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House Select Committee on the Climate Crisis
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I am writing in response to your request for climate change policy recommendations, particularly:

1. What policies should Congress adopt to decarbonize the following sectors consistent with meeting or exceeding net-zero emissions by mid-century? Where possible, please provide analytical support that demonstrates that the recommended policies achieve the goal.

a. Transportation

Advanced Biofuels USA, a nonprofit educational organization advocates for the adoption of renewable fuels as an energy security, military flexibility, economic development and climate change mitigation/pollution control solution. Our key tool is our web site, www.AdvancedBiofuelsUSA.org, including a 30,000-item online library, a bioeconomy resource for everyone from opinion-leaders, decision-makers and legislators to industry professionals, investors, feedstock growers and researchers; as well as journalists, teachers and students. In addition, we prepare technology and policy assessments, brief government staff, participate in conferences, lecture, and provide general assistance to those interested in renewable fuels. Technology neutral and feedstock and product agnostic, Advanced Biofuels USA's work is respected around the world. We take seriously the importance of shaping public discussion, focusing on high-impact solutions.

I hope that our resources and website will prove useful to you as you work on these important issues.

Some specific suggestions that we'd like to make:

1. "Disappearing" Carbon Tax for Non-Renewable Fuels

First proposed in 2015, the proposal begins: If we're serious about reducing Climate Change-causing Green House Gases and reducing non-renewable liquid and gas use, we need serious actions.

The first steps needed are:

- A. Including the price of GHG effects in the pricing of renewable and non-renewable fuels.
- B. Committing serious money to focused renewable fuel research and infrastructure development.

The simplest and fastest way to accomplishing this is adding a ***Non-Renewable Carbon User Fee*** to the portion of liquid transportation fuels and natural gas made from non-renewable sources.

The fee is designed to disappear as renewable fuels replace non-renewable ones. For instance, once renewable content increases to 85% and mileage increases become fleet-wide, the income from the fee will fall dramatically. In fact, ***legislation should cancel the fee when income drops below \$500 million/year.***

Departing significantly from a number of current legislative proposals, Advanced Biofuels USA proposes that the fees be used to further the replacement of fossil fuels with renewable ones rather than being distributed back to the populace. The intent is that the people who need the more affordable, cleaner, less polluting fuel with a smaller carbon footprint would reap those benefits directly. And that by funding research, development and deployment, the pace of replacing fossil fuel with renewables would accelerate.

Thus, the fees should be used in only two ways.

- **Renewable Fuel R&D:** An immediate Apollo-type program should be funded with between 50% and 60% of the fees. It should be ***administered by the National Science Foundation*** (NSF) and be focused on getting non-food biomass fuels and gases into the pipeline in less than seven years. A sustainable renewable fuel industry will not only cut petroleum imports and tremendously reduce US oil and gas extraction damage, but more important, create good jobs for Americans in research labs, rural towns, and urban manufacturing plants and converted refineries.
- **Renewable Fuel Infrastructure:** The upgraded fuel pumps and decentralized processing/distribution modules would be funded with between 40% and 50% of the fees. These programs would be ***run by the states*** with funding available via the existing USDA Biofuel Infrastructure Partnership grant program. States know what the needs are and the most effective ways to address them. Priority could be given to low income and high pollution areas, rural and urban.

Collection of the Non-Renewable Carbon User Fee

The collection of this user fee ***would not require new bureaucracies.*** Existing consumer point-of-sale fuel and utility tax collections systems would be used.

Environmental Justice Considerations: Real, Practical, Visible Benefit to People Who Need It Most.

A tax on the non-renewable portion of gasoline makes transition to less expensive, more renewable fuel a real option. As the proceeds from the tax expand the infrastructure (pumps, engine design/production) to optimize availability and use of greater portions of ethanol, biodiesel, renewable diesel, renewable natural gas or other components in the fuel, everyone should have more renewable choices. Market forces will enhance demand for more renewable fuels (including more renewable electricity for EVs).

In anticipation of the increased fee on non-renewable portions of fuel, fuel retailers could begin offering a wider variety of high proportions of renewable fuels even before the fees go into effect.

If low income and poor air quality areas are given priority for upgraded fuel pumps, then cleaner, less-polluting and less expensive options will benefit those most in need of these advantages of renewable fuels.

This will also accomplish the goal of getting cleaner fuel at lower prices to people who will be driving liquid-fueled vehicles now and for many years to come. It will improve the emissions from older vehicles until the market provides newer, more efficient, high octane/high ethanol engines options and until electric vehicles powered by renewables become available and affordable.

For examples of price comparisons of current regular gasoline (E10) and high ethanol blends (E15, E30, E85), see the website E85Prices (<https://e85prices.com/>).

