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Hydrofluorocarbons, Leaky Car Air Conditioners, and Revoked Waivers: The Question of State-level Regulation of Climate Change in the Trump Era

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NOTE

Hydrofluorocarbons, Leaky Car Air Conditioners, and Revoked Waivers: The Question of State-level Regulation of Climate Change in the Trump Era

Connor Hilbie*

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I. INTRODUCTION

Since the Clean Air Act was passed in 1977, the United States’ purpose regarding our nation’s air has been to keep it healthy and safe, as well as to “protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population . . . [and] to achieve the prevention and control of air pollution.”¹ Under the Trump administration, there was a significant trend towards deregulation of environmental and climate initiatives and programs, and specifically applicable to this case note, the Kigali Amendment to the Montreal Protocol. However, while the federal government failed to take the initiative to reduce emissions in accordance with the Paris Agreement, various states started to rise to the challenge and act as a cohesive unit under the United States Climate Alliance.²

This case note aims to tackle the question of whether states have the power to regulate greenhouse gases, specifically hydrofluorocarbons (HFCs) within vehicle air conditioning units in light of precedent case law, Environmental Protection Agency (EPA) guidance documents, and the newly minted EPA revocation of California’s Clean Air Act tail-pipe emissions waiver. In Part II, I will provide a brief background of HFCs, their environmental impacts,

1. 42 U.S.C. § 7401(b)(1)–(2).

2. See U.S. CLIMATE ALL., 2019 FACT SHEET (Apr. 2019), https://static1.squarespace.com/static/5a4cfbfe18b27d4da21c9361/t/5ccb5aa56e9a7f542fe4233c/1556830885910/USCA+Factsheet_April+2019.pdf [<https://perma.cc/69PH-CFDQ>].

and their regulation under the Clean Air Act. Next, I will briefly recount how HFCs have been regulated to date, focusing on the procedural history involving HFCs under the Montreal Protocol, the Significant New Alternatives Program (SNAP), the Kigali Amendment, and the D.C. Circuit's ruling in *Mexichem v. EPA*.³ Part III includes a brief case study of California and Washington—two states that successfully regulated HFCs at the state level—and comments on the U.S. Climate Alliance. Then, Part IV provides an in-depth analysis of the effect of the revocation of California's Clean Air Act emissions waiver in the context of HFCs in vehicle air conditioning units. Within this analysis, I discuss dormant commerce clause and preemption issues to determine the efficacy of states' future HFC regulations within vehicle air conditioning systems. Finally, Part IV concludes that state regulation of HFCs is likely impermissible under preemption doctrines as well as dormant commerce clause analyses. State legislation would likely conflict with preemption clauses under the Clean Air Act due to the indirect effect that air conditioning has on fuel efficiency as well as its direct conflict with labeling requirements. Similarly, state regulation of HFCs in vehicular air conditioning systems would likely violate the dormant commerce clause due to the impermissible extraterritoriality reach that the effect of labeling and retrofitting requirements would have on out-of-state interests and interstate commerce.

II. WHAT ARE HYDROFLUOROCARBONS? BACKGROUND, ENVIRONMENTAL IMPACT, AND DEVELOPMENT

A. Development, Structure and Background of Hydrofluorocarbons

HFCs are extremely potent greenhouse gases (GHGs), often identified as Short-Lived Climate Pollutants (SLCPs) due to their global warming potential (GWP) 1000 to 3000 times as strong as that of carbon dioxide.⁴ Short-lived climate pollutants are chemicals that

3. *Mexichem Fluor, Inc. v. EPA*, 866 F.3d 451 (D.C. Cir. 2017).

4. *What are Hydrofluorocarbons?*, EIA, <https://eia-global.org/campaigns/Climate/what-are-hydrofluorocarbons> [<https://perma.cc/QCG6-N4CZ>].

remain in the atmosphere for a shorter period of time compared to other pollutants such as carbon dioxide and nitrous oxide. Some examples of SLCPs include HFCs, methane, black carbon aerosols, and tropospheric ozone, which can last in the atmosphere anywhere from several days (black carbon) to approximately 15 years (HFCs).⁵ However, when compared to the timespan of carbon dioxide and nitrous oxide, which can subsist within the environment for “centuries to millennia,”⁶ these SLCPs or “super greenhouse gases,” while short-lived, are approximately 1,000 times more effective at trapping heat than carbon dioxide.⁷ SLCPs like the ones mentioned above have been identified to only represent approximately 1% of global emissions; however, observations and studies have shown that these SLCPs, and HFCs specifically, have increased within the atmosphere at a rate of 10–15% per year⁸ and will likely continue to rise, especially in developing countries.⁹ While HFCs are utilized in many different industrial and commercial fashions and end-uses,¹⁰ they are exclusively studied here within the umbrella of refrigerants, specifically HFCs used within vehicle air conditioners.¹¹ HFCs are useful in these particular types of end-uses because they have high volatility, low thermal conductivity, low surface tension, and low flammability.¹² However, while many GHGs occur naturally, such as carbon dioxide and methane, HFCs are completely anthropogenic

