industry may have different economies of scale, different profit margins and differently technology available to them to change practices. The impact of the increase in levy and emissions levels must be done with great care to ensure that some groups are not penalized more than others. This is of particular importance in terms of electricity generation in Alberta.

Over 80% of Alberta's electricity generation comes from either natural gas or coal, both methods are extremely polluting and lead to a large number emissions.⁴⁹ Currently, of the 103 facilities required to cut emissions there are a total of 17 separate electricity generating facilities that are expected to reduce emissions for a total of just over 43 million tonnes.⁵⁰ This is an extremely large number and if we are to continue to increase both reduction amounts and the price of the levy than the potential for there being an impact on electricity prices increases. This will have an impact on the consumer and this was not part of the design nor an objective of the tax.

Governments must decide if this tax is oil and gas industry specific or if they wish to continue to use threshold hold based reductions. If they choose to stay with the current system they must be

⁴⁹ Alberta. Ministry of Energy. Electricity. Web. 08 Sept. 2013.
<<http://www.energy.alberta.ca/OurBusiness/electricity.asp>>.

⁵⁰ Alberta. Environment and Sustainable Resource Development. Greenhouse Gas Reduction Program Web. 08 Sept. 2013 <<http://environment.alberta.ca/01838.html>>

prepared to examine the cost to the consumer and if it does reach a point where it is truly negatively hurting the average Albertan than the government may wish to introduce a form of low income rebates for Albertans who would struggle to meet the increase in price as they have done in British Columbia.⁵¹

Revenue

The Alberta Government must decide how they intended to spend the dramatic increase in revenue from the carbon levy. They may choose to simply increase the budget of the CCEMC or they may choose new avenues. Tax reductions, economic incentives, putting money into the heritage fund or a potential new fund, rebates or R& D breaks would all be viable options. But this is for the government, industry and the people of Alberta to decide. They must determine the true objectives of this tax and the overall goals that they wish to accomplish. And from there continue to have an open and transparent debate on how and why revenue from this should be spent where it will be.

Clear and Simple System

As the Norwegian model and countless other tax cases have shown, a simple and easy to comply with system is vital to ensure an efficient tax. With the issues of thresholds and different industrial sectors being under the tax, Alberta could potentially go down a road that leads to a system with many exemptions, rebates, rates and emission cut levels. This is dangerous and should be avoided, the tax structure should be kept simple and easy to comply with. If this means

⁵¹ British Columbia`. Ministry of Finance. How the Carbon Tax Works. Web. 08 Sept. 2013.
<<http://www.fin.gov.bc.ca/tbs/tp/climate/A4.htm>>.

changing the structure of the legislation in order to create a form that is easier to keep simple than this may be something government might wish to do.

Conclusion

Alberta's current system is not working, coming nowhere close to achieving the intended results that the government established in 2007. Alberta must change its climate change strategy and the best choice that the province has is to strengthen the current approach. The uncertainty over cap and trade, the difference in objectives between the Alberta and BC approach and the overall inefficiency of the Norwegian model shows that Alberta's best approach is to strengthen the current system.

This is why the proposed move to the 40/40 approach is so intriguing. By looking at the issues that arose with the current system it is easier to examine the likely impacts of the new increases as well as begin to address some of the problems that arose under the current system. If Alberta is to move to a standard along the lines of the 40/40 plan, they must ensure that the reduction levels are high enough to properly encourage physical reductions. The government must also ensure that the penalty price is high enough that it encourages companies to do physical reduction rather than to just pay the fee and continue on as business as usual.

On top of addressing these issues, the Alberta government must also be cautious when raising the numbers as there are many concerns that could arise from increasing the policy. The first is that

it must be simple and straightforward, a tax that has too many differing tax rates, exemptions and reductions levels are complicated for government to administer and even more costly for industry to comply with. The Alberta model must be strong, efficient and simple and it is very unlikely that the province will be able to properly decide at what levels and numbers things are perfect. Therefore the government should attempt to create a legislation that mandates a process that allows for the incremental increases of policy so we can create enough time to ensure that we create a system that will reduce emissions but at the same time ensures that the Alberta economy is capable of dealing with any increase in price and can continue to prosper. Ultimately the Alberta government and people must decide the real objective of this tax; whether it is to make substantial reductions in greenhouse gases or if it is to introduce a system that lowers emissions while protecting industrial profits. In either case, the current system must be augmented and strengthened.

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