September 16, 2011

Via electronic submittal
Comments on the Compliance Offset Protocol U.S. Forest Projects and Subchapter 10 Climate Change, Article 5, Sections 95800 to 96022, Title 17, California Code of Regulations, to read as follows: Article 5: CALIFORNIA CAP ON GREENHOUSE GAS EMISSIONS AND MARKET-BASED COMPLIANCE MECHANISMS
by CA EPA, ARB, September 2011

Dear CARB,

While this version of the proposed Air Resources Board (ARB) approach to measuring the global climate benefits of using wood waste for renewable energy continues to be in sync with other state, national and international approaches (i.e. clear global benefits when produced as a by-product of sustainable forestry and a low-waste systems of using wood products rather than other energy-intensive products), this position appears to contradict one of the forest offset protocols authored by the non-governmental organization Climate Action Reserve (CAR). Continued reliance on the CAR formula will overestimate global climate benefits. By not considering the renewable energy generated by burning wood waste, the CAR formula effectively assumes all wood waste used for energy is a negative outcome from a global carbon cycle perspective. Unless the formulas used in CAR forest protocols are clarified and properly take into account emissions and benefits associated with wood products, there is the risk that overpriced and artificially inflated offsets will enter the system and later, need to be adjusted downwards (similar to the rise and fall of the housing market, especially here in California).

Section 95852.2 of Article 5 clearly define that the carbon dioxide emissions from energy produced from mill residues and post-consumer wood waste (s 95852.2 (a) (2)) and wood and wood waste from regulated sustainable forestry operations (s 95852.2 (a) (4)), p A-102 and A-103, are "emissions without a compliance obligation". In other words, using wood carbon to generate renewable energy is as equally valuable (from a carbon cycle point of view) as if the carbon was still stored in the forest during the finite lifetime of any individual tree. This approach is in sync with the California Energy Commission, the California Public Utilities Commission, the US Environmental Protection Agency, and every country that signed the Kyoto Protocols. They all count wood residues used for energy as a climate benefit. The clarity of ARB's treatment of wood waste associated with sustainable forestry (it would appear that wood waste produced from a conversion of a forest use to a non-forest use would not qualify) is appreciated.

In the Compliance Offset Protocol U.S. Forest Projects document (authored by a party that other than the ARB (who is the responsible entity for representing the State of California), there are 13 references for details on how many pollution credits will be given to projects referring to 'the Forest Offset Protocol Resources section of ARB's website'. They all hotlink to http://www.climateactionreserve.org/how/protocols/adopted/forest/resources/.

It is clear that the ARB regulations put out for public comment are incorrect as this link is not to an ARB website but to a non governmental site that has not been properly vetted through appropriate governmental channels and notification requirements. Further, upon close examination of the formulas, the site uses a very different approach than Article 5 with regard to accounting of climate benefits of wood wastes used for energy. This is important in California since we have no significant paper mills that use wood chips but do have a many wood-to-energy plants that generate renewable electricity. While there are many metrics used to measure wood (e.g. board feet, cubic feet, green tons, bone dry tons), the most recent survey of sawmills in California and other Pacific Coast states calculated that only ½ of the wood volume coming into the sawmill on log trucks leaves the sawmill as dimensional lumber (shown below in 'Table 3' from Keegan et al (2010)). National survey data of harvest sites and sawmills published in tables 39 and 42 in Forest Resources of the United States, 2007 (Smith 2009), also confirm that around ½ the initial total biomass from a harvested forest does not end up in dimensional lumber or products made from wood chips such as oriented strand board (OSB). A significant portion of the wood not going into dimensional lumber in California is used for energy.

Table 3.—CLR, cubic feet of green finished lumber per cubic foot of bole wood processed.

