MEMORANDUM

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004
T +1 202 637 5600
F +1 202 637 5910
www.hoganlovells.com

TO	Securing America's Future Energy		
FROM	Hogan Lovells US LLP	**TELEPHONE**	+1 202 637 6567
DATE	July 15, 2018		
SUBJECT	Authority to Grant Fuel Economy Credit for Congestion Mitigation and Safety-Related Technologies Under Off-Cycle Credit Program		

Emerging technologies, such as autonomous and semi-autonomous vehicle technologies (e.g., self-driving cars), congestion avoidance technologies (e.g., GPS features), and safety and congestion mitigation technologies (e.g., technologies that help reduce collisions), hold significant promise in terms of fuel economy gains. However, these technologies have not traditionally been considered in the fuel economy calculus, which presents a significant lost opportunity to incentivize their further development and expedite their deployment. For instance, congestion avoidance and mitigation technologies can reduce time spent idling in traffic, and thus significantly increase miles per gallon.

The current Administration's reconsideration of greenhouse gas ("GHG") and corporate average fuel economy ("CAFE") standards for vehicle model years ("MYs") 2022-2025 presents an opportunity to modernize the current rules to recognize and promote the benefits of advanced technologies, including safety and congestion mitigation technologies. By crediting such technologies in fuel economy calculations, the Administration can incentivize their further development, while also providing automakers with more flexibility in achieving fuel economy standards. This memorandum discusses the authority of the National Highway Traffic Safety Administration ("NHTSA") and Environmental Protection Agency ("EPA") (collectively, "Agencies") to credit safety and congestion mitigation technologies, and identifies a regulatory pathway for ensuring these technologies are eligible for credit under the Agencies' off-cycle credit program.

I. Executive Summary

We have been asked to evaluate whether there is a statutory bar on recognizing the fuel economy benefits of safety and congestion mitigation technologies in the CAFE program. In short, *there is no statutory prohibition on allowing congestion mitigation and safety-related technology to be credited in the CAFE and GHG programs.* However, EPA would need to take the lead on this, in consultation with NHTSA, because the technologies would be recognized as an element of the "testing and calculation procedures" for the CAFE program, the responsibility for which is vested with EPA under the statute. Moreover, the Agencies would need to make various changes to their regulations in order to remove a regulatory prohibition that exists on crediting these technologies.

II. Background

A. Allocation of Authority between NHTSA and EPA Under the Energy Policy and Conservation Act

The Energy Policy and Conservation Act ("EPCA"), as amended, requires NHTSA to set fuel economy standards for passenger and non-passenger vehicles, i.e. light trucks. These standards must be set at the "maximum feasible" level based on statutory factors in EPCA.[1] Importantly, however, EPCA splits responsibility for the fuel economy program between NHTSA and EPA. Although NHTSA sets the standards, "EPA establishes the procedures for testing, tests vehicles, collects and analyzes manufacturers' data, and calculates the individual and average fuel economy of each manufacturer's passenger cars and light trucks[.]"[2]

EPCA thus assigns EPA primary authority for testing and calculating the average fuel economy of vehicles so that NHTSA can determine compliance with its CAFE standards.[3] Specifically, EPCA requires that EPA "shall measure fuel economy for each model and calculate average fuel economy for a manufacturer under testing and calculation procedures prescribed by the Administrator."[4] Thus, EPA would need to take the lead in decisions that affect the way that fuel economy is measured and calculated. However, NHTSA must also be involved and must coordinate with EPA in executing this authority, as EPCA also requires that "[t]he Administrator shall report measurements and calculations under this section to the Secretary of Transportation and shall consult and coordinate with the Secretary in carrying out this section."[5]

As discussed in the next section, it is under EPA's EPCA authority under 49 U.S.C. § 32904 that the Agencies have already promulgated regulations that allow for credit to be issued for a variety of emerging technologies that increase fuel economy.[6]

B. Background on the Off-Cycle Credit Program and Fuel Economy Improvement Values Generated Under that Program

In the 2012 Final Rule establishing MY 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, EPA, in coordination with NHTSA, created a program for MYs 2017-2025 to recognize air-conditioning efficiency credits and off-cycle credits.[7] Off-cycle credits provide credit for vehicle efficiency improvements that are not captured by the Federal Test Procedure and Highway Fuel Economy Test (known as the two-cycle

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[1] 49 U.S.C. § 32902(f).

[2] *See 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*, 77 Fed. Reg. 62,624, 62,667 (Oct. 15, 2012) ("2012 Final Rule"); 49 U.S.C. § 32904(c).

[3] 49 U.S.C. § 32904.

[4] 49 U.S.C. § 32904(c).

[5] *Id.* at § 32904(e).

[6] *See* 2012 Final Rule at 63,125 ("NHTSA expects automakers to continue increasing the use of innovative and advanced technologies . . . . additional incentive programs finalized will encourage early adoption of these innovative and advanced technologies and help to maximize both compliance flexibility and energy conservation. These incentive programs for [fuel economy] compliance are not under NHTSA's EPCA/EISA authority, but under EPA's EPCA authority . . . EPA measures and calculates a manufacturer's compliance with the [fuel economy] standards, and it will be in the calculation of fuel economy levels that the additional incentives are applied."); *see also* 2012 Final Rule at 63,131 ("All of the [fuel economy] compliance incentives discussed below are being finalized by EPA under its EPCA authority to calculate fuel economy levels for individual vehicles and for fleets."); *id.* at 62,649-50.