5. Y. Xu et al., *The Role of HFCs in Mitigating 21st Century Climate Change*, 13 *ATMOSPHERIC CHEM. & PHYSICS* 6083, 6083 (2013).

6. *Id.*

7. *Kigali Meeting Agrees to Worldwide Phaseout of “Super Warming” HFCs*, 46 *ENV. L. REP. INT’L UPDATE*, no. 30, Oct. 24, 2016, <https://elr.info/international/international-update/archive/46/30> [<https://perma.cc/F9XM-W7GD>]; DURWOOD ZAELKE ET AL., *PRIMER ON HCFs 4* (Nov. 2015), <http://www.igsd.org/documents/HFCPrimer29Nov2015.pdf> [<https://perma.cc/TL5P-WGET>]; *Hydrofluorocarbons (HFCs)*, CLIMATE & CLEAN AIR COAL., <https://ccacoalition.org/en/slcp/hydrofluorocarbons-hfc> [<https://perma.cc/2X7D-JUS8>].

8. Guus J. M. Velders et al., *Preserving Montreal Protocol Climate Benefits by Limiting HFCs*, 335 *SCI. 922*, 922 (2012); *Hydrofluorocarbons (HFCs)*, CLIMATE & CLEAN AIR COAL., <https://ccacoalition.org/en/slcp/hydrofluorocarbons-hfc> [<https://perma.cc/2X7D-JUS8>].

9. See Xu et al., *supra* note 5, at 6086–87.

10. Wen-Tien Tsai, *An Overview of Environmental Hazards and Exposure Risk of Hydrofluorocarbons (HFCs)*, 61 *CHEMOSPHERE* 1539, 1541–42 (2005).

11. See discussion *infra* Part III.

12. Tsai, *supra* note 10, at 1541.

and have only started being widely used throughout the last thirty years.¹³

B. International Efforts to Regulate and Phase-Down Hydrofluorocarbons

HFCs have only been in existence since the 1990s, due almost exclusively to the Montreal Protocol and the subsequent regulated phase-down of Ozone-Depleting Substances (ODSs), specifically Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs).¹⁴ These chemicals were utilized in the above-described industrial contexts; however, they were phased out and replaced with chlorine-free, man-made HFCs. While these replacement chemicals do not contain the ozone-depleting properties or chemical constituents of their predecessors (mainly chlorine), they do contain chemicals that are extremely effective at trapping solar radiation—specifically infrared—and absorbing heat within the lower atmosphere, thus contributing to the overall global warming potential.¹⁵ As such, various scientific models have estimated that, if nothing changes and the developed world continues its “business-as-usual” use, certain estimates indicate HFCs could contribute to an approximately 27–45% increase of radiative forcing of carbon dioxide (CO₂) by 2050.¹⁶ While this may seem like an insubstantial increase, these percentages are quite significant considering the International Panel on Climate Change (IPCC), in their Special Report on Global Warming of 1.5 degrees Celsius, includes the reduction of SLCPs in most mitigation pathways to effectuate warming to only 1.5 degrees.¹⁷ Thus, it is evident that HFC emissions constitute a material contribution to climate change and its associated

13. See *id.* at 1541–42 (highlighting the start of industrial and commercial uses of HFCs in early 1990).

14. See *id.* at 1540.

15. *Chlorofluorocarbons (CFCs) and Hydrofluorocarbons (HFCs)*, MINN. POLLUTION CONTROL AGENCY, <https://www.pca.state.mn.us/air/chlorofluorocarbons-cfcs-and-hydrofluorocarbons-hfcs> [https://perma.cc/S2NB-RF59].

