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October 19, 2007

To: California Air Resources Board October 25-26 meeting on Forestry Protocols

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Subject: Moving towards an effective portfolio of forest protocols for climate benefits

There is considerable interest among all the signatories of the Western Climate Initiative in providing a coherent set of incentives and guidance so that sustainable forestry can increase its already important contributions in terms of climate benefits. This will undoubtedly include accounting for carbon dioxide emission offsets via increased in-forest inventories, wood offsetting more energy intensive building products, and wood-based energy offsetting fossil-fuel based energy use. Protocols that are relevant for the whole forest sector will need to account for as many ownership types as possible as well as the full range of offsets. Even more so than in the case of imported electricity, California must also account for the fact that most of our wood products, and possibly our forest-based emission offsets, will occur outside of our state boundaries. Given the probable emergence of tradable offsets within our own Cap and Trade System, as well as other forest protocols already in use in the other states and provinces in the Western Climate Initiative, it will be in California's best interest to consider the current protocol as one option, rather than the only building block for other options, for forest protocols. As the ARB moves forward with the next round of California stakeholders, it would also be valuable to involve university expertise from California and elsewhere in all phases of the process.

I. The value of approving one protocol now and working towards other relevant options

Although the current CCAR protocols cover a wide range of potential projects, it is important to realize that other forest protocols, such as those used for projects to offset CO₂ emissions from new power plants in Oregon (see www.climatetrust.org), are already in use in neighboring states. As the overarching goal of California's climate change initiatives is to bring other parties along, it will be crucial that our efforts do not accidentally inhibit innovations and approaches in other states. For example, it appears that the current CCAR Forestry Protocols (Version 2.1 September 2007) for managed forests can only be used on forest lands with an existing open space easement and only with a subset of forest management techniques. Even with the increased availability of state (mainly through the Wildlife Conservation Board with Proposition 84 funding) or local open space districts, it is doubtful that more than 2% of the roughly 13 million acres of private forests and woodlands would meet the preconditions and want to enter into one of the options within the current 'entity' and 'project' protocol.

Experience throughout the United States and Canada has shown that most family forest and farm owners are not interested in permanent easements on their lands but are willing to

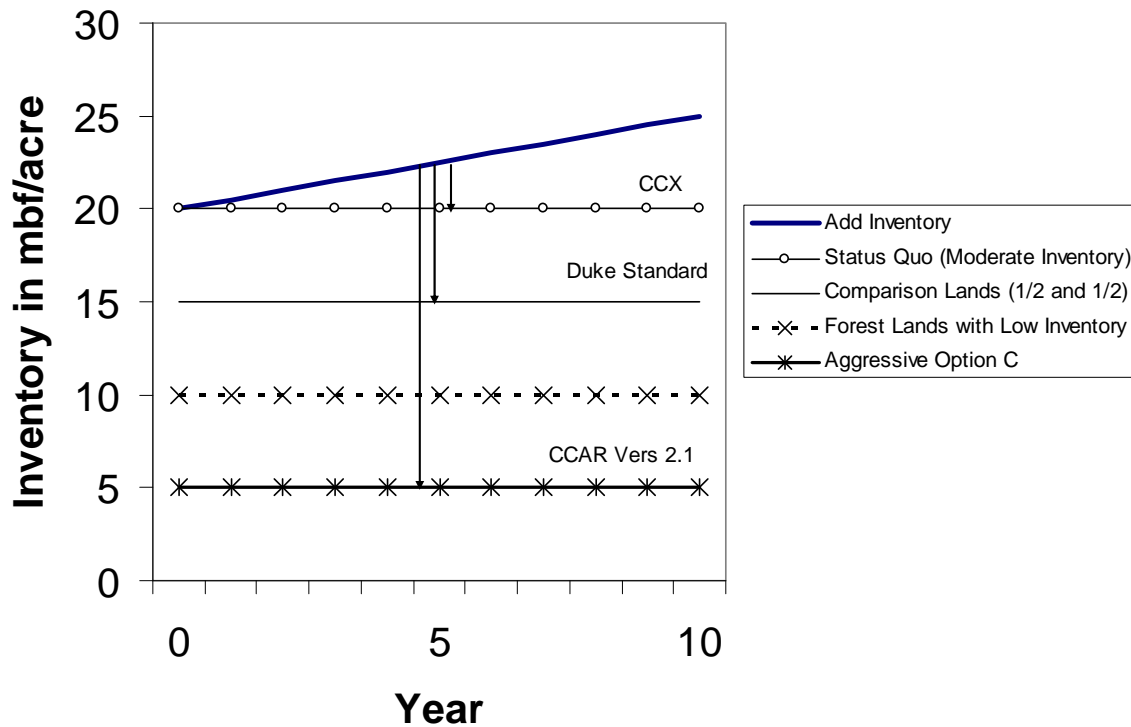
participate on cost-share programs that have decade-long or sometimes multi-decade-long restrictions, often renewable, on land uses. Easements are great tools for permanent protection of land from an acreage point of view, but they are not necessarily correlated with carbon inventories. Federal programs such as the NRCS EQIP, USDA Conservation Reserve Program (CRP), USFS Forestland Enhancement Program (FLEP), as well as the California Forest Improvement Program (CFIP) run by the Department of Forestry and Fire Protection are all organized around cost-share payments dependent on renewable long term contracts. The recently published book from Duke University Press - **Harnessing Farms and Forests in the Low-Carbon Economy: How to Create, Measure, and Verify Greenhouse Gas Offsets**, Willey and Chameides (editors), 2007 - elaborates on the practical characteristics of both permanent easement and renewable contract approaches for both farms and forests. The development of options, such as renewable contracts for carbon, as well as consistent methods accounting for carbon stored in wood products and the offset value where usable energy from wood biomass displaces the use of fossil fuels. The protocols that are used by the Chicago Climate Exchange (CCX) are another example of protocols that will probably work for more landowners and more acres.

