

NE CERT Meeting on Carbon Cap and Trade
June 11, 2008
Audubon Center of the Northwoods, Sandstone, MN

Note: all presentations from the meeting are now posted @
<http://www.cleanenergyresourceteams.org/publications/regional-presentations>

Policies for a Reduced Carbon World – Steve Taff

Steve gave a 10,000 foot overview of specific policies that the state, federal and in-between are pursuing; what they are, what the purported attractions are and how they interact with one another. He noted that the Dakotas, Iowa and Minnesota produce about the same amount of CO₂ as Brazil, and that the policy choice is to live with it OR do something about it.

Greenhouse gas reduction strategies include:

- ban high CO₂ technologies
- require low CO₂ tech
- Subsidize new low CO₂ tech
- Tax CO₂ emissions
- Reduce demand – everyone talks about it, no one wants to do it

“Market-based” policies create economic incentives to meet environmental goals. A Carbon Credit is a “commodity” – a piece of paper – it could be tons, pounds, grams of something. It can be traded or sold to someone else and has value to the owner. It requires a SCORE, but science doesn’t produce precise numbers – this is actually the realm of policy and politics. It also requires an initial allocation, then market takes over and price is then determined by market.

“Cap-n-Trade” is not a new policy, and has been promoted by economists since the late 1960s. The first large scale application (by politicians) was in the 1980s. We have an acid rain program, a NO_x program in eastern US, water pollution (Minnesota River – MPCA point-non-point source trading program), and even greenhouse gases in European Trading System and Chicago Climate Exchange. We know where the pitfalls are. The SO₂ program has been a wonderful success. Actual costs were less than anticipated and the emissions came down.

➤ **Minnesota State Greenhouse Gas Reduction Goal – 15% by 2015, 30% by 2025, 80% by 2050**

Critical Elements of a Cap and Trade system:

- **CAP** – This is the limit on the total amount of emissions that equals the environmental goal. Allowances (permits) equal to total amount of emissions are allocated to emissions sources. (This is traditional command and control approach to environmental regulation) If you want stricter standards you can lower the amount. If you’re worried about costs, you can raise the amount.
- **TRADE** – emissions sources may trade allowances with other emission sources = economic efficiency. (allows folks to clean up their act in one location while remaining dirty in another). This is either the genius or the perversity of the mechanism.
- **INITIAL ALLOCATION** – who gets the pieces of paper to start with? Two main approaches are auction or free distribution (give them to folks who are already polluting). From an overall economic perspective it doesn’t matter, but it does matter from an equity perspective/political perspective. If we auction, what do we do with the proceeds? Minnesota has appointed a new commission to look at what we might do here with the \$ and could be like the LCCMR program.

Who ultimately pays? We all do. For our electricity, natural gas, gas, stuff. Why do we do it? Cause if we don't pay, we'll end up paying for the impacts. It's about assessing whether or not it's cheaper to pay now or cheaper to pay later.

Issues to consider:

- Environmental justice issues – should you allow a paint factory to persist in a poor neighborhood while funding a lovely wetland in a wealthy area? It is criticized by some as buying an indulgence. Is that trumped by reducing overall CO₂?
- Is a proposed cap and trade system for all people? Power plants? Refineries? At the point of your car? What about home heating? Even more difficult to put a Minnesota policy on a power plant in North Dakota. Midwest governors are looking to a regional policy to help deal with this. Feds are saying it must be done nationally. Geographic scope doesn't necessarily address who you give it to... but how you administer it is tough. Easier to do refineries than all cars.
- It's a global pollutant. It impacts everyone. Why should we do it if China doesn't? The other argument is why not decide to clean up our own mess first?
- With SO₂ – there's a readily available technology, that's proven, to make those reductions. In CO₂, we don't have proven technologies – almost like policy is in advance of technology. Some think this is a good incentive to drive technological change.
- How many credits is... a gallon of biomass ethanol? A hectare of biomass ethanol? We assign scores to different things and we don't necessarily agree on what the score should be. Land use changes, like perennials. There are new studies all the time, a recent example being on the CO₂ impact of corn-based ethanol. There are the impacts of how price changes what we grow and the environmental implications of those changes. There is also the disconnect between oil policy and greenhouse gas emission policy.
- If we just focus on CO₂, we're missing other emissions – like mercury. Is there room in some of these policies to address some of our other pollutants. What is the scope – what do you and do you not include? CO₂, nitrous oxides and methane – all convert to CO₂ equivalents. How much of a “two-for” can we get with certain policies – like for emissions reductions or land use?

Interesting Factoid: Based on current renewable energy credits (RECs) being sold <http://www.eere.energy.gov/greenpower/markets/certificates.shtml?page=1>, it costs about a penny a mile to reduce your carbon footprint, and vehicles emit about a pound a mile. (Brief follow-up note: After the meeting Wendy Grethen noted that San Francisco has imposed a carbon tax of 4.4 cents per ton of CO₂ released into the atmosphere).

