DEPARTMENT OF AGRICULTURE

Date: September 17, 2020

To: Governor's Council on Biofuels Executive Committee

From: Bob Patton (Bob.Patton@state.mn.us, 651-201-6226)
Jordyn Bucholtz (Jordyn.Bucholtz@state.mn.us, 651-201-6685)

RE: Packet for Friday, September 18, 2020 meeting

The purpose of this meeting is to review a set of staff-suggested recommendations for the Council to consider at its September 21st meeting; one of which needs to be acted upon at that meeting.

The packet includes:

A. Agenda
B. Memo on the F-Factor (first agenda item; see explanation below)
C. 2019 comment letter to the EPA from the Alliance of Automobile Manufacturers (enclosure to the F-Factor memo)
D. 2019 comment letter to the EPA from the National Corn Growers Association (enclosure to the F-Factor memo)
E. Memo on staff-suggested recommendations (second agenda item)
F. Governor's Council on Biofuels July 9, 2020 meeting notes (enclosure to the staff-suggested recommendations memo)
G. Memo on the low-carbon fuel standard (enclosure to the staff-suggested recommendations memo)
H. Governor's Council principles (enclosure to the LCFS memo)
I. Governor's Council vision statement (enclosure to the LCFS memo)

We have suggested Governor's Council recommendations based upon the Council's policy ideas and the small group discussion at the July 9, 2020 Council meeting (notes included in this packet). Our intent was to fashion recommendations that are clear and actionable by state government. We intend these suggested recommendations simply as a starting place for Committee and Council discussion. Of course, the Council is welcome and encouraged to alter, substitute, or add its own recommendations.

One of the staff-suggested recommendations, however—a recommendation for the Governor to comment on an EPA rule before October 29, 2020—requires Council action at the September 21st meeting, and so will be discussed first.

There is obviously a very short time between the Executive Committee meeting and the full Council meeting on Monday, September 21. Consequently, the packet for the Governor's Council meeting may be sent prior to the Executive Committee meeting and likely will contain the same suggested recommendations that are contained in the Executive Committee packet. We plan to bring the proposed changes and perspectives of the Executive Committee to the full Council on Monday.

Please let us know if you have any questions.

Governor's Council on Biofuels – Executive Committee

September 18, 2020 Meeting

9:00 a.m. to noon
Webex Video Conference

Agenda

9:00 a.m.
Welcome
Commissioner Thom Petersen

9:05 a.m.
Introductions, orientation, and overview of agenda
Bob Patton, Energy and Environment Supervisor, MDA

9:15 a.m.
Action Item: Recommendation for the Governor to comment to the EPA on weighting factor (F-factor) for E85 flexible fuel vehicles for model years 2021 and later

10:00 a.m.
Review of preliminary staff-suggested GCB recommendations

11:45 a.m.
Public Comment

12:00 p.m.
Adjourn

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Jordyn Bucholtz (Jordyn.Bucholtz@state.mn.us, 651-201-6685)

RE: Action Item: Recommendation for the Governor to comment to the EPA on weighting factor (F-factor) for E85 flexible fuel vehicles for model years 2021 and later

In determining fleet-average greenhouse gas (GHG) values for flex-fuel vehicles (FFVs) for its GHG programs, and for determining compliance with Corporate Average Fuel Economy (CAFE) standards, the EPA uses a weighting factor known as the "F-factor." The F-factor is meant to represent the real-world percentage use of E85 in FFVs, since FFVs can and often are fueled with gasoline (such as E10) rather than E85.

During EPA rulemaking in 2019, the Alliance of Automobile Manufacturers (AAM) submitted comments that, based on data from the federal Energy Information Agency (EIA), the F-factor should be updated from 0.14 (i.e., 14%) to 0.21 (i.e., 21%). The National Corn Growers Association also submitted comments in support of the AAM position. The letters are enclosed in this packet.

The EPA extended the rule with a 0.14 F-factor (without the extension, the F-factor would have defaulted to zero, representing that vehicles on average used no E85), but did not increase the F-factor as requested by the AAM.

Currently, the EPA has an open comment period for rulemaking on data sources and analytical approaches on which to base an EPA determination of an updated weighting factor (F-factor) for E85 flexible fuel vehicles for model years 2021 and later (see https://www.epa.gov/regulations-emissions-vehicles-and-engines/e85-flexible-fuel-vehicle-weighting-factor-f-factor-model#rule-summary).

The comment period closes on October 26, 2020, and therefore this item must be acted upon promptly; preferably at the September 21st Council meeting.

Staff-suggested recommendation

We suggest that the Council adopt the following recommendation to the Governor:

The Governor should, on his own, or in concert with the Governors' Biofuels Coalition, submit comments to the U.S. Environmental Protection Agency (EPA) on the weighting factor (F-factor) for E85 flexible fuel vehicles for model years 2021 and later, to the effect that the weighting factor should be increased from 0.14 to 0.21.

September 3, 2019

Byron J. Bunker
Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
2565 Plymouth Road
Ann Arbor, MI 48105

F-Factor Guidance Request for MY 2020 and Later Flex Fuel Vehicles

Dear Mr. Bunker:

The Alliance of Automobile Manufacturers[1] ("Alliance") respectfully submits these comments on the need for an F-factor for model year (MY) 2020 and beyond gasoline-E85 Flex Fuel Vehicles (FFVs). The Alliance appreciates EPA extending the F-factor of 0.14 for MY 2016-2018 through MY 2019, but in order for manufacturers to have confidence that EPA will recognize the benefits of using E85, EPA should issue a new guidance letter to implement a F-factor for MY 2020 and beyond. This guidance should remain in place until the EPA establishes a new F-factor.

The Alliance brings to your attention newly released data that is pertinent to the generation of a new F-factor. The Energy Information Agency ("EIA") released the Annual Energy Outlook ("AEO") 2019 on January 24, 2019, that provides the necessary information to set a new F-factor for gasoline-E85 FFVs. Replicating EPA methodology for establishing the MY 2016-2018 F-factor with the updated AEO 2019 data, arrives at an F-factor of 0.21 for use with MY 2020 and future model year vehicles. This F-factor should remain valid until any new data is established.

An updated F-factor using this new data is needed for 2020 and beyond for manufacturers to calculate their compliance values for both the National Highway Traffic Safety Administration's ("NHTSA's") corporate average fuel economy ("CAFE") standards and the Environmental Protection Agency's ("EPA's") tailpipe carbon dioxide emissions ("GHG") standards. An industry wide F-factor is only possible through EPA written guidance, which is of

[1] The members of the Alliance are BMW Group, FCA US LLC, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche Cars North America, Toyota, Volkswagen Group of America and Volvo Car USA. For more information, go to www.autoalliance.org.

vital importance to automakers. FFVs provide a key compliance flexibility by utilizing a proven technology to cost-effectively achieve real-world petroleum and GHG reductions. FFVs are highly versatile in that these vehicles are approved by original equipment manufacturers (OEMs) to utilize blends of ethanol and gasoline that range from 0-85% ethanol and are likewise federally certified to this range of fuel blends. The F-factor represents the percentage of time FFVs are deemed to use ethanol flex fuel versus gasoline over the lifetime of the FFV for crediting purposes.[2] The regulatory framework of the CAFE and GHG programs rely upon this F-factor to determine the CO_2 and fuel economy benefits that automakers receive for manufacturing and selling FFVs. Automakers make technology pathway decisions based on the relative value that EPA and NHTSA recognize and attribute to FFVs.[3]