16. Xu et al., *supra* note 5, at 6084; see Velders et al., *supra* note 8, at 922.

17. Joeri Rogelj et al., *Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development*, in GLOBAL WARMING OF 1.5°C 93, 118 (Valérie Masson-Delmotte et al. eds., 2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf [https://perma.cc/L4PT-JYF4].

environmental and health hazards.¹⁸ Some of these effects include a significant drop in air quality, the increase of heat-related deaths due to increase in extreme heat events, and the increase in frequency of extreme weather events, which can damage critical infrastructure, result in widespread death, and cause severe shortages of necessary resources such as food, water, and shelter¹⁹

The phase-down of HFCs is clearly a global issue; however, the only way in which a true freeze and phase-down of HFCs will occur is if the developed countries act first and quickly. Doing so will give developing countries a buffer to begin their freeze and phase-down.²⁰ This method was developed through the Montreal Protocol, in which developed countries successfully phased-out the use of CFCs by 1996, and developing countries followed suit by 2010,²¹ which lends support to the attestation that the Montreal Protocol was (and still is) the most successful global climate initiative to-date.²² However, in order for HFCs to be as effectively regulated and removed from use as CFCs under the Montreal Protocol, each country must take the initiative to actively pursue this goal, as enumerated within the Kyoto Protocol.²³

The Kyoto Protocol was an agreement between certain countries to reduce anthropogenic greenhouse gas emissions, including HFCs, by at least 5% below 1990 levels between 2008-2012, and the United States is one of the countries included within the initial list of countries.²⁴ However, when it came time for the Protocol to be ratified, the United States declared that it would not be involved.²⁵

18. See *id.* at 118, 141.

19. See *Climate Impacts on Human Health*, EPA, <https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-human-health.html> [<https://perma.cc/WN3L-LK97>] (Jan. 13, 2017); see Ove Hoegh-Guldberg et al., *Impacts of 1.5°C of Global Warming on Natural and Human Systems*, in *GLOBAL WARMING OF 1.5°C*, *supra* note 17, at 183–252.

20. See Heleen de Coninck, *Strengthening and Implementing the Global Response*, in *GLOBAL WARMING OF 1.5°C*, *supra* note 17, at 353.

21. Xu et al., *supra* note 5, at 6084.

22. Velders, et al., *supra* note 8, at 922.

23. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3, Dec. 10, 1997, 2303 U.N.T.S. 148 [hereinafter Kyoto Protocol].

24. *Id.*

25. See Letter to Members of the Senate on the Kyoto Protocol on Climate Change, 37 WKLY. COMPILATION PRESIDENTIAL DOCUMENTS 444, 444–445 (Mar. 13, 2001), <https://www.govinfo.gov/content/pkg/WCPD-2001-03-19/pdf/WCPD-2001-03-19-Pg444-2.pdf> [<https://perma.cc/PM7L-DY7L>].

Since then, the United States has been involved with various pieces of international emissions reductions agreements, especially under the Obama administration, starting with the Paris Agreement. The Paris Agreement's purpose was to strengthen the global response to climate change and demonstrates a consolidated effort to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."²⁶ While the Paris Agreement is an incredibly important tool to address the global problem of anthropogenic emissions and climate change, it does not specifically address HFCs, and thus, will not be analyzed in detail. Still, the connection between the Paris Agreement and HFCs is strong, as demonstrated by President Obama's statement recognizing how simply focusing on these voluntary emissions reductions will not be enough and that aggressive, mandatory enforcement of curbing HFCs is necessary.²⁷ As such, in the later stages of the Obama Administration, and subsequent to the Paris Agreement, the United States engaged in discussions regarding the Kigali Amendment to the Montreal Protocol.

This particular amendment represents an aggressive international agreement to phase-down the use of HFCs and include them in the Montreal Protocol since they are incredibly potent greenhouse gases (yet not ozone depleting substances).²⁸ However,

26. U.N. Framework Convention on Climate Change, Adoption of the Paris Agreement art. 2, U.N. Doc. FCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015) [hereinafter Paris Agreement].

27. See Coral Davenport, *Nations, Fighting Powerful Refrigerant That Warms Planet, Reach Landmark Deal*, N.Y. TIMES (Oct. 15, 2016), <https://www.nytimes.com/2016/10/15/world/africa/kigali-deal-hfc-air-conditioners.html> [<https://perma.cc/FB6S-4XKS>]; Remarks Announcing the United States Formal Entry into the United Nations Framework Convention on Climate Change Paris Agreement in Hangzhou, China, DAILY COMP. PRES. DOC. 556 (Sep. 3, 2016), <https://www.govinfo.gov/content/pkg/DCPD-201600556/pdf/DCPD-201600556.pdf> [<https://perma.cc/SB7D-HSYN>]. Even back in 2013, President Obama and President Xi of China formally agreed to set phase-down of HFCs as an emissions priority, and in President Obama's address surrounding the Paris Agreement, he reiterated that "the Paris Agreement alone won't solve the climate crisis. But it does establish an enduring framework that enables countries to ratchet down their carbon emissions over time." *Id.*