A price on the non-renewable portion would enhance the price benefit of ethanol, spur consumers to demand high octane/high ethanol/lower price fuels and flex fuel or high ethanol optimized vehicles. In turn, it will spur auto manufacturers to build and sell the next generation/[E30 optimized vehicles](#) with [improved mileage and performance](#).

Similarly, fleets will find these same high ethanol benefits, plus they may see benefits from transitioning diesel vehicles to use renewable diesel or biodiesel blends; and will find benefits of transitioning to high renewable natural gas (RNG or rCNG) fuels, as well. Not to mention the benefit that airlines will glean from renewable aviation fuels.

Electric vehicles would also experience the benefits as fossil power transitions to renewables.

The fees will also fund research and development to assure supplies of sustainable, renewable transportation fuels made from feedstocks ranging from used cooking oil, algae, and municipal waste to agricultural and forest wastes and residues, and from purpose-grown feedstocks, winter or cover crops and treated flue gases.

For details, download [Updated Non-Renewable Carbon User Fee for Fuels \(Disappearing Gas Tax\) August 2019](#) and find more information from word search, categories and tags on the Advanced Biofuels USA website (www.AdvancedBiofuelsUSA.org).

I have attached a PDF and Word document describing this policy in more detail.

2. How to De-Fossilize Your Fleet: Suggestions for Fleet Managers Working on Sustainability Programs

Cities, companies, universities, organizations pledge to be 100% renewable (or 50%) by a certain date. But how often does that pledge include renewable transportation energy? Occasionally. But it could be better. Federal and state policies should encourage, facilitate and incentivize transition to renewable fuels, particularly in the near-term as we wait for electric vehicles to be available, affordable, powered by renewables using “fair trade” batteries or energy storage systems.

Here are some practical ideas that show this is not an expensive or unattainable goal; and that it is supported by market forces and in turn supports jobs, innovation and business development. Much is built on a foundation already existing in federal regulations.

At conferences, sustainability events, by phone and email, I’ve discussed with fleet managers practical ways they can contribute to their company’s/university’s/municipality’s/state’s/organization’s/family’s sustainability goals. Here are some of the ideas we’ve developed with suggested practice statements in italics. (*Also available, regularly updated, in [PDF](#)*)

Dance with the One Who Brung You^[1]

*You got to dance with who brung you, swing with who swung you,
Life ain’t no forty-yard dash, be in it for the long run ...*

That is: Start with what you have and lower your life cycle carbon emissions as much as possible with what is available to you immediately. There are three key strategies:

1. Reduce Vehicle Miles Traveled
2. Decrease Fossil-Based Fuel Use
3. Increase Engine Efficiency

This policy recommendation will focus on the second strategy with some overlap with the third. Internal combustion engine vehicles including spark ignition engines, compression ignition/diesel engines and engines that use compressed natural gas likely dominate your fleet. They provide opportunities under your control to maximize emissions reductions immediately.

We’ve come up with these policy suggestions and examples of how to achieve them.

1. Spark Ignition Engines:

Fuel with the greatest proportion of renewable fuel available

-Flex Fuel Vehicles: *Any flex fuel vehicles (FFVs) in your fleet or that staff use as they travel must be filled up with E85 if there’s a station reasonably available; second choice is E15 or other blends if available.*

How do you know it's an FFV and can use high ethanol blends? You can look in the owners' manual or on the driver's side door. It might also have a decal or insignia near the vehicle name. If you can't find it that way, for model years 2018 and older, the [Renewable Fuels Association](#) has published a list. The Fuel Freedom Foundation has the [Check Your Car tool](#). You can enter in your vehicle's make, model, year and engine size, and it'll tell you if it is an FFV.

What's a reasonably available station? Federal regulations described in the [Federal Fleet Management Handbook\[2\]](#) (see appendix) provide an example of what might be reasonable. "... within a 15-minute drive or within 5 miles (one way) from the vehicle's garaged location. Waivers will be granted for vehicles that have a drive longer than 15 minutes even if a station is within the 5-mile barrier. Dual fueled vehicles that have access to alternative fuel along the vehicle's usual travel route are expected to use that fuel, even if that infrastructure is more than 5 miles away from the vehicle's garaged location.

There's an exception related to expense:

(If) alternative fuel is unreasonably expensive. Unreasonably expensive means that alternative fuel costs more per gallon than gasoline at the same station.[\[3\]](#)

Choose an app such as E85 Prices (<https://e85prices.com/>) to locate fueling stations that carry E85 (technically 51-83% ethanol; but generally thought of as 85% ethanol and 15% gasoline) and other ethanol blends in the US. Or use the [U.S. Department of Energy's Alternative Fueling Station Locator](#) which also includes locations in Canada.

