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Climate Change and its Impacts on Municipal Operations

By Paul G. Gosselink and Jason Tournillon

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Jason Tournillon and I are going to talk to you today about the sale of carbon credits – what they are and how to sell them and why you should consider getting into the business of selling them. Accordingly, this is not going to be a scholarly or academic presentation – only one case citation, some legislation and a couple of state and federal rules. But, if the concepts and facts discussed in our talks fit your city, then this can lead to the generation of a potentially significant revenue stream, global environmental benefits and positive public relations for your city.

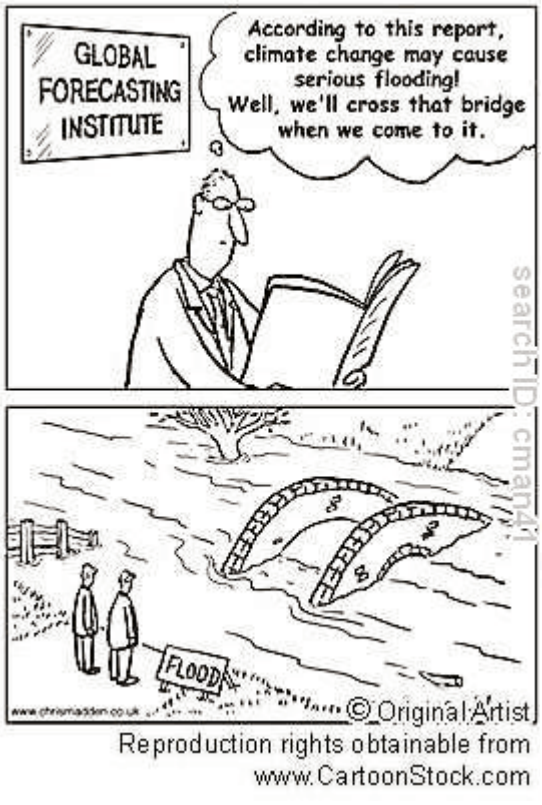
I know, you are all thinking that this sounds too good to be true. The truth is that it might turn out to NOT be as good as I just made it sound but Jason and I think the chances are much better that it will turn out to be very good. How it turns out is largely dependent on how the proposed cap and trade legislation plays out.

Will it pass – this session or be delayed? What will it cover? Or will the EPA step into the void (if no legislation passes) and promulgate regulations.

Before I explain the concept of cap and trade and try to address the questions I just posed. I want to explain what this talk is not going to cover.

I am not going to talk about the underlying science. I appreciate that there is a debate about whether climate change is actually occurring and, if so, whether it is the result of man's greenhouse gas (GHG) emissions and whether a reduction in the amount of GHG's by the United States will have any beneficial effect.

CARTOONS – 2 SLIDES



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We are not here to take either side of that debate in this presentation. Our personal view is not the point. Heck it is not even relevant. The point is that enough people in the United States believe it that a voluntary market for carbon credits has formed and a mandatory cap and trade program that includes carbon credits seems imminent. Indeed, the U.S. is late to this party. Many of the developed countries of the world signed the Kyoto protocol. The United States actually signed the original treaty, known as the United Nations Framework Convention on Climate Change (UNFCCC), in 1992 along with 166 other nations. Limits on GHG emission were adopted in the much better known Kyoto Protocol in 1997. Of the initial signatories to the UNFCCC only the U.S. and Kazakhstan have not yet ratified Kyoto. However, the US is now poised to sign under the Obama Administration.

The imposition of cap and trade legislation has been touted for a lot of potential positives including being a way to reduce the budget deficit. What the end product of this legislative process will look like is very much unknown as the political debate moves forward. What does seem clear is that some of the impending restrictions will create hardships as well as offer benefits. We are here to try to get you to look at yet one other side of this coin – it also creates some opportunities.

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The opportunity that will likely be available to cities (as well as various industries) is the ability to sell what are generally referred to as "environmental attributes". These environmental attributes are essentially commodities which can be bought and sold in various market places throughout the world. I say throughout the world because the planet's atmosphere does not discriminate between GHG based on the emitter's country of origin. The problem, assuming it is a problem, is global in scope. The GHG's that are emitted in Houston, for example, don't just raise the temperature in Houston. They can be conveyed by the winds to the far reaches of the world.

