

CLIMATE CHANGE: A COMMON SENSE VIEW FROM THE FOREST

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The fact that negotiators at the recent meetings in Bonn were able to agree on so many of the Kyoto Protocol's contentious issues was a surprise to many. But for some, the fact that emission offsets from forest-based sinks will continue to be a part of the process was not a surprise at all. Sinks, particularly forest-based sinks, will inevitably play both a long and short-term role in global society's efforts to address the challenge of climate change.

The climate change debate has been and – notwithstanding the Bonn agreements – will continue to be fraught with the politics of environment, global trade, developing country economics, and international hemispheric power politics. But if you step away from all the posturing or “noise,” three fundamental realities remain:

1. Addressing the challenges of the global warming problem will take decades, not years;
2. In the short term, there are no technological quick fixes or “silver bullets” that will take care of this problem; and
3. No sovereign national government is going to ignore its own short-term economic interests, no matter what its officials claim!

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Let us quickly add that the issues just agreed in Bonn – and the ones remaining – are significant, and are not to be dismissed. They are also very complex, and deserving of serious attention and debate. For example, the need for “good science” should not simply be discarded in favor of a *carte-blanche* endorsement of the precautionary principle. Nor, conversely, should we fail to move forward because we don’t have all the scientific proof.

The concerns about how the Protocol’s implementation will affect developed and developing country economies – and “who gets the trade advantage” – are also no trivial matter. (This last, by the way, is looking less clear with some voices on both sides now claiming they will be disadvantaged.) And perhaps most important, if the world is to address the long-term challenge of global warming, we will have to decrease our dependency on fossil fuels. This is not an easy task, especially when you consider that the Kyoto Protocol’s nominal 5 percent average reduction in greenhouse gas emissions really means much more when increases in energy use since 1990 are factored in.

So, where does this leave us? We believe there is sufficient scientific evidence to warrant going ahead. And there are actions we can take now that make near term economic sense in their own right – so-called “no regrets” steps. For example, last year, Weyerhaeuser Company replaced an old oil-fueled energy system in one of our major Canadian pulp and paper mills with a modern biofuel (wood waste) boiler system. This one project effectively reduces our annual carbon dioxide (CO₂) emissions at that site by an estimated half million metric tons. We are also investing for the long term by supporting the development of even more efficient biomass energy technology, discussed below. But even these efforts are not enough. We need to do more – and we need to have ways to do it that won’t undermine our economic viability over time and our ability to go the distance.

To achieve these goals we need to use every reasonable option at our disposal. One of those options, particularly for the near and intermediate term, is the use of forest-based sinks to generate tradable greenhouse gas emission offsets. Granted, forest-based sinks do not reduce carbon dioxide emissions, but they do offer a proven, natural and economically viable means to begin chipping away at the net effect of greenhouse gas emissions so we can lower their concentration – carbon dioxide in this instance – in the atmosphere.

The balance of this paper will expand on three points: 1) Why the Bonn agreement on the use of forest-based sinks is a move toward quality, 2) how the forest products industry is moving towards a more fossil fuel-free future, and 3) how we can act collaboratively with others to advance our shared goals.

Forest-Based Sinks: A Move Toward Quality

Over the long term, real additional increments of CO₂ removed from the atmosphere through forest-based sinks should be allowed not just on a limited basis, but on an unlimited basis. This will require, however, internationally agreed forest sequestration accounting protocols and verification mechanisms to avoid game playing. Given that we do not yet have these accounting capabilities in place, it is appropriate, perhaps even prudent, to proceed cautiously in the short term. In this regard, the Bonn agreements concerning forest-based sinks should heighten the quality of forest-based sinks that are developed in the near and intermediate term. They will do this by limiting the “supply” of and “demand” for forest-sequestered CO₂ that can be traded or used to offset greenhouse gas emissions in three ways:

- Allowing, but limiting, the amount of domestic credits (or offsets) from ongoing domestic “forest management” activities that can be “sold” via the Joint Implementation and emissions trading mechanisms;
- Restricting the expected supply of forest derived sequestration credits during the first commitment period by limiting Clean Development Mechanism (CDM) sink projects to afforestation and reforestation investments based on changes in land use;
- Limiting the use of CDM forest sink-based credits by Annex I developed countries to no more than 1 percent of their respective base year emissions allotment. In effect – if we are interpreting the Bonn language correctly – Annex I countries on average can only use CDM sink project credits for one fifth or less of their base year emissions reductions obligations. And, the fraction is even smaller if you include energy use growth since 1990.