A word of caution. If the FFV has been using gasoline regularly before using high ethanol blends regularly, include in your maintenance plan changing the fuel filter after about 200 miles. If the vehicle has been using gasoline for many years, as was true for the 2002 Ford Focus we converted to use E85[\[4\]](#), we found another fuel filter change after 1000 miles is a good idea. The ethanol serves to clean out the fuel system and dislodges hydrocarbon build up which gets filtered out and can clog the fuel filter. After getting the fossil fuel grunge out of the system, regular use of E85 should keep the system clean.

-Model year 2001 and newer *Use E15 whenever available.*

If spark ignition vehicles in your fleet are 2001 model year or newer (18 years old or newer) and not Prius-type hybrids (which can't "stomach" the higher octane very well)[\[5\]](#), they should use E15 when filling up. The U.S. Environmental Protection Agency has approved E15 use in 2001 MY and newer vehicles, although manufacturer warranties and owners' manuals might not mention E15 as it was not available for consumers when those vehicles were manufactured and sold. The Renewable Fuels Association provides an annual [analysis of vehicle warranty statements\[6\]](#) available [here\[7\]](#). And a [list\[8\]](#) of approval status of E15 for non-FFV vehicles.

-Benefit of Ethanol Fuel

In addition to having lower carbon intensity than petroleum-based fuel, the added benefit of using higher ethanol blends is they may also save you money. E15 and E85 are usually less expensive than regular E10 gasoline. E85Prices posts daily prices at www.E85Prices.com[9]. Other benefits of ethanol: less reliance on foreign oil, cleaner air and more income in rural communities. Specifically, ethanol as an oxygenate lowers tailpipe emissions[10], replaces benzene, a well-documented carcinogen[11], reduces harmful volatile organic compound (VOC) emissions and reduces smog-forming potential. [12] It also lowers the wear and tear on engines and improves performance due to characteristics such as higher heat of vaporization and higher compression ratios.[13]

Increasing the volume of ethanol in the fuel supply to 30 percent (E30) has the greatest positive impact on tailpipe emissions of toxins out of any commercially available fuel. This included significant reductions in ultrafine particulates and carbon monoxide. Latest research finds that E30 did not contribute to smog formation (a mixture of nitrous oxides and carbon monoxide).[14]

Recent research from the U.S. Department of Agriculture has found that domestically-produced corn ethanol is, on average, 43 percent less GHG intensive than gasoline. Cellulosic ethanol, sourced from crop wastes and purpose-grown crops (rather than edible plant matter), must be 60 percent less GHG intensive than gasoline. According to modeling from the U.S. Department of Energy, cellulosic ethanol can reduce GHG emissions between 90 and 115 percent, relative to gasoline, depending on the feedstock.[15]

So, using high ethanol blends in spark ignition engines can significantly defossilize your fleet.

2. Compression Ignition/Diesel Engines

Any compression ignition/diesel vehicles in your fleet or that staff use as they travel must be filled up with renewable diesel or biodiesel blends if there's a station reasonably available. Diesel equipment must use the highest blend of biodiesel or renewable/green diesel available that is compatible with the engine.

Existing vehicles and equipment that have compression ignition or diesel engines can transition to renewable fuels as well.

Renewable diesel (also known as green diesel or HVO) can be used as a drop-in ultra low sulfur replacement for petroleum diesel with no modification, additives or warranty issues. It has fewer particulates in the exhaust and lower maintenance needs. Biodiesel can be used in some proportion, depending on the engine, fuel system and weather conditions. Other fuels such as rDME may also be an option.

Advanced Biofuels USA published a white paper[16] explaining the differences between renewable diesel/green diesel and biodiesel. We are working on an update with a more world-

wide focus that also includes renewable DME and other fuels that can be used in compression ignition engines.

-Biodiesel

Essentially, biodiesel is an alternative diesel fuel for use in diesel engines defined by ASTM to be “a fuel comprised of mono-alkyl esters of long-chain fatty acids derived from vegetable oils or animal fats.” Biodiesel is also referred to as FAME (fatty acid methyl ester) or RME (rape seed methyl ester) in Europe; and when the catalyst used is ethanol, the version is known as FAEE (fatty acid ethyl ester)[[17](#)]. Generally, it is produced using a transesterification process, or “reacting vegetable oils or animal fats catalytically with a short-chained aliphatic alcohol (typically methanol or ethanol).”

Biodiesel possesses properties that are dissimilar to fossil diesel. Biodiesel users must be aware of these differences for they may affect the operation of their diesel/compression ignition engine. For example, biodiesel is chemically different from fossil diesel because it contains oxygen atoms. This leads to different physical properties for biodiesel, some of which vary according to the biodiesel feedstock.[\[18\]](#) Biodiesel can be made from many things from used cooking oil or restaurant grease to algae, from seed crops to oil crops. Most of the biodiesel in the US is made from soybeans as the oil is extracted when making soy meal for animal feed. Similarly, in the Europe, most of the biodiesel is made from canola/rapeseed as the co-product to high protein animal feed.