In Texas there are three different kinds of environmental attributes that can be bought and sold; carbon credits; renewable energy credits (RECs) and Compliance Premiums. In addition, the federal government provides both production tax credits and investment tax credits. Further, the Obama administration through the Department of Energy's (DOEs) Energy Efficiency and Conservation Block Grant Program has set aside significant grant funds for States and individual cities to assist in the establishment of projects and processes specifically designed to reduce GHG emissions. Finally, if SB 16 passes the Texas Legislature and is signed into law, additional grant monies should be available.

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DOE Grant Funds

I have a handout which lists various Texas cities and the amount of dollars allocated to each city by the DOE for these projects. I'd like to think that your cities already know about this program and are busy making application for the grants. The grants are sizeable – many in the millions of dollars. You should look at that list and, if you see your city, be sure to investigate whether you have taken the necessary steps to apply for the grant. The deadline is June 25.

I want to point out that there are various virtually pre approved projects. These are found on pages 2 and 3 of the first handout . One that is particularly on point for our talks is:

> "Reduction and Capture of Methane and Greenhouse Gas generated by landfills or similar waste related sources."

If you don't find your city or county on the list, not to worry. That list simply reflects the DOE's classification of the larger cities. The smaller cities and counties can get their grant money through the State. The State timely requested $560 million, a minimum of 60% of which must be passed through to cities and counties not receiving direct funding (not on the previous list). A system and schedule will be set up for you to apply for that money. You can sign up for email alerts in order to track the process by going to http://www.seco.cpa.state.tx.us/resources/arra.php.

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I hope this prospect of "free" money to engage in GHG reductions has caught your attention. But that is not the point of our talks. It is essentially gravy.

What are carbon credits?

I referred to carbon credits, RECs and compliance premiums as the three environmental attributes traded in Texas. And, as they say, the greatest among these is carbon credits. This is because carbon credits are the most valuable. RECs and compliance premiums, on the other hand, are creatures of Texas regulatory law. The definition of a REC is contained in 16 TAC §25.5(108).

> "a REC represents one megawatt hour of renewable energy that is physically metered and verified in Texas and meets the requirements set forth in Subsection E of this Section."

Note, however, that RECs, also known as green tags, exist in other states and can be sold in other states.

Compliance Premiums are defined in the PUC regulations as:

> "a premium awarded by the program administrator in conjunction with a renewable energy credit that is generated by a renewable energy source that is not powered by wind and meets the criteria of Subjection (M) of this Section. for the purpose of the renewable energy portfolio standard requirements, one complaince premium is equal to one renewable energy credit."

Compliance premiums are exclusively a Texas market concept. While conceptually of equal value to RECs, as a matter of practice, they have been

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discounted. The most important thing to appreciate is that, at this time, RECs and Compliance Premiums are worth less than carbon in most markets.

What I have been referring to as carbon credits is not just made up of carbon dioxide emissions. Officially, the unit that is traded is known as a carbon equivalent unit or CO2e. There are 6 principal GHGs in CO2e. They are

CO2	carbon dioxide
MH4	methane
N_2O	nitrous oxide
HFC	hydroflourocarbons
PFC	perflourocarbons
SF6	sulfur hexaflouride

One metric tonne of any of these is worth some number of carbon credits, based on that particular GHG's contribution to global warming as compared to one metric tonne of carbon dioxide. For example, one metric tonne of methane is worth 21 CO2es, because methane is considered around 21 times more potent a GHG than carbon dioxide is. Likewise, a metric tonne of nitrous oxide is worth around 300 CO2e credits.

A carbon credit is created when an emitter voluntarily reduces its CO2e emissions in a way that is "voluntary" and is "additional" or not business as usual (there is more to this concept but I will leave that explanation for Jason). Assuming the emitter does this, then the emitter has a carbon credit to sell either

directly to someone who wants/needs to buy it or indirectly through a carbon exchange market.

Three questions should jump into your mind (1) who buys these credits? (2) why? and (3) what do they cost? Jason will tell you about their value and how to participate in the various markets. One thing I want you to know is that cities are much more likely to be sellers than buyers. The buyer you will sell to will buy for a variety of reasons.

(1) Green marketing

(2) Sincere attempts to slow global warming

(3) Preparation for expected mandatory cap and trade requirements – pre compliance buying (while credits are still cheaper).

