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GROWING WITH AMERICA SINCE 1861

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California Air Resources Board
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Dear Ms. Nichols, Mr. Bode, Ms. Panek and Members of the Board:

The American Forest & Paper Association (AF&PA) appreciates the opportunity to comment on the California Climate Action Registry (CCAR) Forestry Protocols in advance of the public workshop scheduled for September 6, 2007.

The forest products industry accounts for approximately 6 percent of total U.S. manufacturing output, employs more than 1 million people, and ranks among the top 10 manufacturing employers in 42 states with an estimated payroll exceeding $50 billion dollars. In California, the forest products industry employs approximately 75,000 people producing annual shipments valuing over $15 billion dollars.[1]

AF&PA offers these preliminary comments as a first step in working with you to develop a robust and credible forestry protocol that is applicable for voluntary reporting in the near term and that can ultimately be adopted by California Air Resources Board (CARB) to satisfy mandatory forestry sector reporting requirements under AB32. We hope that these comments will offer some additional or alternative policy options that can be incorporated into the protocol to make it both more inclusive of managed forestry operations and more effective at reducing atmospheric carbon. Forests currently cover 33.2 million acres or 33% of the land area in California of which 19.6 million acres are productive unreserved forestland.[2]

[1] 2004 data from Minnesota IMPLAN Group, Inc.
[2] Estimated area of forest land by ownership and land status (Millions of Acres) (Source: 2005, USFS, FIA)

Key Concerns:

The CCAR Forestry Protocol discourages the participation of managed forestry operations through two key provisions: 1) perpetual easement requirements for forest-based projects and 2) methodology for calculating baselines from which additional carbon can be measured. These provisions can be expanded to include options that credibly satisfy permanence and additionality requirements while encouraging landowners to manage their forestlands for carbon as well as timber value.

Managed Forests

The CCAR and CARB rules should adopt a more comprehensive look at the carbon profile of the forest products industry in order to recognize and encourage the positive role managed forestry operations play in reducing GHG emissions. While conservation forests can, for a time, reduce atmospheric concentrations of CO_2, managed forestry operations can also make a significant contribution to reducing atmospheric carbon. As noted in the Intergovernmental Panel on Climate Change Fourth Assessment (IPCC) Report, *Mitigation:*

> "In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber or energy from the forest, will generate the largest sustained mitigation benefit."[3]

The climate benefits of sustainably managed forests, when coupled with timber production, provide several positive carbon benefits that are quite significant when compared to unmanaged forests. These include:

- ***Carbon storage in wood products:*** Approximately one-third of the carbon in wood harvested for the industry ends up in long-lived products such as lumber and wood-based panels,[4] and is sequestered in some cases for decades, even centuries.[5] *Long term storage of carbon in such products is internationally recognized by climate scientists and policymakers, including the recently released guidelines by the Intergovernmental Panel on Climate Change.*[6] The U.S. government estimates that the amount of carbon stored in forest products is equivalent to removing over 100 million tons of carbon dioxide from the atmosphere every year.[7] This is equivalent to eliminating the carbon dioxide emissions

[3] (Source: IPCC. 2007. *Mitigation, Fourth Assessment Report*)
[4] *Based on data from the FAO database FAOStat http://faostat.fao.org/.*
[5] *Based on half-lives in Annes 3.12 of* USEPA 2007, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 7 1990 – 2005
[6] Intergovernmental Panel on Climate Change (IPCC). 2006. *2006 IPCC guidelines for national greenhouse gas inventories*
[7] http://www.epa.gov/climatechange/emissions/downloads06/07LULUCF.pdf page 7-11

from 18 million passenger cars - 13% of all passenger cars on the road in the U.S.[8]

- ***Lower Carbon Footprint:*** Wood as a building material requires less energy to extract, process, transport, construct and maintain over time and is a better insulator than other building materials such as cement and steel.[9] In addition, harvested wood that is not made into products is used as a substitute for fossil fuels, often through co-generation which further amplifies the benefits of using this GHG-neutral fuel. Wood fiber for other uses, such as packaging material, provides many of the same advantages. According to the latest DOE figures, in 2002, 89 percent of electricity generated at paper mills was cogenerated.[10] Moreover, economic returns to active forest management can have substantial effects on landowner decisions about whether to convert forests to non-forest uses.[11]

- ***More rapid carbon sequestration rates:*** Young trees that are regenerated to replace those that are harvested have higher sequestration rates than old trees. As forests age, they absorb carbon dioxide at considerably slower rates while giving off increasingly more carbon dioxide through respiration and decay. (Absorption tapers off between 50 and 300 years depending on species and growing conditions).[12] Ultimately, old forests release as much carbon to the atmosphere as they remove from it.