In the US over the past 10 years, we can count on more consistent quality characteristics from industrially-produced biodiesel. Experience with biodiesel blends in cold weather has also led to development of best practices that include additives, cold flow improvers, stabilizers[\[19\]](#) and limiting high biodiesel blend use during winter.

According to the National Biodiesel Board (NBB), some engine companies specify that biodiesel used in their engines must meet ASTM D6751 standards. Others are still in the process of adopting this standard within their company or have their own set of guidelines for biodiesel use that were developed prior to the approval of ASTM D6751.[\[20\]](#) The NBB anticipates that the entire industry will incorporate the ASTM biodiesel standard into their owner’s manuals over time. [Here’s a list of current OEM support providers created by the NBB.](#) [\[21\]](#)

In the US, any diesel fuel can contain up to 5% biodiesel (B5) without notification to customers and without special labeling. The biodiesel is considered an additive or part of the fuel “recipe.” Users must be advised about blends over 5%.[\[22\]](#) ASTM7467 designates biodiesel blends of 6-20%.

Some engine manufacturers will allow concentrations up to B20 in their engines through Tier 3/Stage IIIA models, including all non-emissions-certified engines if the biodiesel (B100) meets ASTM D6751, EN 14214 or equivalent specification.

The advanced emission controls of newer model engines designed to meet new Environmental Protection Agency Tier 4 standards may not accommodate high levels of biodiesel.

Manufacturers continue to test, study, and research the effect of biodiesel in their engines and equipment. As a result, a manufacturer's stance on biodiesel is continuously changing as they release new vehicles and gain more field experience. For this reason, it is critical to check with your engine manufacturer before using biodiesel, at any blend level over 5%.

-Renewable/Green Diesel/HVO Hydrotreated Vegetable Oil

Renewable Diesel, often called green diesel, second generation diesel, or hydrotreated vegetable oil (HVO) refers to fossil diesel-like fuels derived from biological or renewable sources that are chemically not esters and thus distinct from biodiesel.

In the US, the term "renewable diesel" has been defined differently by the Department of Energy (DOE), the Internal Revenue Service (IRS) and the Environmental Protection Agency (EPA).[\[23\]](#) In addition, the terms renewable diesel and green diesel have been further distinguished based on the processing method to create the fuel with fossil diesel-like chemical composition. For the purpose of this discussion, the term "renewable diesel" will refer to diesel fuels derived from biomass or other renewable feedstock that meet the standards of ASTM D975 and are not mono-alkyl esters.

Renewable diesel is chemically similar to fossil-based diesel. Like biodiesel, renewable diesel has near-zero aromatic content and very low sulfur content. It typically has a very high cetane number and a cloud point more like conventional fossil diesel fuels. Renewable diesel can be made from the same feedstocks as biodiesel.

Renewable diesel blends follow the same nomenclature as biodiesel. Renewable diesel in its pure form is designated R100 while a blend comprised of 20% renewable diesel and 80% fossil diesel is called R20. Renewable diesel can be mixed with fossil diesel in any proportion but users may need to add an additive to address lubricity issue associated with compounds with no oxygen.

-Biodiesel and Renewable Diesel Sources

You will probably find it difficult to find biodiesel or renewable diesel in many parts of the US. If you want to buy direct from the producer, there's a list of member biodiesel and renewable diesel plants that are members of the National Biodiesel Board [here](#).[\[24\]](#)

For Biodiesel retail locations, here's the [list](#).[\[25\]](#)

You might contact these retailers or the National Biodiesel Board about what it would take to get fuel retail close to you to carry biodiesel blends or renewable diesel or for information about installing your own pumps.

Some schools have partnered with their science programs to acquire biodiesel from class production projects.[\[26\]](#)

3. Compressed Natural Gas (CNG) Engines

Any compressed natural gas (CNG) vehicles in your fleet or that staff use as they travel and rent must be filled up with renewable natural gas (RNG) if there's a station reasonably available. On-site CNG equipment must use RNG.

Fossil natural gas has been promoted as a bridge to renewables and over the past decade many fleets have transitioned to CNG vehicles such as CNG buses and trucks. If these are already in your fleet, you can decrease their carbon footprints substantially by using biomethane or renewable natural gas (RNG) in place of all or part of the fossil CNG.