(4) Investment – if you believe cap and trade or other mandatory regulation is coming, the demand for credits will rise and likely outstrip the supply.

The other financial benefit you need to know about but we are not going to talk much about is tax credits. There are two kinds: (1) the production tax credit (PTC) which is specific to electricity generation and (2) for the first time an investment tax credit (ITC). They can be worth up to a 35 % tax credit. In order to qualify you have to have your project placed in service by 12/31/13.

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Political and Legal Background

So – having provided a little of the technical background I am going to do the more lawyerly piece and give you some of the political and legal background that has lead up to the impending adoption of GHG regulations or the passage of GHG legislation.

You'll find Jason's talk much more useful. He'll talk to you about markets and dollars. He'll do that by running through some examples so you can see what selling carbon credits can be worth and how to do it. But first the legal discussion.

Massachusetts v. EPA

The case which expressly opened the door for GHG regulation and implicitly gave GHG legislation a major boost was the Supreme Court's decision in Massachusetts v. EPA, 549 U.S. 497 (2007) In this case, the Supreme Court held that carbon dioxide and other GHGs are air pollutants and may be regulated under the Federal Clean Air Act (FCAA) by EPA.

Endangerment Finding

In 1999 a group of 19 petitioners filed a rulemaking petition asking EPA to regulate GHG emissions from new motor vehicles. The EPA rejected the petition. The refusal was appealed as arbitrary and capricious by Massachusetts and a number of states.

There was a very interesting threshold standing question and a variety of policy issues all of which were resolved in a 5-4 decision in favor of the states. The Court remanded the case to the EPA to reconsider the rulemaking with the statement that the FCAA requires the EPA to prescribe regulations for GHGs (and any pollutant) if it determines that the pollutant may "reasonably be anticipated to endanger public health or welfare".

The Bush administration did not move forward with the rulemaking. The Obama administration, on the other hand, has taken an aggressive stance toward regulating GHGs. One of the first steps the Obama EPA took was on April 17 of this year to make the "endangerment" finding the Supreme Court referenced. This cleared the way for the rulemaking to commence. The interesting political gambit here is that the Obama EPA does not really want to ultimately regulate GHG emissions under the FCAA. They prefer it be regulated by legislation specific to GHGs. They have set the rulemaking process in motion in the event cap and trade legislation does not pass and in an effort to incentivize Congress to pass the legislation because apparently no one wants such an important issue to the country regulated under the FCAA.

Another interesting by product of this ruling has been the very recent settlement of the case between the State of California and the Bush EPA. California passed State fuel efficiency regulations which regulated GHG emissions

and were more stringent than the EPA mandated mileage standards. Automakers sued California and used the Massachusetts v. EPA ruling to reinforce their position that the EPA regs pre-empted the field on car emission regulations as a defense to California's unilateral efforts. In an interesting turn of events the EPA and California have very recently reached a settlement whereby the EPA will essentially adopt California standards in return for a non-suit from the State.

Guess what, the automaker's position remains the same: that they were right and the law of federal preemption controls: Now, however, preemption results in support for the more stringent standards that caused them to oppose the rule in the first place. Nonetheless, the news articles report everyone says they are happy: EPA, California and the automakers. Strange outcome.

GHG Reporting Rule

The other recent rule that has been proposed is the GHG Reporting Rule. This proposed rule would require about 85-90% of all GHG emissions (encompassing approximately 13,000 sources) to report how many GHG's they are emitting annually. This is an information gathering rather than regulatory rule. In the big picture the goal of this rule makes sense. If you are considering regulating GHGs you should start by figuring out how many there are and where they are coming from.

Exactly how the EPA proposes to do this has been the subject of extensive comments. These comments have focused on the fact that the amount of information required to be reported is unprecedented, the lead in time is extremely limited, the proposed size of the civil penalties for failure to report ($32,500/day) is excessive, the apparent risk of criminal penalties are more punitive than appropriate and the "all in" provision – meaning that if you are a certain kind of emission source you have to report even if your controls keep you under the reporting threshold – does not recognize or reward an emitter if it installs controls.

So what are the reporting thresholds?

I'll give you the basic points of the proposed rule but warn you that because of these comments and others the final rule may have various changes in the details. The proposed rule will require the following entities to report

1. any facility that emits > 25,000 metric tonnes of GHGs
2. All manufacturers of motor vehicles
3. All suppliers of fossil fuels, (refineries, coal plants etc.)
4. Certain other sources – the "all in" sources (for cities' purposes a relevant source is landfills).

