

May 31, 2022

Lianne Randolph
Chair, California Air Resources Board
Attn: Clerk's Office
1001 I Street
Sacramento, California 95814

Re: Comments of Clean Fuels Development Coalition on CARB's Advanced Clean Cars II Regulatory Proposal

Dear Chair Randolph:

The Clean Fuels Development Coalition is a nonprofit organization dedicated to finding common ground among fuel producers, automobile manufacturers, and agricultural organizations to advance clean-fuel policies that improve air quality, create domestic jobs, and increase energy independence. The Clean Fuels Development Coalition appreciates the opportunity to comment on CARB's Affordable Clean Cars II ("ACC II") proposal.

While we strongly support CARB's overarching goals of reducing air pollution and reducing automobile emissions, the ACC II's *de facto* 100% electric car mandate is unlawful because it preempted by the federal CAFE law and because it is inconsistent with the renewable fuels requirements of the Energy Independence and Security Act of 2007. The ACC II program should therefore not be finalized.

BACKGROUND

A. The Law of Federal Fuel Economy Regulation

The Corporate Average Fuel Economy ("CAFE") law requires the U.S. Secretary of Transportation to establish ambitious corporate average fuel economy standards applicable to manufacturers of new automobiles.¹ In CAFE, Congress sought to establish a single standard for fuel economy, and it recognized that CAFE's effectiveness would be frustrated if states adopted needlessly duplicative or overlapping

¹ Energy Policy and Conservation Act of 1975, Pub. L. 94-163 § 502(a)(1), 89 Stat. 871, 902 (1975); *Ctr. for Auto Safety v. NHTSA*, 793 F.2d 1322, 1324 (D.C. Cir. 1986).

automobile policies. Thus, to prevent states from second-guessing federal “maximum feasible” fuel economy standards, or NHTSA’s enforcement of those standards, CAFE provides:

When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under [chapter 329 of title 49 of the U.S. Code].²

Congress used the broad term “related to” to prevent artful evasions of this prohibition and to preserve the integrity of the national program. Consistent with that anti-circumvention principle, CAFE’s express preemption provision is extraordinarily broad. As the Supreme Court has explained in an analogous preemption context, the “ordinary meaning” of “related to” “is a broad one—to stand in some relation; to have bearing or concern; to pertain; refer; to bring into association with or connection with,’ . . .—and the words thus express a broad pre-emptive purpose.”³ The Court of Appeals for the Second Circuit, for example, has held that CAFE’s preemption of state laws “related to fuel economy standards or average fuel economy standards” applies to local taxi-fleet rules encouraging the adoption of hybrid taxis.⁴

B. The Clean Air Act’s National Program for Vehicle Emissions Regulation

Under § 202(a)(1) of the Clean Air Act, EPA must regulate “any air pollutant from” new motor vehicles which in its judgment “cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare.”⁵ EPA traditionally exercised this authority to regulate automobile emissions that are detrimental to air quality, but following *Massachusetts v. EPA*, it has also regulated

² 49 U.S.C. § 32919(a). The statute provides one limited exception—automobiles purchased for the sole use of state or local governments are not subject to preemption. *Id.* § 32919(c).

³ *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 383 (1992) (quoting Black’s Law Dictionary 1158 (5th ed. 1979)).

⁴ See *Metro. Taxicab Bd. of Trade v. City of New York*, 615 F.3d 152, 157–58 (2nd Cir. 2010); see also *Ophir v. City of Boston*, 647 F. Supp. 2d 86, 94 (D. Mass. 2009).

⁵ 42 U.S.C. § 7521(a)(1)

greenhouse gases such as carbon-dioxide.⁶

In general, § 209(a) of the Clean Air Act prohibits states from regulating new motor vehicle emissions.⁷ This federal preemption avoids “an anarchic patchwork of federal and state regulatory programs, a prospect which threatened to create nightmares for [vehicle] manufacturers.”⁸ However, since 1967, § 209(b) has allowed California to apply for a limited waiver of this prohibition.⁹ Under the statute (as further amended in 1977), California may apply for a waiver of preemption of the Section 209(a) prohibition if California “determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.”¹⁰ EPA “shall” then grant a waiver—but “[n]o such waiver shall be granted” if EPA “finds that”

- (1) California’s “determination . . . is arbitrary and capricious”;
- (2) California “does not need such . . . standards to meet compelling and extraordinary conditions”; or
- (3) California’s “standards and accompanying enforcement procedures are not consistent with section 7521(a) [202(a)] of this title, which requires sufficient lead time “to permit the development and application of the requisite technology, giving appropriate consideration to

⁶ 549 U.S. 497, 505 (2007).

⁷ 42 U.S.C. § 7543(a).

⁸ *Motor Equip. Mfrs. Assn., Inc. v. EPA*, 627 F.2d 1095, 1109 (D.C. Cir. 1979); *see also Motor Vehicle Mfrs. Ass’n v. N.Y. Dep’t Env’tl. Conservation*, 17 F.3d 521, 526 (2nd Cir. 1994) (“The cornerstone of Title II is Congress’ continued express preemption of state regulation of automobile emissions.”).

⁹ 42 U.S.C. § 7543(b)(1); *see also* Air Quality Act of 1967, Pub. L. No. 90-148, § 208(b), 81 Stat. 485, 501 (1967). “California is the only state . . . eligible for a waiver under this provision.” *Chamber of Commerce v. EPA*, 642 F.3d 192 (D.C. Cir. 2011); *see also* 42 U.S.C. § 7507 (allowing other states to adopt “California standards” in certain circumstances).

¹⁰ 42 U.S.C. § 7543(b)(1).

the cost of compliance within such period.”¹¹

Congress justified this waiver exception based on California’s “unique” smog problems, caused by California-specific conditions such as the “numerous thermal inversions that occur within that state because of its geography and prevailing wind patterns.”¹² But while only California has a special federal preemption exemption, other states can copy California.¹³

While California has made good use of this authority in combatting smog, it also has a controversial history of attempting to use its special treatment under § 209(b) to enact electric car mandates that have little to nothing to do with the state’s unique air-quality situation. ACC II is by far the most ambitious mandate of this kind ever contemplated by CARB—nothing less than a *de facto* 100% electric car mandate for new cars by 2035. The current life expectancy of new light- and medium-duty vehicles is approximately 17 years¹⁴—so, by 2050, this mandate will have displaced nearly all ICE-powered light- and medium-duty vehicles in the state (and thus in all Section 177 states as well).

