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7-12-7

San Pedro Bay Ports – CARB – SCAQMD
**Can Lead the Way to Meet Renewable and Alternative Fuel Use
To Reduce Harmful Emissions, Reduce Foreign Dependency,
Promote the Use and Production of Alternative & Renewable Fuels
& Create Jobs and Demand for Alt-Technologies**

- **January 9th, 2007** - Gov. Schwarzenegger Issues Directive to Establish World's First Low Carbon Standard for Transportation Fuels
- **04/25/2006 – In EXECUTIVE ORDER S-06-06** - The California Air Resources Board is urged to consider as part of its rulemaking the most flexible possible use of biofuels through its Rulemaking...
- **April 10, 2007** - ...the Bush Administration's call to increase the supply of alternative and renewable fuels nationwide...
- **Dec. 7th, 2007 – ARB has the opportunity to encourage the development of advanced technologies, the production and use of alternative and renewable fuels and help California meet its Lawful Mandate to achieve a 20% use of these fuels in its current rulemaking.**

01/09/2007 GAAS:012:07 FOR IMMEDIATE RELEASE

Gov. Schwarzenegger Issues Directive to Establish World's First Low Carbon Standard for Transportation Fuels

World's first Greenhouse Gas Standard for transportation fuels will spark research in alternatives to oil, boost clean technology industry in California and reduce greenhouse gas emissions...

The University of California estimates that the Governor's greenhouse gas (GHG) emissions goals can increase Gross State Product by about \$60 billion and create over 20,000 new jobs. As a result of AB 32 and other initiatives, including the Million Solar Roofs and Hydrogen Highway projects, **the Bioenergy Action Plan** and the Strategic Innovation and Research Initiative, California drives clean technology research, investment and development nationally. California leads the nation in clean tech investment, attracting \$484 million in venture capital to California in 2005 alone—40 percent to startups in energy generation and efficiency sectors. The Low Carbon Fuel Standard further expands the state's clean tech market by creating more sustainable demand for cleaner fuels.

04/25/2006

EXECUTIVE ORDER S-06-06

by the

Governor of the State of California

WHEREAS, abundant biomass resources from agriculture, forestry and urban wastes can be tapped to provide transportation fuels and electricity to satisfy California's fuel and energy needs; and

WHEREAS, ethanol is a renewable transportation biofuel that California consumes more than 900 million gallons a year which is approximately 25 percent of all the ethanol produced in the United States; and

WHEREAS, California produces less than five percent of the ethanol it consumes; and

WHEREAS, biomass fuels, including ethanol produced from cellulose and bio-diesel produced from a variety of sources, can reduce the state's reliance on petroleum fuels and work to lower fuel costs for consumers; and

WHEREAS, in the Hydrogen Highway plan, the state has invested \$6.5 million to support a network of more than 16 filling stations and a growing fleet of cars and buses that run on this clean fuel of the future; and

WHEREAS, biofuels can be a clean, renewable source for hydrogen; and

WHEREAS, biofuels offer greenhouse gas reduction benefits; and

WHEREAS, biomass as a source of energy has the potential to power more than three million homes or produce enough fuel to run more than two million automobiles on an annual basis; and

WHEREAS, biomass is a renewable resource which currently contributes two percent of the state's electricity mix, or nearly 1,000 megawatts of the state's generating capacity and is one of the options needed to achieve the State Renewables Portfolio Standard requirements; and

WHEREAS, improvements in the use of waste and residues from forests and farms for energy production can actually decrease the greenhouse gas emissions associated with biomass decomposition that otherwise would occur; and

WHEREAS, harnessing California's biomass resources to produce energy and other products is good for the state's economy and environment and contributes to local job creation; and

WHEREAS, the increased use of biomass resources contributes solutions to California's critical waste disposal and environmental problems, including the risk of catastrophic wild fires, air pollution from open field burning, and greenhouse gas emissions from landfills; and

WHEREAS, sustained biomass development offers strategic energy, economic, social and environmental benefits to California, creating jobs through increased private investment within the state.

NOW, THEREFORE, I, ARNOLD SCHWARZENEGGER, Governor of the State of California, by virtue of the power invested in me by the Constitution and the statutes of the State of California, do hereby order effective immediately:

1. The following targets to increase the production and use of bioenergy, including ethanol and bio-diesel fuels made from renewable resources, are established for California:

a. Regarding biofuels, the state produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050;

b. Regarding the use of biomass for electricity, the state meet a 20 percent target within the established state goals for renewable generation for 2010 and 2020; and

2. The Secretary for the California Resources Agency and the Chair of the Energy Resources Conservation and Development Commission ("Energy Commission") shall coordinate oversight of efforts made by state agencies to promote the use of biomass resources; and