Indeed, these limitations, when coupled with the Protocol's sustainable development requirements, should go a long way toward avoiding investments in poorly planned and managed tree-growing projects. In fact, they should encourage high quality, ecologically healthy forests capable of providing long-term carbon storage. This outcome is an example of what we meant earlier when we stated that the Bonn agreements governing sinks should move us towards quality.

One other note of concern: The Protocol's sustainability requirement raises a critical issue, and a somewhat controversial and complex one. The Bonn negotiators also agreed that "sustainability" would be determined by a CDM project's host country. The potential for abuse of this sovereign right to local sustainability determination is a legitimate concern. One has only to read industry and environmental trade journals that cover forestry practices around the world to learn how poorly the forest resources are managed in some countries, and of the many reasons – or excuses – as to why this occurs.

We can assure ourselves that we will see a move to quality forestry by requiring that CDM forest sink projects be third-party certified under one of the emerging sustainable forest management certification programs – preferably one that is acceptable to both the investor and the project's host country. These certification programs vary in their scope, with some addressing social and other non-forest matters *per se*. However, there are at least four major programs with which we are familiar – there may be more – that have credible requirements for ensuring that the forests themselves are managed sustainably. (These are the Canadian CSA/SFM standards, the Pan European Forest Certification system, the US's Sustainable Forestry Initiative, and the Forest Stewardship Council's Criteria and Standards.)

Forest-based sinks raise two other critical issues: additionality and permanence. On additionality, the only way we are going to resolve this element of the leakage debate is to ensure that we have a globally accepted set of greenhouse gas accounting rules. Once we have these accounting rules, they should be used by Annex I (developed) countries and CDM project host countries alike to prepare their annual national greenhouse gas inventories.

On the issue of permanence, there is far too much fear and a lack of understanding of how well traditional market mechanisms can readily address this area

of risk. Many individuals are looking at forests from only a biodegradable point of view, and not as a risky asset that can be managed.

Yet managing risky, perishable assets – trees in this instance – is something the forest products industry does every day, and has been doing quite successfully using management practices and market mechanisms. All we are really doing is substituting one commodity – wood – with another – sequestered carbon dioxide. We believe that these traditional methods are inherently transferable to the world of CO₂ emissions trading, and can be used to shore up the “permanence” of forest-based sinks.

Conceptually, the sale of forest-based CO₂ offsets is equivalent to setting aside a tree. This tree acts like a sealed container, holding the CO₂. This tree is no longer a source of timber. Rather, it is a “CO₂ container tree” that can be certified by a third party as to its condition. We refer to these “CO₂ container trees” as certified tradable offsets of sequestered carbon dioxide – or a “CTO” for short. (This compares to a certified emissions reduction, or “CER.”)

The “tree” and the “CTOs” are inextricably intertwined. The tree cannot be harvested, but the CTOs can be sold to someone else, presumably at a price that is cheaper than what it would cost the buyer to capture or eliminate the same amount of CO₂ from the buyer’s own factory or power plant. If the tree is harvested, or is otherwise destroyed, the value of the CTO is also lost. It would be the equivalent of the container’s seal being broken, allowing all the CO₂ gas to escape.

In a sustainably managed forest, trees are harvested and more are grown all the time. Since the forest and the “sink” are physically one and the same, if the sink is sustainably managed, the total volume of biomass and sequestered carbon will stay constant over time. So it is really the risk of over-harvesting or other physical damage that might deplete the sink’s biomass volume that we are managing.

At Weyerhaeuser, and at other world class forest companies, this is accomplished by employing well developed sustainable forest management practices to ensure that our timber – actually the total biomass – of the forest – is continuously maintained. Simply stated, we harvest what we grow, and when necessary, adjust our harvest and regeneration rates to compensate for losses due to external events, such as fire, pest damage, wind blow down, and drought.

Going back to the conceptual model with the “container tree,” from a financial value point of view, this broken CO₂ container tree would have to be written off as a total loss, resulting in a debit on the buyer’s greenhouse gas emissions accounting books. The buyer would now have to replace the CO₂ container tree’s CTOs with others of equal value. Because a buyer cannot wait 20, 40 or 60 years to grow another tree, a smart buyer will require the CTO seller to be liable for replacing the broken CO₂ container tree. Otherwise the buyer will pay a lot less for the CTO and own the responsibility of paying for replacement CTOs.