One interesting aspect of the rule is that it was proposed on March 9, 2009. The EPA will take comments until June 9, 2009. The final rule, even without changes, will not be ready until later this summer and, if there are changes, until

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later than that. The first annual report will need to be filed in 2011. But those reports will be for year 2010 which is, at most, 6 months from now. The message is everyone, cities included, will presumptively have to get prepared in very short order. Remember there are potential criminal penalties and proposed civil penalties of $32,500/day.

Cap and Trade Legislation

Although the EPA is now armed with case law, an endangerment finding and the proposed GHG reporting rule, the Obama administration has made it clear that they would prefer the effort to reduce GHG emissions be accomplished by specific legislation. The specific legislation that MIGHT accomplish this goal is the "American Clean Energy and Security Act of 2009" commonly known as the Waxman-Markey bill after the two principal authors in the House. It is the bill which contains the cap and trade program.

First let me explain what cap and trade is. It is a fairly simple concept. The cap part of the program means that carbon emitters will have the amount of GHG's they are allowed to emit limited or capped either by this legislation or by rule. They have to stay at or below their allowed caps or face fines or injunctions just like other environmental command and control rules. This structure gives the allowances to emit a financial value.

The trade part is a little different. The emitter that is capped has the option of making physical or operational changes to its plant to reduce its CO2e emissions or, instead, trading (which means buying) CO2e emission reductions (known as credits) from an emitter who can do so less expensively. Each year the number of allowances under the law are reduced to match the required annual reduction targets. That means that each year the law of supply and demand will make voluntary reductions of CO2e more valuable. The EPA predicts that they will be worth $13 to $17 a ton of CO2e in 2015.

The incentive to the excess emitter is clear: it can buy credits more cheaply than it can self reduce its emissions. The incentive to the seller is clear: it can make some revenue by voluntarily reducing its emissions (which is often done in connection with a separate purpose – like installing a landfill gas collection system). The benefit to the environment is also clear: there are reduced GHG emissions in the global atmosphere – recall the comment about how GHG emissions in Houston don't just stay over Houston. And the benefit to the economy is that this has been done more cost effectively.

Notwithstanding this nice list of public policy rationales, all is not perfectly rosey. There are philosophical objections. Those who think it will either drive up the cost of existing power supplies (read coal fired power plants and threaten that industry's viability) or those who think it will drive up the cost to consumers are

staunchly opposed to the concept and call it cap and tax. Others are concerned about the details. Will the emitters be given allowances to start or will they have to pay for all of their emissions over the cap in an auction process? Will coal states suffer unemployment? Will states already using hydroelectric power be prevented from getting carbon credits because they reduced their GHG emissions before they had to?

In other words, it is not clear that the Waxman-Markey bill will pass. If it does become law, it is not likely that, it will look like the version that passed out of the Energy and Commerce Committee in mid May.

To give you an idea of the substance of the proposed cap and trade legislation at this time, let me summarize the proposed caps. The bill would establish an economy wide emission cap that covers about 85% of total U.S. GHG emissions and virtually all emissions from the combustion of fossil fuels. The cap starts in 2012 with an aggregate level of GHG emissions equal to 3% below 2005 levels. Then 17% below 2005 levels by 2020 and ultimately 83% below 2005 levels by 2050. The bill also allows covered emitters to offset up to 2 billion metric tonnes. However, entities choosing to offset any of their emissions through such projects must reduce 1.25 metric tonnes of traded for emissions for every metric tonne of their capped emissions.

Most commentators believe that some form of cap and trade bill will pass both houses. The Obama Administration is working hard to get passage. However, if the legislation fails, as I have noted, the Administration is making it appear that the EPA will act and thereby providing an incentive for Congress to act.

I think all we can say is wait and see. The political landscape changes daily as deals are made.

Texas Legislation

Seven bills were introduced in the Texas legislation this session which dealt with climate change. Five of them never made it to the floor. As of the time of this writing two might survive on their own or in some form as amendments to other bills. The most important of those for cities is SB 16 since it provides for grant funding for projects which will reduce GHGs. For now, again, all we can say is we'll see what happens.

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