[7] 2012 Final Rule at 62,628, 62,649-50.

procedure).[8] In order to be eligible for credit under the off-cycle program "technologies must have a measurable, demonstrable, and verifiable real-world CO_2 reduction that occurs outside the conditions of the Federal Test Procedure and the Highway Fuel Economy Test."[9]

The credits obtained under the off-cycle program are referred to as "fuel consumption improvement values" for the purposes of the CAFE program.[10] The fuel consumption improvement value is equivalent to the off-cycle credits EPA issues for the purposes of the GHG program.[11] Specifically, the fuel consumption improvement value is determined "at the fleet level by converting the CO_2 credits determined under the EPA program (in metric tons of CO_2) for each fleet (car and truck) to a fleet fuel consumption improvement value. This improvement value would then be used to adjust the fleet's CAFE level upward."[12] To apply the credit, the "improvement values are subtracted from the manufacturer's two-cycle-based fleet fuel consumption value to yield a final new fleet fuel consumption value, which would be inverted to determine a final fleet fuel CAFE value."[13] Essentially, "instead of manufacturers gaining credits as done under the GHG program, a direct adjustment would be made to the manufacturer's fuel economy fleet performance value."[14] The credit is thus technically applied as a part of EPA's calculation of average fuel economy levels under its EPCA authority.[15]

To facilitate issuance of off-cycle credits, EPA, in coordination with NHTSA, created a "menu" of technologies eligible for credits with pre-defined fuel consumption improvement values.[16] For technologies that are not on the menu, the program allows manufacturers to apply for credit either (i) by demonstrating fuel economy improvements through EPA's 5-cycle test or (ii) if that will not work, through an alternative methodology developed by the manufacturer.[17] To obtain credit under the latter option, the manufacturer must submit a "detailed analytical plan" and the alternative methodology demonstration should, among other things, "use modeling, on-road testing, on-road data collection, or other approved analytical or engineering method," and "[b]e robust, verifiable, and capable of demonstrating the real-world emissions benefit with strong statistical significance[.]"[18] Where fuel consumption improvement values are sought by a manufacturer, EPA and NHTSA would consult with each other on manufacturer applications for credit under the off-cycle program.[19]

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[8] 40 C.F.R. § 86.1869-12(a) ("Manufacturers may generate credits for CO_2–reducing technologies where the CO_2 reduction benefit of the technology is not adequately captured on the Federal Test Procedure and/or the Highway Fuel Economy Test.").

[9] *Id.*

[10] 2012 Final Rule at 62,833 ("EPA, in coordination with NHTSA, is also finalizing the proposed provision allowing manufacturers to include fuel consumption reductions resulting from the use of off-cycle technologies in their CAFE compliance calculations. This provision would apply starting in MY 2017. Manufacturers may generate 'fuel consumption improvement values' essentially equivalent to EPA credits, for use in the CAFE program.").

[11] 2012 Final Rule at 62,727.

[12] *Id.* at 63,136; 62,736-37 (same); *see also* 40 C.F.R. § 600.510–12.

[13] 2012 Final Rule at 62,726.

[14] *Id.* at 63,134.

[15] *Id.* at 63,125.

[16] *Id.* at 62,832; 62,728.

[17] 40 C.F.R. § 86.1869-12(c)-(d); 2012 Final Rule at 63,134-35; *id.* at 62,839.

[18] 40 C.F.R. § 86.1869-12(d).

[19] *Id.* at § 86.1869-12(d)(3) ("With respect to fuel consumption improvement values applicable to the determination of average fuel economy under 600.510–12(c)(3) for the 2017 and later model years, EPA will consult with the U.S. Department of Transportation, National Highway Traffic Safety Administration, prior to making a decision on a manufacturer's application."); *see also* 49 U.S.C. § 32904(e) ("The Administrator shall report measurements and calculations under this section to the Secretary of Transportation and shall consult and coordinate with the Secretary in carrying out this section."); 49 C.F.R. §§ 531.6(b); 533.6; 2012 Final Rule at 63,135, 62,839-40.

Generally, the application process created by the Agencies allows manufacturers to seek credit for a wide variety of different technologies, provided that the manufacturer can demonstrate real-world fuel economy benefits. However, in the 2012 Final Rule, the Agencies carved out a blanket exception to this general rule for safety, crash avoidance, and congestion mitigation technologies based on questionable policy rationales that are by no means mandated by the statute.[20] The next sections describe the Agencies' policy decision to exclude these technologies, and the means by which the Agencies can reverse this decision to allow for these safer and more efficient technologies to be eligible for off-cycle credit.

C. Background on Policy Decisions Prohibiting Fuel Economy Credit for Safety and Congestion Mitigation Technologies

In the 2012 Final Rule, the prior Administration's decision to disallow off-cycle credit for safety technologies was framed as a policy decision, rather than a decision based on a lack of authority. Indeed, EPCA itself does not speak to or bar consideration of crash-avoidance and other congestion mitigation technologies, or the crediting of energy efficiency improvements linked to safety features. However, in the 2012 Final Rule, the Agencies decided to categorically bar safety technologies from receiving credit under the off-cycle program.[21] Specifically, EPA's regulation at 40 C.F.R. § 86.1869–12 ("CO_2 credits for off-cycle CO_2–reducing technologies") contains a limitation that restricts the eligibility of safety technologies for off-cycle credit:

> Off-cycle credits may not be approved for crash-avoidance technologies, safety critical systems or systems affecting safety-critical functions, or technologies designed for the purpose of reducing the frequency of vehicle crashes. Off-cycle credits may not be earned for technologies installed on a motor vehicle to attain compliance with any vehicle safety standard or any regulation set forth in Title 49 of the Code of Federal Regulations.

There are two basic elements to this prohibition: (1) congestion mitigation, crash avoidance, and other technologies designed to reduce crashes are ineligible for credit; and (2) technologies that already required under federal law for safety purposes, i.e., technologies required under NHTSA Federal Motor Vehicle Safety Standards ("FMVSS"), are ineligible for credit.