3. The Air Resources Board, Energy Commission, California Environmental Protection Agency, California Public Utilities Commission, Department of Food and Agriculture, Department of Forestry and Fire Protection, Department of General Services, Integrated Waste Management Board, and the State Water Resources Control Board shall continue to participate on the Bioenergy Interagency Working Group chaired by the Energy Commission; and

4. The Energy Commission shall coordinate with other responsible state agencies to identify and secure federal and state funding for research, development and demonstration projects to advance the use of biomass resources for electricity generation and biofuels for transportation; and

5. The Energy Commission shall report to the Governor and the State Legislature through its Integrated Energy Policy Report, and biannually thereafter, on progress made in achieving sustainable biomass development in California; and

6. The California Air Resources Board is urged to consider as part of its rulemaking the most flexible possible use of biofuels through its Rulemaking to Update the Predictive Model and Specification for Reformulated Gasoline, while preserving the full environmental benefits of California's Reformulated Gasoline Programs; and

7. The California Public Utilities Commission is requested to initiate a new proceeding or build upon an existing proceeding to encourage sustainable use of biomass and other renewable resources by the state's investor-owned utilities; and

8. As soon as hereafter possible, this Order shall be filed with the Office of the Secretary of State and that widespread publicity and notice be given to this Order.

IN WITNESS WHEREOF I have here unto set my hand and caused the Great Seal of the State of California to be affixed this the twenty-fifth day of April 2006.

/s/ Arnold Schwarzenegger

Governor of California

(Washington, D.C. – April 10, 2007) In step with the Bush Administration's call to increase the supply of alternative and renewable fuels nationwide, the U.S. Environmental Protection Agency today established the nation's first comprehensive Renewable Fuel Standard (RFS) program.

At a press conference today, EPA Administrator Johnson, joined by Energy Secretary Samuel Bodman and National Highway Traffic Safety Administrator Nicole Nason, discussed the RFS program, increasing the use of alternative fuels and modernizing CAFÉ standards for cars.

"The Renewable Fuel Standard offers the American people a hat trick – it protects the environment, strengthens our energy security, and supports America's farmers," said EPA Administrator Stephen L. Johnson. "Today, we're taking an important first step toward meeting President Bush's "20 in 10" goal of jumping off the treadmill of foreign oil dependency."

"Increasing the use of renewable and alternative fuels to power our nation's vehicles will help meet the President's Twenty in Ten goal of reducing gasoline usage by 20 percent in ten years," Secretary Bodman said. "The Administration's sustained commitment to technology investment will bring a variety of alternative fuel sources to market and further reduce our nation's dependence on foreign sources of energy."

"While we must look at increasing the availability of renewable and alternative fuels, we must also continue to improve the fuel efficiency of our passenger cars and light trucks," said Nicole R. Nason, Administrator of the National Highway Traffic Safety Administration. "As a part of the President's "20 in 10" energy security plan, we need Congress to give the Secretary of Transportation the authority to reform the current passenger car fuel economy standard."

Authorized by the Energy Policy Act of 2005, the RFS program requires that the equivalent of at least 7.5 billion gallons of renewable fuel be blended into motor vehicle fuel sold in the U.S. by 2012. The program is estimated to cut petroleum use by up to 3.9 billion gallons and cut annual greenhouse gas emissions by up to 13.1 million metric tons by 2012 -- the equivalent of preventing the emissions of 2.3 million cars. The RFS is an important first step toward meeting President Bush's call on our nation to reduce gasoline use by 20-percent within 10 years by growing our renewable and alternative fuel use to 35 billion gallons by the year 2017.

The RFS program will promote the use of fuels such as ethanol and biodiesel, which are largely produced from American crops. The program will create new markets for farm products, increase energy security, and promote the development of advanced technologies that will help make renewable fuel cost-competitive with conventional gasoline. In particular, the RFS program establishes special incentives for producing and using fuels produced from cellulosic biomass, such as switchgrass and woodchips.

The RFS program requires major American refiners, blenders, and importers to use a minimum volume of renewable fuel each year between 2007 and 2012. The minimum level or "standard" which is determined as a percentage of the total volume of fuel a company produces or imports, will increase every year. For 2007, 4.02 percent of all the fuel sold or dispensed to U.S. motorists will have to come from renewable sources, roughly 4.7 billion gallons.

The RFS program is based on a trading system that provides a flexible means for industry to comply with the annual standard by allowing renewable fuels to be used where they are most economical. Various renewable fuels can be used to meet the requirements of the program. While the RFS program establishes that a minimum amount of renewable fuel be used in the United States, more fuel can be used if producers and blenders choose to do so.