C. The Renewable Fuel Standard

In 2005, Congress established the Renewable Fuel Standard (“RFS”).¹⁵ As amended in 2007,¹⁶ the RFS “requires that increasing volumes of renewable fuel be introduced into the Nation’s supply of transportation fuel each year.”¹⁷ “Renewable fuel” is a “fuel that is produced from renewable biomass and that is used to replace

¹¹ *Id.* § 7521(a)(2).

¹² *California State Motor Vehicle Pollution Control Standards: Waiver of Federal Preemption Notice of Decision*, 49 Fed. Reg. 18887, 18890 (May 3, 1984) (citing 113 Cong. Reg. 30,948, (Nov. 2, 1967)).

¹³ 42 U.S.C. § 7507; *see also Am. Auto. Mfrs. Ass’n v. Cahill*, 152 F.3d 196, 201 (2d Cir. 1998) (“[T]he Section 177 exception is available to the 49 other states only when a standard identical to an existing California standard is adopted.”).

¹⁴ *See* Table H-1, California Air Resources Board, *Draft 2022 Scoping Plan, Appendix H* (May 2022), <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp-appendix-h-ab-32-ghg-inventory-sector-modeling.pdf>.

¹⁵ Energy Policy Act of 2005, Pub. L. No. 109–58, 119 Stat. 594 (2005).

¹⁶ Energy Independence and Security Act, Pub. L. 110-140, 121 Stat. 1492 (Dec. 19, 2007).

¹⁷ *Americans for Clean Energy v. EPA*, 864 F.3d 691, 697 (D.C. Cir. 2017).

or reduce the quantity of fossil fuel present in a transportation fuel.”¹⁸ The term “transportation fuel” means “fuel for use in motor vehicles, motor vehicle engines, nonroad vehicles, or nonroad engines.”¹⁹

There are two main purposes that animate the RFS: (1) to “move the United States toward greater energy independence and security”; and (2) “to increase the production of clean renewable fuels.”²⁰ To these ends, “Congress ordained the inclusion of 4 billion gallons of renewable fuel in the Nation’s fuel supply” for calendar year 2006, and required that, “[b]y 2022, the number will climb to 36 billion gallons.”²¹ This policy is grounded in the reality that internal combustion engines will be the predominant powerplant for vehicles of all kinds for decades. Congress therefore sought to improve the quality of the fuel they use while avoiding the national-security and energy independence issues that will arise from dependence on a critical mineral supply chain dominated by China. Congress’s choices were not accidental—it was certainly aware of electric vehicles, but it nevertheless mandated the use of renewable fuels, *not* electric vehicles.

The RFS works by requiring refiners or importers of domestic transportation fuel to meet four specific annual volumetric quotas for three specific renewable fuel categories, as well as a residual total renewable fuel category. Those categories are: (i) cellulosic biofuel; (ii) biomass-based diesel; (iii) advanced biofuel; and (iv) total renewable fuel.²² Each refiner’s or importer’s fair share of the quota must be determined based on the volume of transportation fuel it produces or imports in a given year.²³

Congress required EPA to establish an RFS credit trading program to reduce overall compliance costs.²⁴ Under the RFS credit regulations, each batch

¹⁸ 42 U.S.C. § 7545(o)(1)(J).

¹⁹ *Id.* § 7545(o)(1)(L).

²⁰ *Americans for Clean Energy v. EPA* (“ACE”), 864 F.3d 691, 697 (D.C. Cir. 2017) (quoting the Energy Independence and Security Act, Pub. L. No. 110-140, 121 Stat. 1492 (2007)).

²¹ *HollyFrontier Cheyenne Refining, LLC v. Renewable Fuels Association*, 141 S. Ct. 2172, 2175 (2021). After 2022, RFS levels are set by EPA.

²² 42 U.S.C. § 7545(o)(2)(B)(i)(I)-(IV). The categories differ in how they are produced, and in their lifecycle greenhouse gas emissions. *Id.* § 7545(o)(1), (B), (D), (E), (J).

²³ *See Renewable Fuels Ass’n v. EPA*, 948 F.3d 1206, 1217, 1222 (10th Cir. 2020).

²⁴ *See* 42 U.S.C. § 7545(o)(5).

of renewable fuel that is produced or imported for domestic use is assigned a “Renewable Identification Number” (“RIN”).²⁵ The number of RIN-gallons generated by each gallon of renewable fuel varies.²⁶

RINs work relatively simply for liquid fuel. For example, an RFS registered ethanol producer generates a RIN for a batch of ethanol, and it sells that batch of ethanol to distributors or blenders with the RIN still “attached” to the ethanol batch. When a party blends that batch of ethanol into gasoline, the RIN is “separated” from the batch, and parties who own the separated RIN may trade it through the online EPA “Moderated Transaction System” until the RIN is “retired” by an obligated party to comply with a given year’s renewable fuel blending obligations.²⁷

DISCUSSION

I. ACC II’s Flouting of Federal Law is Arbitrary and Capricious, and its Proposed Requirements are Therefore Ineligible for a Clean Air Act Waiver.

As explained below, ACC II’s electric car mandate violates both CAFE and the RFS. By definition, an unlawful and thus unenforceable standard cannot be “at least as protective of public health and welfare as applicable Federal standards.” Thus, any decision to finalize the ACC II rule’s electric car mandate would be arbitrary and capricious.

A. ACC II Would Be Preempted by CAFE.

ACC II effectively proposes an increasing percentage of electric automobiles (including “the cleanest-possible plug-in hybrid-electric vehicles”) per conventional vehicle sold until 2035, when they must account for 100% of new vehicles sold in California (and thus all Section 177 states). The effect of this program is to force automobile manufacturers to meet fleet-average fuel economy standards with a costlier fuel-efficiency technology, restricting manufacturer compliance choices and

²⁵ 40 C.F.R. § 80.1415, 80.1425, 80.1426(e).

