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A Critique of Climate Central's Recent Story entitled "Pulp Fiction"

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A few non-governmental organizations have used flawed analysis regarding the sustainability and the carbon benefits of using wood pellets for power generation. The claims fall into two basic categories: (1) Forests are being decimated to produce wood pellets, and (2) combustion of wood pellets creates pollution that is worse than coal.

These claims form the foundation for a recent three part "special report" by Climate Central's writer, John Upton titled "Pulp Fiction". Throughout the well-written and well-produced report, the author again and again references so-called scientific consensus. But in fact, the author relies on deeply flawed logic to produce a highly biased report. The report may satisfy those with an aversion to ever cutting a tree for any reason. There are certainly many trees that should not ever be cut. But the US and Canada contain vast "working forests[1]" whose purpose is to grow the wood fiber that becomes lumber, paper, packaging, and many other engineered products including wood pellets.

This brief paper discusses why the Climate Central report is a biased and inaccurate characterization of how the forest products sector operates and why the report fails to properly describe the carbon benefits of using sustainably sourced biomass for energy.

We know the report is biased because the author of this white paper, Dr. William Strauss, was interviewed a number of times by the author of "Pulp Fiction", Mr. Upton. Dr. Strauss also exchanged numerous emails with Mr. Upton. In those interviews and emails Dr. Strauss provided Mr. Upton with detailed analysis of the logic and the forestry management constraints that leads to the conclusion that using sustainably harvested wood for energy as a substitute for coal in power plants lowers GHG emissions. "Pulp Fiction" however never balances its narrative with those facts. None of the information provided by Dr. Strauss is in the Climate Central report.

The long three-part report begins with loaded language[2] and a conclusion regarding greenhouse gases that is not supported by any scientific analysis[3]:

> "*In England and across Europe, the most popular source of renewable energy is wood. But chopping down trees — many of them in the U.S. — and burning the wood heats the planet more quickly than burning coal*."

[1] Most forested land is managed for the sustainable growth of wood for use in the forest products industry. The US has about 521 million acres of timberland. 98 million acres are national forests. About 360 million acres are privately owned and most is managed for growing trees for the forest products industry. (source: American Forest and Paper Association, January, 2015)
[2] Characterizing wood harvesting with the words "chopping down" suggests a random and destructive process. As this paper discusses, managed forestry is anything but random and destructive.
[3] Some models, including some cited in the Climate Central report, show an initial carbon debt. But those models show that in the medium term there are significant carbon benefits. FutureMetrics showed why the "debt-then-dividend" logic that was at the foundation of the Manoment Study and a few other studies since is incorrect for forests that have been in production for many decades over many growth and harvest rotations. Those papers are available at the FutureMetrics website. www.FutureMetrics.com

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For a recent focused discussion of the carbon benefits of using wood from sustainably managed forests, we refer the reader to a white paper we published earlier in 2015 titled "Why the World Resources Institute has it Wrong on Wood Pellets[4]."

But a few of Mr. Upton's statements deserve some attention in this white paper.

> *"European law assumes climate pollution released directly by burning fuel made from trees doesn't matter, because it will be re-absorbed by trees that grow to replace them.*
>
> *The assumption is convenient, but wrong. Climate science has been rejecting it for more than 20 years. It ignores the decades it can take for a replacement forest to grow to be as big as one that was chopped down for energy—or the possibility that it won't regrow at all. The assumption also ignores the loss of a tree's ability to absorb carbon dioxide after it gets cut down, pelletized and vaporized."*

Given the author's unwillingness to report on the logic of forest management and the sustainability constraints that are essential to proper carbon accounting, it is not surprising that he would illustrate his bias with such a statement. But it is unfortunate that the serious mission of working out how to transition our economies to a decarbonized future advocated under Climate Central's mission and its first value statement ("Scientific and Journalistic Integrity — We report the scientific facts of climate change however they fall.) is sullied by propaganda rather than balanced reporting.