EPA previously established an F-factor for model years 2016 through 2018[4], which was recently extended through MY 2019.[5] EPA set this F-factor at 0.14, meaning FFVs of these model years were projected to operate on E85 14% of the time over their useful life. Absent further action, the existing EPA regulations set the F-factor at zero starting after model year 2019.[6] In other words, starting in MY 2020 FFVs are currently assumed to never run on E85, and therefore would provide zero GHG and CAFE benefits. An F-factor of zero eliminates the regulatory incentive to manufacture FFVs under the CAFE and GHG programs and ignores the real-world CAFE and GHG benefits delivered by the use of E85 in FFVs. The absence of an F-factor for model year 2020 and thereafter could similarly constrain the potential for developing vehicles that utilize higher octane gasoline (such as from mid-level ethanol blends), an issue on which the SAFE rulemaking sought comment.[7]

By necessity, automakers are already evaluating vehicle compliance strategies through MY 2026. Expeditiously establishing an F-factor for model years 2020 and subsequent years based on the new EIA data would allow automakers to make appropriate vehicle production investments and decisions to support future compliance. A new F-factor determination is critical to supporting automaker compliance strategies. This is especially important given that model year 2020 has already started. Consistent with this, EPA has "initiated a forward-looking assessment based on real-world use for the 2020 and later model years with the goal of issuing a new determination expeditiously."[8] Further, EPA has recognized, "the F factor should be

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[2] See Letter of Byron J. Bunker, Director of Compliance Division, Office of Transportation and Air Quality, U.S. Environmental Protection Agency, "E85 Flexible Fuel Vehicle Weighting Factor for Model Year 2016-2018 Vehicles," (November 12, 2014) at https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=33581&flag=1 (hereafter "EPA's 2014 F-factor Guidance," at p. 1, 4.

[3] See 40 CFR 600.510-12(c)(2)(v)(regarding CAFE) and (j)(2)(vi)(regarding vehicle GHG compliance).

[4] See 2014 F-factor Guidance, *supra*.

[5] See Letter of Byron J. Bunker, Director of Compliance Division, Office of Transportation and Air Quality, U.S. Environmental Protection Agency, "E85 Flexible Fuel Vehicle Weighting Factor for Model Year 2019 Vehicles," (August 26, 2019) at https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=47440&flag=1 (hereafter "EPA's 2019 F-Factor Guidance").

[6] 40 CFR 600.510-12(c)(2)(v)(regarding CAFE) and (j)(2)(vi)(regarding vehicle GHG compliance).

[7] See e.g., SAFE proposed rule at 83 Fed. Reg. 42,986, 43,446 (August 24, 2018). Comment was also more broadly sought on compliance levels, flexibilities and approaches to automakers achieving compliance with the applicable standards. In response, Pearson Fuels and other entities commented that an appropriate F-factor should be established for Model Year 2019 and onward. See e.g., Pearson Fuels SAFE Comment, *supra* at 8-12.

[8] See 2019 F-factor Guidance, *supra*.

locked-in as far out as possible … to provide manufacturers with as much certainty as possible."[9]

Multiple new sources of empirical data can be used to set a new F-factor. Most importantly, EIA just published data projecting E85 use with values beginning at 0.04 quads in 2019 rising to 0.14 quads in 2025 in its Annual Energy Outlook.[10] An analysis of this EIA data was conducted by Air Improvement Resources ("AIR") using a methodology consistent with the established EPA methodology for determining an F-factor across several model years.[11] A copy of the technical AIR report is included as Exhibit A and demonstrates that the EIA data supports an F-factor of at least 0.21 for MY 2020 through 2025, based on an average across those model years. Alternatively, EPA could establish specific F-factors for each model year from 2020 per the values noted in Table 1 of the report. These individual F values increase each year from 2020 through 2025, and when averaged equate to 0.21.[12]

Consistent with the EIA data, a recent analysis conducted by Professor Scott H. Irwin, of the University of Illinois, found significant increases in ethanol use at both the federal and state level.[13] The analysis derived from public data on E85 use showed a consistent *upward* trend in consumption over the review period. Further, the analyses showed double-digit increases in E85 use over the period December 2017 through October 2018. In particular, E85 use was up 32 percent for December 2017 through October 2018 compared to the same period a year earlier for both national and state-level data.

The EIA data and the state-level data sources are consistent with the data that the California Air Resources Board has gathered showing a rapid growth trend in E85 usage in FFVs of 30% per year in the last several years.[14]

EPA recognition of real-world E85 usage through the publication of an updated F-factor would enable automakers that manufacture gasoline-E85 FFVs to appropriately weight the contribution of fuel economy/GHG emissions in the CAFE and GHG programs. Rather than defaulting to zero, establishing an F-factor for MY 2020 and subsequent years would provide commensurate credits for the fuel economy and GHG benefits of FFVs utilizing E85.

Given the strength of the EIA data in establishing robust and growing real-world E85 usage in FFVs, the Alliance urges EPA to expeditiously establish an F-factor for MY 2020 and

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[9] 2014 F-factor Guidance, *supra* at p. 24-25. EPA had previously issued a multi-year F-factor to provide "to provide manufacturers with as much lead time and certainty as possible." *Id.* at 8.

[10] Energy Information Agency, Annual Energy Outlook 2019, January 24, 2019, at https://www.eia.gov/outlooks/aeo/, and supplemental data for Table 38, "Light-Duty Vehicle Energy Consumption by Technology and Fuel Type" at https://www.eia.gov/outlooks/aeo/tables_ref.php.

[11] See EPA's 2014 F-factor Guidance, *supra,* which established a single F-factor for model years 2016-2018.

[12] While the AIR analysis goes through MY 2025, the Alliance requests an F-factor be in place through MY 2026 so as to align with the SAFE Rulemaking.

[13] Irwin, S. "Small Refinery Exemptions and E85 Demand Destruction," farmdoc daily (9):8, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, January 16, 2019; at https://farmdocdaily.illinois.edu/2019/01/small-refinery-exemptions-and-e85-demand-destruction.html. For a further examination of this data, see also, Irwin, S. "What's Behind Rising E85 Use?" in farmdoc daily (9):13, January 24, 2019, at https://farmdocdaily.illinois.edu/2019/01/whats-behind-rising-e85-use.html.

[14] See Pearson Fuels SAFE Comment (*supra* footnote 1), at 11 and Exhibit 1.

beyond at 0.21. An F-factor should not be zero as a result of inaction, and as such, keeping an F-factor in place until new guidance is released is appropriate. Doing so would enhance regulatory predictability, inform automaker production planning, enhance regulatory compliance, increase efficiency, and reduce GHG emissions from the transportation sector.

In summary, the Alliance respectfully requests that EPA expeditiously issue a guidance letter that uses EIA data and prior EPA procedures setting the F-factor equal to 0.21 for MY 2020 and future model years for both CAFE and GHG programs. This guidance should also clarify that an F-factor is valid until the EPA determines a new value; F-factors are not assumed to be zero if new guidance has not been written to cover new model years.

Thank you for consideration. If you have any questions, please contact Dan Bowerson at dbowerson@autoalliance.org or 248-327-1777.