With respect to congestion mitigation and crash avoidance technologies more generally, EPA identified several rationales for not allowing them to be eligible for off-cycle credit. Importantly, the "agencies agree[d] that there is a clear nexus between congestion mitigation and fuel/CO_2 savings for the entire on-road fleet."[22] However, they nevertheless declined to give credit due to several policy considerations.

First, the Agencies expressed uncertainty with regards to whether manufacturers would be able to quantify and verify real-world improvements in energy efficiency that resulted from the use of such technologies. The agencies reiterated that "credits should be available only for technologies providing real-world improvements, the improvements must be verifiable, and the process by which credits are granted and implemented must be transparent."[23] They concluded that these factors would not be satisfied for congestion mitigation systems and technologies that reduce the frequency

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[20] 40 C.F.R. § 86.1869-12(a).

[21] 2012 Final Rule at 62,730, 62,732-62,736, 62,836.

[22] *Id.* at 62,732.

[23] *Id.* at 62,733.

of crashes,[24] because they "indirectly" improve fuel economy of other vehicles (or the fleet as a whole) rather than the efficiency of the specific vehicle on which they are installed, and thus could be hard to verify.[25] Thus, although the Agencies expressly acknowledged the "clear nexus between congestion mitigation and fuel/CO_2 savings for the entire on-road fleet," they noted that "[i]t is less clear, however, whether there is a calculable relationship between congestion mitigation and fuel/CO_2 savings directly attributable to individual vehicles produced by a manufacturer . . . ."[26] The Agencies thus determined that in order "for a technology to be 'counted' under the credit provisions, it must make direct improvements to the performance of the specific vehicle to which it is applied."[27]

Neither of these interrelated rationales mandates the approach adopted by the Agencies in 2012 barring the use of these technologies. In terms of EPA's hesitancy to award credits for technologies that may be shown to increase fuel economy for a fleet (rather than individual vehicles), NHTSA's corporate *average* fuel economy standards are standards that apply to a manufacturer's *fleets*, rather than specific *vehicles*,[28] so this fact should not disqualify safety technology from being eligible for credit. This is especially true in light of the fact that EPA currently determines and applies the off-cycle improvement value for each manufacturer at the fleet level, not the vehicle level.[29] As described above, "all off-cycle CO_2 credits would be converted to a gallons-per-mile fuel consumption improvement value at a fleet level for purposes of the CAFE program."[30] Essentially, "instead of manufacturers gaining credits as done under the GHG program, a direct adjustment would be made to the manufacturer's fuel economy fleet performance value."[31] There is no reason why credit for safety technologies could not be applied on a fleet level. Also, the prohibition on eligibility for credit for safety technologies is overbroad, in that some technologies with safety benefits can spur fuel economy improvements both at the individual vehicle *and* at the fleet level.

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[24] Under this rationale, the Agencies determined not to provide "off-cycle credits for technologies and systems including, but not limited to, Electronic Stability Control, Tire Pressure Monitoring System, Forward Collision Warning, Lane Departure Warning and/ or Intervention, Collision Imminent Braking, Dynamic Brake Support, Adaptive Lighting, Blind Spot Detection, Adaptive Cruise Control, Curve Speed Warning, Fatigue Warning, systems that reduce driver distraction, and any other technologies that may reduce the likelihood of crashes." *Id.*

[25] *Id.* at 62,732-33. For instance, installing congestion mitigation safety technologies on a large number of vehicles would reduce accidents, which would reduce associated traffic, idling, and fuel waste and improve fuel economy.

[26] *Id.* at 62,732.

[27] *Id.* at 62,733.

[28] *See id.* at 62,699 ("noting that "no specific vehicle need meet its target (because standards apply to fleet average performance)").

[29] *See* 40 C.F.R. § 600.510-12(c)(1)(ii) (calculating the improvement value for off-cycle technology on a fleet basis); 2012 Final Rule at 62,839 ("The [fuel economy] improvement value for off-cycle improvements will be determined at the fleet level[.]"); *id.* at 62,738 n.312 (explaining that "EPA's calculation methodology in 40 CFR 600.510–12 does not use vehicle-specific fuel consumption adjustments to determine the CAFE increase due to the various incentives allowed under the program. Instead, EPA will convert the total CO_2 credits due to each incentive program from metric tons of CO_2 to a fleetwide CAFE improvement value"). It should be noted that EPA is subject to certain limitations on its authority to calculate a manufacturer's average fuel economy and must calculate a harmonic volume-weighted average as described in 49 U.S.C. § 32904(a)(1)(B). EPA appears to apply the fleet fuel consumption improvement value after calculating this average.

[30] 2012 Final Rule at 62,839-40.

[31] *Id.* at 63,134; *see also id.* at 62,726 ("EPA will convert the metric tons of CO_2 credits for air conditioning (as well as for other off-cycle technologies and for full size pick-up trucks) into *fleet-wide* fuel consumption improvement values, consistent with the way EPA would convert the improvements in CO_2 performance to metric tons of credits. . . . There will be separate improvement values for each type of credit, calculated separately for cars and for trucks. These improvement values are subtracted from the manufacturer's two-cycle-based *fleet* fuel consumption value to yield a final new *fleet* fuel consumption value, which would be inverted to determine a final fleet fuel CAFE value.") (emphasis added).

Granting credit for such technologies could also incentivize increased technology penetration in the fleet. Such an approach could provide a pathway to accelerate the penetration of technologies such as vehicle-to-vehicle ("V2V") communication technology in the fleet, by providing value to incent auto-manufacturers to assume the investment. By focusing only on individual vehicle improvements in isolation, and not recognizing the potential for fleet-wide gains, the Agencies may inadvertently lose the forest for the trees—especially as the automobile sector becomes a more interconnected network.