28. UNEP, THE KIGALI AMENDMENT TO THE MONTREAL PROTOCOL: HFC PHASE-DOWN (2016), <https://multimedia.3m.com/mws/media/13659240/unep-fact-sheet-kigali-amendment-to-mp.pdf> [<https://perma.cc/NE39-HW5L>].

while the United States was represented at the 28th Meeting of the Parties to the Montreal Protocol in Kigali, Rwanda on October 15, 2016, the Trump administration refused to ratify the amendment.²⁹

C. Significant New Alternatives Program and the Clean Air Act

While there is no current movement to address HFCs in the United States under the Kigali Amendment, prior to 2016, EPA, under the Obama administration, had begun to develop and implement a national regulation to phase-down hydrofluorocarbons under authority delegated through the Clean Air Act and the Montreal Protocol, identified as the Significant New Alternatives Policy Program (SNAP).³⁰ This program garnered its authority from the Clean Air Act and the Montreal Protocol, specifically Section 612 of the Clean Air Act, which authorized the Administrator to replace Class I and Class II substances (various CFCs and HCFCs, respectively) with substances that reduce overall risks to human health and the environment.³¹ Furthermore, this Section also authorizes the Administrator to publish lists of safe alternatives, and a list of substitutes that are prohibited,³² which may be determined based off of “new information” or “changed circumstance”³³ that “may present adverse effects to human health or the environment.”³⁴ Therefore, EPA began to phase out the use of HFCs through the administrative rulemaking process.

One of the most highly-utilized HFCs within the vehicle air conditioning industry is HFC-134a, which is included within the SNAP substitutes list as “unacceptable” for vehicles with “Model

29. Editorial Board, *This Treaty Is Good for the Environment. It Might Even Be Good for Trump*, N.Y. TIMES (May 23, 2019), <https://www.nytimes.com/2019/05/23/opinion/trump-kigali-agreement.html> [<https://perma.cc/S8ZN-XD8Q>].

30. See Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program, 80 Fed. Reg. 42,870, 42,870 (July 20, 2015) (to be codified at 40 C.F.R. pt. 82); see also 40 C.F.R. §§ 82.170–82.184 (2020).

31. Clean Air Act § 612, 42 U.S.C. § 7671(k).

32. *Id.*

33. Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program, 80 Fed. Reg. at 42,876.

34. 42 U.S.C. § 7671k(c).

Year (MY) 2021, except [where] allowed under a narrowed use limit . . . through MY 2025.”³⁵ This particular man-made refrigerant is one of the most frequently used HFCs³⁶ and has a high GWP of approximately 1300, over a 100-year span, and contributes the highest level of “radiative forcing.”³⁷ Radiative forcing (RF), as defined by the IPCC, is the “change in net downward radiative flux at the tropopause after allowing for stratospheric temperatures to readjust to radiative equilibrium, while holding surface and tropospheric temperatures and state variables . . . fixed at the unperturbed values,” indicating that a high RF correlates to a stronger effect on the atmosphere and, thus, a higher detriment to climate change.³⁸ Additionally, this chemical is manufactured and distributed by Koura, once Mexichem Fluor, Inc.,³⁹ a company that specializes in fluorocarbon sales. This company brought suit against the EPA on behalf of various refrigerant industry companies as a result of the inability to manufacture and distribute HFC-134a (among others) due to the SNAP regulations and rollbacks of these particular refrigerants.

D. Discussion and Analysis of Mexichem Fluor, Inc. v. EPA in the context of Federal/State Regulation

Mexichem Fluor, Inc. and Arkema, two industry-leaders of fluorocarbon manufacturing and distribution both internationally and within the United States, brought suit against the EPA in the

35. Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program, 80 Fed. Reg. at 42,872; 40 CFR pt. 82, subpt G, app. B.

36. *What are Hydrofluorocarbons (HFCs)?*, GLOB. MONITORING LAB'Y, <https://www.esrl.noaa.gov/gmd/hats/about/hfc.html> [<https://perma.cc/G5PF-NEW5>].

37. GREENHOUSE GAS PROTOCOL, GLOBAL WARMING POTENTIAL VALUES, https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf [<https://perma.cc/ZZT2-52NC>].