Sincerely,

Dan Bowerson
Director, Vehicle Electrification & Fuels

Exhibit A

"F" Factor Developed from Energy Information Agency (EIA)
Fuel Consumption Projections
Air Improvement Resource, Inc.
February 1, 2019

Introduction

The "F" factor for a flexible fuel vehicle is the ratio of its fuel consumption on E85 to the total fuel consumption, over the vehicle life. EPA requires the "F" factor to be used in estimating GHG emissions of FFVs.[15]

EPA estimated the "F" factor for FFVs in model years 2016-2018 as 0.14.[16] EPA used FFV sales projections, ethanol volume projections, and E15 use projections from the Energy Information Agency AEO2014 in developing this estimate. Developing "F" factors by model year requires projecting the amount of E85 use into the future for each model year, and a number of factors beyond the control of the automakers influence this use.

The Energy Information Agency projects both E85 use and total fuel consumption for FFVs. This report calculates "F" factors from EIA fuel consumption projections for model years including 2019 through 2025 based on the AEO2019 projection. Calculations were prepared for two alternative assumptions on assumed vehicle life (15 and 20 years) and were weighted based on projected vehicle miles travelled over the vehicle life. Alternative calculations using a simple average of annual "F" factors (rather than a weighted average based on vehicles miles travelled) were also prepared. Calculated "F" factors are shown in Table 1.

Table 1. "F" Factor calculations

Model Year	20-year vehicle life		15-year vehicle life	
	VMT weighted avg over 20 yrs	Simple avg over 20 yrs	VMT weighted avg over 15 yrs	Simple avg over 15 yrs
2019	16.53%	18.19%	13.80%	14.34%
2020	17.91%	19.56%	15.40%	15.99%
2021	19.26%	20.88%	17.05%	17.66%
2022	20.56%	22.08%	18.71%	19.33%
2023	21.79%	23.18%	20.38%	20.99%
2024	22.98%	24.16%	22.03%	22.62%
2025	23.99%	24.95%	23.50%	24.06%
Mean across MYs 2019-2025	20.43%	21.86%	18.70%	19.29%

[15] EPA CD-14-18 (LDV/LDT/ICI/LIMO), E85 Flexible Fuel Vehicle Weighting Factor for Model Year 2016-2018 Vehicles, November 12, 2014.
[16] *Id*. at p. 1.

Analysis

EIA assembles an Annual Energy Outlook (AEO) every year. The most recent one is AEO2019.[17] The data includes fuel consumption by many different vehicle types – gas, diesel, FFVs, etc. AEO2019 contains total fuel consumption in BTU by FFVs, and E85 fuel consumption in BTU.[18] The model also contains FFV sales and vehicle stock projections. An "annual" "F" factor (e.g., before weighting for miles travelled across the vehicle lifetime of a particular model year) can be estimated from AEO2019 data as the ratio of the E85 fuel projection divided by the projection of total fuel consumed by FFVs in each projection year. However, this annual ratio is not the same thing as EPA's "F" factor. EPA's "F" factor is model year or model year group specific. Model year specific "F" factors that are comparable to EPA's can be calculated by weighting the annual ratios (of E85 and total FFV use) by "vehicle miles traveled" (VMT) weighting factors developed from EPA's MOVES model.

FFV sales by car and LDT, FFV vehicle stock by car and LDT, and E85 fuel consumption and total fuel consumption by FFVs from AEO2019 are shown in Attachment 1. Also shown in the attachment is the annual ratio of E85 to total FFV fuel use. Figure 1 shows this ratio between the 2017 and 2050 calendar years. The ratio climbs to 30.97% by 2038 (and thereafter declines somewhat).

EIA's projections of ethanol used in E85 increase from 0.03 quads in 2019 to 0.09 quads by 2025, while total ethanol volumes are relatively flat over that time period (shown in Attachment 2). EIA projects ethanol used in E85 to continue to increase to 0.17 quads by 2038.

Travel fractions by age from MOVES2014 are shown in Figure 2. These travel fractions are shown for two periods – 15 years and 20 years.[19] Since most of the FFVs are LDTs, this analysis has applied the MOVES LDT travel fractions by age to both cars and LDTs.

Using the annual ratios of E85 to total FFV fuel use and the travel fractions, the resulting model year specific "F" factors are shown in Figure 3.[20] The 20-year results are comparable to EPA's results for 2016-2018. The "F" factor is approximately 17% for model year 2019 and climbs to 24% by model year 2025. Although EPA used a 15-year period in their prior analysis of the "F" factor, data supports using a 20-year assumed vehicle life, which yields a slightly higher "F" factor in the early years of this range of model years (as shown in Figure 3).

[17] Annual Energy Outlook 2019, With Projections to 2050, January 24, 2019, https://www.eia.gov/outlooks/aeo/.
[18] See Tables 37 and 38 in AEO2019, https://www.eia.gov/outlooks/aeo/tables_ref.php.
[19] In each case, the travel fractions add to 100%.
[20] The travel fractions are multiplied by the annual "F" factors and summed over each period of analysis. For example, for 2016 model year vehicles, the 2016 annual "F" factor is multiplied by the age 0 travel fraction, the 2017 annual "F" factor is multiplied by the age 1 travel fraction, and so on, until the end of period is reached.

Figure 1

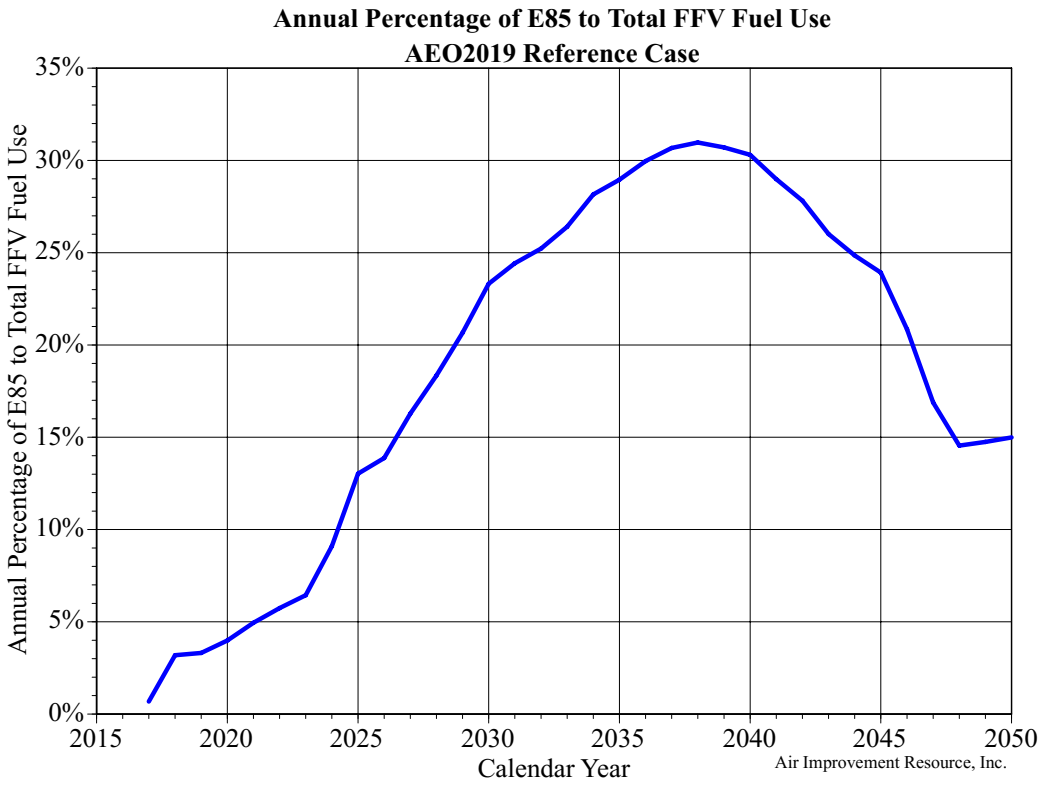

Annual Percentage of E85 to Total FFV Fuel Use
AEO2019 Reference Case
Annual Percentage of E85 to Total FFV Fuel Use
35%
30%
25%
20%
15%
10%
5%
0%
2015
2020
2025
2030
2035
2040
2045
2050
Calendar Year
Air Improvement Resource, Inc.