The RFS brings the nation closer to President Bush's Twenty in Ten goal to reduce gasoline consumption 20 percent in ten years. To achieve this goal, the Bush Administration's Alternative Fuel Standard (AFS) proposal builds on the RFS and requires use of 35 billion gallons of renewable and alternative fuels in 2017 - nearly five times the RFS target of 2012. The AFS proposal will displace 15 percent of projected annual gasoline use in 2017 **through the use of fuels, including corn ethanol, cellulosic ethanol, biodiesel, methanol, butanol, hydrogen, and other alternative fuels.** The Twenty in Ten plan also calls for reforming and modernizing CAFÉ standards to increase the fuel economy of cars. This will reduce projected annual gasoline use by up to 8.5 billion gallons, a further 5 percent reduction that will bring the total reduction in projected annual gasoline use to 20 percent. President Bush has called on Congress to act on these proposals by the start of the summer driving season this year.

For more information: <http://www.epa.gov/otaq/renewablefuels/>

An Overview of Biodiesel and Petroleum Diesel Life Cycles



A Joint Study Sponsored by:

U.S. Department of Agriculture and
U.S. Department of Energy

May 1998

An Overview of Biodiesel and Petroleum Diesel Life Cycles

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A national laboratory of the U.S. Department of Energy
Operated by Midwest Research Institute
Under Contract No. DE-AC02-83CH10093

Prepared under Task No. BF886002

May 1998

Why biodiesel?

Proponents of biodiesel as a substitute for diesel fuel (neat or in blends) point to its advantages:

- ✓ ***It can reduce our dependence on foreign petroleum...***
Petroleum imports are at record levels in the United States, and will continue to rise as domestic oil supplies shrink. Our transportation sector, with its great demand for gasoline and diesel fuel, relies almost exclusively on petroleum for energy. Biodiesel can be produced domestically from agricultural oils and from waste fats and oils. Because it can be used directly in diesel engines, biodiesel offers the immediate potential to reduce our demand for petroleum.
- ✓ ***It can leverage limited supplies of fossil fuels...***
Regardless of whose perspective we choose to believe on the future of coal, oil, and natural gas, their supply is, ultimately, limited. Biodiesel can help us leverage our use of these fuels.
- ✓ ***It can help reduce greenhouse gas emissions...***
The burning of fossil fuels during the past century has dramatically increased the levels of carbon dioxide (CO₂) and other "greenhouse gases" that trap heat in our atmosphere. Their implications are hotly debated, but the levels of these gases have unquestionably risen at unprecedented rates in the context of geological time¹. To the extent that biodiesel is truly renewable, it could help reduce greenhouse gas emissions from the transportation sector.
- ✓ ***It can help reduce air pollution and related public health risks...***
One of the U.S. Environmental Protection Agency's (EPA) primary charges is to reduce public health risks associated with environmental pollution. Biodiesel can play a role in reducing emissions of many air pollutants, especially those targeted by EPA in urban areas. These include particulate matter (PM), carbon monoxide (CO), hydrocarbons (HC), sulfur oxides (SO_x), nitrogen oxides (NO_x), and air toxics.

Reductions in petroleum and fossil energy consumption

Biodiesel offers tremendous potential as one component of a strategy for reducing petroleum oil dependence and minimizing fossil fuel consumption.

The benefit of using biodiesel is proportionate to the blend level of biodiesel used. Substituting B100 for petroleum diesel in buses reduces the life cycle consumption of petroleum by 95%. A 20% blend of biodiesel and petroleum diesel (B20) causes the life cycle consumption of petroleum to drop 19%.

Biodiesel and petroleum diesel production processes are almost equally efficient at converting raw energy resources (in this case, petroleum or soybean oil) into fuels. Biodiesel's advantage is that its largest raw resource (soy oil) is renewable. So biodiesel requires less fossil energy (only 0.31 units) to make a 1 unit of fuel.

Biodiesel yields 3.2 units of fuel product energy for every unit of fossil energy consumed in its life cycle. The production of B20 yields 0.98 units of fuel product energy for every unit of fossil energy consumed.

By contrast, society uses 1.2 units of fossil resources to produce 1 unit of petroleum diesel. Such measures confirm the "renewable" nature of biodiesel.

At the tailpipe, biodiesel (most of which is renewable) emits 4.7% more CO₂ than petroleum diesel. The nonrenewable portion comes from the methanol. Biodiesel generates 573.96 g/bhp-h compared to 548.02 g/bhp-h for petroleum diesel. The higher CO₂ levels result from more complete combustion and the concomitant reductions in other carbon-containing tailpipe emissions. As Figure 8 shows, the overall life cycle emissions of CO₂ from B100 are 78.45% lower than those of petroleum diesel. The reduction is a direct result of carbon recycling in soybean plants. B20 reduces net CO₂ emissions by 15.66%.