When RNG comes from dairy waste, Dairy Cares reports that according to the California Air Resources Control Board, dairy biomethane is by far the least carbon-intensive transportation fuel currently available in California with a negative carbon intensity score of -255, making it nearly ten times more effective at reducing carbon than even electric vehicles.[\[27\]](#)

Biomethane or renewable natural gas usually comes from captured landfill methane or biogas from anaerobic digesters. The feedstock for the anaerobic digesters could be food waste, agricultural feedstock, animal manure and waste (for example, swine in North Carolina, dairy in California), connected to wastewater treatment facilities, etc. Often biogas from anaerobic digesters is used to generate power on-site. If it is distributed by existing natural gas pipelines or used for transportation fuel, additional clean-up is required.[\[28\]](#)

To locate local sources of biomethane or renewable natural gas, you might want to talk to the people at the [Coalition for Renewable Natural Gas\[29\]](#) or the [American Biogas Council\[30\]](#) to see if there's someone who would deliver RNG to your fueling location. A map of RNG production facilities is [here\[31\]](#).

Travel Practices

Although the use of transportation for travel may be beyond the control of a fleet manager, the organization might want to incorporate attention to the fuel used when traveling. In addition to the suggestions provided above, you might want to give priority to airlines that use renewable fuel and let them know that is a factor in making travel arrangements. Some airlines are providing options for customers, instead of buying off sets, they can pay into a fund that supports research, development and deployment of renewable aviation fuels. For example the Nordic countries' [Fly Green Fund\[32\]](#) and [KLM's Corporate BioFuel Programme\[33\]](#) or use [Lufthansa's calculator](#).

If planes are part of the fleet for freight or business, SkyNRG's [Board Now](#) program provides an opportunity reduce business air travel emissions and at the same time contribute to the development of a new production facility for sustainable aviation fuel. Board Now enables

companies to contribute directly to the development of the sustainable aviation fuel (SAF) industry. Organizations that join Board Now, commit themselves for a period of 5 years to the purchase of SAF. With this commitment, they reduce their own business air travel CO₂ emissions, contribute to the development of a new production facility and have their investments used to cover the price difference between sustainable aviation fuel and conventional jet fuel.

Future Fuels

In addition to bio-based fuels, researchers are working on making fuel from flue gas, recycling plastics to chemicals that can be fuels or building blocks of other products like plastics, fibers, etc. And other fuels like renewable DME that can be used in compression ignition engines are under development.

Policy Considerations

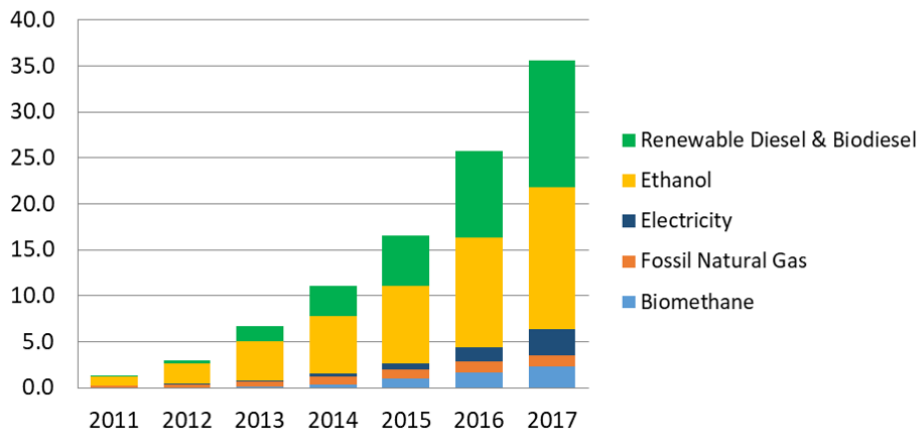
A number of states or municipalities have policies that promote the sale and use of biofuels. Some states follow or are planning to follow some of California’s policies, incorporating a version of that state’s model low carbon fuel standard.

Without strong policy, other than transitioning to increased use of lower cost higher ethanol blends, transitioning to renewable fuels may incur additional costs. Unless the prices of fossil natural gas and petroleum/oil go up or a price is put on carbon or a policy like California’s low carbon fuel standard is implemented, fossil fuels will have a price advantage.

This graph from Diesel Technology Forum using data from the California Air Resources Board regarding the progress of the state’s Low Carbon Fuel Standard illustrates the benefit of transitioning to renewable transportation fuels such as ethanol, biodiesel, renewable diesel and renewable natural gas (biomethane) to achieve the greatest near-term progress to climate change mitigation goals.