- ***More Resilient to Climate Stresses:*** In addition, sustainably managed forests that are periodically regenerated are less susceptible to catastrophic fire, disease and insect epidemics. Forests managed in accordance with silvicultural principles[13] are generally more productive and less likely to experience stand-replacing wildfires as a result of investments in regeneration, stocking control, pest management and fire protection.

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[8] USEPA 2007, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990 – 2005 and information from EPA's personal greenhouse gas calculator website http://www.epa.gov/climatechange/emissions/ind_calculator.html

[9] http://www.beconstructive.com/pdf/Factsheet4.pdf based on http://www.corrim.org/reports/2006/final_phase_1/index.htm

[10] Energy Information Administration 2002 report on Energy Use in Manufacturing, Table 11.3 www.eia.doe.gov/emeu/mecs/mecs2002/data02/pdf/table11.3_02.pdf

[11] The forest and agricultural sector optimization model (FASOM): model structure and policy applications. 1996. Adams, Darius M.; Alig, Ralph J.; Callaway, J.M.; McCarl, Bruce A.; Winnett, Steven M. Res. Pap. PNW-RP-495. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 60 p

[12] Appendix 1 of Technical Guidelines for Voluntary Reporting of Greenhouse Gas Program: Chapter 1, Emission Inventories: Part I Appendix: Forestry: March 2006.

[13] The Practice of Silviculture. 7th edition. 1962. David M. Smith. John Wiley & Sons, Inc. New York.

Perpetual Easements & Permanence

The Registry's requirement for perpetual easements is an unnecessary constraint that discourages landowners from committing their lands to carbon management by constraining future land use options. Easements are also too limited a tool to address all of the "permanence" related risks to forests' sequestered assets.

GHG registries should include a portfolio of elements that will encourage landowners to maintain their forests for the long term, enhance the value of timberlands, and ensure that landowners have the ability to sustainably manage the land for both GHG mitigation value and timber value in the most flexible way. At the same time, these options should ensure that the fundamental principal of additionality is maintained, and that the liability for changes to carbon stocks on the land, both decreases as well as increases, is clearly established, tracked, and managed over time following GHG accounting and registry requirements for transparency.

Liability for forestland carbon stocks, both increases and decreases, should be assigned to the land owner of the carbon asset being registered, not the land. This will enable the landowner to use various options to mitigate any losses or decreases in registered forest carbon stocks, and to capture value from the carbon via "market mechanisms" under any future cap-and-trade carbon trading program. It also allows the "market" to add or subtract the value of the permanence risk to the price of a carbon credit to reflect who owns that liability, and it creates an auditable system wherein all of these elements (title to the carbon, liability for loss, etc.) are documented in the contracts that would be used to transact a "carbon credit" trade.

At a minimum, the CCAR requirements should be changed to allow a forest land owner to use one or more of the following options to address permanence:

- ***Banking:*** Allowing a forest owner to "bank" some or all of any annual carbon stock gains as a hedge against future reductions.
- ***Insurance:*** Obtaining insurance against carbon stock losses, wherein the insurer would provide a payment that could be used to purchase replacement carbon reduction units (credits).
- ***Like-Kind Pools:*** Development of like-kind carbon stock insurance pools – forest carbon management units created to act as a replacement reserve. (Both private and public forest land owners should participate in the development of these pools, for mutual benefit, and to reduce costs.)
- ***Physical Risk Management:*** Obligations to apply state-of-the-art sustainable forest management methods to reduce the risk of fire, pest and other force majeur risks – methods that have been developed and employed with considerable success over decades or longer by many of the largest forest land owners in the world.
- ***Force Majeure Safe Harbor:*** Provisions should allow for carbon stock losses due to force majeure events (fire, wind blowdown, disease, and

pest damage) to be subtracted from the inventory baseline, without the recording of an emission, so long as the landowner re-grows (regenerates) the carbon stocks to the levels equal to the amounts lost. Such increases would not be considered additional, but a replacement for the lost carbon stocks. As the replacement stocks are generated, they would be added to the baseline, until the full loss is replaced.[14]

Additionality and Baseline Requirements

Calculating baselines and additionality based on business-as-usual (BAU) scenarios is not appropriate for measuring long term changes in carbon stocks in forests.