Figure 2

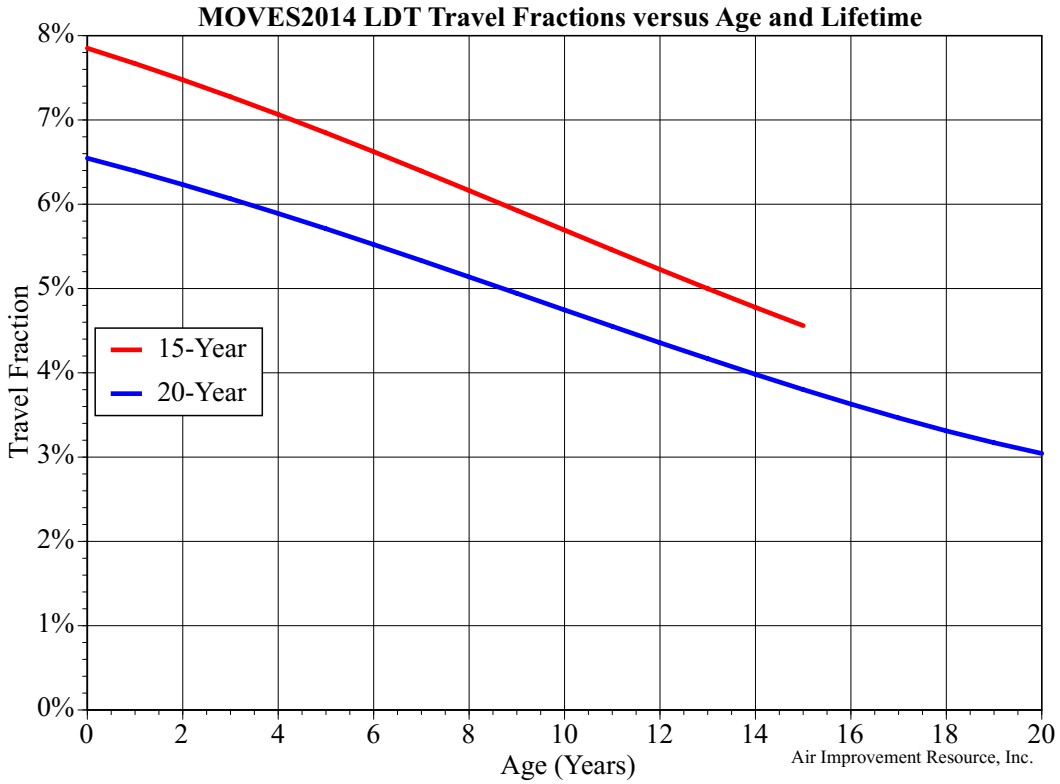
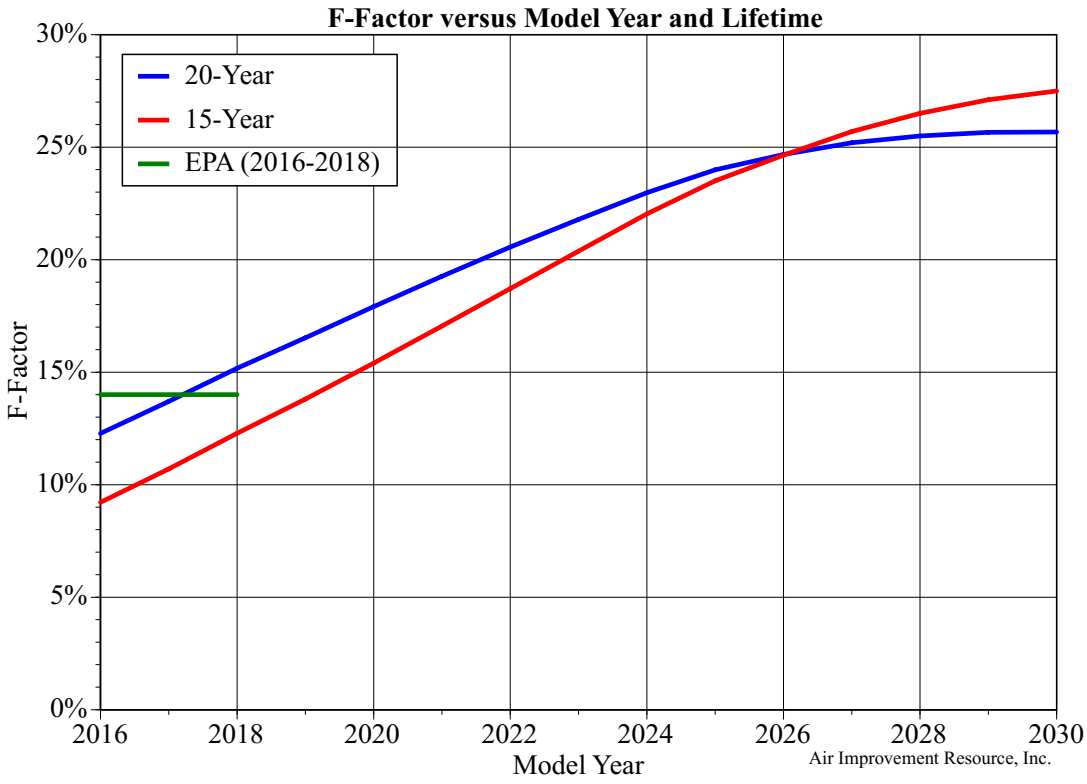