²⁶ *Id.* § 80.1425(b).

²⁷ *See id.* § 80.1426(e), 80.1429(b).

undermining CAFE's flexible performance standards.²⁸

This is illegal under CAFE's plain text and through the principles of implied preemption.²⁹

Under CAFE, automobile manufacturers may meet the standards using conventional fuel-efficiency technologies or using a variety of alternative fuel technologies.³⁰ CAFE pursues an all-of-the-above strategy for alternative fuels, where all liquid and gaseous alternative fuels have the same fuel economy credit multiplier (1/0.15) (as does electricity under the Department of Energy's regulations).³¹ This allows automobile manufacturers a choice between improving conventional automobile fuel economy or being rewarded with artificially high fuel economy for producing a variety of alternative fuel technologies, including automobiles capable of operating on alternative liquid and natural gas fuels, not just electricity or hydrogen.

The proposed 100% electric automobile quota destroys that statutory choice, mandating the production and sale of electric automobiles, when Congress has decided to encourage a range of options (and, as explained next, taken pains to ensure the increased use of renewable fuels through the RFS.)

B. ACC II Would Be Impliedly Preempted by the RFS.

By its very design, ACC II exists to effectively eliminate the use of internal combustion engines and, therefore, the liquid fuels that power them, including both fossil fuels and renewable fuels such as ethanol. But the express purpose of the RFS is "to *increase* the production of clean renewable fuels," for the express purpose of decreasing greenhouse gas emissions from the U.S. transportations sector based on its determination that increased blending of renewable fuels is the best solution for

²⁸ Cf. *New York State Conference of Blue Cross & Blue Shield Plans*, 514 U. S. at 668; *Geier v. American Honda Motor*, 529 U.S. at 881 (holding that any rule of state tort law imposing a duty to install airbags was preempted by the National Traffic and Motor Vehicle Safety Act of 1966 and NHTSA's implementing regulations, because the tort law would present "an obstacle to the variety and mix of devices that the federal regulation sought").

²⁹ See *Metro. Taxicab Bd. of Trade*, 615 F.3d at 157–58; accord *Ophir*, 647 F. Supp. 2d at 93 (noting the decrease in choice as one reason why Boston's rules were preempted)

³⁰ 49 U.S.C. §§ 32902(h), 32905.

³¹ *Id.*; 65 Fed. Reg. 36,986, 36,987 (June 12, 2000); 10 C.F.R. § 474.3.

reducing greenhouse gas emissions from the transportation sector.³²

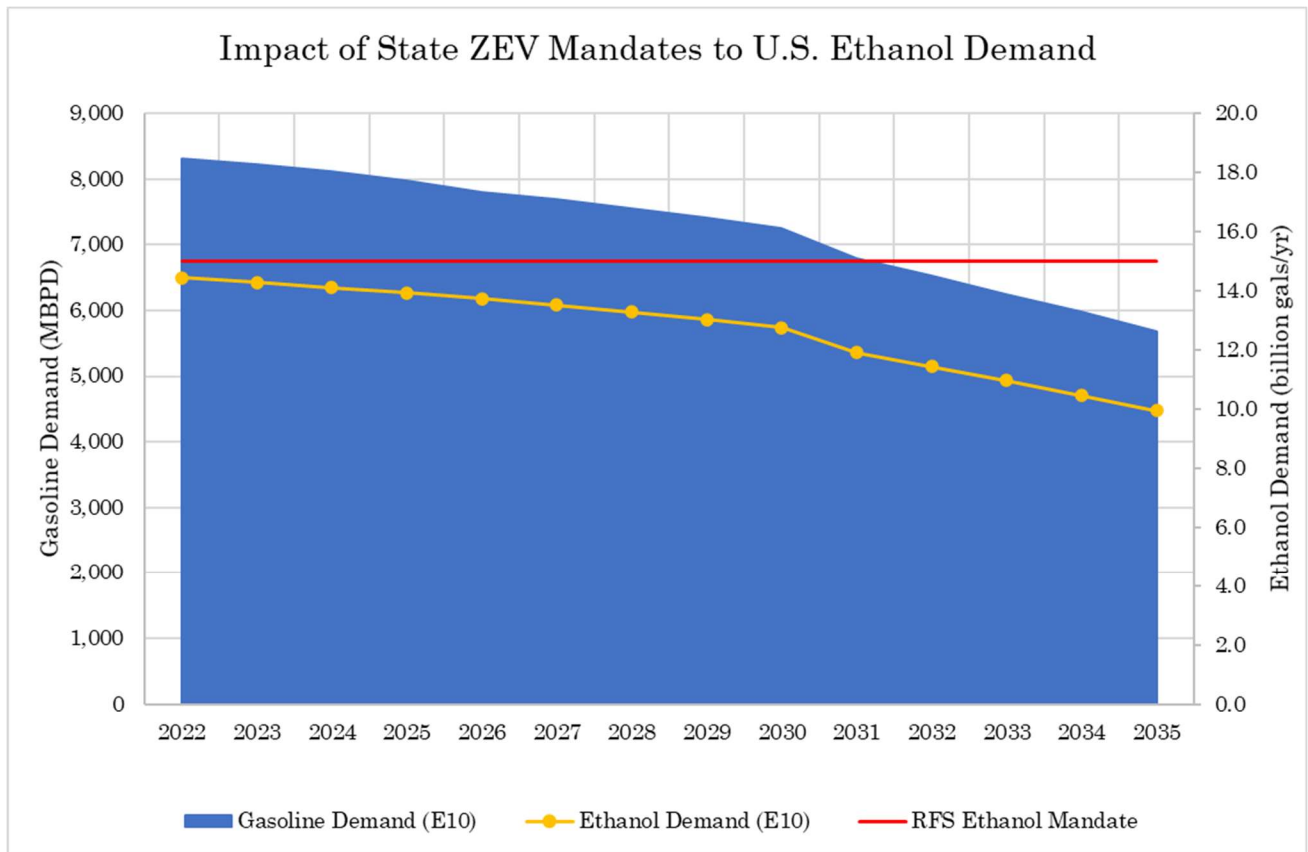
ACC II would erect a major obstacle to this program because (1) it would decrease the demand for and price of renewable fuels and feedstocks, thus threatening the viability of renewable fuels producers, and (2) it would reduce the availability of RINs, which will make it more difficult for obligated parties to comply with their annual requirements. The frustration of the RFS is made plain by CARB's stated intention to "maintain constant 10% blend level [of corn ethanol] level, resulting in phaseout as gasoline usage is phased out."³³

The magnitude of the inconsistency between the RFS and ACC II is shown in the following market projections we have prepared in analyzing the ACC II proposal's requirements.³⁴

³² *ACE*, 864 F.3d at 696 ("Congress intended to Renewable Fuel Program ... to reduce greenhouse gas emissions.").

