



TO: Science Advisory Board, Biogenic Carbon Emissions Panel  
FROM: Ruben Lubowski, Chief Natural Resource Economist, Environmental Defense Fund  
RE: Draft Advisory dated August 27, 2015  
DATE: September 7, 2015

To the Panel:

I am writing on behalf of the Environmental Defense Fund, in response to the Draft Report (August 27, 2015) containing SAB's review of EPA's *Framework for Assessing Biogenic CO<sub>2</sub> Emissions from Stationary Sources* (2014).

We commend the Panel for its excellent work and we support the SAB's revised approach to accounting for time in which the effects of emissions are quantified via the cumulative difference between "business as usual" (BAU) and the policy case. We note, however, that the new formulation as described in Appendices B-D leaves unresolved the important question of exactly how to define the BAU baseline against which the policy case should be compared. This is important because the "delta" – the cumulative difference between the BAU and the policy case – is the relevant variable.

Implementing a complex economic and biophysical modeling approach, like the FASOM approach used by EPA in this draft of the Framework, is not the only way to estimate the delta. We disagree with the Panel's draft finding (p. 2) that this type of modeling – integrating market demand and supply conditions with biophysical conditions to quantify the effects of forest bioenergy harvest – is required to predict BAU. Rather, we reiterate that the best approximation of BAU is a shifting historical baseline, which projects prior carbon stock conditions (for the "managed" portion of the forest landscape) into the future and then updates it periodically to incorporate new data (EDF comment to SAB Panel, March 25, 2015; Buchholz et al. 2014). The shifting historical baseline has additional benefits: it is simple and transparent, and – when based on publicly-available measured data like FIA plots – it is replicable, easy to implement, and readily updated.

Perhaps most importantly, the use of a complex modeling approach to predict BAU and/or the associated "delta" under a hypothetical future bioenergy scenario de-links the policy discussion from actual measurements of carbon stocks on the ground. As the Panel itself explains in this draft Advisory (p. 3) while advocating for a deeper discussion of EPA's choice to use FASOM in this context, "the carbon consequences of increased demand for biogenic feedstocks are likely to depend on the model selected to evaluate those consequences." This will invariably lead to debates over the choice of model and why other alternative approaches with different modeling assumptions were not selected. The Agency will need evidence to defend its approach.

The available data suggests that, for the economically active part of the forest landscape, the best estimate for BAU carbon stocks given current policy and economic conditions is a flat projection of past historical carbon stock levels (Buchholz et al. 2014). If applied to the “managed” part of the forest landscape, this is the most dependable estimate of BAU against which to measure the “delta” associated with bioenergy use. The delta over a given time interval, perhaps 5 to 10 years, can be empirically measured based on observed changes relative to the baseline established at time 1. These changes can be assumed to continue for a longer period (e.g. 30 years) over which permits may need to be issued. However, the baseline can be reset and the delta recalculated as new measurements become available. Results from these new measurements can be applied for policy decisions going forward. Thus, policy decisions at time 2 would be based on a baseline established at time 1 (and observed changes between time 1 and 2). However, policy decisions at time 3 would be based on a shifting baseline established at time 2 (and the observed changes between time 2 and 3). There is no evidence that an alternative approach performs better in estimating either BAU or the deviation from BAU under future policy for forest bioenergy use. If new evidence indicates that an economically modeled BAU and associated delta provides a better estimate of actual impacts of bioenergy use, this conclusion should be revised.

EPA’s purpose is best served by a policy that is based on transparent, replicable, and predictable metrics, based on the best available evidence. There is no need to implement a complex economic modeling approach in EPA policy to estimate the carbon impacts of forest-based bioenergy use. The principle of “Occam’s razor” indicates that one should select the most parsimonious approach that does the job just as well. In this case, the simplest approach to estimating BAU that performs best given all the available information is the use of a historical baseline, periodically updated over time as new data become available.

#### Reference:

Buchholz, TB, S Prisley, G Marland, C Canham, and N Sampson. Uncertainty in projecting GHG emissions from bioenergy. *Nature Climate Change* 4: 1045-1047.