Pricing carbon in North America

It was with great interest that most of us listened to President Obama put climate change back on the US agenda in his state of the union address this month.

"*After years of talking about it, we are finally poised to control our own energy future. We produce more oil at home than we have in 15 years. We have doubled the distance our cars will go on a gallon of gas, and the amount of renewable energy we generate from sources like wind and solar – with tens of thousands of good, American jobs to show for it. We produce more natural gas than ever before – and nearly everyone's energy bill is lower because of it. And over the last four years, our emissions of the dangerous carbon pollution that threatens our planet have actually fallen.*

But for the sake of our children and our future, we must do more to combat climate change. Yes, it's true that no single event makes a trend. But the fact is, the 12 hottest years on record have all come in the last 15. Heat waves, droughts, wildfires, and floods – all are now more frequent and intense. We can choose to believe that Superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence. Or we can choose to believe in the overwhelming judgment of science – and act before it's too late."

The real question is will there be policy to support acting before it's too late?

I think most would agree that any strategy that would change behaviour requires an economic impact – because we all respond to prices. This means we need a price on carbon; either a carbon tax or a cap and trade program. In the past most

jurisdictions in North America have favoured consideration of the cap and trade approach as new taxes (to nobody's surprise) are very difficult to implement. In North America (in contrast to Europe) we generally believe we have a right to low cost energy and there is genuine concern that higher energy prices further weaken the economy and negatively impact jobs. And with jobs being a huge priority, many have said that there will not be any price on carbon in the foreseeable future.

But for all of those who have said there will never be a price on carbon in America, I am sorry to say – YOU ARE WRONG. Today there is a price on carbon – the only problem is that it is negative. That's right – its negative. In other words, we have significant subsidies on oil and gas that encourage more production and consumption; whereas pricing carbon positively would encourage reduced oil demand and use of lower carbon alternatives.

The 2012 World Energy Outlook (WEO) shows ever-growing subsidies to fossil fuels. It only considers consumer and consumption subsidies, commonly applied in the developing world and in oil producing countries. In 2011, this subsidy amounted to almost $300 billion, far greater than any other form of energy.

In North America we do not provide consumer subsidies for oil but rather producer subsidies in the form of tax relief through various exemptions and special provisions in the tax code. Most talks by President Obama have quoted the cost of these subsidies at about $4 billion per annum federally (some estimates show that state subsidies are many times greater than the federal subsidy). In Canada, subsidies to the oil industry are estimated at about $2.8 billion per annum (both federally and provincially).

The argument in support of these subsidies is that they are generally intended to encourage drilling, agreeably a very

risky endeavour. The arguments against fall into two categories: first there are many subsidies that have outlived their usefulness but somehow are never removed from the books; and second, that at a price of over $100/bbl, oil companies are making record profits (the three largest oil companies made profits of $80 billion or $200 Million/day in 2011) so they shouldn't need subsidies to encourage them to find more oil, i.e. the current price of oil is incentive enough.

Examining the subsidies a bit further, we can calculate the cost (if you see any errors in my calculations, please let me know). Using production data from the WEO 2012, we can take $4 billion and divide it by 8.1 mb/d in the US and take $2.8 billion and divide by 3.5 mb/d in Canada. The result is about $1.35/b in the US and $2.20/b in Canada. Assuming a carbon content of about .43 t/bbl would result in a subsidy cost per tonne of carbon of just over $3 in the US and about $5 in Canada. The US number is smaller because it is limited to federal subsidies while the Canadian number is for both federal and provincial subsidies. What this shows is that carbon indeed has a price and it is negative, i.e. it incents more fossil, rather than less or alternatives.

So let's take this one step further. Again going back to the WEO, they assume a carbon price reaching $45/t in the New Policies Scenario (base case – continue down the current path) rising to $120/t in the low carbon 450 ppm scenario. Or to put it more simply, a large positive price on carbon (equivalent to $20-50/b) rather than the current subsidy (i.e. negative price) is required to move the world to a low carbon scenario that will actually have an impact on climate change.

In summary, if a price on carbon is a key tool to help reduce fossil fuel use and combat climate change, then we are clearly going in the wrong direction. Because yes, today we do have a price on carbon in Canada and the United States – and it is negative.

Note to readers – I did not comment on the benefits of nuclear in this blog as I was focused on making a point about the impact of subsidizing oil and gas prices. There have been a number of other blogs that have done a good job on this point. See Steve Alpin's blog showing how Ontario in Canada has drastically reduced its carbon emissions through increasing production from its nuclear fleet while reducing coal use. There is also the point to be made about how large a subsidy is required to implement renewables even with large carbon prices. And there is the pressure that most are expecting to come to Canada from the US in exchange for approval of the Keystone pipeline. But we will leave that for another day……