Figure 3



Attachment 1
AEO2019 Reference Case

Calendar Year	LDV Energy Consumption and Ratio of E85 to Total FFV Energy Use (Trillion Btu)			FFV Stock (Millions)			FFV Sales (Millions)		
	FFV	E85	Ratio E85/FFV Btu	Car	LDT	Total	Car	LDT	Total
2017	1,349.82	9.16	0.68%	4.81	14.63	19.44	0.233	0.689	0.922
2018	1,347.08	43.01	3.19%	4.93	14.80	19.73	0.221	0.665	0.886
2019	1,336.71	44.30	3.31%	5.02	14.93	19.95	0.213	0.663	0.876
2020	1,315.39	52.47	3.99%	5.09	15.00	20.09	0.210	0.651	0.861
2021	1,284.24	63.49	4.94%	5.13	15.01	20.14	0.207	0.647	0.855
2022	1,246.10	71.58	5.74%	5.15	14.94	20.08	0.203	0.628	0.831
2023	1,201.55	77.36	6.44%	5.14	14.81	19.95	0.204	0.623	0.827
2024	1,152.75	104.88	9.10%	5.11	14.63	19.74	0.206	0.616	0.821
2025	1,101.25	143.48	13.03%	5.06	14.40	19.46	0.207	0.609	0.816
2026	1,054.70	146.33	13.87%	4.98	14.15	19.13	0.209	0.608	0.817
2027	1,011.92	164.74	16.28%	4.89	13.90	18.79	0.218	0.616	0.834
2028	974.38	178.72	18.34%	4.79	13.68	18.46	0.231	0.641	0.872
2029	940.43	194.29	20.66%	4.69	13.48	18.17	0.244	0.655	0.899
2030	912.84	212.84	23.32%	4.60	13.33	17.94	0.260	0.689	0.949
2031	888.57	217.03	24.42%	4.54	13.21	17.75	0.270	0.698	0.968
2032	867.10	218.71	25.22%	4.49	13.09	17.58	0.274	0.697	0.972
2033	848.79	224.13	26.41%	4.46	12.99	17.45	0.282	0.707	0.989
2034	834.81	235.04	28.16%	4.45	12.93	17.38	0.293	0.728	1.021
2035	823.52	238.42	28.95%	4.47	12.88	17.35	0.297	0.730	1.027
2036	816.88	244.75	29.96%	4.50	12.85	17.35	0.302	0.733	1.035
2037	813.80	249.61	30.67%	4.55	12.85	17.40	0.306	0.738	1.043
2038	812.58	251.69	30.97%	4.61	12.86	17.47	0.307	0.734	1.041
2039	812.27	249.42	30.71%	4.67	12.87	17.55	0.304	0.719	1.023
2040	812.24	246.15	30.30%	4.74	12.88	17.62	0.301	0.703	1.004
2041	810.74	234.97	28.98%	4.80	12.87	17.67	0.293	0.676	0.969
2042	807.79	224.71	27.82%	4.85	12.83	17.68	0.285	0.648	0.933
2043	802.88	208.84	26.01%	4.88	12.76	17.64	0.274	0.615	0.889
2044	796.79	198.04	24.86%	4.91	12.66	17.57	0.268	0.597	0.865
2045	789.39	188.87	23.93%	4.92	12.55	17.47	0.262	0.579	0.842
2046	779.06	162.44	20.85%	4.91	12.39	17.30	0.246	0.538	0.785
2047	767.76	129.59	16.88%	4.89	12.21	17.10	0.238	0.519	0.757
2048	756.14	109.99	14.55%	4.86	12.02	16.88	0.234	0.510	0.744
2049	744.94	109.86	14.75%	4.83	11.83	16.65	0.233	0.508	0.742
2050	734.04	110.02	14.99%	4.78	11.63	16.42	0.232	0.507	0.739

Attachment 2

AEO2019 Reference Case				
Calendar Year	**Quadrillion BTU**			**Billion Gallons**
	Ethanol Used in E85	**Ethanol Used in Gasoline Blending**	**Total**	**Ethanol**
2017	0.01	1.19	1.20	12.60
2018	0.03	1.16	1.19	12.50
2019	0.03	1.17	1.19	12.56
2020	0.03	1.16	1.19	12.58
2021	0.04	1.15	1.19	12.50
2022	0.04	1.14	1.18	12.46
2023	0.05	1.13	1.18	12.39
2024	0.07	1.10	1.17	12.31
2025	0.09	1.08	1.17	12.28
2026	0.09	1.06	1.15	12.09
2027	0.10	1.04	1.14	12.02
2028	0.11	1.02	1.13	11.94
2029	0.12	1.00	1.13	11.85
2030	0.14	0.98	1.12	11.78
2031	0.14	0.97	1.11	11.67
2032	0.14	0.95	1.09	11.50
2033	0.15	0.93	1.08	11.35
2034	0.15	0.92	1.07	11.31
2035	0.16	0.91	1.07	11.26
2036	0.16	0.91	1.07	11.25
2037	0.16	0.91	1.07	11.26
2038	0.17	0.91	1.07	11.28
2039	0.16	0.91	1.07	11.29
2040	0.16	0.91	1.07	11.31
2041	0.15	0.92	1.07	11.31
2042	0.15	0.93	1.08	11.33
2043	0.14	0.94	1.08	11.34
2044	0.13	0.96	1.09	11.45
2045	0.12	0.98	1.10	11.62
2046	0.11	1.00	1.10	11.62
2047	0.09	1.02	1.10	11.62
2048	0.07	1.04	1.11	11.70
2049	0.07	1.06	1.13	11.90
2050	0.07	1.06	1.13	11.94

October 18, 2019

Acting Assistant Administrator Anne Idsal
Office of Air and Radiation
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Assistant Administrator Idsal:

Higher blends of corn ethanol are an American-made solution to our need for low-cost, low-carbon transportation fuel. Higher ethanol blends also help confront the continuing national security challenge of our dependence on foreign petroleum.

We, the undersigned representatives of America's corn farmers, support the auto industry in its request for an updated F-factor of 0.21 for model years 2020 and beyond, which the industry needs to continue producing flex-fuel vehicles (FFVs). As explained in the Auto Alliance's September 3, 2019 letter, this number is well justified by the Energy Information Agency's Annual Energy Outlook 2019.

FFVs—which can run on high-ethanol content fuel such as E85, regular gasoline, or any combination of the two—represent an important and growing market for home-grown, low-cost ethanol and offer more choice to drivers. An accurate F-factor provides an important compliance option for automakers when it comes to meeting fuel economy and greenhouse gas emission standards, giving manufacturers an incentive to incur the small marginal cost of producing a FFV. Timely and accurate F-factor guidance enables manufacturers to make vehicle technology decisions based on available GHG and fuel economy program benefits from FFVs.

Flex-fuel vehicles also build a bridge to more efficient transportation solutions of the future. As the Auto Alliance's letter suggests, a national fleet of vehicles certified on high-level ethanol fuel will be well equipped to run on "higher octane gasoline (such as from mid-level ethanol blends)." Such a fuel would enable high-efficiency engines with high compression ratios that take advantage of ethanol's value as an octane additive.

We join the auto industry in urging EPA to expeditiously provide an accurate and updated F-factor of 0.21 for MY 2020 and future model year vehicles so that FFVs manufactured in the coming years receive the correct credit for the home-grown ethanol they will run on in the real world.