Moreover, *even if* the fuel economy gains of such technologies were difficult to quantify at the time the 2012 Final Rule was promulgated, it does not mean that they still cannot be quantified or will not be able to be quantified several years from now. The current regulations thus unnecessarily bar a whole category of potential technologies in an overbroad manner, leaving no opportunity for the Agencies to evaluate whether data may be available to justify credits in the future. Analytical capabilities and the ability to understand, monitor, and collect data regarding the efficacy of various technologies has grown exponentially since 2012. Given the pace at which technology and analytics change, a more forward-thinking approach would allow manufacturers the option to demonstrate and quantify the fuel economy benefits associated with these technologies. Thus, even if the Agencies think that quantification may currently be difficult, they should not enshrine a prohibition that may soon grow outdated in their regulations.

Indeed, the Agencies took this exact same wait-and-see approach with respect to the eligibility of other technologies in recognition of the fact that manufacturers may be able to demonstrate real-world fuel economy gains that merit credit. For instance, in the 2012 Final Rule, the Agencies also concluded that other forms of technology, such as congestion avoidance and driver-selectable technologies, could also be difficult to quantify, but did not create a similar categorical bar for these technologies.[32] Rather the Agencies left open the possibility that such technologies could be eligible for credit, and decided to review such technologies on a case-by-case basis. The Agencies should remove the categorical bar against safety and congestion mitigation technologies to allow for manufacturers the opportunity to demonstrate that credit is warranted.

The other potential rationale advanced by the Agencies for excluding safety technologies from eligibility was that NHTSA evaluates safety technologies under other regulatory programs, i.e., the New Car Assessment Program ("NCAP") and FMVSS, and these other programs provide a mechanism for evaluating, promoting, and potentially even mandating adoption of safety technologies.[33] More specifically, the Agencies explained that:

> Additional technologies may be added to the NCAP list of crash avoidance technologies when there is sufficient information and analysis to confirm their safety value. . . . Alternatively, NHTSA may conclude that such technologies are sufficiently developed, their safety benefits sufficiently clear, and relevant test procedures sufficiently defined that they should be the subject of a mandatory safety standard. NHTSA could not render a determination on such a request without thoroughly testing the technology as applied in that specific model and developing a specialized benefits analysis. The agency's higher priority would clearly have to be analyzing the

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[32] In the 2012 Final Rule, EPA also emphasized that it believed that manufacturers would have a hard time demonstrating that driver-selectable and driver interactive technologies, e.g., congestion avoidance, should receive credit and would need to conduct extensive data collection. *See* 2012 Final Rule at 62,736.

[33] *Id.* at 62,733 ("[T]he agency may either promote its use through its New Car Assessment Program (NCAP) or mandate its use by issuing a Federal Motor Vehicle Safety Standard (FMVSS) requiring the technology on all or some categories of new vehicles.").

> technologies it found to offer great safety promise on a broader basis and developing standardized tests for those technologies. Therefore the agencies believe that evaluation of crash avoidance technologies is better addressed under NHTSA's vehicle safety authority than under a case-by-case off-cycle credit process.[34]

The Agencies further explained that they "believe that the advancement of crash avoidance systems specifically is best left to NHTSA's exercise of its vehicle safety authority. NHTSA looks forward to working with manufacturers and other interested parties on creating opportunities to encourage the general introduction of these technologies in the context of the NCAP program and possible safety standards."[35]

This rationale appears to be based on the notion that NHTSA should prioritize its authority under its safety mandates to encourage the adoption of advanced safety technologies. But this explanation misses the critical point that NHTSA's responsibilities under the safety program and the fuel economy program are not mutually exclusive and no-tradeoffs are required. Instead, NHTSA could leverage its expertise under these various programs so they can all reflect the multi-faceted benefits offered by congestion mitigation, crash avoidance, and other safety technologies. Indeed, NHTSA's analyses on the efficacy of various technologies under the safety program would be expected to inform the analysis of their fuel economy potential, and vice versa. Once again, the Agencies cited to no statutory bar to crediting these technologies under the fuel economy regime, and instead expressed a policy preference not to do so.

In addition to the 2012 regulatory prohibition against credit for congestion mitigation and crash avoidance technologies in general, there is also a more specific prohibition in the regulation for technologies that are already required under federal law for safety purposes, i.e., technologies that are required under NHTSA FMVSS. With respect to this narrower category of safety technologies, the Agencies explained that "EPA will not provide credits for a technology required to be used by Federal law, as EPA would consider such credits to be windfall credits (i.e. not generated as a result of the rule)."[36] This decision, once again, is a policy choice made in reference to the goals of the off-cycle credit program—to encourage adoption of fuel efficient technologies. Although not mandated by the statute, the decision to exclude the category of safety technologies that are already mandated by law, is at least consistent with the goals of the off-cycle program (although we note that the Agencies can always modify the programs goals).

However, this decision stands in stark contrast to the decision to exclude all congestion mitigation, crash avoidance, and other safety technologies, as many of these technologies are innovative and evolving and have significant potential to achieve fuel economy gains. The Agencies' decision to exclude them thus runs counter to the goals of the off-cycle program (and EPCA in general) to promote fuel efficiency and encourage the adoption of innovative fuel efficient technologies.[37] At the very least the Agencies should narrow their prohibition on eligibility only to technologies that are mandated under existing NHTSA regulations (e.g. FMVSS).