³³ Table H-12, California Air Resources Board, *Draft 2022 Scoping Plan, Appendix H* (May 2022), <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp-appendix-h-ab-32-ghg-inventory-sector-modeling.pdf>.

Fig. 1: Projected Demand Destruction for Ethanol if ACC II is Adopted³⁵



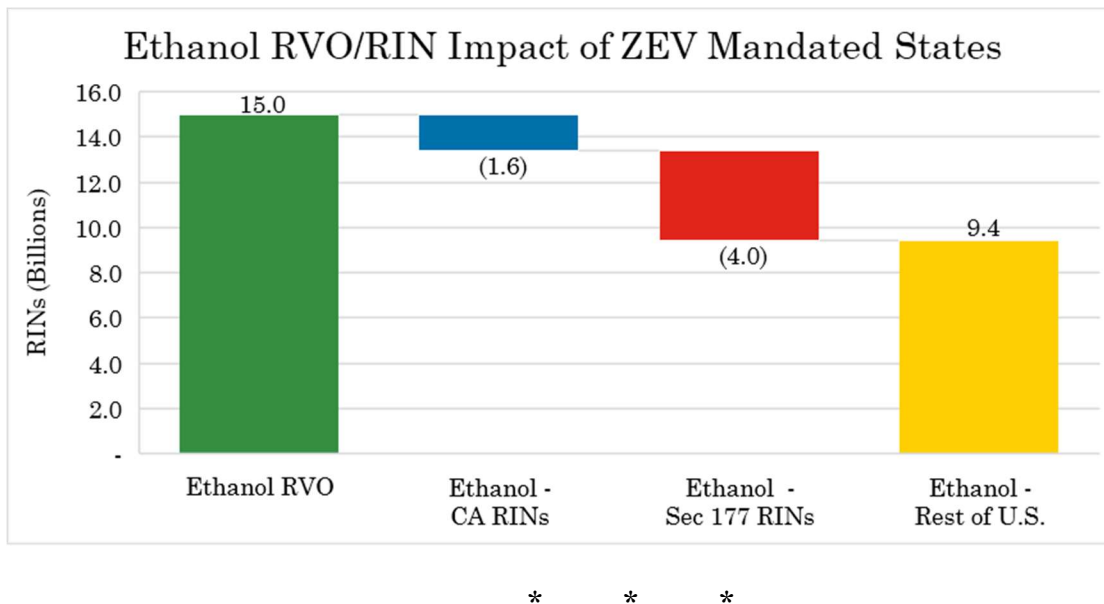
This reduction will result in significant disruption of the RIN market as well. The 2019 California fuel market accounted for 3.0 billion RINs, and the Section 177 states together accounted for another 4.7 billion RINs. Based on 2019 data (used because it is the latest un-COVID tainted year), these markets represent 37% of the proposed 2022 Renewable Volume Obligation (“RVO”) of 20.77 billion RINs. In particular, the California market consumes 11% of the RFS ethanol mandated volume, and the Section 177 states together consume another 27%. If the ethanol demand associated with these markets were eliminated, the U.S. would be shy approximately 5.6 billion RINs against the proposed 2022 mandate of 15 billion RINs—an enormous frustration of the RFS’s design.

³⁵ A spreadsheet with the underlying data and assumptions is submitted herewith.

Fig 2: Ethanol RINs

Ethanol	Billion RINs	% of 2022 Eligible Ethanol RVO
2022 Proposed RVO	15.0 (implied)	100%
2019 Demand – CA	1.6	11%
2019 Demand – Sec. 177 states	4.0	27%

Fig. 3: Ethanol RVO/RIN Impact of ACC II

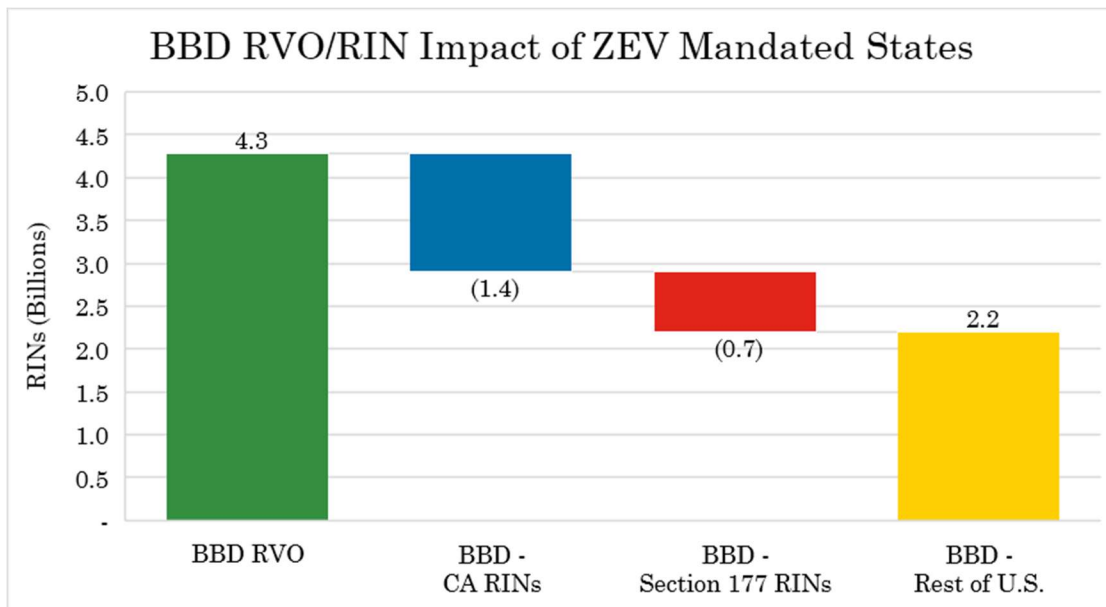


Similar disruptions will arise with respect to biodiesel and renewable diesel. The California market consumes 32% of the mandated volume (again, based on 2019 data), and the Section 177 states together consume another 16%. If the biodiesel and renewable diesel demand (“BBD”) associated with these markets were eliminated, the U.S. would be shy approximately 2.2 billion RINs against the proposed 2022 BBD mandate of 4.3 billion RINs—again, a staggering disruption of the RFS’s program.