II. Baseline and additionality issues

California imports around 80 percent of its wood products from other states. Most of the imports come from states that are partners in the California-led Western Climate Initiative. It stands to reason that approaches to baseline, additionality, and leakage definitions must work across western North America. While the current open space easement option of the CCAR Forestry Protocols includes considerable stress on the local place-based benefits of projects, it may be hard to justify the regional value of these localized benefits to parties in Oregon, Washington or British Columbia. Those parties are going to focus on the regional and global climate benefits of actions and their point of view may be in better sync with national and international entities that are going to be in the carbon offset market. While there are many different ways to define 'baseline' and 'additionality', including 'proportional additionality' (Willey and Chameides, 2007) that combines both concepts, it will be necessary for commonly agreed upon definitions to emerge if they are to apply regionally.

The following simple diagram illustrates three different ways to measure climate benefits of the standing carbon stock on a forest stand with increasing forest inventories. At its simplest, sustainable forestry requires that growth exceed harvest. By any definition, the stand shown in this example is accruing climate benefits. The amount of benefits measured depends to a large degree on what type of baseline is used. Simply comparing inventories between two time periods is the simplest method. Measuring against comparable inventories on similar lands (the Duke Standard), rather than the base parcel would produce a different estimate and give a clear signal to all landowners that higher than average carbon inventories will be rewarded. The current CCAR protocols would appear to generate the largest measured benefit as it is measured against a much more aggressive theoretical harvest pattern. Different protocols in use throughout Western North America have different ways to measure these benefits, different approaches to periodic payments, and different approaches towards the risks of future carbon reversals or withdrawals. In the same way that different financial vehicles- savings accounts, stocks, bonds, mutual funds, REITs – operate together without conflict, it is probable that different protocols will be used simultaneously. The earlier that California enters into a serious dialogue with the proponents of the different protocols and addresses the need for national or international arbiters – such as the role the Security and Exchange Commission (SEC) plays for financial instruments – the better.

Very Simple Example of Different Baseline and Additionality Rules



III. Leakage

The issue of state-to-state leakage of carbon harvested from forests and stored in wood products is another concept that must have regional relevance. This is especially true for California since we import that vast majority of our wood products and will probably see many project proposals based on calculating carbon sequestration based on limits to timber harvesting.

It would appear that the current CCAR protocols – if they are couched in ‘sector’ rather than ‘project’ terms - may not meet the plain language of AB 32 in terms of leakage. Version 2.1 of the CCAR Forestry Protocols allow the proponent to view market leakage to be an optional component. “Activity shifting leakage that may have been created in the entity due to the project must be assessed. Reporting market leakage is optional.” (CCAR Forest Sector Protocol, Version 2.1, September 2007, p 61). This will probably not meet the ‘where appropriate and to the maximum extent feasible’ standard in H&S Sec 38530 (b) (3) as there is a much stricter definition of leakage that applies to the whole bill: ‘ “Leakage” means a reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside of the state.’ (Health and Safety Code Section 38505 (j)).

The importance of considering market leakage in well-developed timber markets has been well documented by Wear and Murray (2004) and Murray, McCarl and Lee (2004) and has been

referenced in recent review articles (Sathaye and Andrasko 2007) and books (Willey and Chameides 2007). Murray and others used the drastic reduction in public timber harvests during the Northwest Forest Plan as an example of a large scale carbon storage project. When they measured increases in harvests in other areas of the United States they found that nearly all the extra carbon stored on public lands in the Northwest was effectively cancelled out by increased harvests elsewhere. Willey and Chamedies summarized the issue well: “This means for every ton of emissions avoided by reducing timber harvest on federal lands, 0.88 tons of emissions occurred from increases in harvesting elsewhere...Thus, if the reduced lumber harvesting program had been filed as a GHG offset project, the project could have claimed only 12 percent of its net greenhouse benefit as offsets (the benefit after accounting for proportional additionality and the baseline).” (Willey and Chameides 2007).

The authors of AB 32 were most probably focusing on the electricity markets when they crafted the ‘leakage’ definition. Integrated timber markets operate in a similar manner to integrated electrical markets in terms of the real regional carbon footprint. This problem can be addressed fairly simply by clarifying that the current protocols are for relatively small ‘entity’ or ‘project’ level impacts that could be covered by the ‘de minimis’ clauses in AB 32. If they are interpreted as being the preferred option for the whole forest sector (including public forest lands), then it would be hard to ignore the conflict with the official ‘leakage’ definition. This is an example of another area where a clear understanding of the carbon-related and other public policy goals of various protocols must be developed.

IV. Consider a net regional loss of forest carbon metric for avoided deforestation

Avoiding deforestation in tropical countries is correctly considered to be one of the most beneficial actions in terms of providing climate benefits. Avoided deforestation in the California context is quite different for a number of reasons. The first point is that most acres of development in forest areas will occur through large lots, with most of the acreage in lots of 5 acres or more. Although wildlife habitat may be severely impacted on all the acres within each parcel, an analysis of aerial photography clearly shows that most of the trees, and therefore carbon, is maintained on most large lots after the new homes are built. The second point is that a project that is registered for avoided deforestation on one site may simply shift the conversion pressure to somewhere else within the watershed, county or region. A broader land use perspective would improve the analysis of intra-regional shifts of land changes.

References

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