A smart seller, however, seeking the highest possible price, will look to enhance the CTO’s value by reducing the risk that the buyer will have to replace it due to loss of value. There are a number of ways for the seller to do this. For example, recall that the value of the CTOs and the trees from which they come are inextricably intertwined. Thus, the seller can obtain a third party certification – an assurance of sorts – that the sink (the forest) is being protected through the use of state-of-the-art sustainable forest management practices.

The seller can also use several traditional market mechanisms to further manage or eliminate the buyer’s risk, adding to the “credit worthiness” or quality of the CTOs. It is here that the greenhouse gas emissions trading concepts embraced by the Kyoto Protocol are very helpful. For example, a CTO seller could hold some additional trees in reserve, creating a form of self-insurance. Or, the seller could buy a greenhouse gas emissions insurance policy backed by a like-kind risk management pool – basically a third party owned forest reserve. The seller, or for that matter, even the buyer – may elect to purchase CTO futures or options to cover any potential losses.

In short, sellers – and buyers – of CTOs from forest-based sinks can use a combination of traditional sustainable forest management practices and market-based risk management tools to “enhance” the “permanence” of a CTO. And in doing so, the sink owner is likely to get a better price for this less risky, more “permanent” CTO from a buyer who will be more willing to buy this “insured” greenhouse gas emissions offset.

To producers of forest products, commodity traders, or others familiar with the financial and commodities markets, there is nothing very new here. In fact, Weyerhaeuser Company, as do most of our major competitors, regularly manages

its risks through the use of all these financial market tools. And, we use state-of-the-art sustainable forest management methods to ensure that our forests – and the carbon dioxide they sequester – are, relatively speaking, permanent. We have been doing this with great success for years – in Weyerhaeuser Company’s case, for over 100 years!

As we evaluate the opportunities in the emerging greenhouse gas emissions trading market, Weyerhaeuser Company is encouraged by the fact that major international firms such as AON Insurance, Swiss Re and Cantor Fitzgerald are already developing these risk management instruments for the greenhouse gas emissions trading market. The extent to which all of this will come to pass will, of course, depend on the final emissions trading rules, future forest sequestration accounting methodologies and the degree of interchangeability among the different types of emissions credits and debits – something the Wall Street types call “fungibility.” It will also depend on the extent to which the emerging emissions accounting and trading rules can be met without having overly burdensome trading transaction costs.

We believe forest based sinks and emissions trading can work at the global level. Rather than criticizing the use of sinks and emissions trading, we should support efforts to test these concepts and develop the needed tools and protocols. Given the enormity of the climate change problem, it is worth taking the risk.

Towards a More Fossil Fuel-Free Future

The forest products industry can be a contributor to climate change mitigation not only through establishment and maintenance of sinks. It can be a contributor by investing – now – in the development of new technologies that will reduce our fossil fuel emissions. In this regard, Weyerhaeuser Company is involved with some of our competitors and the U.S. Department of Energy in a project called the “Forest Products Industry Gasification-Combined Cycle Initiative.” This initiative is a longer-term option based on dramatically improving the amount of energy we derive from biomass byproducts at pulp mills. This initiative is not an attempt to avoid doing what we need to do by arguing that we need to study the issue. In fact, the basic technological elements involved – there are several – have been under development for over 25 years. And, we have already moved into the “doing” stage.

Pilot operations of this technology – including one at our New Bern, North Carolina mill – have generated thousands of hours of operating data. More recently, the first large-scale demonstration plants are being engineered, and in some cases built. If we are successful – and we believe we will be – the Gasification-Combined Cycle Initiative will allow the industry to replace all its fossil fuel-based furnaces and even its current wood-waste boilers with this innovative technology. The electrical power production capability of this technology is estimated to be two to three times that achieved from the conventional processes we now use. In the U.S., our industry would change from buying some 6 to 8 billion watts of electric power from utility companies to selling 22-24 billion watts of electric power to them. This gain – a total of approximately 30 billion watts – is enough to supply two thirds of the electric power needs of the world's fifth largest economy: the state of California. It would come, moreover, from a high energy-use industry that would be essentially fossil fuel independent!