Fig 4: BBD RINs

BBD	Billion RINs	% of 2022 Eligible BBD RVO
2022 Proposed RVO	4.3	100%
2019 Demand – CA	1.4	32%
2019 Demand – Sec. 177 states	0.7	16%

Fig. 5: BBD RVO/RIN Impact of ACC II

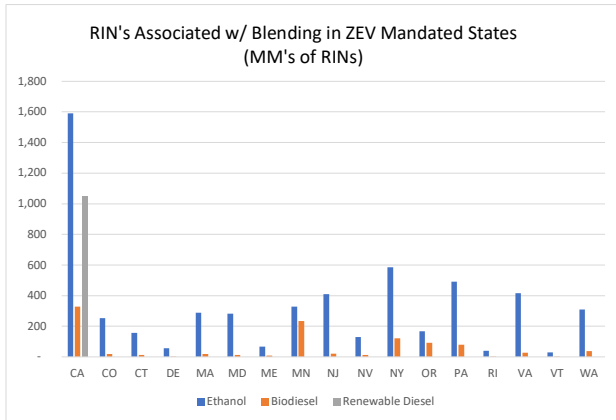


CONCLUSION

There are many other flaws with the ACC II proposal that will doubtless be covered in detail by other commenters. In addition to those, the reasons set forth in this comment make clear that CARB should not proceed with ACC II, but should instead look for lawful and technology-neutral pathways to improve environmental quality.

RIN's Associated w/ Blending in ZEV Mandated States (MM's)
2019

State	Ethanol	Biodiesel	Renewable Diesel	Total RINs	
CA	1,590	328	1,050.41	2,968.40	14.3%
CO	252	19	-	271.08	1.3%
CT	156	13	-	169.27	0.8%
DE	58	2	-	59.56	0.3%
MA	288	19	-	307.32	1.5%
MD	281	13	-	293.76	1.4%
ME	66	9	-	75.30	0.4%
MN	327	234	-	560.81	2.7%
NJ	409	21	-	430.25	2.1%
NV	129	13	-	141.93	0.7%
NY	585	120	-	705.46	3.4%
OR	167	93	-	260.00	1.3%
PA	492	79	-	570.25	2.7%
RI	40	3	-	43.15	0.2%
VA	416	26	-	442.10	2.1%
VT	30	3	-	33.65	0.2%
WA	309	37	-	345.74	1.7%
Grand Total	5,597	1,030	1,050.41	7,678.03	37.0%



Obligation in NPRM*

	2019	2020	2021	2022
Cellulosic		0.51	0.62	0.77
Biomass-Based Diesel*		2.43	2.43	2.76
Advanced Biofuel		1.69	2.15	2.24
Advanced Biofuel Total		4.63	5.2	5.77
Ethanol		12.5	13.32	15
Total Renewable Fuel		17.13	18.52	20.77
Supplemental Standard	n/a	n/a		0.25

* Obligation reflected in physical gallons (rather than RINs)
2022 NPRM, EPA used 1.55 multiplier to convert phy vol to ethanol-equivalent volumes

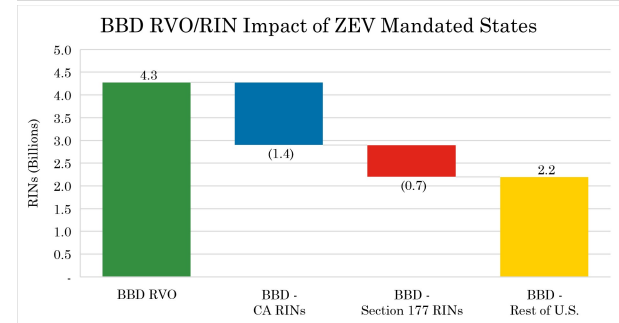
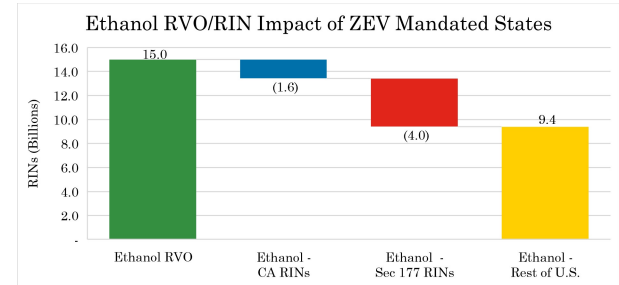
Obligation in RIN's

	2019	2020	2021	2022
Cellulosic		0.51	0.62	0.77
Biomass-Based Diesel*	3.7665	3.7665	4.278	
Advanced Biofuel	0.3535	0.8135	0.722	
Advanced Biofuel Total	4.63	5.2	5.77	
Ethanol	12.5	13.32	15	
Total Renewable Fuel	17.13	18.52	20.77	
Supplemental Standard	n/a	n/a		0.25

2022 RVO % Calc's (basis NPRM G+D)

	% Ob			
CB	0.77	0.44%	G	136.49
BBD	1.55	4.278	D	56.81
		2.42%	RG	13.98
AB	5.77	3.27%	RD	2.66
RF	20.77	11.76%	G+D	176.66
Supp	0.25	0.14%		

	RINs	
Ethanol RVO	15.0	
Ethanol - CA RINs	(1.6)	11%
Ethanol - Sec 177 RINs	(4.0)	27%
Ethanol - Rest of U.S.	9.4	63%
BBD RVO	4.3	
BBD - CA RINs	(1.4)	32%
BBD - Section 177 RINs	(0.7)	16%
BBD - Rest of U.S.	2.2	51%