Sincerely,

Kevin Ross, President
National Corn Growers Association

Jeremy Wilson, President
Alabama Soybean and Corn Association

Dave Eckhardt, President
Colorado Corn Growers Association

Rodney Harrell, President
Georgia Corn Growers Association

Ted Mottaz, President
Illinois Corn Growers Association

Sarah Delbecq, President
Indiana Corn Growers Association

Jim Greif, President
Iowa Corn Growers Association

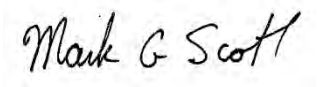
Steve Rome, President
Kansas Corn Growers Association

Mark Roberts, President
Kentucky Corn Growers Association

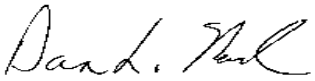
Jason Condrey, President
Louisiana Cotton and Grain Association

Matt Frostic, President
Michigan Corn Growers Association

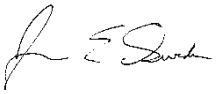
Brian Thalmann, President
Minnesota Corn Growers Association



Mark Scott, President
Missouri Corn Growers Association



Dan Nerud, President
Nebraska Corn Growers Association



Jason Swede, President
New York Corn and Soybean Growers Association

Randy Melvin, President
North Dakota Corn Growers Association

Jon Miller, President
Ohio Corn and Wheat

Doug Noem, President
South Dakota Corn Growers Association

Mike Holman, President
Tennessee Corn Growers Association

Wesley Spurlock, President
Texas Corn Producers Association

Doug Rebout, President
Wisconsin Corn Growers Association

DEPARTMENT OF AGRICULTURE

Date: September 17, 2020

To: Governor's Council on Biofuels Executive Committee

From: Bob Patton (Bob.Patton@state.mn.us, 651-201-6226)
Jordyn Bucholtz (Jordyn.Bucholtz@state.mn.us, 651-201-6685)

RE: Preliminary Staff-Suggested GCB Recommendations

We have suggested Governor's Council recommendations based upon the Council's policy ideas and the small-group discussion at the July 9, 2020 Council meeting (notes included in this packet). Our intent was to fashion recommendations that are clear and actionable by state government. We intend these suggested recommendations simply as a starting place for Committee and Council discussion. Of course, the Council is welcome and encouraged to alter, substitute, or add its own recommendations.

We propose that the Executive Committee review these suggested recommendations in preparation for the full Governor's Council meeting on Monday, September 21. Questions that the Council may wish to consider are:

- Do the staff-suggested recommendations conform to the Governor's Council principles and vision?
- Who might be experts that the Governor's Council should hear from as it makes decisions about these staff-suggested recommendations?
- What additional information does the Governor's Council need?
- What might be unintended consequences?

Preliminary Staff-Suggested GCB Recommendations

A. E15/Mid-Level Blends

Staff-Suggested Recommendations

1. Amend the Petroleum Replacement Promotion Statute (Minnesota Statutes, section 239.7911) to revise the minimum content requirements and goal years in subdivision 1, with the minimum content requirements set at 15 percent (E15), 20 percent (E20), 25 percent (E25), and 30 percent (E30), and with the goal years set according to the "Roadmap for Biofuels Infrastructure" as outlined in the staff-suggested recommendation on biofuels fueling infrastructure.
2. In addition, amend the section to allow the minimum content requirements to go into effect only after determinations by the Commissioners of Agriculture, Commerce, and the Pollution Control Agency determine that a set of criteria have been met. The criteria for the minimum contents should include readiness of fueling infrastructure and, in addition, the criteria for E30 should include EPA registration for use in all vehicles after a certain model year. The section would also include safeguards ("off ramps"), such as an ability for content mandates for be temporarily waived when there are disruptions in supply or fuel quality problems.

Discussion

This patterns the Petroleum Replacement Promotion statute after the biodiesel mandate statute (M.S. 239.77), creating implementation dates that go into effect only after meeting conditions as determined by agency commissioners, and providing safeguards.

B. Biodiesel

Staff-Suggested Recommendation

Amend biodiesel mandate statute (M.S. 239.77) to set additional conditional implementation dates (i.e., implementation upon target date upon meeting statutory conditions as determined by Commissioners of Agriculture, Commerce, and the Pollution Control Agency) for blends of biodiesel higher than B20 (e.g., B30, B40…) in warm-weather months. An additional criterion will be needed regarding compatibility of retail infrastructure.

Discussion

The staff-suggested recommendation is an extension of the current scheme in the biodiesel mandate statute. Because current retail fuel dispensing infrastructure is compatible with biodiesel up to B20, an additional criterion regarding compatibility is needed for blends above B20.

C. Biofuels Fueling Infrastructure

Staff-Suggested Recommendations

Pending recommendations of the Infrastructure Subcommittee.

Discussion

The Infrastructure Subcommittee held its first meeting on Tuesday, August 11th, and is scheduled to meet again on Thursday, September 24th and Monday, September 28th. Our intent is that the Subcommittee come to consensus on recommendations to the Governor's Council on how to meet needs for retail infrastructure in Minnesota (dispensers, storage tanks, and related equipment) in order to deliver higher biofuel blends to the public, with the ultimate aim of meeting Minnesota's petroleum replacement and greenhouse gas reduction goals. A term we are using to refer to these recommendations is a "roadmap", since it would ideally spell out how and when infrastructure would be ready for E15 and higher blends of ethanol and biodiesel.

There was a recent announcement that the Trump Administration would allow E15 to be sold in existing E10 infrastructure. The effect of this announcement is not clear at this time. According to a message from the U.S. Environmental Protection Agency (EPA), "[a]s a next step, EPA is moving to update E15 labels to ensure consumers have informed choices at the pump and clarify the ability of existing fuel infrastructure to support expanded E15 use. However, much of the responsibility regarding labels falls to state agencies, EPA encourages they update them as well and stands ready to support them."

D. *Clean Fuels/Low Carbon Fuel Standard*

Staff-Suggested Recommendation and Discussion

Please see the separate memo included in the packet.

E. *Biofuels Use in the State Fleet*

Staff-Suggested Recommendation

An executive order on biofuels use in state fleets.

Discussion

We are working out details with our sister agencies and we'll discuss ideas at the Executive Committee meeting.

F. *Public Understanding & Marketing*

Staff-Suggested Recommendations

1. Create a standing Council on Biofuels Education and Promotion comprised of representatives of stakeholder groups [who?] responsible for developing and directing a coordinated program of education and promotion of biofuels among consumers and auto-industry professionals in Minnesota.
2. Establish a regular source of funding for education and promotion of biofuels administered by the MDA with guidance from the Council on Biofuels Education and Promotion.

Discussion

A number of state and national groups engage in education and promotion of biofuels to consumers, and currently MEG Corp (the fuel testing and consulting firm based in Plymouth, Minnesota MEG Corp runs the Diesel Help Line) is certified to instruct auto service professionals on biofuels, and holds an annual course. A state role can be providing funding and convening a representative advisory group to inform the funding program. We welcome input from the Council on appropriate advisory group members.

G. *Placeholders*

We have not yet worked on recommendations for the following topics:

Advanced Biofuels/Technology R & D

There were a number of ideas from the Council pertaining to incentivizing advanced biofuels, including utilization of wood waste. We will suggest recommendations at a subsequent meeting.

Benzene

We received a suggestion to look at limits on benzene in gasoline. Again, we will suggest recommendations at a subsequent meeting.

Governor's Council on Biofuels
Meeting Notes

Meeting No. 8
Thursday, July 9, 2020
1:00 p.m. to 3:30 p.m.
Online

Council members in attendance:

Gary Anderson, John Christianson, Elizabeth Crow, Tim Gross, Chris Hanson, Rick Horton, Lance Klatt, Jeanne McCaherty, Gary Wertish, Mike Bull, Kevin Lee, Gary Wertish, and Bob Worth.

Agency commissioners in attendance:

Commissioner Thom Petersen, Minnesota Department of Agriculture (MDA); Laura Bishop, Minnesota Pollution Control Agency (MPCA)

Welcome & Introductions

The meeting was begun at approximately 1:05 p.m.

