



# Sustainable Low Carbon Fuel Use and Production in Maryland – Petition to Enable Policies and Incentives that Programatically Support the GGRA Plan

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## The GGRA Draft Plan Calls for Low Carbon Fuels

- **Electric Vehicles (EVs)** Enabling SLCF policies will support MD EV program: “The fleet-wide mix will include **PHEVs** and **BEVs**, along with traditional gasoline and diesel-powered vehicles.” Page 67.
- **Regional Clean Fuel Standard:** Supports the regional clean fuels standard to achieve a 15% reduction in the carbon intensity of carbon-based fuels 2030. Page 80.
- **Lead by example - Alternative Fuel Usage in State Fleet:** Alternative fuel vehicles and fuels including ultra-low Sulphur diesel, biodiesel, and E-85. Page 96.
- **Transportation Programs:** “Transition to advanced biofuels blended into remaining diesel and natural gas uses, with 63% of diesel replaced by renewable diesel by 2050, and 25% of natural gas replaced by biomethane by 2050.” Page 183.

What policies, incentives, and programs would or could support this call for advanced / low carbon sustainable transportation fuels?

# Why the 09-24-2019 SLCFs Petition ?<sup>1</sup>

**Because Maryland has an opportunity.**

1. SLCF = Sustainable low carbon fuels

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# Transport Fuels and Energy in MD<sup>©</sup>

“Maryland’s planners can’t predict the future; but that shouldn’t prevent them from setting science based goals and developing a plan to meet those goals.” GGRA Draft Plan

Maryland Energy and Transportation Fuels Consumption Estimates 2016 - Preliminary

Category(1)	Consumed - Trillion (1.0 <sup>12</sup> ) BTUs	Equivalent Liquid Fuel - Million Gallons	Consumed in Transportation - Million Gallons	% from in State Sources (Est)
Motor Gasoline excl. Ethanol	307	2,738	2,738	0%
Distillate Fuel Oil (Mostly Diesel)	99	748	692	0%
Biomass	49	N.A. (3)	N.A.	N.A.
Fuel Ethanol	24	281	281	0%
Jet Fuel	9	65	65	0%
Biodiesel	NA	NA	NA	0% (?)
<b>Total</b>	<b>487</b>	<b>3,832</b>	<b>3,776</b>	<b>---</b>

Potential Opportunity for Sustainable Low Carbon Fuel Use & Production?



Maryland is extremely vulnerable in transportation fuel supply – No in-state production. Can we afford that?

(1) 100% combustion eff. Source US EIA information, MDE, and GHG Eng. analysis. Natural gas/others excluded for lack of data.  
 (2) Data on Biodiesel/Renewable Diesel blended with MD's Diesel Fuel not available.  
 (3) NA = Not available  
 (4) Totals may be different than sum because of rounding.

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## Sustainable Low Carbon Fuels: Not New to Maryland

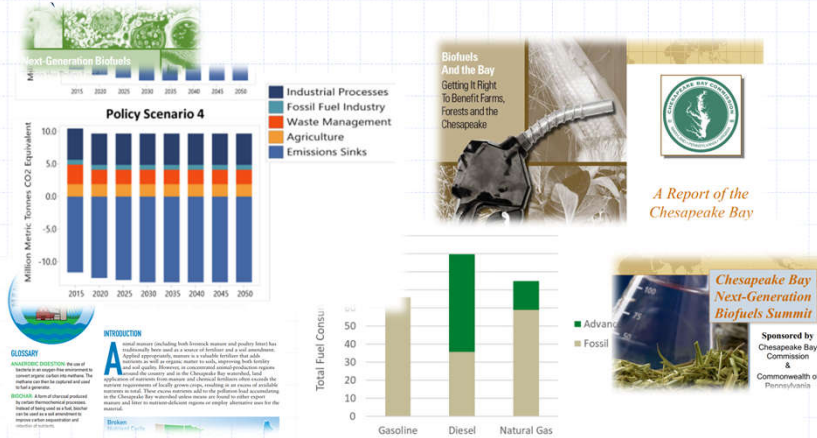


Figure 2-22. Total Fuel Consumption for Gasoline, Diesel, and Natural Gas by Primary Fuel Composition in 2050, Policy Scenario 2

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## Transport Fuels and GHG Emissions

- Life cycle analysis (LCA) GHG emissions of fuels is needed to compare carbon benefits between transportation fuels on an equal basis.
- Fuel GHG benefits can be expressed using the Carbon Intensity (CI) value of a fuel.
- The CI is calculated using rigorous and peer reviewed LCA techniques guided by ISO 14040/44.
- Low CI values indicate lower life cycle GHG emissions when compared to the fuel being substituted.

“The use of life cycle analysis (LCA) fully accounts for all GHG emissions of a fuel, nullifying emissions leakage.” (RicardoEE, 2018)

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## What is Next? – Some Thoughts

- MCCC endorses the creation of a Low Carbon Transportation Fuels Subgroup part of MCCC's MWG.
- Form an inclusive stakeholder group.
- Assess the total needs listed in the Plan.
- Strategically assess data and information (D&I) gaps.
- Obtain / estimate the needed D&I gaps – rough pass.
- Develop a summary strategic roadmap to satisfy the GGRA decarbonization plans.
- Determine next steps.