2019 Fuel Consumption for the Section 177 States
 State Energy Data System (SEDS) Consumption - (EIA)*

Section 177 State	(Multiple Items)
Unit of Measure	Thousand barrels
Sector	(Multiple Items)

Sum of 2019 State	Material Group 1 Ethanol (Fuel)	Gasoline
CA	37,856	360,237
CO	6,011	57,200
CT	3,725	35,446
DE	1,370	13,034
MA	6,860	65,278
MD	6,692	64,084
ME	1,582	15,393
MN	7,788	61,761
NJ	9,748	92,761
NV	3,074	29,251
NY	13,937	135,870
OR	3,988	37,948
PA	11,708	115,992
RI	956	9,098
VA	9,903	96,726
VT	719	7,253
WA	7,353	69,973
Grand Total	133,270	1,267,305

1,000's bbls /yr			
CBOB	Eth	Blend %	
322,381	37,856	10.51%	
51,189	6,011	10.51%	
31,721	3,725	10.51%	
11,664	1,370	10.51%	
58,418	6,860	10.51%	
57,392	6,692	10.44%	
13,811	1,582	10.28%	
53,973	7,788	12.61%	
83,013	9,748	10.51%	
26,177	3,074	10.51%	
121,933	13,937	10.26%	
33,960	3,988	10.51%	
104,284	11,708	10.09%	
8,142	956	10.51%	
86,823	9,903	10.24%	
6,534	719	9.91%	
62,620	7,353	10.51%	
1,134,035	133,270	10.52%	

BPD		
CBOB	Eth	Total Gasoline
883,236	103,715	986,951
140,244	16,468	156,712
86,907	10,205	97,112
31,956	3,753	35,710
160,049	18,795	178,844
157,238	18,334	175,573
37,838	4,334	42,173
147,871	21,337	169,208
227,433	26,707	254,140
71,718	8,422	80,140
334,063	38,184	372,247
93,041	10,926	103,967
285,710	32,077	317,786
22,307	2,619	24,926
237,871	27,132	265,003
17,901	1,970	19,871
171,562	20,145	191,707
3,106,945	365,123	3,472,068

RIN's Associated w/ Blending (MM's)	
State	Ethanol RIN's
CA	1,589.95
CO	252
CT	156
DE	58
MA	288
MD	281
ME	66
MN	327
NJ	409
NV	129
NY	585
OR	167
PA	492
RI	40
VA	416
VT	30
WA	309
Grand Total	5,597

Volumes Grouped by CA, 177, & Non-177

State	(All)
Unit of Measure	Thousand barrels
Sector	(Multiple Items)

Sum of 2019 Section 177 State	Material Group 1 Ethanol (Fuel)	Gasoline
CA	37,856	360,237
Yes	95,414	907,068
No	213,199	2,130,604
Grand Total	346,469	3,397,909

1,000's bbls /yr			
CBOB	Eth	Blend %	
322,381	37,856	10.51%	
811,654	95,414	10.52%	
1,917,405	213,199	10.01%	
3,051,440	346,469	10.20%	

BPD		
CBOB	Eth	Total Gasoline
883,236	103,715	986,951
2,223,710	261,408	2,485,118
5,253,164	584,107	5,837,271
8,360,110	949,230	9,309,340

Annual Gallons Associated w/ Blending (MM's)			
CBOB	Ethanol	Total Gasoline	
13,540.00	1,589.95	15,129.95	
34,089.47	4,007.39	38,096.86	
80,531.01	8,954.36	89,485.37	
128,160	14,552	142,712	

Volumes by MSN

State	(All)
Unit of Measure	Thousand barrels
Section 177 State	(Multiple Items)

Sum of 2019 MSN	Sector	Material Group 1 Ethanol (Fuel)	Gasoline
ENACP	Transportation	127,860	
ENCCP	Commercial	3,344	
ENICP	Industrial	2,061	
ENTCP	Ethanol (Fuel)- Total Consumption	133,270	
MBICP	Industrial		0
MGACP	Transportation		1,215,882
MGCCP	Commercial		31,905
MGICP	Industrial		19,516
MGTCP	Gasoline - Total Consumption		1,267,305
MGTXP	n/a		1,267,305
Grand Total		266,535	3,801,913

2019 Fuel Consumption for the Section 177 States
State Energy Data System (SEDS) Consumption - (EIA)*

Section 177 State	(Multiple Items)
Unit of Measure	Thousand barrels
Sector	(Multiple Items)

Sum of 2019 State	Material Group 1	
	Biodiesel	Distillate Fuel
CA	5,039	98,407
CO	286	22,188
CT	197	17,938
DE	31	2,817
MA	295	26,850
MD	195	17,760
ME	136	12,332
MN	3,590	31,014
NJ	320	29,126
NV	197	13,254
NY	1,845	61,140
OR	1,421	17,257
PA	1,206	60,277
RI	46	4,206
VA	402	36,533
VT	53	4,838
WA	567	28,363
Grand Total	15,826	484,300

1,000 bbls/yr

Diesel	Biodiesel	Renewable Diesel*	BD Blend %	RD Blend %
78,656	5,039	14,712	5.1%	14.9%
21,902	286	-	1.3%	0.0%
17,741	197	-	1.1%	0.0%
2,786	31	-	1.1%	0.0%
26,555	295	-	1.1%	0.0%
17,565	195	-	1.1%	0.0%
12,196	136	-	1.1%	0.0%
27,424	3,590	-	11.6%	0.0%
28,806	320	-	1.1%	0.0%
13,057	197	-	1.5%	0.0%
59,295	1,845	-	3.0%	0.0%
15,836	1,421	-	8.2%	0.0%
59,071	1,206	-	2.0%	0.0%
4,160	46	-	1.1%	0.0%
36,131	402	-	1.1%	0.0%
4,785	53	-	1.1%	0.0%
27,796	567	-	2.0%	0.0%
453,762	15,826	14,712	3.3%	3.0%

