



Federal Policy Opportunities for the Algae Biofuel Industry in 2010

CURT RICH

Algae Biomass
Summit

San Diego,
California

October 8, 2009

Federal Framework for the U.S. Biofuel Industry



- Renewable Fuel Standard
- Federal Tax Incentives
- DOE and USDA Grant Funding Support for Research and Development (R&D) (pilot and demonstration scale projects)
- DOE and USDA Loan Guarantee Opportunities for Commercial Deployment
- *Climate Change*

2007 Renewable Fuel Standard Implementation



- 2007 Energy Infrastructure and Security Act directs EPA to issue regulations for renewable fuels that are sold or introduced into commerce in the United States annually. Comment period closed on September 25, 2009. Final Rule projected by end of 2009.
- Regulations apply to refiners, blenders and importers.
- The applicable volume for 2010 is set at 12.95 billion gallons.
- Establishes new definitions for the renewable fuels program, including conventional biofuels, advanced biofuels, cellulosic biofuels, and biomass-based diesel.
- *Conventional biofuels* is ethanol derived from corn starch. Conventional ethanol facilities that commence construction after the date of enactment must achieve a 20% greenhouse gas (GHG) emissions reduction compared to baseline lifecycle GHG emissions.
- *Advanced biofuels* is renewable fuel other than ethanol derived from corn starch that is derived from renewable biomass, and achieves a 50% GHG emissions reduction requirement. The definition – and the schedule – of advanced biofuels includes cellulosic biofuels and biomass-based diesel. (Cellulosic biofuels that do not meet the 60% threshold, but do meet the 50% threshold, may qualify as an advanced biofuel.)
- *Cellulosic biofuels* is derived from any cellulose, hemicellulose, or lignin, that is derived from renewable biomass, and achieves a 60% GHG emission reduction requirement.

Renewable Fuel Standard – Updated Schedule



Year	Renewable Biofuel	Advanced Biofuel	Cellulosic Biofuel	Biomass-based Diesel	Undifferentiated Advanced Biofuel	Total RFS
2008	9.0					9.0
2009	10.5	.6		.5	0.1	11.1
2010	12	.95	.1	.65	0.2	12.95
2011	12.6	1.35	.25	.8	0.3	13.95
2012	13.2	2	.5	1	0.5	15.2
2013	13.8	2.75	1		1.75	16.55
2014	14.4	3.75	1.75		2	18.15
2015	15	5.5	3		2.5	20.5
2016	15	7.25	4.25		3.0	22.25
2017	15	9	5.5		3.5	24
2018	15	11	7		4.0	26
2019	15	13	8.5		4.5	28
2020	15	15	10.5		4.5	30
2021	15	18	13.5		4.5	33
2022	15	21	16		5	36

RFS2 – Priorities for Algae Biofuels



- Create a regulatory process for evaluating new fuels and feedstocks that is streamlined, transparent, and timely. There should also be a process for re-evaluation.

Federal Production Tax Incentives for Biofuels – Internal Revenue Code Section 40



- *Biodiesel Production Tax Credit* – Biodiesel producers (or producers of diesel/biodiesel blends) can claim a \$1.00 per gallon credit for biodiesel produced from virgin agricultural products such as vegetable oils and animal fats. Credit expires on December 31, 2009.
- *Volumetric Ethanol Excise Tax Credit* – Gasoline suppliers who blend ethanol with gasoline are eligible for a \$0.45 per gallon credit. Credit expires on December 31, 2010.
- *Cellulosic Biofuel Production Tax Credit* – Producers of cellulosic biofuel can claim a \$1.01 per gallon tax credit. Credit expires on December 31, 2012.

Federal Tax Incentives – Priorities for Algae Biofuels



- Current production tax incentives do not include algae-based biofuels. Need to structure future tax incentives so that they are technology and feedstock neutral.