MDA Commissioner Thom Peterson welcomed the participants and thanked them for their participation.

Overview of agenda

Bob Patton, MDA Energy and Environment Supervisor, introduced the council members and attendees and gave an overview of the agenda.

Orientation to policy proposal refinement process

Bob Patton gave an orientation to the policy proposal refinement process that will be used during this meeting. Patton explained that participants will be split into three small groups, each covering two topics. Patton gave the group a list of questions intended to analyze the policy proposals. Patton explained that after an hour of small group discussions, the group will reconvene to give summaries of their discussions.

Q: Some groups have big topics, so are we anticipating subcommittee meetings again?

A: That will be a topic the Executive Committee discusses.

Small group discussions

Attendees were divided into three ad hoc groups to discuss the topics of E15 and mid-level blends *plus* biodiesel; public understanding and marketing *plus* vehicles; and low carbon fuel standard/clean fuels policy *plus* 'other' topics.

Report-backs from small groups and Council discussion

The large group reconvened at approximately 2:41 p.m. The leaders of each group presented a summary of their group's discussion. The summaries are as follows:

E15 and midlevel blends plus biodiesel:

- There is value in requiring state and local fleets to use E15.
- Minnesota should have an E30 demo like Nebraska.
- There is not much work left on E30. E30 is already a certified fuel at ASTM.
- There are regulatory hurdles for a B30 mandate, the Council and Governor could help with that.
- Manufacturing engines designed for higher blends cannot be done in Minnesota, but Governor and legislation can help influence that.
- B100 in state fleets

Low carbon fuel standard/clean fuels policy plus 'other':

- Issues that would have to be handled:
    - Process for achieving would have to be either executive order (EO) or through legislation
        - Concerns that EO could lead to divisiveness and other issues that could make the policy not as long standing
        - Legislative process could be more consensus building
- Impacts to watch out for associated with this policy:
    - Who might be in opposition: petroleum industry?
    - Cost of fuel rising
    - Must clarify relationship with electric vehicles in this policy
    - Food vs. fuel argument
    - Ensure that native prairie remains protected
    - Answer all questions with science and facts
- To move forward, we need a task force
    - Task force must work in conjunction with state legislators and policy makers
    - Task force would develop broad policy concepts within LCFS that we want to accomplish, try to get through legislation, rule making committee that would be involved in working with legislative staff and agency members; or
    - Look at Midwest Clean Fuels Policy initiated by GPI and American Coalition for Ethanol and dive deeper into that to discuss what we do and don't like and make recommendations.
    - Need a bigger and more diverse group than this council on the task force in order to move policy forward into legislation.
    - Group wants input on whether the task force should be focused on more specific or broader recommendations.

Public understanding and marketing plus vehicles:

- Public and key influencers don't really understand biofuels.
- First, must decide what we want to communicate on. If E15 is going to become the new regular, we don't need to educate on E10 to E15 switch.
- Need to understand what work is currently going on so we can work synergistically with other efforts in place.
- Key influencers are dealers and mechanics because they have high credibility with the consumers. Corn Growers have been working with technical schools to educate technicians. Think about what we can do specifically knowing mechanic and dealerships are influential groups in terms of renewables.
- Ensure dealers are doing everything they can to present fuels. Make sure E15 isn't being sold as a specialty fuel any longer and pumps are labeled correctly.
- Conduct educational campaign for retailers.
- In what phase would technology demonstrations occur? Phase one would be driving volume, so phase two or three might include technology demonstrations.
- Hybrids and flex fuels that can use E85 or 100% as part of Clean Cars MN are not available today so must be part of phase two or three of council recommendations. Recommendations will not influence volume today.
- How do we get higher blends into vehicles? Can we create a tax incentive/relief program like Kansas that rewards $750 for gas receipts showing purchase of E85 in flex fuel or retrofitted vehicles?
- Must advocate for federal policies around flex fuel vehicles to reverse the decline in flex fuel vehicles on the road. What does this advocacy look like?

Clean Cars MN presentation

Frank Kohlasch from MPCA presented about the Clean Cars MN rule.

Public comment and questions

Stephen Moser opened the lines for public comment.

Adjourn

Commissioner of MDA, Thom Peterson thanked everyone for their time, participation, and patience. The meeting was adjourned at approximately 3:25 p.m.

DEPARTMENT OF AGRICULTURE

Date: September 17, 2020

To: Governor's Council on Biofuels Executive Committee

From: Bob Patton (Bob.Patton@state.mn.us, 651-201-6226)
Jordyn Bucholtz (Jordyn.Bucholtz@state.mn.us, 651-201-6685)

RE: Low Carbon Fuel Standard Suggested Recommendation

Background

A low carbon fuel standard (LCFS), also known as a clean fuels policy, is a performance-based incentive program that aims to reduce the carbon intensity of transportation fuels. By using market-based mechanisms, LCFS allows all parties involved in transportation fuel production to choose how they will reduce emissions while responding to consumer demand.[6]

A low carbon fuel standard evaluates all gasoline, diesel fuel, and their substitutes based on lifecycle carbon accounting and assigns each fuel production method a unique carbon intensity (CI) score.[1] The CI score of each fuel is based on the amount of greenhouse gas (GHG) emissions associated with the production, transportation, and use of the fuel, as well as indirect effects on GHG emissions.[7] Since all parts of a fuel's lifecycle are accounted for in the carbon score, multiple opportunities are present to reduce carbon emissions.[4] In the California program, providers of transportation fuels are incentivized to generate a CI score below the declining benchmark in order to generate credits denominated in metric tons of GHG emissions.[7] If a provider fails to meet this benchmark for the annual compliance period, they may acquire credits from another party to make up for their deficient, thus creating more benefits for those who are in compliance.[7]

California, Oregon, British Columbia, and some European countries are using LCFS and similar programs to reduce greenhouse gas emissions by lowering the carbon content of transportation fuels, reduce dependence on petroleum, create a lasting market for clean transportation technology, and stimulate production and use of alternative, low carbon fuels.[3]

California Governor Arnold Schwarzenegger issued Executive Order S-1-07 on January 19, 2007 to enact an LCFS.[6] The California Air Resources Board (CARB) approved the LCFS legislation in 2009 and began implementation on January 1, 2011.[7] In 2018, CARB approved amendments to the regulation to strengthen and smooth the CI benchmarks through 2030.[7]

In 2009, the Oregon legislature authorized the Oregon Environmental Quality Commission to adopt LCFS and a 29-member advisory committee was formed to give input on the structure of the program.[2] The current LCFS is designed to reduce the average carbon intensity of transportation fuels by at least 10% below the 2015 levels by

2025. The DEQ and EQC have been directed by Executive Order 20-04 to expand the carbon intensity reductions to at least 20% by 2030 and 255 by 2035.[4]

The Midwestern Clean Fuels Policy Initiative, facilitated by the Great Plains Institute (GPI), explores how a clean fuels policy can create economic benefits for the region while simultaneously reducing greenhouse gas emissions.[1] The coalition consists of fuels producers and marketers, nonprofit and research organizations, scientists and engineers, and agriculture and industry stakeholders.[1] A stakeholder process was conducted with the intention to build a consensus document; many of the Governor's Council on Biofuels (GCB) members were part of this process. As part of the Initiative process, preliminary modeling was conducted on economic impacts and achievable CI reductions for several carbon-reduction scenarios. From this process, a white paper was released offering high-level considerations on how to structure a policy to benefit the Midwest, noting where more work will be required.[1]

Staff-Suggested Recommendation

Minnesota Department of Agriculture (MDA) staff recommends that the GCB proposes legislation that contains the tentatively adopted principles and vision of the GCB in order to meet the various interests of our group members. Additionally, staff recommends that proposed legislation authorizes rulemaking advised by a task force.