Importantly, in the explanation for the Agencies' decision to bar off-cycle credit for safety technologies, there is no reference to any statutory provision that mandates this approach, and we are not aware of any. Indeed, the entire off-cycle program was created as a function of EPA's discretion to measure and calculate average fuel economy, in coordination with NHTSA, under 49

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[34] *Id.* at 62,733.

[35] *Id.*

[36] 2012 Final Rule at 62,836.

[37] *Id.* at 62,833 (noting that the goal of the program is to "provid[e] an incentive for the development and use of additional technologies to achieve real-world reductions in CO_2 emissions.").

U.S.C. 32904. Thus, given that this program is a creation within EPA's discretion that is subject only to a few statutory limits (See Section III below), it is within EPA's discretion to credit safety, crash avoidance, and congestion mitigation technologies in the fuel economy calculation, provided there is a real-world fuel economy benefit to measure or calculate. EPA and NHTSA have already acknowledged that there is such a benefit.

Accordingly, the Agencies should eliminate the prohibition on applying for credit for such technologies, and NHTSA should leverage its extensive knowledge of technology safety efficacy to support such application efforts and provide guidance to assist with such efforts.

The Agencies should also go one step further and use their authority and expertise to incent and promote research on the fuel economy gains resulting from deployment of such advanced vehicle technologies. The Agencies could allow automakers to earn estimated, pre-determined credits for three to five years as part of a temporary research program through which the automakers would deploy autonomous and connected vehicle technology, collect data about the technology's performance, and share that data with the Agencies. The pre-determined credit value would be estimated based on the best available data prior to the research program. After the temporary research program is complete, data collected through the program would then be used to determine the appropriate amount of credit to award based on the effectiveness of the technology on a permanent basis. Securing America's Future Energy ("SAFE") recently determined that several of these technologies available today can obtain a fuel economy benefit of 18%-25% with most of these savings achieved system wide. However, the data SAFE used is limited due to small deployments. The research program will allow for data to be collected on a larger scale by incentivizing increased deployment. This approach will address the proverbial "chicken and egg" problem because it will incentivize a quicker deployment to achieve more real world data.

The Agencies have found it to be within their authority to incent "game-changing" technologies by providing fuel economy credit to promote their further penetration. For instance, in the 2012 Final Rule, the Agencies offered a "game-changing" technology incentive for full size pick-up trucks to promote their penetration into the fleet.[38] Similarly, the Agencies should establish a research program for the benefits obtainable from the penetration of "game-changing" autonomous vehicle and safety technologies, and make the program permanent where appropriate based on that research in order to promote their deployment.

As described in more detail below, the Agencies are permitted to change positions on this issue in a subsequent notice-and-comment rulemaking, and should do so as a part of their imminent rulemaking process.

III. Regulatory Changes Necessary to Allow For Fuel Economy Credit for Safety and Congestion Mitigation Technologies

Because the Agencies' decision to exclude safety and congestion mitigation technologies from off-cycle eligibility was a policy decision made in a rulemaking, the Agencies are permitted to change their position through notice-and-comment rulemaking provided they acknowledge the change and provide an explanation for it as described in *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 514-15 (2009).

While an agency's change in position is subject to the same standard of review as other agency actions, the agency must follow certain specific requirements. Importantly, the agency *must*

[38] 2012 Final Rule at 63,131-32.

acknowledge that it is changing positions. Indeed, "the requirement that an agency provide reasoned explanation for its action would ordinarily demand that it display awareness that it *is* changing position. An agency may not, for example, depart from a prior policy *sub silentio* or simply disregard rules that are still on the books."[39] The agency also must provide good reasons for its new policy. However, it does not need to "demonstrate to a court's satisfaction" that these reasons are better than the reasons for the old policy: "it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates."[40]

However, while an agency does not necessarily need to provide a more detailed justification for a changed policy, there are certain circumstances where it must do so, including when "its new policy rests upon factual findings that contradict those which underlay its prior policy; or when its prior policy has engendered serious reliance interests that must be taken into account."[41] "It would be arbitrary or capricious to ignore such matters. In such cases it is not that further justification is demanded by the mere fact of policy change; but that a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy."[42]

The Agencies are free to change their position on this issue at any time, and may do so in the upcoming notice-and-comment rulemaking to reconsider the MY 2022-2025 standards as a result of EPA's Midterm Review Process.[43] Part of the rationale for reconsidering the standards is that they "present[] challenges for auto manufacturers due to feasibility and practicability, raise[] potential concerns related to automobile safety, and result[] in significant additional costs on consumers, especially low-income consumers."[44] This stated rationale for reevaluating the MY 2022-2025 standards also supports a change in the regulations regarding eligibility for off-cycle credits. The changes described below to remove the prohibition against credit for safety and congestion mitigation technologies will serve the stated reasons for the reconsidering the MY2022-2025 standards: this approach will further increase flexibility and practicability, promote safety considerations, and provide benefits for consumers. NHTSA has long considered safety concerns in setting CAFE standards,[45] and allowing safety technologies to be eligible for credit does not suffer from the same tradeoffs between safety and fuel economy that NHTSA has historically needed to balance. Here, the Agencies can achieve both objectives in tandem. To achieve these objectives, the regulations that should be changed are described below.

As noted above, the current Off-Cycle Credit Program is located at 40 C.F.R. § 86.1869–12 ("CO_2 credits for off-cycle CO_2–reducing technologies"). However, this EPA regulation contains a limitation that restricts the eligibility of safety technologies for off-cycle credit: "Off-cycle credits may not be approved for crash-avoidance technologies, safety critical systems or systems affecting

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[39] *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) ("*Fox*").

[40] *Id.*; *see also Clean Air Council v. Pruitt*, 862 F.3d 1, at 9 (D.C. Cir. 2017) ("Although EPA had no section 307(d)(7)(B) *obligation* to reconsider the methane rule, it is free to do so as long as 'the new policy is permissible under the statute. . . , there are good reasons for it, and . . . the agency *believes* it to be better.'") (quoting *Fox*, 556 U.S. at 515).

