

Vermont Energy & Climate Summit Pitch Submission Form

1. Pitch Submitted By (Your Name or Organization):

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4. Pitch Title: Renewable Fuels Standard (RFS)

5. Pitch Summary: Similar to a “renewable energy standard” (RES) that requires increasing the mix of renewable sources on the electric grid, a “renewable fuels standard” (RFS) would impose a similar requirement on the fossil fuels industry. Biofuels and biomass are recognized as renewable fuels in Vermont’s Renewable Energy Standard (Act 56 of 2015), and the fuel dealers and their regional and national organizations have embraced biofuels as a way to move off of fossil fuels. Vermont should establish an increasing standard of biofuels as a percentage of all fuels delivered in Vermont going forward. Define “renewable fuels” to include liquid biofuels, biogas, biopropane and wood products. Establish a baseline year from which to increase market share of renewable fuels and then measure compliance at the statewide level. Establish a non-compliance penalty that would fund incentives (through the CEDF) for efficient and renewable-fired equipment. Allow the market and Vermont Fuel Dealers Association to innovate to determine the best means of implementing, but establish an Alternative Compliance Payment (ACP) mechanism similar to the RES as an incentive for compliance. Consider establishing a seat on the CEDF board for a fuel dealer representative to help direct use of these funds.

6. What energy sector(s) does this Pitch apply to? (Check all that apply):

- Energy Efficiency
- Electricity
- Transportation
- Thermal Heating &/or Cooling
- All (Total Energy)
- None: Non-energy related carbon reduction proposal

7. Which criteria category(ies) does it address? (Check all that apply):

- Economic Activity
- Affordability
- Vulnerable Vermonters

❑ Other

8. **Scale of impact on Vermont’s energy and climate goals:** If this proposal came to fruition, how might it move the needle in helping to meet Vermont’s energy and climate goals by 2025 and/or 2050? Please outline assumptions and, if available, provide calculations.

Bio-fuels offset fossil fuels and help meet our climate goals. With an aggressive standard set at the statewide level that increases annually, this approach can provide an alternative and complimentary strategy to electrification while supporting our existing fuel dealer infrastructure and forest product industry.

9. **Benefits/costs of this proposal for Vermont and Vermonters:** Including, where possible, economic, financial, social, and environmental.

(Input results from analysis).

10. **Decision-makers necessary for this proposal to be adopted or move forward (e.g., Legislature, Governor, a regulatory agency, a business, organization, media outlet, or financing institution, etc.)**

- Establishing a RFS will require an act of the Legislature
- Collaboration with the Vermont Fuel Dealers Association and their members and the Northern Forest Alliance and other biomass organizations will be important

11. **Strategy and key considerations:** Outline the overall strategy, including gaps, barriers and opportunities for moving this proposal forward.

- Other states surrounding Vermont are either considering or have already implemented bio-fuels standards, and there is already a bio-blending plant in Vermont so the infrastructure is readily available to support this standard;
- The wood products industry in Vermont is poised to increase production, and is already tuned-in to sustainable forestry practices as part of their business operations, which need to be an important consideration;
- Research the other 13 states’ experience with renewable fuels standards to learn lessons;
- Collaborate with the VFDA and biomass groups as standards are developed and implemented.

12. **Timeline:** To meet our 2025 goals, we need some proposals that can be implemented in the next couple of years as well as some “game changers” that will bend the curve even further out. What timeline do you foresee for your proposal to be developed and implemented?

This concept would likely take a few years to develop, but could be implemented by 2020.

13. **Additional Material** – From VFDA

Biodiesel

Made from an increasingly diverse mix of resources such as soybean oil, recycled cooking oil, and animal fats, biodiesel is a renewable, clean-burning diesel replacement that can be used in existing diesel engines and in oilheat burners. Biodiesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend. It can be used in heating oil equipment without modification. Biodiesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics. Biodiesel is registered as a fuel and fuel additive with the U.S. Environmental Protection Agency (EPA) and meets clean diesel standards established by the California Air Resources Board (CARB). B100 (100% biodiesel) has been designated as an alternative fuel by the U.S. Department of Energy (DOE) and the U.S. Department of Transportation (DOT).

Food vs. Fuel Debate

More biodiesel production helps the food supply, despite what some incorrectly claim. Unlike corn based ethanol, biodiesel is made from fats and oils that are an agricultural byproduct. The soybean is the most common example of a crop that produces both food and fuel. To produce the oil needed to make just one gallon of biodiesel, the soybeans grown by farmers make 30 pounds of protein and 22 pounds of carbs and dietary fiber for the food supply at the same time.

Energy Balance

Biodiesel is the only commercial-scale fuel produced across the U.S. to meet the EPA's definition as an Advanced Biofuel, meaning the EPA has determined that biodiesel reduces greenhouse gas emissions by more than 50 percent when compared with petroleum diesel. Biodiesel has the highest "energy balance" of any transportation fuel, alternative or conventional. The DOE/USDA lifecycle analysis shows for every unit of fossil energy it takes to make biodiesel, 5.4 units of energy are gained. This takes into account the planting, harvesting, fuel production, and fuel transportation to the end user.

BioHeat: Biodiesel and Heating Oil

BioHeat fuel is any blend of petroleum heating oil and biodiesel. The use of biodiesel in home heating equipment results in reductions of unburned hydrocarbons (ozone precursors), carbon monoxide (poisonous gas), and particulate matter (black smoke) compared to emissions from petroleum fuel. In addition, emissions of sulfur oxides and sulfates (components of acid rain) from biodiesel are essentially eliminated. Research and testing confirm that biodiesel exhaust have less harmful impacts than petroleum diesel fuel. Biodiesel emissions have decreased levels of polycyclic aromatic hydrocarbons (PAH), which have been identified as potential cancer causing compounds. Test results indicate PAH compounds were reduced 90 to 95 percent. Biodiesel also reduces carbon monoxide (CO) by up to 45 percent and Nitrogen Oxides (NOx) by up to 25 percent.

Greenhouse Gas Emissions

Biodiesel and BioHeat can achieve significant savings in greenhouse gas emissions in thermal applications compared to both oil-fired and natural gas-fired combustion systems. A study by ICF International compared the greenhouse gas emissions of biodiesel with conventional fossil fuels and shows that B100 biodiesel can achieve an approximately 70% reduction in greenhouse gas emissions compared to natural gas and a greater than 80 percent reduction compared to traditional heating oil. A B20 blend with traditional heating oil will achieve greenhouse gas emission levels equivalent or below that of natural gas.

Sources:

American Society of Agricultural and Biological Engineers
Brookhaven National Laboratory
Informa Economics
Energy Information Administration
National Biodiesel Board