From a global climate change perspective, in the U.S. alone we could generate something in excess of 145 million metric tons of CO₂ emission reductions annually. This would be equivalent to meeting almost a quarter of the United States' annual 600 million metric ton CO₂ reduction obligation under the Kyoto Protocol. And this is just from one segment of one industrial sector.

This won't happen tomorrow or in the next couple of years. But it is not a very long-term solution so much as it may be an intermediate-term solution, perhaps over the next 15 to 20 years. It will take a lot of work, investment and some risks by those who are supporting its development and will be the first to test it at commercial scale. The risks are significant, even with government support. But the payoff for the entire industry – and society – are enormous. We are also carefully monitoring similar initiatives in other industries, initiatives that have names such as Brightstar, which uses municipal solid waste as a fuel, Dynamotive, which involves the use of bio-oils, and Ensyn, a project that uses organic resins. These and other technology-based initiatives are sure to appear in the years ahead if given the chance and the support needed.

Moving Beyond Collaborative Talk to Collaborative “Doing”

The forest products industry has a lot to contribute to the sustainability agenda in general, and the global climate change challenge in particular. Over the

past half-century, most if not all of the major firms in the industry have undergone considerable change in the way we do business. These are changes that cause us to be ever more careful and prudent managers of forest resources, changes that continue to force us to think and act outside the box. The industrial forest of today is not the industrial forest of a century ago, or even a few decades ago, and it will not be same as the industrial forest that our children's children will see at the beginning of the next century. But they will see forests, for this is a very renewable resource.

As the Gasification-Combined Cycle Initiative demonstrates, the forest products industry has long been committed to making the investments in technology and science that can truly bring about benefits not just to our industry, but to society as a whole. In fairness, it also needs to be said that we did not do all of these things entirely of our own volition. A share of the credit must go to the environmental and social activist community, who have pushed and prodded our industry, and who have raised their voices to point out things that they felt were – and perhaps may feel still are – unacceptable. For this, these activists – past and present – are to be commended. Where these debates have been responsible, they have contributed to change. We know we will see more of this, as this is the mark of a healthy democratic society.

But there is a downside to this approach. It is a downside of unintended consequences, where all the members of an industry often are deemed to be at fault for the unacceptable practices of the few who have yet to change and improve their practices. It leads responsible firms to leave a region or market in frustration. It leads less reputable firms, and even responsible firms, to shift their sourcing and manufacturing to developing countries that often lack the institutional capacity – or will – to protect their forests. The results are often the antithesis of what was being sought in the first place: better forest management and more healthy ecosystems.

It is far too easy for the industry vs. environment debate to turn into a way of being, with both sides seeing each other as the perennial enemy, never to be trusted. Instead of constructive debate and dialogue leading to awareness and change, we end up with an endless stream of single-issue politics, strident demands, and forced remedies that all too often lead to sub-optimal solutions and slower progress – if any. There is a need for all of us to renew efforts to work

more collaboratively, and to take a more balanced, and multi-faceted approach. Single-issue politics and hostile campaigns may well have been needed to kick start real environmental change some 30 years ago. But it won't help us achieve the types of technological successes we need to address global climate change and other long-term sustainability issues.

Dialogue and transparency, while a good start toward changing this situation, are not enough. We cannot expect to bring about lasting changes in societal behavior – and avoid unintended negative consequences – unless we are even more innovative in our approaches. Somehow we need to find ways to actually work together to “do” the things we talk about. The challenges we face with climate change are a good example. If we are to succeed in the long term, we will need to work together to advocate and support rules that will encourage fundamental changes in societal behaviors. We will need to work together to bring about social and economic changes that support real investment in and use of “greenhouse gas neutral” technologies and lifestyles. We will also have to work together to develop and support interim options that may not be “perfect” or “permanent” from a purely environmental point of view, but are capable of making a positive difference in the interim.

There are instances where the less than “perfect” option may help us capture more improvement in the interim than we will capture by endlessly arguing about the “right” way to do something. Forest-based sinks are one of these interim options. Financial incentives to encourage more investment and greater use of existing alternative energy technologies such as our Canadian mill's woodwaste boiler system is yet another.

The opportunity to develop these types of cooperative “doing” relationships isn't limited to global climate change. It's not too late to move to this collaborative “doing” approach on the climate change issue, or for that matter, other global sustainability issues. Indeed, the time is just beginning.