[41] *Fox*, 556 U.S. 502 at 515.

[42] *Id.* at 15-16; *see also Perez v. Mortg. Bankers Ass'n*, 135 S. Ct. 1199, 1209 (2015).

[43] *Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles; Notice; Withdrawal*, 83 Fed. Reg. 16,077, 16,078 (April 13, 2018) ("On the whole, the Administrator believes the MY 2022–2025 GHG emission standards are not appropriate and, therefore, should be revised as appropriate. EPA, in partnership with NHTSA, will further explore the appropriate degree and form of changes to the program through a notice and comment rulemaking process.").

[44] *Id.*

[45] *See* 2012 Final Rule at 62,670.

safety-critical functions, or technologies designed for the purpose of reducing the frequency of vehicle crashes. Off-cycle credits may not be earned for technologies installed on a motor vehicle to attain compliance with any vehicle safety standard or any regulation set forth in Title 49 of the Code of Federal Regulations."[46] This language would need to be deleted or amended through notice-and-comment rulemaking. EPA's regulation at 40 C.F.R. § 600.510-12(c) provides the formulas for calculating fuel improvement values and the overall average fuel economy based on the amount of off-cycle credits obtained under 40 C.F.R. § 86.1869–12. Thus, amending 40 C.F.R. § 86.1869–12 to remove the bar for safety technologies should effectively address the issue. EPA should also evaluate the requirements of the application process provided in 40 C.F.R. § 86.1869-12(e) to ensure that this process does not require information that may be inapplicable to safety technologies, and should provide additional guidance as to the types of information EPA will deem appropriate to demonstrate fuel economy reductions.[47]

In recognition of EPA's status as lead agency for fuel economy calculation purposes, NHTSA's regulations state that "[f]or model years 2017 to 2025, a manufacturer is eligible to increase the fuel economy performance of passenger cars in accordance with procedures established by EPA set forth in 40 CFR part 600, including any adjustments to fuel economy EPA allows, such as for fuel consumption improvements related to . . . off-cycle technologies."[48] The regulations further explain that "[t]he eligibility of a manufacturer to increase its fuel economy performance through use of an off-cycle technology requires an application request made to EPA in accordance with 40 CFR Part 86.1869–12 and an approval granted by EPA made in consultation with NHTSA."[49] As currently drafted, this language would not need to be changed, because it cross-references EPA's provisions. Thus, changing EPA's provisions for off-cycle credit for GHGs should also effectively change those provisions with respect to the CAFE program.

However, some of NHTSA's regulations will also need to be amended (and the cross-references may need to be updated depending on how EPA's regulations are amended). As noted above, when a manufacturer applies for credit, the Agencies' regulations require consultation between EPA and NHTSA on the applications to allow NHTSA to evaluate specific off-cycle technologies for their impact on fuel economy, and EPA's approval is "made in consultation with NHTSA."[50] In particular, the regulations require NHTSA to "consult with EPA regarding NHTSA's evaluation of the specific off-cycle technology to ensure its impact on fuel economy and the suitability of using the off-cycle technology to adjust the fuel economy performance."[51] However, the regulation also provides that "NHTSA's evaluation and review will consider:

> (1) Whether the technology has a direct impact upon improving fuel economy performance;
> (2) Whether the technology is related to crash-avoidance technologies, safety critical systems or systems affecting safety-critical functions, or technologies designed for the purpose of reducing the frequency of vehicle crashes;
> (3) Information from any assessments conducted by EPA related to the application, the technology and/or related technologies; and

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[46] 40 C.F.R. § 86.1869-12(a).

[47] As noted above, EPA is the lead agency in this process and would need to make the ultimate decision to amend its own regulations.

[48] 49 C.F.R. § 531.6(a); *see also* 49 C.F.R. § 533.6(b) (similar provision applicable to light truck fleets); *see also* 2012 Final Rule at 63,131.

[49] 49 C.F.R. § 531.6(b); *see also* 49 C.F.R. § 533.6(c) (similar provision applicable to light truck fleets).

[50] 49 C.F.R. § 531.6(b); 40 C.F.R. § 86.1869-12(d)(3); *see also* 2012 Final Rule at 62,650, 62,839-40.

[51] 49 C.F.R. § 531.6(b); *see also* 49 C.F.R. § 533.6(c) (similar provision applicable to light truck fleets).

(4) Any other relevant factors.[52]

In order to clarify that applications for off-cycle credits for safety technologies can be considered, this provision should be revised and reframed in several ways. First, the requirement that NHTSA consider "[w]hether the technology has direct impact upon improving fuel economy performance" should be revised.[53] In the 2012 Final Rule, EPA utilized the word "direct" to refer only to fuel economy improvements that occurred for the vehicle on which the technology was installed. However, as described above, EPA found that efficiency gains achieved via safety equipment were "indirect" in that they result in efficiency improvements for the fleet as a whole or other cars on the road. Although safety technologies do in fact have a significant impact on improving fuel economy, the use of the word "direct" here could create confusion given the regulatory history, and should be removed.

Second, the provision requiring that NHTSA consider "[w]hether the technology is related to crash-avoidance technologies, safety critical systems or systems affecting safety-critical functions, or technologies designed for the purpose of reducing the frequency of vehicle crashes" should be reframed and clarified. It is desirable to have NHTSA involved in evaluating the eligibility of such technologies given its expertise, However, the purpose of this provision was to require NHTSA to evaluate whether technologies implicated safety for the *purposes of excluding* them.[54] If the Agencies eliminate the prohibition on credit for these technologies, NHTSA should still be involved in evaluating them, but the provision should be clarified that the goal of such review is not too exclude them from receiving credit. The role of NHTSA in this process should also be better defined and enhanced, given its expertise in safety issues.