Region/state	1970s	1980s	1990s	2000–2006	% increase[a]
Four Corners[b]	0.40	0.41	0.41	0.46	15
Northern Rockies					
Idaho	0.40	0.43	0.45	0.46	15
Montana	0.41	0.41	0.42	0.44	7
Wyoming	0.42	NA[c]	NA	0.44	5
Pacific Coast					
Alaska	0.36	0.36	0.37	0.39	8
California	0.42	0.43	0.43	0.48	14
Oregon	0.42	0.48	0.49	0.52	24
Washington	0.43	0.45	0.51	0.50	16

[a] Percent increase column represents the total increase between the first (1970s) and last (2000 through 2006) periods.
[b] Arizona, Colorado, New Mexico, and Utah.
[c] NA = not available.

from Keegan III and others, 2010

Since only long lived wood products are considered as a climate benefit under the CAR formulas, all the wood waste used to generate renewable energy is essentially considered a negative outcome in the 'baseline harvest scenario' where wood waste is used for energy. The reduction of harvested wood used for energy is therefore credited as a climate benefit in the 'improved forest management (IFM) project' based on a 'with and without comparison'.

When measuring climate benefits under the 'with project' and 'without project' scenario, IFM projects form the basis for deciding how many pollution credits a project earns when sold through CAR. The CAR protocols continue to count all the carbon in wood residues used to generate energy as a 100% emission rather than as a true carbon benefit that can be measured by the avoided emissions from fossil fuel burning. This is a critical distinction between the CAR formulas and the proposed ARB regulations designed to govern the use of carbon credits in a reputable Cap and Trade program.

The CAR formula significantly inflates the apparent climate benefits of an IFM project since all the wood residues used for energy from the logging operation, the sawmill operation and post-consumer collection operations are considered as emissions rather than substitutions for fossil fuels. After the useful lifetime of wood products is over, much of the construction debris and wood is collected and burned to generate renewable energy in urban waste-to-energy plants. These benefits also appear to be ignored in the CAR accounting scheme. The net result of this accounting approach is that 1 ton of CAR-defined emission offset credits from an IFM project based on reduced levels of products should be discounted by the CO_2 produced from the fossil fuels used to generate the renewable energy will not be generated from wood waste. If this distinction is not made and accounted for early in the verification process, there will be a net increase in global emissions for every IFM credit authorized. As shown above, the fact that wood used for energy is not considered 'carbon neutral' by CAR could inflate the number of credits by 50 percent or more. This inflation factor will further flood and erode the "market" with over valued credits, thus contributing to questions about the accounting controls over the carbon market economy.

The climate advantages of RPS-energy are well documented and are an integral part of state policy (California Energy Commission 2009) because they increase carbon sequestration of fossil fuels that can stay buried rather than be burned to generate energy for Californians. However, it appears that the accounting formulas buried deep inside the CAR forest offset protocols will end up allotting tradable carbon credits for projects that reduce historical and sustainable levels of renewable energy production. This may have been an unintended outcome of a fairly lengthy and complex protocol.

Since these regulations are authored by the California Air Resources Board rather than the non-governmental Climate Action Reserve, it would seem necessary for the calculations of the climate benefits related to wood waste used for energy to match those in "Article 5: CALIFORNIA CAP ON GREENHOUSE GAS EMISSIONS AND MARKET-BASED COMPLIANCE MECHANISMS" rather than rely on information and formulas posted on website outside of the control of the Air Resources Board. This will require more than pasting and copying the CAR webpages to ARB web pages, since the overarching ARB regulations define wood use for energy as essentially carbon neutral.

Sincerely,

William Stewart
Forestry Specialist
University of California, Berkeley
billstewart@berkeley.edu , 510.643.3130

References

California Energy Commission (2009). 2009 Integrated Energy Policy Report, Final Commission Report, December 2009, CEC -100-2009-003-CMF.

Keegan III, Charles E.; Todd A. Morgan; Keith A. Blatner and Jean M. Daniels. 2010. "Trends in Lumber Processing in the Western United States. Part Ii: Overrun and Lumber Recovery Factors." *Forest Products Journal*, 60(2), pp. 140-143.

Smith, W. B., tech. coord; Miles, Patrick D., data coord.; Perry Charles H., map coord,; Pugh, Scott A. Data CD coord. (2009). Forest Resources of the United States, 2007. Washington, DC, U.S. Department of Agriculture, Forest Service, Washington Office**:** 336. GTR-WO-78. http://www.treesearch.fs.fed.us/pubs/17334