Cumulative CO₂ Reductions (million tons)

SOURCE: California Energy Commission, Low Carbon Fuel Standard Dashboard



Graphic: Diesel Technology Forum

The Advanced Biofuels USA website has gathered articles that describe others experiences [defossilizing fleets](#). We encourage you to learn from others, to avoid “reinventing the wheel.” [\[34\]](#)

Appendix

<https://afdc.energy.gov/fuels/laws/ETH?state=US>

Vehicle Acquisition and Fuel Use Requirements for Federal Fleets

Under the Energy Policy Act (EPAAct) of 1992, 75% of new light-duty vehicles acquired by covered federal fleets must be alternative fuel vehicles (AFVs). As amended in January 2008, Section 301 of EPAAct 1992 defines AFVs to include hybrid electric vehicles, fuel cell vehicles, and advanced lean burn vehicles. Fleets that use fuel blends containing at least 20% biodiesel (B20) may earn credits toward their annual requirements. Federal fleets are also required to use alternative fuels in dual-fuel vehicles unless the U.S. Department of Energy (DOE) determines an agency’s vehicle requests qualify for waivers; grounds for a waiver include lack of alternative fuel availability and cost restrictions (per EPAAct 2007, section 701).

Additional requirements for federal fleets were included in the [Energy Independence and Security Act of 2007](#), including fleet management plan requirements (Section 142), low greenhouse gas (GHG) emitting vehicle acquisition requirements (Section 141), and renewable fuel infrastructure installation requirements (Section 246). For more information, see the [Federal Fleet Management](#) website.

Executive Order 13834, issued in May 2018, requires the Secretary of Energy (Secretary), in coordination with the Secretary of Defense, the Administrator of General Services, and the heads of other agencies as appropriate, to review the existing federal vehicle fleet requirements. In April 2019, the Secretary provided a [report\(PDF\)](#) to the Chairman of the Council on Environmental Quality and the Director of the Office of Management and Budget detailing opportunities to optimize federal fleet performance, reduce associated costs, and streamline reporting and compliance requirements. Specifically, the report recommends that federal agencies identify and implement strategies to:

- Right-size the fleet
- Reduce vehicle miles traveled
- Implement more fuel efficient vehicles
- Align the implementation of AFVs and associated fueling infrastructure

To track progress toward meeting AFV acquisition and fuel use requirements, federal fleets must report on their percent alternative fuel increase compared to the fiscal year 2005 baseline, alternative fuel use as a percentage of total fuel consumption, AFV acquisitions as a percentage of vehicle acquisitions, and fleet-wide miles per gasoline gallon equivalent of petroleum fuels. (Reference 42 [U.S. Code](#) 13212 and [Executive Order 13834\(PDF\)](#))

Point of Contact

Federal Energy Management Program

U.S. Department of Energy

https://federalfleets.energy.gov/fleet_management_contacts

Vehicle Acquisition and Fuel Use Requirements for Private and Local Government Fleets

Under the Energy Policy Act (EPAAct) of 1992, the U.S. Department of Energy (DOE) was directed to determine whether private and local government fleets should be mandated to acquire alternative fuel vehicles (AFVs). In January 2004, DOE published a final rule announcing its decision not to implement an AFV acquisition mandate for private and local government fleets. In response to a March 2006 ruling by a U.S. District Court, DOE issued a subsequent final rulemaking on the new Replacement Fuel Goal in March 2007, which extended the EPAAct 1992 goal to 2030. The goal is to achieve a domestic production capacity for replacement fuels sufficient to replace 30% of the U.S. motor fuel consumption. In March 2008, DOE issued its determination not to implement a fleet compliance mandate for private and local government fleets, concluding that such a mandate is not necessary to achieve the Replacement Fuel Goal. For more information on the Private and Local Government Fleet Rule compliance, visit the [EPAAct Private and Local Government Fleet Determination](#) website. (Reference 42 [U.S. Code](#) 13257)

Vehicle Acquisition and Fuel Use Requirements for State and Alternative Fuel Provider Fleets

Under the Energy Policy Act (EPAAct) of 1992, as amended, certain state government and alternative fuel provider fleets are required to acquire alternative fuel vehicles (AFVs) as a portion of their annual light-duty vehicle acquisitions. Compliance is required by fleets that operate, lease, or control 50 or more light-duty vehicles within the United States. Of those 50 vehicles, at least 20 must be used primarily within a single Metropolitan Statistical Area/Consolidated Metropolitan Statistical Area, and those same 20 vehicles must also be capable of being centrally fueled for the fleet to be subject to the regulatory requirements.

Under [Standard Compliance](#), the AFVs that covered fleets acquire help them achieve compliance, with each AFV acquired earning the fleet one AFV-acquisition credit. Covered fleets may earn additional credits for AFVs earned in excess of their requirements, and these credits may be banked for future use toward compliance or traded with other fleets. Additionally, fleets that use fuel blends containing at least 20% biodiesel (B20) in medium- and heavy-duty vehicles may earn credits toward their annual AFV-acquisition requirements. A fleet may also earn credits that may be used toward compliance or banked once the fleet achieves compliance for investments in alternative fuel infrastructure, mobile non-road equipment, and emerging technologies associated with certain electric drive vehicle technologies.