BPD

Diesel	Biodiesel	Renewable Diesel*	Total Diesel
215,497	13,805	40,306	269,608
60,005	784	-	60,789
48,605	540	-	49,145
7,633	85	-	7,718
72,753	808	-	73,562
48,123	534	-	48,658
33,414	373	-	33,786
75,134	9,836	-	84,970
78,921	877	-	79,797
35,773	540	-	36,312
162,452	5,055	-	167,507
43,386	3,893	-	47,279
161,838	3,304	-	165,142
11,397	126	-	11,523
98,989	1,101	-	100,090
13,110	145	-	13,255
76,153	1,553	-	77,707
1,243,184	43,359	40,306	1,326,849

RIN's Associated w/ Blending (MM's)

State	BD RIN's	RD RIN's	Total RIN's
CA	328.04	1,050.41	1,378.45
CO	18.62	-	18.62
CT	12.82	-	12.82
DE	2.02	-	2.02
MA	19.20	-	19.20
MD	12.69	-	12.69
ME	8.85	-	8.85
MN	233.71	-	233.71
NJ	20.83	-	20.83
NV	12.82	-	12.82
NY	120.11	-	120.11
OR	92.51	-	92.51
PA	78.51	-	78.51
RI	2.99	-	2.99
VA	26.17	-	26.17
VT	3.45	-	3.45
WA	36.91	-	36.91
Grand Total	1,030.27	1,050.41	2,080.69

*RD is not identified in SEDS data, Utilized CARB Quarterly data for 2019 to correct for RD volumes within total volumes

Volumes Grouped by CA, 177, & Non-177

State	(All)
Unit of Measure	Thousand barrels
Sector	(Multiple Items)

Sum of 2019 State	Material Group 1	
	Biodiesel	Distillate Fuel
CA	5,039	98,407
Yes	10,787	385,893
No	27,333	1,013,461
Grand Total	43,159	1,497,761

1,000's bbls /yr

Diesel	Biodiesel	Renewable Diesel*	BD Blend %	RD Blend %
78,656	5,039	14,712	5.1%	14.9%
375,106	10,787	-	2.8%	0.0%
986,118	27,333	-	2.7%	0.0%
1,439,890	43,159	14,712	0	0

BPD

Diesel	Biodiesel	Renewable Diesel*	Total Diesel
215,497	13,805	40,306	269,608
1,027,688	29,553	-	1,057,241
2,701,721	74,885	-	2,776,605
3,944,905	118,244	40,306	4,103,455

Annual Gallons Associated w/ Blending (MM's)

State	Diesel	Biodiesel	Renewable Diesel*	Total Diesel
CA	3,303.57	211.64	617.89	4,133.09
Yes	15,754.45	453.05	-	16,207.50
No	41,417.38	1,147.99	-	42,565.37
Grand Total	60,475.39	1,812.68	617.89	62,905.96

Volumes by MSN

State	(All)
Unit of Measure	Thousand barrels
Section 177 State	(All)

Sum of 2019 MSN	Material Group 1	
Sector	Biodiesel	Distillate Fuel
BDACP	Transportation	86,322
BDTCP	Biodiesel - Total Consumption	86,322
DFACP	Transportation	2,282,431
DFCCP	Commercial	113,405
DFECP	Electric Power	18,671
DFICP	Industrial	417,926
DFRCP	Residential	163,087
DFTCP	Distillate Fuel - Total Consumption	2,995,522
DFTXP	n/a	2,976,850
DKEIP	Electric Power	18,671
Grand Total	172,644	8,986,563

**States that have Adopted California's Vehicle Standards
under Section 177 of the Federal Clean Air Act**

The states listed below have adopted California's Low-Emission Vehicle (LEV) criteria pollutant and greenhouse gas (GHG) emission regulations and Zero-Emission Vehicle (ZEV) regulations under Section 177 of the Clean Air Act (42 U.S.C. §7507) beginning with the model year (MY) as shown below. Table current as of March 17, 2022.

State 1	State	Footnote	Applicable Model Year (MY)			State's Share (%) of U.S. New Light-Duty Vehicle Sales*	177 State
			Criteria Pollutant Regulation	GHG Regulation	ZEV Program		
CA	California		1992	2009	1990	11.00%	Yes
NY	New York	1	1993	2009	1993	6.10%	Yes
MA	Massachusetts	2	1995	2009	1995	2.10%	Yes
VT	Vermont	3	2000	2009	2000	0.30%	Yes
ME	Maine	4	2001	2009	2001	0.40%	Yes
PA	Pennsylvania	5	2001	2009		3.90%	Yes
CT	Connecticut	6	2008	2009	2008	1.00%	Yes
RI	Rhode Island	7	2008	2009	2008	0.30%	Yes
WA	Washington	8	2009	2009	2021	1.70%	Yes
OR	Oregon	9	2009	2009	2009	1.00%	Yes
NJ	New Jersey	10	2009	2009	2009	3.50%	Yes
MD	Maryland	11	2011	2011	2011	1.90%	Yes
DE	Delaware	12	2014	2014	2027	0.30%	Yes
CO	Colorado	13	2022	2022	2023	1.50%	Yes
MN	Minnesota	14	2025	2025	2025	1.50%	Yes
NV	Nevada	15	2025	2025	2025	0.80%	Yes
VA	Virginia	16	2025	2025	2025	2.30%	Yes

Footnotes:

- 1 6 NY Code, Rules & Regs., Parts 218-8.3, 200.
- 2 310 Code of Mass. Regs., §§ 7.40(1), esp. (1)(c); 7.40 (2)(a)(6).
- 3 Section 5-1102 and Appendix F of the Vermont Air Poll. Ctrl. Regs.; see also Subchapter XI, 5-1106(a)(5).
- 4 Ch. 127 of Maine Dep't Env. Protection rules, 06-096 C.M.R., ch. 127, § 4(1).
- 5 Proposed amendments to 25 Pa. Code Chapter 126, Subchapter D.
- 6 Conn. Gen. Stat. § 22a-174g; Regs. Conn. State Agencies, §§ 22a-174-36, -36b, -36c.
- 7 Rhode Island Air Poll. Ctrl Reg. 37.2.3.
- 8 Wash. Sen. Bill 5811, stats. 2020, ch. 143; Wash. Admin. Code, § 173-423-030.
- 9 Or. Admin. Code R. 340-257-0050.
- 10 N.J.A.C. 7:27-29.1 to -29.14.
- 11 Code of Md. Regs. § 26.11.34.09.
- 12 Del. Dep't Natural Resources and Env. Control, March 3, 2022, for 2027 <https://news.delaware.gov/2022/03/03/delaware-to-adopt-zero-emission-vehicle-regulation/>
- 13 5 Col. Code Regs. 1001-24.
- 14 Minn. State Reg., vol. 45, no. 25, pp. 663-670 (Dec. 21, 2020).
- 15 Nev. Admin. Code, ch. 445B.
- 16 Va. Code Ann. § 10.1-1307.04.