38. Gunnar Myhre et al., *Anthropogenic and Natural Radiative Forcing*, in CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS 659, 665 (Thomas F. Stocker et al. eds., 2013), https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf [<https://perma.cc/982N-L9ZY>].

39. *Klea ® 134a (R-134a)*, KUORA, <https://www.klea.com/air-conditioning/r134a/> [<https://perma.cc/DNK5-DPAU>]; *Mexichem Fluor Changes Name to Koura*, COOLING POST (Sept. 10, 2019), <https://www.coolingpost.com/world-news/mexichem-fluor-changes-name-to-koura/> [<https://perma.cc/QZ7Z-8QX2>]. This company changed its name to Koura in accordance with the parent company of Mexichem changing its name to Orbia. *Id.*

D.C. Circuit Court of Appeals challenging the 2015 SNAP rule that effectively forced these companies to discontinue production of HFCs, especially HFC-134a.⁴⁰ Judge Kavanaugh (now Supreme Court Justice Kavanaugh) presided over this case and ultimately found that the EPA had overextended its authority. The Court held that the Clean Air Act did not give the agency the authority to add previously-deemed safe alternatives to the list of prohibited substitutes.⁴¹ In finding this, the Court reiterated that “EPA may only act as authorized by Congress. Here, EPA has tried to jam a square peg (regulating non-ozone depleting substances that may contribute to climate change) into a round hole (the existing statutory landscape).”⁴² As such, the Court held that, since this particular section of the Clean Air Act (Section 612, enacted as a result of the Montreal Protocol) only deals with “ozone-depleting substances” and not greenhouse gasses, there is no statutory authority for the EPA to act on a quasi-legislative function.⁴³

Furthermore, the Court also disposed of EPA’s argument that the language of the statute, specifically the word “replace,” indicates that every time a manufacturer uses a substitute instead of CFCs, they are “replacing” it over and over again.⁴⁴ Here, the Court looked to the plain meaning of “replace” in order to effectively dispose of this argument and, in analyzing EPA’s interpretation under *Chevron*, determined that “EPA’s strained reading of the term . . . contravenes the statute and thus fails at Chevron step 1.”⁴⁵ While this holding effectively vacates the 2015 SNAP Rule, in that manufacturers are not required to replace HFCs with a substitute chemical, the court did specify that its holding does not apply to manufacturers who are still currently manufacturing or utilizing CFCs.⁴⁶ In that instance, they are restricted from substituting CFCs with HFCs and must use a substitute within the updated and approved list of substitutes.⁴⁷

In the wake of the *Mexichem v. EPA* decision, the SNAP 2015 Rule was effectively vacated. As a result of this vacatur, EPA developed a guidance document to advise industry and interested

40. *Mexichem Fluor, Inc. v. EPA*, 866 F.3d 451, 460 (D.C. Cir. 2017).

41. *Id.* at 460–61.

42. *Id.* at 460.

43. *Id.*

44. *Id.* at 458–59.

45. *Id.*

46. *See id.* at 457, 459–60, 462.

47. *See id.* at 457.

parties on the outcome of this case and to clarify the uncertainty regarding the regulated field in the aftermath.⁴⁸ In doing so, EPA provided clarification regarding the court's differentiation between "product manufacturers" and "other users," specifying that since the 2015 Rule does not specify or distinguish between "manufacturer," generally, that the court's vacatur will apply to "any regulated parties" in order to dispel confusion between specific case-by-case scenarios in the interim.⁴⁹ Additionally, the EPA provides examples of potential future steps that the agency may take to address the court's vacatur, including potential regulations and the phase down of HFCs in general.⁵⁰ EPA discusses the premise of rolling out a notice and comment period within the proposed rulemaking and noted a few specific issues that may be addressed, which include specific definitions within the Code of Federal Regulations of "substitute" and "use," whether the EPA should actually distinguish between product manufacturers and general users regulated by the rule (as the court specified), whether the regulation applies to a specific facility's use of a particular chemical or if the chemical in and of itself is restricted, and whether HFCs can be regulated under other types of legislation within the United States, such as the Toxic Substances Control Act (TSCA), or through other Clean Air Act programs, such as under National Ambient Air Quality Standards (NAAQS) or the Prevention of Significant Deterioration (PSD) program.⁵¹

As of the date of the publication of this Note, EPA has not addressed the remand with a notice and comment rulemaking, and an additional docket has not been established in order to do so.⁵² As a result of this vacatur as well as the fact that EPA has been stagnant on the notice-and-comment rulemaking and the Trump administration did not ratify the Kigali amendment, various states

48. Protection of Stratospheric Ozone: Notification of Guidance and a Stakeholder Meeting Concerning the Significant New Alternatives Policy (SNAP) Program, 83 Fed. Reg. 18,431, 18,432 (Apr. 27, 2018) (to be codified at 40 C.F.R. pt. 42).