Fleets may also opt into [Alternative Compliance](#), which allows fleets the option to choose a petroleum reduction path in lieu of acquiring AFVs under Standard Compliance. Interested fleets must obtain from DOE a waiver from Standard Compliance by submitting a plan that demonstrates a path by which they will achieve a certain level of petroleum reduction specific to their fleet composition.

For more information, visit the [EPA State and Alternative Fuel Provider Fleets](#) website. (Reference 42 [U.S. Code](#) 13251 and 13263a, and 10 [CFR](#) 490)

Point of Contact

EPAct Transportation Regulatory Activities
U.S. Department of Energy
regulatory.info@nrel.gov
<https://epact.energy.gov/contact-us>

Vehicle Incremental Cost Allocation

The U.S. General Services Administration (GSA) must allocate the incremental cost of purchasing alternative fuel vehicles (AFVs) across the entire fleet of vehicles distributed by GSA. This mandate also applies to other federal agencies that procure vehicles for federal fleets. For more information, see the GSA's [AFV](#) website. (Reference 42 [U.S. Code](#) 13212 (c))

Point of Contact

U.S. General Services Administration
Phone: (703) 605-5630
<http://www.gsa.gov>

[1] Songwriters: R. Benson; Dance With Who Brung You lyrics © Bob-a-lew Songs

[2] U.S. Department of Energy, Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance Comprehensive Federal Fleet Management Handbook, https://www.energy.gov/sites/prod/files/2017/01/f34/eo13514_fleethandbook.pdf

[3] U.S. Department of Energy, Executive Order 13514 Federal Leadership in Environmental, Energy, and Economic Performance Comprehensive Federal Fleet Management Handbook https://www.energy.gov/sites/prod/files/2017/01/f34/eo13514_fleethandbook.pdf

[4] Kozak, Bob, Advanced Biofuels USA, Walking the Walk in Advanced Biofuels USA's "E30 and Beyond Retrofitted" Focus <https://advancedbiofuelsusa.info/walking-the-walk-in-advanced-biofuels-usas-e30-and-beyond-retrofitted-focus/>

[5] Kozak, Robert, New Engine Technologies Could Produce Similar Mileage for All Ethanol Fuel Mixtures, Advanced Biofuels USA <https://advancedbiofuelsusa.info/wp-content/uploads/2012/08/New-Ethanol-Engine-Tech-Revised-Aug-2012-Formatted.pdf>

[6] https://ethanolrfa.org/wp-content/uploads/2019/02/carmodels_e15.jpg

[7] <https://ethanolrfa.org/consumers/e15-higher-octane-lower-price/>

[8] <https://ethanolrfa.org/wp-content/uploads/2018/10/Copy-of-2019MY-Table.pdf>

[9] <https://e85prices.com>

[10] CRC study, Report No. E-129, titled ALTERNATIVE OXYGENATE EFFECTS ON EMISSIONS, https://crcao.org/reports/recentstudies2019/E-129/CRC%20Project%20%20E-129%20Final%20Report_May%202019.pdf

[11] *What's in Our Gasoline Is Killing Us: Mobile Source Air Toxics and The Threat to Public Health*, http://www.safegasolinecampaign.org/wp-content/uploads/2019/06/MSAT-Fact-Book_042919.pdf

[12] EESI <https://www.eesi.org/articles/view/ethanol-and-air-quality-separating-fact-from-fiction> ; [The Consumer and Fuel Retailer Choice Act: Environmental, Health & Consumer Considerations](https://www.eesi.org/papers/view/the-consumer-and-fuel-retailer-choice-act-environmental-health-consumer-considerations), EESI; [New Studies Show Ethanol Reduces Emissions And Improves Air Quality](https://www.eesi.org/articles/view/new-studies-show-ethanol-reduces-emissions-and-improves-air-quality), Fix Our Fuel

[13] [New Engine Technologies Could Produce Similar Mileage for All Ethanol Fuel Mixtures](https://advancedbiofuelsusa.info/wp-content/uploads/2012/08/New-Ethanol-Engine-Tech-Revised-Aug-2012-Formatted.pdf) <https://advancedbiofuelsusa.info/wp-content/uploads/2012/08/New-Ethanol-Engine-Tech-Revised-Aug-2012-Formatted.pdf>

And

Effects of Heat of Vaporization and Octane Sensitivity on Knock-Limited Spark Ignition Engine Performance Ratcliff, M.A., Burton, J., Sindler, P., Christensen, E. et al., "Effects of Heat of Vaporization and Octane Sensitivity on Knock-Limited Spark Ignition Engine Performance," SAE Technical Paper 2018-01-0218, 2018, doi:10.4271/2018-01-0218. <https://www.nrel.gov/docs/fy18osti/70443.pdf>

[14] EESI <https://www.eesi.org/articles/view/ethanol-and-air-quality-separating-fact-from-fiction>