AK	No
AL	No
AR	No
AZ	No
CA	CA
CO	Yes
CT	Yes
DC	No
DE	Yes
FL	No
GA	No
HI	No
IA	No
ID	No
IL	No
IN	No
KS	No
KY	No
LA	No
MA	Yes
MD	Yes
ME	Yes
MI	No
MN	Yes
MO	No
MS	No
MT	No
NC	No
ND	No
NE	No
NH	No
NJ	Yes
NM	No
NV	Yes
NY	Yes
OH	No
OK	No
OR	Yes
PA	Yes
RI	Yes
SC	No
SD	No
TN	No
TX	No
US	N/a
UT	No
VA	Yes
VT	Yes
WA	Yes
WI	No
WV	No
WY	No

Totals	
Yes	16
No	34

E10 Case

Year	CBOB Demand - CA	Ethanol Demand - CA	Y-to-Y Demand Reduction	CBOB Demand - Sec. 177 States	Ethanol Demand - Sec. 177 States	CBOB Demand - rest of U.S.	Ethanol Demand - Rest of U.S.	CBOB Demand - Total U.S.	Ethanol Demand - CA	Ethanol Demand - Sec. 177 States	Ethanol Demand - Rest of U.S.	Ethanol Demand - Total U.S.	RFS Ethanol Mandate
	BPD	BPD	%	BPD	BPD	BPD	BPD	MBPD	bGal/yr	bGal/yr	bGal/yr	bGal/yr	bGal/yr
2021	857,367	98,332											15
2022	844,140	96,815	2%	2,223,710	261,408	5,253,164	584,107	8,321	1.5	4.0	9.0	14.4	15
2023	829,877	95,179	2%	2,186,137	256,991	5,209,388	579,239	8,225	1.5	3.9	8.9	14.3	15
2024	814,564	93,423	2%	2,145,797	252,249	5,165,976	574,412	8,126	1.4	3.9	8.8	14.1	15
2025	798,186	91,544	2%	2,102,653	247,177	5,122,927	569,626	8,024	1.4	3.8	8.7	13.9	15
2026	780,118	89,472	2%	2,055,058	241,582	5,080,236	564,879	7,915	1.4	3.7	8.7	13.7	15
2027	758,700	87,016	3%	1,998,634	234,950	5,037,900	560,171	7,795	1.3	3.6	8.6	13.5	15
2028	733,470	84,122	3%	1,932,174	227,137	4,995,918	555,503	7,662	1.3	3.5	8.5	13.3	15
2029	704,794	80,833	4%	1,856,631	218,256	4,954,285	550,874	7,516	1.2	3.3	8.4	13.0	15
2030	671,785	77,047	5%	1,769,677	208,034	4,912,999	546,283	7,354	1.2	3.2	8.4	12.7	15
2031	570,315	65,410	15%	1,502,375	176,612	4,814,739	535,358	6,887	1.0	2.7	8.2	11.9	15
2032	523,273	60,015	8%	1,378,454	162,044	4,718,445	524,651	6,620	0.9	2.5	8.0	11.4	15
2033	473,425	54,297	10%	1,247,139	146,607	4,624,076	514,158	6,345	0.8	2.2	7.9	11.0	15
2034	420,733	48,254	11%	1,108,332	130,290	4,531,594	503,874	6,061	0.7	2.0	7.7	10.5	15
2035	365,158	41,880	13%	961,933	113,080	4,440,962	493,797	5,768	0.6	1.7	7.6	9.9	15

E15 Case

Ethanol Content	Ethanol Demand - CA	Ethanol Demand - Sec. 177 States	Ethanol Demand - Rest of U.S.	Ethanol Demand - Total U.S.	RFS Ethanol Mandate	Ethanol Growth over Base Case	CBOB Demand - Total U.S.	CBOB Loss from Base Case
%	bGal/yr	bGal/yr	bGal/yr	bGal/yr	bGal/yr	bGal/yr	MBPD	MBPD
					15			
	1.5	4.0	9.0	14.4	15	0	8,321	0
	1.5	3.9	8.9	14.3	15	0	8,225	0
	1.4	3.9	8.8	14.1	15	0	8,126	0
10.6%	1.5	3.8	9.3	14.6	15	1	7,978	46
11.3%	1.5	4.0	9.9	15.4	15	2	7,808	107
11.3%	1.5	3.9	9.8	15.1	15	2	7,689	106
11.3%	1.4	3.8	9.7	14.9	15	2	7,557	104
11.3%	1.4	3.6	9.6	14.6	15	2	7,413	103
11.3%	1.3	3.4	9.5	14.3	15	2	7,254	101
11.3%	1.1	2.9	9.4	13.4	15	1	6,792	96
11.3%	1.0	2.7	9.2	12.9	15	1	6,528	92
11.3%	0.9	2.4	9.0	12.3	15	1	6,255	89
11.3%	0.8	2.2	8.8	11.8	15	1	5,975	86
11.3%	0.7	1.9	8.6	11.2	15	1	5,686	82

Notes:

- Projected based on proprietary model
- Projected based on proprietary model
- Actual 2019 CBOB consumption for Section 177 states - assume 2019 consumption is representative of 2022 demand
- Assumes demand reduction of 10% from 2018 levels by 2030 and 30% from 2018 levels by 2040
- Assumes bump in ethanol content starting in 2025 - 2-year step to E15 at 25% of stations