The excerpt above displays a naïve view of how working forests are managed. If in fact the forest products industry cut down every tree in the country in one giant clear cut, then the author's wait for the replacement forest would be a correct view of the world. But every user of the raw materials that trees provide depend on a continuous supply. A pulp and paper mill or a lumber mill requires raw material every day of the year. That means that the feedstock demand of the mill cannot exceed the region around the mill's ability to continuously supply sawlogs or pulp chips. No company would invest the enormous capital into a mill if that mill had to cease operations after a few years when all the wood is gone.

The wood will never be gone because the mills are sized so that they can economically procure wood continuously forever. Forest landowners that supply wood to mills are, in the true sense of the words, tree farmers growing a crop.

The landscape around any mill that uses the products from the tree farmers is in a continuous state of growth and harvest. As long as the rate of harvest does not exceed the rate of growth in the region around a mill then the stock of wood, and therefore the stock of sequestered carbon, never diminishes. That is the fundamental sustainability constraint that must be enforced to certify that pellet fuel is carbon neutral in combustion.

In many locations primarily in the southeastern US, the traditional buyers of the landowners' wood, the pulp and paper mills, are in decline. Global demand for printed media is declining rapidly. Pellet mills are built in locations that no longer have competing demand for pulp grade wood. In the southeast US, this has kept demand for non-sawlog timber high enough to counter the potential for land use conversions that will take place if the tree farmer's crops have no buyers[5].

[4] That paper is freely available at the FutureMetrics' website at www.FutureMetrics.com .
[5] Two recent reports containing actual facts and scientific analysis can be downloaded at the following links:
http://nafoalliance.org/images/issues/pellets/Forest2Market_USSouthWoodSupplyTrends.pdf
http://iopscience.iop.org/article/10.1088/1748-9326/10/11/114019/pdf

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The Climate Central report says,

> *"The accounting trick allows the energy industry to pump tens of millions of tons of carbon dioxide into the air every year and pretend it doesn't exist."*

But the trick is on the reader for whom the author fails to inform that for every ton of carbon released in combustion, at least a ton is absorbed contemporaneously by the new growth in the forest. The report that is cited in the Climate Central piece[6] that coins the term "accounting error" clearly assumes that the stock of forests providing biomass are reduced by the demand for biomass for energy. If that were the consequence of using wood for energy, then it would be incorrect to label using wood for energy as carbon neutral. However, if the stock of carbon sequestered in the forests is maintained and the net quantity of carbon in the atmosphere is not increased, that is by definition carbon neutrality. Since that "accounting error" report was delivered in 2011 certification and auditing schemes have been implemented in the UK and EU to guarantee that the forest growth rates equal or exceed the harvest rates. Under these certification programs, the stock of forest carbon cannot be diminished.

The logic is clear and as long as the wood pellets used in power plants meet the sustainability criteria there is no net new carbon added to the atmosphere in the combustion of wood pellets. Of course there is a carbon footprint associated with the harvest, production, and transport of wood pellets just as there is with the extraction, processing, and transport of coal. But in combustion, every ton of carbon released by pellet fuel is contemporaneously sequestered by the continuously growing forests that surround the pellet mills that make the pellet fuel.

Climate Central is right to express concern about climate change and about activities that are destructive to our ecosystems. But "Pulp Fiction" assumes that the vast working forests of North America are in a steady state of decline and that the decline is driven by demand for wood pellets.

The North American continental forests have been providing wood for generations; and over the last 100 years, right up to the present, the quantity of working forested land in the North America has increased not decreased[7]. Those continuously replenishing forests supply the raw materials for the continuous demand for everything from toilet paper and paper towels, to the boxes that deliver items from online shopping, to books and magazines, to lumber, and more recently as paper demand has declined, to wood pellets.

A rational and environmentally beneficial approach to decarbonizing the energy grid includes using carbon neutral solid fuel as a substitute for coal. Climate Central should recognize that fact rather than promote pellet fiction.

[6] From the European Environment Agency Scientific Committee on Greenhouse Gas Accounting at http://www.eea.europa.eu/about-us/governance/scientific-committee/sc-opinions/opinions-on-scientific-issues/sc-opinion-on-greenhouse-gas/at_download/file
[7] http://www.fs.fed.us/sites/default/files/media/types/publication/field_pdf/forestfacts-2014aug-fs1035-508complete.pdf