49. *Id.* at 18,433–34 (specifies that since the court vacated and remanded back to the EPA in order to promulgate a refined rule in accordance with the holding, that the guidance is only applicable as a short-term clarification, until a proper notice and comment period is conducted).

50. *Id.* at 18,435–36.

51. *Id.*

52. See *SNAP Regulations*, EPA, <https://www.epa.gov/snap/snap-regulations> [<https://perma.cc/C7GS-ML5N>] (Dec. 11, 2020).

have started to take matters into their own hands and regulate HFCs at a local-level.

III. BRIEF DISCUSSION OF THE U.S. CLIMATE ALLIANCE AND STATE-LEVEL REGULATION OF HFCS

A. The U.S. Climate Alliance—Brief Introduction and Analysis

The U.S. Climate Alliance is a group of approximately 24 states within the United States that are like-minded in the sense that they all are individually striving to achieve emissions reductions consistent with the Paris Agreement.⁵³ U.S. Climate Alliance states, including New York and California—two states historically on the forefront of energy and climate initiatives—have joined together to attempt to create cohesiveness throughout the U.S. in regulation and phase-down of hydrofluorocarbons.⁵⁴ Furthermore, between 2005 and 2016, U.S. Climate Alliance states have enjoyed economic benefits and experienced an average of 14% reduction in emissions, compared to the national average of 11%.⁵⁵

In regulating HFCs, the U.S. Climate Alliance has issued a guidance document titled, “From SLCP Challenge to Action,” which effectively lays the groundwork for U.S. Climate Alliance states to implement short-lived climate pollutant (including HFCs) legislation, regulations, and guidance documents in order to continue with the overarching goal of reducing current SLCP levels by 40–50% by 2030.⁵⁶ The framework lays out many ways in which to implement HFC regulation at the state-level, which includes adopting the SNAP regulations, providing incentives to the phase-down of HFCs, and supporting the ratification of the Kigali

53. U.S. CLIMATE ALL., *supra* note 2.

54. *See id.*

55. *Id.*

56. U.S. CLIMATE ALL., FROM SLCP CHALLENGE TO ACTION: A ROADMAP FOR REDUCING SHORT-LIVED CLIMATE POLLUTANTS TO MEET THE GOALS OF THE PARIS AGREEMENT 2 (Sept. 2018), https://static1.squarespace.com/static/5a4cfbfe18b27d4da21c9361/t/5b9a9cc1758d466394325454/1536859334343/USCA+SLCP+Roadmap_final+Sept2018.pdf [https://perma.cc/NV8C-5H9X] [hereinafter SLCP Challenge]. The 40–50% goal will only take into consideration the U.S. Climate Alliance states. *Id.*

Amendment to the Montreal Protocol.⁵⁷ However, while the guidance document states that some of these options can be completed because the Clean Air Act explicitly allows states to “set more stringent regulations than the federal government,”⁵⁸ this may be in question after the revocation of California’s Clean Air Act waiver under the Trump Administration, as it is unclear whether federal law preempts or otherwise constrains state authority to regulate HFCs in this manner.⁵⁹ While this revocation must be taken into consideration, multiple U.S. Climate Alliance states have already implemented, or intend to implement, versions of their own state-level regulations of HFCs.⁶⁰

B. State-Regulation of Hydrofluorocarbons—California

California’s legislature passed Senate Bill 1013, which effectively added Section 39734 to the California Health and Safety Code as well as Division 45 to the Public Resources Code, which relates to Greenhouse Gases.⁶¹ This bill was signed into law on September 13, 2018, and in doing so, California prohibited fluorinated chemicals while establishing a Fluorinated Gases Emissions Reduction Program, which aims to “promote the adoption of new refrigerant technologies to achieve short- and long-term climate benefits, energy efficiency, and other cobenefits, as specified,” while including the implementation of an incentive program,⁶² which is also suggested in the U.S. Climate Alliance Framework document.⁶³ Additionally, this particular piece of legislation focuses on the restriction of HFCs specifically used in refrigeration and foam end-uses; however, it does not specify

57. *Id.* at 20.

58. *Id.*

59. See Juan Carlos Rodriguez, *Trump Admin. