

# The Importance of Decarbonizing New York's Transportation Sector

## KEY POINTS

1. Transportation vehicles are responsible for 46% of NYS's energy-related CO<sub>2</sub> emissions,<sup>1</sup> and 36% of the state's transportation sector emissions come from "hard to electrify" sources such as diesel, jet, and ship engines.<sup>2</sup>
2. Multiple states are currently decarbonizing their transportation sector through policies that encourage the consumption of low carbon alternative fuels.
3. New York currently utilizes comparatively small amounts of low carbon fuels and there is immense growth potential for production and use in the state.
4. To achieve the Climate Leadership and Community Protection Act targets, New York must rapidly decarbonize its transportation sector.
5. SUNY ESF has a broad range of expertise and analytical capabilities on the low carbon fuel supply chain that New York can utilize as it transitions to a fully decarbonized transportation sector.



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## WHAT IS A LOW CARBON FUEL STANDARD?

- Low carbon fuel standards mandate that transportation fuels be decarbonized via increased consumption of alternative fuels that emit much less CO<sub>2</sub> than petroleum fuels.
- Low carbon fuel standards are technology neutral and allow a variety of different alternative fuels (biofuels, electricity, gaseous fuels, etc.) to participate as long as they have small carbon footprints.
- Existing low carbon fuel standards implemented by the federal government and other state governments incentivize production through subsidies, the cost of which is paid for by producers of conventional petroleum fuels.

## The importance of a low carbon fuel standard

- New York's Climate Leadership and Community Protection Act requires the thorough decarbonization of the state's transportation sector.
- Transportation is a major source of CO<sub>2</sub> emissions in New York, the U.S., and the world.
- Fossil transportation fuels are also important sources of other harmful emissions such as particulate matter, carbon monoxide, unburned hydrocarbons, and nitrous oxides.
- Consumption of low carbon alternative fuels greatly reduces emissions of both CO<sub>2</sub> and other pollutants compared to petroleum fuels.
- Important sources of emission such as diesel fuel, jet fuel, and marine bunker fuel are very difficult to decarbonize using batteries, making it necessary to utilize a broad assortment of low carbon fuels.
- Many low carbon fuels can be utilized with the existing transportation fuel infrastructure, whereas others require specialized distribution equipment and vehicles.



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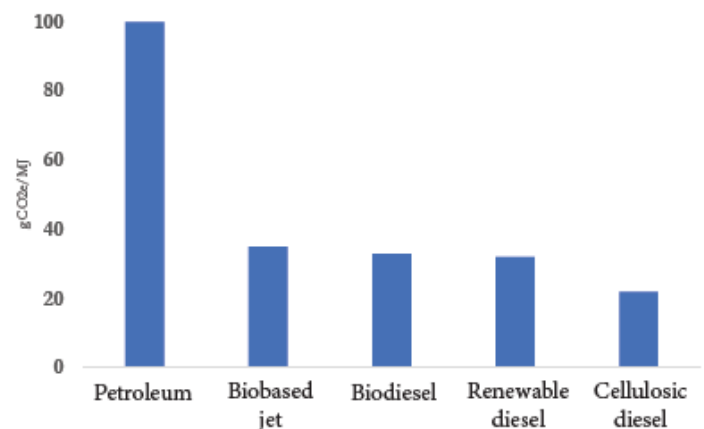
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## LOW CARBON FUEL STANDARDS PLAY AN IMPORTANT ROLE IN OTHER STATE ECONOMIES

- California's Low Carbon Fuel Standard has successfully incentivized the creation of a large domestic market for low carbon fuels that emit 65-80% less CO<sub>2</sub> per unit of energy than petroleum fuels.<sup>3</sup>
- Minnesota mandates that all diesel fuel sold in the state be blended with up to 20% low carbon fuel.<sup>4</sup>
- At least nine states have explicitly mandated the partial replacement of hard-to-electrify petroleum fuels with low carbon fuels.<sup>4</sup>
- The U.S. government also requires the consumption of low carbon fuels via the national Renewable Fuel Standard.

Average carbon footprint of select low carbon fuels used in California<sup>3</sup>



## The decarbonized future

To meet its climate protection requirements, New York State should study how other states have begun to decarbonize their transportation sectors using Low Carbon Fuel Standards. New York will only achieve long-term CO<sub>2</sub> emission reductions by reducing the carbon footprints of all the different transportation systems in the state.

**At SUNY ESF**, we possess a strong expertise in low carbon fuels and the decarbonization of hard-to-electrify transportation systems. We already:

- Provide expert advice to state, national, and international stakeholders on transportation sector decarbonization;
- Quantify the environmental and financial costs and benefits of different technologies that can contribute to transportation decarbonization; and
- Analyze the conditions that are necessary for low carbon fuel standards to successfully reduce CO<sub>2</sub> emissions from the transportation sector.

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### References:

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