The current approach is biased against landowners who are sequestering additional carbon annually on a BAU basis, and those who harvest some or all of that annual gain in carbon stocks for the production of long-lived forest products.

Other methods, such as a baseline year approach, should be allowed by the protocol. Under a baseline year approach, any annual increases in carbon stocks are considered as additional.

In addition, verification and certification are also more straightforward using a year as a baseline. Important factors such as changing forest management objectives, markets for alternative land uses, timber prices, ecosystem service prices (e.g. the price of sequestered carbon), and changes in technology and knowledge all contribute to a high level of inherent uncertainty when defining a baseline under a BAU scenario.[15]

The Regional Greenhouse Gas Initiative, DOE's 1605b Greenhouse Gas Registry and the Chicago Climate Change all use a baseline year approach.

Forest Product Carbon

The carbon in forest products should be fully recognized by the Sector, Project and Certification Protocols. As stated earlier, long term storage of carbon in such products is internationally recognized by climate scientists and policymakers. The current California Protocol puts such product carbon in an "optional" category that cannot be used to develop greenhouse gas reductions. Consequently, an entity's

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[14] http://www.pi.energy.gov/enhancingGHGregistry/documents/January2007_1605bTechnicalGuidelines.pdf Section 1.I.3.4 Natural Disturbances p.244

[15] Ruddell, Steven, R. N. Sampson, M. Smith, R. A. Giffen, J. Cathcart, J.M. Hagan, D. L. Sosland, J. Heissenbuttel, J.F. Godbee, S.M. Lovett, J.A. Helms, W.C. Price, R.S. Simpson. 2007. The Role for Sustainably Managed Forests in Climate Change Mitigation. Society of American Foresters. Washington, DC. Journal of Forestry. In Press.

decision to send forest products to the wood products carbon storage pool is not rewarded.

We recommend that forest product carbon must be considered a mandatory pool, along with above and below-ground living biomass, dead biomass, and soil, and it be tracked, registered and certified. The owner of the rights to the product carbon (typically the landowner, product manufacturer or end customer) may register the product carbon. Registration rights for product carbon may be transferred among parties however the registering party must demonstrate ownership of the product carbon through market based buy/sell agreements or contracts.

We support the inclusion of default methods and values to simplify calculations while retaining the ability for reporters to use appropriate alternative methods.

Standardized look up tables should be included in the protocol to determine the amount of carbon stored in forest products. Appropriate tables have been developed for the DOE 1605b GHG Registry found at http://www.pi.energy.gov/enhancingGHGregistry/documents/PartIForestryAppendix.pdf on page 162. The values in these tables are discounted for uncertainty and provide users with a simplified approach to determining product carbon levels.

We support the inclusion of the 100 year method[16] as an optional method for calculating carbon stored in forest products. The calculation method recommended by the Registry for such products is similar to the one recommended by the IPCC to develop national inventories of carbon in products. It results in large net increases in stored carbon in the early years due to crediting of new products with fewer debits for decaying products. It is an appropriate method for measuring product carbon back to 1900 (for a national inventory) as these start up effects have an opportunity to smooth over time. However, it is less appropriate for current or shorter time horizons that are covered in the Protocol.

In addition, reporters may want to use more appropriate conversion factors than those provided in the recommended or default product carbon calculations which tend to underestimate the amount of forest products harvested.

The appropriate use off all methods will be confirmed during the verification/certification process.

Inventory

Because acceptable inventory and reporting procedures are time-consuming and expensive, it is important to provide flexibility for acceptable carbon inventory

[16] Miner (2005), "The 100-Year method for forecasting carbon sequestration in products in use", in Mitigation and Adaptation Strategies for Global Change published on-line May 22, 2006

procedures. There should be options for conducting annual inventory of on-site carbon storage, ranging from look-up tables to field sampling. Carbon quantification using look-up tables can be discounted to take into account greater uncertainty. Reducing inventory and monitoring expenses will help to keep such costs more in line with the value of carbon.

Natural Forest Management

In the current Project Protocol, forest management projects must use natural forest management practices which promote and maintain native forests that are comprised of multiple ages and mixed native species in the forest overstory and understory. First, natural forest management in no way is limited to only stands of mixed species with multiple ages, in both California or in other parts of the world. There are many single cohort stands dominated by single species that exist due to light requirements and competitive nature of the dominant species (e.g., most pine species and Douglas-fir grow best with light, and while today they are mostly planted in this fashion, historically they germinated naturally after large stand-replacing disturbances). Second, this requirement of having mixed species and multiple age management has no direct relationship to carbon sequestration.