Federal Grant Funding to Support Biofuel R&D – DOE



- \$85 million for Algal and Advanced Biofuels (funding for 2-3 partnerships). Application period closed (September 14, 2009).
- \$50 million for Algal Biofuels Consortia to accelerate demonstration of algal biofuels.
- \$480 million for Demonstration of Integrated Biorefinery Operations. Application period closed (June 30, 2009).
- \$150 million for “transformational” energy R&D projects. Application period closed (August 28, 2009).

DOE is likely to issue another biofuel solicitation in early FY 2010.

Federal Funding Continued – USDA



- *R&D Initiative.* \$25 million in grant funding available. Application period closed (June 11, 2009). *\$28 million available in FY 2010.*
- *Bioenergy Program for Advanced Biofuels.* Payments to eligible agricultural producers to support production of advanced biofuels. The bill provides \$55 million in 2009 and 2010, \$85 million in 2011, and \$105 million in 2012.
- *Biomass Crop Assistance Program.* Provides support to establish and produce crops for conversion to bioenergy in project areas and helps with collection, harvest, storage, and transportation of eligible material for use in a biomass conversion facility.

Federal Funding – Priorities for Algae Biofuels



- Provide targeted DOE demonstration grant funding to the algae biofuels sector commiserate with funding levels provided to cellulosic biofuels.
- The next farm bill (2013-2017) should increase program funding for USDA bioenergy programs. Those programs should be expanded to include algae-based fuels and products.

Federal Loan Guarantees



- *EPAct Section 1703 Program* – DOE Loan guarantees available to fund new or significantly improved pre-commercial technologies that reduce greenhouse gas emissions.
 - \$18.5 billion for Energy Efficiency, Renewable Energy, and Advanced Transmission and Distribution Technologies (rolling application deadline).

- *AARA Section 1705 Program* – DOE Loan guarantees available to fund commercial and pre-commercial technologies that reduce greenhouse gas emissions. These include incremental hydropower, upgrading electric power transmission systems, and biofuel projects performing at the pilot or demonstration scale which substantially reduce life-cycle greenhouse gas emissions compared to other transportation fuels.
 - \$4 billion in funding to support approximately \$40 billion in loans for eligible projects that commence construction no later than September 30, 2011.
 - \$500 million of which is dedicated to advanced biofuel projects.

- \$245 million available in 2010 for commercial scale biorefineries under the USDA Loan Guarantee Program.

Loan Guarantee – Priorities for Algae Biofuels



- DOE must better balance interest in protecting against loan default with program policy objective of supporting pre-commercial technologies.
 - Streamline application process.
 - Adhere to 20% equity requirement.
 - Impose reasonable requirements on applicants.

Federal Climate Change Legislation



- Emissions Cap
 - Creation of an economy wide “cap and trade” program with the cap steadily declining over time to reduce GHG emission levels.
 - 17-20% reductions of CO₂ by 2020 from 2005 levels
- Covered Facilities (80% of U.S. GHG emissions)
 - Any electricity source
 - Stationary source emitters of more than 25,000 tons of CO₂ per year
 - Geologic sequestration sites
 - Natural gas processing plants
 - Natural gas local distribution companies that deliver to customers that are not covered entities
 - Petroleum refineries
- Creates a trading program for carbon credits. Covered entities can purchase compliance credits from the government via auction, from other entities holding credits, or from qualified carbon reductions not required by law (forest projects, soil sequestration, methane capture, etc.).
- Revenue stream from the cap and trade program will grow as allowance prices and size of auction increase.

Federal Climate Change – Priorities for Algae Biofuels



- Do not treat biofuels the same way that you treat fossil fuels. Recognize that the RFS imposes GHG requirements on biofuels.
- Do not hold algae based biofuels accountable for the CO₂ that they use as a feedstock.
- Dedicate proceeds from the sale of allowances to deployment of advanced biofuels.

For more information

CURT RICH

202-298-1886

jcr@vnf.com

**Algae Biomass
Summit
San Diego,
California
October 8, 2009**