Discussion

In addition to providing principles and goals, legislation would lay out the broad framework required to enact LCFS in the Midwest. The rulemaking, advised by a task force, would determine the policy design and the details about how the LCFS works. We recommend that the legislation clearly lay out principles and goals drawn from both the GCB's principles and vision statement, and from the principles and vision established in the white paper.

We suggest the legislation should contain the following principles:

- Rely on a portfolio of clean fuels including biodiesel, ethanol, renewable natural gas, other renewable and low-carbon fuels; [white paper]
- Consider regional factors in the Midwest such as:
    - Current production practices at biofuel facilities
    - Adoption of farming practices that impact soil organic carbon and nitrous oxide emissions
    - Current and aspirational biofuel blending levels; [white paper]
- Build on existing state policies rather than replacing those policies. Such as:
    - Greenhouse gas policies
    - State biofuel blending requirements and incentives
    - State greenhouse has goals
    - Federal Renewable Fuel Standard; [white paper]
- Reinforce and complement existing efforts by the agricultural sector to increase the adoption of practices that improve soil health and water quality and have the potential to lower the carbon intensity of biofuel production; [white paper]
- Recognize emissions reductions at the farm level that contribute to the reduced carbon intensity of fuels; [white paper]
- Consider the relation of biofuels production to the impacts to, and opportunities for, farmers, forest landowners, rural communities, the natural environment, and economically disadvantaged populations. [GCB principles]

We suggest the legislation should aim to:

- Foster growth and use of biofuels including higher blends and supporting policies; [GCB vision]
- Create pathways for advanced biofuels development; [GCB vision]
- Protect and enhance air quality and public health, water quality, wildlife habitat, biodiversity, soil productivity and other associated ecological services, and ensure healthy and vibrant forest-reliant communities; [GCB vision]
- Improve the economic vitality of the state, particularly in rural Minnesota and in the renewable energy, agricultural, and forest sectors; [GCB vision]
- Offer value and benefits for consumers; [GCB vision]
- Financially reward farmers for environmental stewardship, particularly for agronomic practices that lower carbon intensity of biofuels feedstock and have other environmental and public health benefits; [GCB vision]
- Foster growth and use of biofuels including higher blends and supporting policies; [GCB principles]
- Accelerate achievement of the petroleum replacement goals outlined in Minnesota Statutes 2018, section 239.7911; [GCB principles]
- Advance and invest in carbon efficiency improvements of biofuels plants and sources of biofuels feedstock; [GCB principles]
- Utilize biofuels to help Minnesota achieve its greenhouse gas reduction goals under the 2007 Next Generation Energy Act; [GCB principles]
- Provide cost-effective incentives necessary to expedite the use of greater biofuel blends in this state. [GCB principles]
- Contribute to meeting and exceeding existing goals and policies at the state level, including policies to replace petroleum, increase biofuel use, support EV goals, and more fully actualize transportation greenhouse gas reduction goals and policies; [white paper]
- Support a portfolio of clean fuels, including biofuels, low and zero-carbon electricity for transportation, and other clean fuel options; [white paper]
- Create broad rural and urban economic development, benefits for communities, consumers, and agriculture, and increased energy security from increased reliance on clean fuels produced in the Midwest; [white paper]
- Achieve additional GHG reductions through increased renewable content in transportation fuels over time; [white paper]
- Support existing farmer-led efforts to adopt agricultural practices that benefit soil health and water quality while contributing to GHG reductions. [white paper]

Alternative recommendations

The above recommendation is staff's suggestion for moving forward with a low carbon fuel standard but there are alternative paths:

- Executive order creating a task force to develop LCFS program (to be implemented through subsequent legislation). This would delay legislation to a subsequent legislative session.
- Legislation creating an LCFS program (without rulemaking). This alternative would require any policy design details to be contained in the legislation.
- Rulemaking by executive order. This alternative would need to be under existing statutory authority.
- Legislation authorizing rulemaking, but without an advisory task force.

Sources:

1. https://www.betterenergy.org/wp-content/uploads/2020/01/Clean-Fuels-Policy-for-the-Midwest.pdf
2. https://www.oregon.gov/deq/FilterDocs/CFPFinalReport.pdf
3. https://ww3.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf
4. https://www.oregon.gov/deq/aq/programs/Pages/Clean-Fuels.aspx
5. https://www.c2es.org/document/low-carbon-fuel-standard/
6. https://en.wikipedia.org/wiki/Low-carbon_fuel_standard
7. https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/about

Governor's Council on Biofuels Principles
Tentatively adopted at GCB Meeting #7 (6/11/2020)

Recommendations will:

- Advise the Governor, and the Commissioners of the Department of Agriculture, the Department of Transportation, the Department of Commerce, and the Pollution Control Agency on policies and programs that increase the production and utilization of biofuels in an effort to reduce greenhouse gas emissions in the transportation sector
- Include policies and programs that:
    - Foster growth and use of biofuels including higher blends and supporting policies
    - Accelerate achievement of the petroleum replacement goals outlined in Minnesota Statutes 2018, section 239.7911
    - Advance and invest in carbon efficiency improvements of biofuels plants and sources of biofuels feedstock
    - Utilize biofuels to help Minnesota achieve its greenhouse gas reduction goals under the 2007 Next Generation Energy Act
    - Identify the biofuels infrastructure required to achieve the petroleum replacement goals
    - Recommend cost-effective incentives necessary to expedite the use of greater biofuel blends in this state, including but not limited to incentives for retailers to install equipment necessary to dispense biofuels to the public
- Consider the relation of biofuels production to the impacts to, and opportunities for, farmers, forest landowners, rural communities, the natural environment, and economically disadvantaged populations
- Consider the feasibility and cost of increasing biofuels infrastructure throughout Minnesota

Governor's Council on Biofuels Vision
Tentatively adopted at GCB Meeting #7 (6/11/2020)

The state will adopt policies and programs to decarbonize the transportation sector and reduce greenhouse gas emissions through the increased use of low-carbon biofuels over the coming decades. This will be done in ways that:

- The State moves rapidly to establish E15 as a base fuel and provisions for higher mid-level blends in the near term;
- Create pathways for advanced biofuels development;
- Protect and enhance air quality and public health, water quality, wildlife habitat, biodiversity, soil productivity and other associated ecological services, and ensure healthy and vibrant forest-reliant communities;
- Improve the economic vitality of the state, particularly in rural Minnesota and in the renewable energy, agricultural, and forest sectors;
- Offer value and benefits for consumers;
- Create financial incentives for farmers for environmental stewardship, particularly for agronomic practices that lower carbon intensity of biofuels feedstock and have other environmental and public health benefits;
- Ensure infrastructure is ready for adoption of mid-level blends
- Increase public awareness, acceptance, and utilization of biofuels.