Understanding Carbon Credit Opportunities in Northeast Minnesota – Dean Current

Carbon storage:

- Sequestration is capture and secure storage; any growing plant sequesters carbon as it grows.
- Soils also store carbon.
- Trees and Forests as “sinks” i.e., growing trees sequesters the carbon. Trees are 20% carbon by weight. Faster growing trees sequester more carbon faster. New plantings provide a “net gain” in carbon sequesters. Managed forests maintain a carbon “stock”.
- Caveat: what we know today about how much CO₂ plants and soil sequester may be wrong in six months...

Carbon credits – Prevention/reduction of carbon emissions produced by human activities from reaching the atmosphere by capturing and diverting them to secure storage. CO₂ resides in a global reservoir and thus you can offset your emissions in a global way.

Programs trading Carbon Credits include:

- Chicago Climate Exchange (CCX) <http://www.chicagoclimateexchange.com/> (voluntary)
- European Climate Exchange http://www.europeanclimateexchange.com/default_flash.asp (Kyoto Protocol – They can't buy credits from us because we didn't sign).
- Regionally, the Iowa Farm Bureau assists with carbon credit trading via low till/no till crop planting and now a forestation program <http://www.iowafarmbureau.com/special/carbon/default.asp>.
- There is now an attempt to develop a voluntary standard, sort of a “gold seal,” to verify carbon reduction by an independent 3rd party.

The CCX needs credits to be sold in increments of at least 12,500 metric tons, approx 2,500 acres. Landowners need to work w/ aggregator who then works to combine sufficient number to create a large enough bundle. Some will go down to a 1-acre level. Aggregators typically charge 8-10% for service to measure, aggregate and sell, and the CCX certifies the aggregators as reputable.

Why are people participating in this voluntary market?

Fear and Greed are two answers. Many people anticipate that CO2 regulation will come (note: both presidential candidates propose carbon cap & trade systems:

http://www.grist.org/feature/2007/10/01/mccain_factsheet/ &

http://www.grist.org/feature/2007/07/30/obama_factsheet/).

Various companies and the EPA are tracking emissions in advance of market creation. Credits are cheaper now, so you might save money later by buying offsets today – could be between \$5 and \$30 in 2016 by some estimates....

Example – 40 acres of aspen birch might give a total income of \$10,731 from your carbon credits here in the US. If you lived in Europe it would be about \$64,000.

There are a lot of opportunities to do some terrestrial carbon sequestration projects here in Minnesota.

Minnesota's certified forests, aggregating credits for working lands, and finding creative ways to “bundle” incentives to reward stewardship/maintaining of carbon stores.

There are also challenges. “Additionality” means you can't get credit for something you would have done anyway, and it also relates to paying people to NOT cut a forest... BUT if you don't pay them to not cut them down, they might cut them down and then hope to get paid for replanting.

Also, are we trading crop land for forest land? What about the impact on food that could have been grown, but now we're instead growing trees? There is a lot of discussion to target marginal lands that probably shouldn't be used for cropping anyway. What about monoculture vs. diversity? Added benefits are/should be big driver. This might allow folks to do carbon sequestration work because there's a financial incentive, but we might also see other added benefits like water quality improvement, added perennality, and added diversity.

Managing Minnesota's Carbon Stocks – Cheryl Miller

How do we maintain our terrestrial carbon stocks to maintain positive climate benefit? We need to better understand what we have. We need good science to base policy on how we support sustainable development and deal with adaptation to climate change. It is interesting to note that the MPCA says all environmental impact statements will soon start including a CO2 profile in them.

MCCAG recommends 50+ strategies for transport, electric, land use, etc. – based on the notion of “wedges” we'll need to do a lot of different things to get to our goal; there's no one answer (Pacala and Socolow, 2003) <http://www.princeton.edu/~cmi/resources/stabwedge.htm>.

The Minnesota Terrestrial Carbon Sequestration Initiative is trying to quantify the sequestration rates for 11 different practices – wetland, peatland, forestry, row crops to hayland or grass land, conservation tillage, cover crop inclusion and low diversity to high diversity changes, etc. They wanted to find out what it would take for a 10% reduction/sequestration of CO₂ for Minnesota. First steps:

- Protect existing carbon sinks: peatlands and forests
- Incorporate high confidence practices into existing programs – there are 11 they feel good about.
- Invest in R&D to improve confidence of public investors, policymakers – go from literature studies into on-the-ground research.

In the NE Region there are excellent opportunities for woody biofuel production, management of abandoned and under-utilized pasture and hayland, enhanced stocking in forest and shrublands, and ecological restoration of public forests. But how do we finance this? Besides the idea of auctioning off carbon permits, perhaps a Minnesota Carbon Fund/Climate Trust could be created. This could be funded through a check off on your utility electric bill and could include renewable energy and energy efficiency projects. In 2005 Minnesota was responsible for 150 million metric tons of CO₂. – if you capped only 10% that could be big money that could then be reinvested into carbon reducing projects.

For more information, please visit:

Minnesota Terrestrial Carbon Sequestration Initiative – <http://wrc.umn.edu/outreach/carbon/index.html>

Minnesota Climate Change Advisory Group (MCCAG) report – <http://www.mnclimatechange.us/>