In addition to eliminating any regulatory provisions that hinder the eligibility of safety technologies to receive credit, the Agencies may also want to actively include language clarifying the pathway for such technologies to achieve credit and confirming that such credit is available if an adequate demonstration is made by a manufacturer. The agencies may also develop a method for quantifying the benefits of such technologies, as they have for other off-cycle technologies. New provisions for safety technologies could be inserted in 40 C.F.R. § 86.1869–12, or in a separate regulation in 40 C.F.R. Part 86, Subpart S ("General Compliance Provisions for Control of Air Pollution from New and in–Use Light–Duty Vehicles, Light–Duty Trucks, and Heavy–Duty Vehicles"). Depending on where the new provisions are inserted, changes may also need to be made to 49 C.F.R. § 531.6 and 49 C.F.R. § 533.6, which allows for off-cycle credit for the fuel economy program (for passenger vehicles and light trucks respectively) by cross-referencing EPA's off-cycle regulation at 40 C.F.R. § 86.1869–12. Any new regulation would need to also be cross-referenced here.

IV. Legal Limitations on EPA's Authority Under EPCA Do not Bar Granting Credit for Safety and Congestion Mitigation Technologies

Section 32904(c) provides the basis for the off-cycle credit program and provides that EPA "shall measure fuel economy for each model and calculate average fuel economy for a manufacturer under testing and calculation procedures prescribed by the Administrator."[55] EPA's EPCA authority

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[52] *Id.*

[53] *Id.*

[54] 2012 Final Rule at 62,733 ("If a manufacturer has an off-cycle technology that is not included on this list and brings it to the agencies for assessment, NHTSA will determine whether it is ineligible for a credit or adjustment by reason of the agency's judgment that it is related to crash avoidance systems, is related to motor vehicle safety within the meaning of the National Traffic and Motor Vehicle Safety act, as amended, or may otherwise reduce the possibility and or frequency of vehicle crashes."); *see also id.* at 63,135.

[55] 49 U.S.C. § 32904(c).

under Section 32904 is broad and the agency has significant discretion, but there are several potential legal limitations on this authority. None of these limitations, however, would mandate categorically barring safety and congestion mitigation technologies or require EPA to distinguish between these technologies and other technologies currently credited under the off-cycle program.

First, any fuel economy gains achieved by emerging technologies must be quantifiable in terms of miles per gallon. EPCA defines "fuel economy" as "the average number of miles traveled by an automobile for each gallon of gasoline . . . used, as determined by the [EPA] Administrator under section 32904(c) . . . ."[56] However, there is no apparent reason why fuel economy gains from safety and congestion mitigation technologies could not be quantified in miles per gallon.

Second, EPA must use a volume-weighted average for its average fuel economy calculations. "Average fuel economy" "means average fuel economy determined under section 32904 of this title."[57] Section 32904 provides some instruction on how the Administrator must calculate average fuel economy, but also provides discretion in this regard. The major limitation is that this method of calculation is "subject to" EPA dividing "(i) the number of passenger automobiles manufactured by the manufacturer in a model year; by (ii) the sum of the fractions obtained by dividing the number of passenger automobiles of each model manufactured by the manufacturer in that model year by the fuel economy measured for that model."[58] However, the phrase "subject to" does not mean that this is the exclusive method EPA may use in the calculation, only that this method must be used at some step in the calculation. EPA has discretion to add additional elements to the overall method used. Indeed, EPA uses this method to determine fuel economy under its current regulations, but applies the off-cycle credit as an additional step in the overall procedure. As noted above, EPA determines the total off-cycle credits on a fleet-wide basis (e.g., non-passenger vehicle or light truck) in terms of megagrams of CO_2, and then converts this number to the fleet-wide production-weighted total value of the off-cycle technology credits for "all off-cycle technologies in the applicable fleet, expressed in gallons per mile."[59] EPA can account for off-cycle credits for safety technologies using this existing procedure.

Third, although EPCA gives EPA broad discretion to measure and calculate fuel economy, it also imposes certain limits on EPA's ability to change its testing and measurement procedures for passenger vehicles (but not light trucks).[60] Specifically, EPCA provides that the "Administrator shall measure fuel economy for each model and calculate average fuel economy for a manufacturer under testing and calculation procedures prescribed by the Administrator. However, . . . the Administrator shall use the same procedures for passenger automobiles the Administrator used for model year 1975 (weighted 55 percent urban cycle and 45 percent highway cycle), or procedures

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[56] 49 U.S.C. § 32901(a)(11); *see also* 2012 Final Rule at 63,014 ("NHTSA is required by statute to set CAFE standards in terms of miles per gallon— 'fuel economy,' as expressly defined in EPCA, means "'the average number of miles traveled by an automobile for each gallon of gasoline (or equivalent amount of other fuel) used.'").

[57] 49 U.S.C. § 32901(a)(5).

[58] *Id.* § 32904(a).

[59] *See* 40 C.F.R. § 86.1869-12(e); 40 C.F.R. §§ 600.510-12(c)(1),(c)(3)(ii); *See also* 2012 Final Rule at 62,726 ("For the CAFE program, EPA will determine fleet average fuel consumption improvement values in a manner consistent with the way fleet average CO_2 credits will be determined. EPA will convert the metric tons of CO_2 credits for air conditioning (as well as for other off-cycle technologies. . .) into fleet-wide fuel consumption improvement values, consistent with the way EPA would convert the improvements in CO_2 performance to metric tons of credits. . . . There will be separate improvement values for each type of credit, calculated separately for cars and for trucks. These improvement values are subtracted from the manufacturer's two-cycle-based fleet fuel consumption value to yield a final new fleet fuel consumption value, which would be inverted to determine a final fleet fuel CAFE value.").

