

Background: Biomass Reporting in a Cap and Trade Program

Issue

Depending on specific details defining biomass, biomass-derived fuels may or may not fall under the definition of carbon-neutral. Different definitions and reporting requirements that apply to biomass are contained in the California's Renewable Portfolio Standard, the Federal Renewable Fuel Standard, the proposed Low Carbon Fuel Standard, and ARB's Mandatory Reporting Regulation.

For the purpose of this workshop, staff is soliciting stakeholder comments on the following questions:

1. What principles and criteria should guide California's biomass definition for the purpose of reporting and inclusion/exclusion of fuels under the cap?
2. Should the definition of biomass that ARB incorporates into its reporting requirements for a cap-and-trade program take into account other working definitions, e.g., the RPS, RFS, and LCFS (when adopted)?
3. What reporting provisions related to biomass should be considered regarding data collection, measurement, emission factors, etc.?

Background

As part of California's cap-and-trade program development, the ARB will address reporting requirements for all fuels that are covered by cap-and-trade, including biomass-derived fuels.

Resource categories for biomass include agriculture, forestry, and municipal waste. Agricultural biomass includes orchard and vineyard crops, field and vegetable crops, food processing residues, and animal manure. Municipal wastes may include biosolids, biogenic organics, green wastes, food waste, and paper/cardboard, landfill gas, and sewage digester gas.

In development of a cap and trade program, staff will review ARB's reporting definition for biomass and clarify as necessary the types of fuels that are 'carbon neutral'. **ARB does not plan to revise its mandatory reporting rules until the California cap-and-trade regulation is adopted in late 2010.** ARB intends to use the next several months to discuss reporting issues, including biomass and carbon neutrality to help inform the 2010 rulemaking.

To begin the discussion, staff has included the following background information on existing definitions and standards for biomass.

Existing Definitions of Biomass

ARB's Mandatory GHG Reporting Requirement for Biomass:

ARB has adopted a definition of biomass in its GHG mandatory reporting program. "Biomass" means non-fossilized and biodegradable organic material originating from plants, animals and micro-organisms, including products, byproducts, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material. And; "Biomass-derived fuels" or "biomass fuels" means fuels derived entirely from biomass.

WCI "Background Document and Progress Report for Essential Requirements of Mandatory Reporting for the Western Climate Initiative, Third Draft":

The WCI identifies "biomass fuels" or "biomass-derived fuels" as fuels derived entirely from biomass¹. Each Partner jurisdiction would determine its own definition for carbon-neutral fuel. Emissions from the combustion of biomass determined to be carbon-neutral by a Partner jurisdiction do not need to be covered by allowances in that jurisdiction; biomass emissions are reported, however, regardless of carbon neutrality.

WCI Design Recommendations for the WCI Regional Cap and Trade Program:²

Recommends that "carbon dioxide emissions from the combustion of pure biofuels, or the proportion of carbon dioxide emissions from the combustion of biofuel in a blended fuel (e.g. B20 or E85)" not be included in the cap and trade program, except for purposes of reporting. With regard to life cycle analysis, WCI Design Recommendations state that WCI Partner jurisdictions "will assess whether and how to include upstream emissions from biofuel and fossil fuel production, taking into consideration the potential for emissions leakage, the potential role of other policies (such as a low carbon fuel standard), consistent treatment among fuels, and other factors (such as practicality of implementation)"³.

Existing Biomass Standards

California Renewable Portfolio Standard. *State standard addressing electric power consumption in the retail market - inclusion of biomass as it counts toward a utility's renewable portfolio.*

¹ Page 1-22, WCI.9 Definitions; Background Document and Progress Report for Essential Requirements of Mandatory Reporting for the Western Climate Initiative, Third Draft (January 6, 2009)

² Section 1.4 <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F20432.PDF>

³ Ibid, Section 1.5 <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F20432.PDF>

The California Renewable Portfolio Standard (RPS) sets a statewide statutory goal of 20% renewable electricity by 2010 and a 33% renewable electricity standard by 2020 by Executive Order. The general definition under the State RPS for biomass is any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, and construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, sludge derived from organic matter, and wood and wood waste from timbering operations. Biomass feedstock from state and national forests is allowable under the State RPS definition.

Renewable Fuel Standard. *Federal standard addressing consumption of liquid fuel - inclusion of biomass fuel under the Federal Renewable Fuel Standard*

The Energy Independence and Security Act of 2007 (EISA) Renewable Fuel Standard (RFS) addresses consumption of liquid fuel and is a federal standard that defines renewable biomass by categories (conventional biofuel, advanced biofuel, cellulosic and biomass-based diesel) and rules out specific feedstocks. Conventional biofuel is ethanol derived from corn starch and applies to fuels produced in new facilities only; advanced biofuels is anything but ethanol derived from corn starch; cellulosic biofuels and biomass-based diesel are advanced biofuels from specific feedstocks that contain a lower carbon footprint than other advanced biofuels.

Generally, the RFS biomass definition limits crops and crop residues by type and its origin. It restricts crops and crop residues to lands that were cultivated or cleared prior to the EISA and are actively managed, fallow, or non-forested. Thinning materials and woody residues from federal forests cannot be feedstock for biofuels. It includes usage of “planted trees and tree residue from actively managed tree plantations on non-federal land cleared at any time prior to enactment...” and “slash and pre-commercial thinnings that are from non-federal forestlands...” Logging residues and pre-commercial trees from naturally-regenerated forestlands are allowed.

The RFS includes a lifecycle analysis or greenhouse gas screen that establishes minimum verifiable GHG reductions. For ‘conventional’ renewable fuels such as ethanol derived from corn, the fuel must meet a 20% emission reduction in direct and indirect lifecycle emissions (and come from new facilities) to qualify under the RFS compared to equivalent petroleum fuels. ‘Advanced fuels’ must meet a 50% lifecycle GHG threshold; and cellulosic biofuel must meet a 60% lifecycle GHG threshold.

Alternative and Renewable Fuel and Vehicle Technology Program (AB118). AB 118 (Núñez Statutes of 2007, Chapter 750) directs the California Energy Commission to develop and implement the “Alternative and Renewable Fuel and Vehicle Technology Program”, a funding and incentive program to support the development of alternative fuels. This program is in development. The CEC did not adopt the EISA RFS definition of ‘renewable biomass’ to meet AB118 funding requirements because the EISA definition excludes forest biomass from federal forest lands, which is inconsistent with existing State policies that recognize forest biomass waste streams as a feedstock source, and support state forest management and fire risk reduction policies. AB118’s draft regulation does include sustainability criteria which identifies sustainable forest biomass as:

“Section 31010.5(b)(2)(F) Projects that use forest biomass resources as part of their feedstock, and that demonstrate the advancement of natural resource protection goals, are those that use forest biomass collection or harvesting practices that do not diminish the ecological values of forest stands, and that are consistent with forest restoration, fire risk management, and ecosystem management goals”.