Instead, we suggest that for impacts unrelated to carbon stocks, the Protocol require compliance with state regulations. Compliance with California's Forest Practice Rules should suffice without supplementary management requirements.

Reporting

Asymmetry

Simple changes in carbon stocks over time, including increases or sequestration, should be allowed under entity-wide reporting. Currently, California considers decreases in carbon stocks to be emissions but, unless you are enrolled in a carbon project, California does not consider increases in stocks to be GHG reductions. On the other hand, a decrease in overall carbon stocks is always considered an emission. This double standard should be eliminated - both gains and losses in forest land carbon stocks must be recognized in computing changes in carbon stocks over time.

Applicability

It is unclear whether emissions from forestry operations will be included in regulations implemented under AB32. Most, if not all, mandatory programs to regulate GHG emissions do not impose requirements on the forestry sector.

Options

Depending on the ultimate scope of the future CARB Mandatory Reduction Requirements and Registry Protocols, ***forest land owners should be afforded the***

following options under which they can register carbon stock changes on their land:

- If there is a mandatory program that requires measurement and reductions from forestry operations, a land owner should be able to include its forest carbon stocks, and annual carbon stock changes in its enterprise-wide carbon inventory.

- If the reporting entity includes manufacturing as well as timber growing operations, these would be combined and reported under rules comparable to the CCAR General (GHG) Reporting Protocol, in a consolidated account. Any increases in carbon stock should be considered credits and similarly, any reductions in carbon stock should be considered emissions. Consolidated registrations would be held to net changes (increases and decreases) from a consolidated baseline. Note that for an entity reporting under this scenario the Forest Project Protocol would be unnecessary.

- In order to avoid unnecessary and expensive carbon accounting, it is important that entity-wide reporters have the option to be exempt from reporting carbon fluxes from forests that are sustainably managed. This is based on the fact that carbon stocks on sustainably managed forests are likely to be stable or positive over time. This provision would allow entities to avoid expensive carbon accounting and verification procedures on land that likely will have *de minimis* changes over time. In addition, landowners should have the ability to certify all or part of their forest land as being managed sustainably and choose to include actual estimates of changes in carbon stocks on the remaining parts their lands, rather than relying on the assumption of *de minimis* changes. This allows landowners the opportunity to undertake activities that would maximize carbon sequestration over time (and the accounting and verification requirements) on specific areas of their ownership should they so choose. This reporting option for lands certified to a sustainable forestry standard, such as the Sustainable Forestry Initiative, Forest Stewardship Council, Canadian Standards Association Sustainable Forest Management certification, or the American Tree Farm System, has been adopted by the Department of Energy's Voluntary Reporting of Greenhouse Gases 1605b Program.[17]

- If a mandatory system does not require measurement and reductions from forestlands, the Forest Project Protocol should be used to verify carbon offsets. Note that for those registering offsets from sustainably managed land, reporting a complete inventory through the Forest Sector Protocol is unnecessary.

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17 http://www.pi.energy.gov/enhancingGHGregistry/documents/January2007_1605bTechnicalGuidelines.pdf (Section 1.I.3.5 Sustainably Managed Forests Page 244 4.)

Summary

In order for the Protocols be more effective in reducing atmospheric carbon, we suggest adding an alternative or supplementary protocol for sustainable forest management activities to accurately account for harvest and regeneration practices to restore, enhance, and maintain forests and their carbon stocks.

Key components of such a protocol tailored to managed forests include:

- Appropriate reversal requirements to deal with additionality and permanence issues around harvesting, forest disturbance or land use change.
- Allowing full recognition and certification of forest product carbon.
- Accounting of changes in carbon stocks over time.
- Recognition of the stability of carbon stocks on sustainably managed lands.
- Minimized accounting costs.

We thank you for the opportunity to comment on CCAR's Forestry Protocols. We hope that these comments will lead to the incorporation of additional alternatives that will make the Forestry Protocols more inclusive of managed forestry operations. We believe it is possible to include such provisions while maintaining the level of integrity necessary to support the Registry's objectives of measuring real, additional, verifiable, and permanent reductions in green house gases.

Please do not hesitate to contact us as we would like very much to provide any supporting information needed or work with you to refine any of the options outlined in these comments.

Thank you for your consideration.

Sincerely,

Rhea Hale
Director, Climate and Air Programs
American Forest & Paper Association