[15] EESI Fact Sheet – The Consumer and Fuel Retailer Choice Act — Environmental, Health & Consumer Considerations <https://www.eesi.org/papers/view/fact-sheet-the-consumer-and-fuel-retailer-choice-act>

[16] <https://advancedbiofuelsusa.info/whats-the-difference-between-biodiesel-and-renewable-green-diesel> Here's more information: <https://advancedbiofuelsusa.info/tag/renewable-diesel-green-diesel/>

[17] Ron Cascone and Steven Slome, FAME Is Fleeting: FAEE as a More Sustainable Option for Biodiesel in the US: Filling the Tank on the Road to the Future, Nexant/Biofuels Digest <https://advancedbiofuelsusa.info/fame-is-fleeting-faee-as-a-more-sustainable-option-for-biodiesel-in-the-us-filling-the-tank-on-the-road-to-the-future/>

[18] Rapier, Robert, R-Squared Energy, Renewable Diesel Primer, <http://www.rrapier.com/2009/01/renewable-diese/>

[19] <https://advancedbiofuelsusa.info/?s=stabilizer>

[20] <https://www.biodiesel.org/using-biodiesel/oem-information>

[21] <https://www.biodiesel.org/docs/default-source/ffs-basics/oem-support-summary.pdf?sfvrsn=28>

[22] U.S. Department of Energy, Biodiesel Codes, Standards and Safety, https://afdc.energy.gov/fuels/biodiesel_codes.html

[23] Lane, Jim. "Bioenergy PROFITS Principles: How the Government Defines Renewable Diesel and Biodiesel for Tax Credits and Engine Acceptance." *Biofuels Digest* 8 Jan. 2010. Webpage. <http://www.biofuelsdigest.com/blog2/2010/01/08/bioenergy-profits-principles-how-the-government-defines-renewable-diesel-and-biodiesel-for-tax-credits-and-engine-acceptance/>

[24] <https://nbb.org/about-us/member-plants>

[25] <https://www.biodiesel.org/using-biodiesel/finding-biodiesel/retail-locations/biodiesel-retailer-listings>

[26] For example, Villanova: <https://advancedbiofuelsusa.info/villanova-center-for-the-advancedment-of-sustainability-in-engineering-invites-advanced-biofuels-usa/> and others: Lane, Jim, March Madness: These Colleges are Mad for Biodiesel, *Biofuels Digest* <https://advancedbiofuelsusa.info/march-madness-these-colleges-are-mad-for-biodiesel/>; Sims, Bryan, Fueling Education Loud and Clear, AIDB's biodiesel program provides unparalleled work experience for its students *Biodiesel Magazine* <http://www.biodieselmagazine.com/articles/8358/fueling-education-loud-and-clear>; High School Students from Arizona Charter Academy are Taking Part in Innovative Biodiesel Project, <http://www.prweb.com/releases/2015/02/prweb12497317.htm>;

[27] <https://www.dairycares.com/dairy-digesters>

[28] Eggleston, Michael, What Happened to Anaerobic Digestion in Rhode Island? *Advanced Biofuels USA*, <https://advancedbiofuelsusa.info/what-happened-to-anaerobic-digestion-in-rhode-island/>

[29] <http://www.rngcoalition.com/>

[30] <https://www.americanbiogascouncil.org/>

[31] <http://www.rngcoalition.com/rng-production-facilities>

[32] <http://skynrg.com/nordic/fly-green-fund/>

[33] <http://skynrg.com/klmcorporatebiofuelprogramme/#track-record>

[34] <https://advancedbiofuelsusa.info/tag/fleets/>

This article, updated, is available in PDF. How to defossilize your fleet: [Suggestions for Fleet Managers Fleets article v6 AdvancedBiofuelsUSA](#)

Renewable and bio fuels are the least expensive, quickest way to most effectively reduce our carbon footprint. In addition, they have other air quality benefits; and may be part of solutions to other problems such as erosion control, waste water treatment, food waste management, plastic and carbon recycling/reuse, etc.

Renewable and bio fuels should be used as much as possible, as soon as possible in all vehicles that can use them. Vehicles and engines should be developed and deployed to use higher renewable blends as soon as possible. Federal, state, regional and business policies should require and facilitate this transition from fossil fuels to cleaner burning, beneficial alternatives.

We have provided these practical, market-based solutions. Don't hesitate to contact us for details and for referrals to specific experts on any aspect of these ideas.

Best regards,

Signed

Joanne Ivancic
Executive Director

Enclosures:

[“Disappearing” Carbon Tax for Non-Renewable Fuels](#) (PDF and Word)

[How to De-Fossilize Your Fleet: Suggestions for Fleet Managers Working on Sustainability Programs](#) (PDF and Word)