[60] *See* 2012 Final Rule at 62,802.

that give comparable results."[61] The legislative history of this provision explains that:

> Compliance by a manufacturer with . . . fuel economy standards is to be determined in accordance with test procedures established by the EPA Administrator by rule. Test procedures so established would be the procedures utilized by the EPA Administrator for model year 1975, or procedures which yield comparable results. The words 'or procedures which yield comparable results' are intended to *give EPA wide latitude* in modifying the 1975 test procedures to achieve procedures that are more accurate or easier to administer, so long as the modified procedure does not have the effect of substantially changing the average fuel economy standards.[62]

This provision was likely intended to ensure baseline comparability of the standards over time, while still allowing EPA "wide latitude."[63]

The language of the statute allowing for EPA to use "procedures that give comparable results" and this legislative history thus indicate that EPA has flexibility to change its measurement approach. However, EPA recognized that its pre-2012 interpretation of this provision may have limited the use of the off-cycle credit program.[64] Accordingly, in the 2012 Final Rule, EPA adopted an interpretation of the statute that the offset credit program is permissible under this provision, even though it does not have an analog in the 1975 test procedure. EPA has thus already provided a detailed analysis justifying the propriety of the off-cycle program under the terms of the statute.

Specifically, EPA explained in the 2012 Final Rule that it "considers the fuel economy results to be 'comparable results' to the 1975 procedure as there would not be a substantial impact on real world [fuel economy] stringency and benefits, given the changes in procedure are the same as provisions in EPA's companion greenhouse gas procedures and standards."[65] Thus, under the current harmonized program, EPA has concluded that it has authority to change the test procedures to credit technologies that provide real-world efficiency, even where they are not measurable under and do not have an analog in the 1975 procedure. It is unclear whether EPA would similarly conclude it could take this position under EPCA, if its GHG procedures did not also recognize those credits. EPA should thus issue parallel credits for any safety and congestion mitigation technologies under its GHG program to the extent it credits those technologies under the fuel economy program. These technologies reduce real-world emissions as well as create real-world gains in fuel economy.

In sum, the Agencies have already concluded that they have the authority to give credit for technologies under the off-cycle program as a part of the fuel economy calculation process. The

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[61] 49 U.S.C. § 32904(c).

[62] H.R. Rep. No. 94-340, at 91-92 (1975) (emphasis added); *see also* S. Rep. No. 94-516, at 157 (1975).

[63] *See id.; see also* S. Rep. No. 94-179, at 19 (1975).

[64] EPA's prior interpretations could have proven problematic for the off-cycle program. In the 2012 Final Rule, EPA considered whether changing its test procedure to allow for credit for air conditioner efficiency and off-cycle efficiency (which are not captured in the 1975 two-cycle test procedures), would "substantially change" the standards in a manner barred by this provision. EPA explained that its pre-2012 approach to analyzing this question relied on a D.C. Circuit case (which was later vacated on other grounds) interpreting this provision, and that EPA's pre-2012 approach considered whether the test procedure change (1) had a significant impact on fuel economy results, (2) reflected real world efficiency improvements, and (3) had an analog in the original 1975 test procedure such that it was substantially comparable. *See* 2012 Final Rule at 62,803. EPA noted that its procedure changes to accommodate off-cycle and air conditioning efficiencies lacked an analog in the 1975 procedure, indicating they might not be appropriate under EPA's traditional interpretation. *Id.* However, given EPA's change in interpretation in the 2012 Final Rule, EPA has already determined that this provision does not bar granting off-cycle credits.

[65] 2012 Final Rule at 62,804. EPA can change its interpretation, and it will generally receive deference provided it is not contrary to the statute or regulations.

limitations on EPA's authority under § 32904(c) thus do not stand as a prohibition to crediting other off-cycle technologies—such as safety and congestion mitigation technologies—as a part of the off-cycle program. Moreover, this provision in § 32904(c) only applies to passenger cars, and not light trucks, so EPA has even more flexibility in determining the appropriate procedures applicable to light trucks.[66]

V. Conclusion

In sum, the Agencies have the combined authority and expertise to credit fuel economy benefits from safety, crash avoidance, and congestion mitigation technologies. Although there are some legal limitations in EPCA that the Agencies must be aware of, past agency practice in establishing the off-cycle credit program demonstrates that the Agencies have concluded that they have significant authority to recognize real-world fuel economy improvements. Accordingly, at the very least, the Agencies should eliminate the 2012 regulatory prohibition to obtaining off-cycle credits for safety-related technologies. The Agencies should also go one step further and allow automakers to earn pre-determined credits based on best available data for three to five years as part of a research program through which the automakers would deploy autonomous and connected vehicle technology, collect data about the technology's performance, and share that data with the Agencies. This additional real world data would then be used to determine the appropriate amount of credit to award based on the effectiveness of the technology on a permanent basis. Regardless of this program, the Agencies should also streamline and improve the off-cycle application process to allow manufacturers to more easily obtain credits, and NHTSA should leverage its safety expertise to provide guidance and resources to assist manufacturers in quantifying and verifying the fuel economy gains achievable through deployment of these technologies.

[66] *Id.* at 62,673 ("Under EPCA, EPA is required to use these procedures (or procedures which yield comparable results) for measuring fuel economy for cars for CAFE purposes, but not for labeling purposes. EPCA does not pose this restriction on CAFE test procedures for light trucks, but EPA does use the FTP and HFET for this purpose.").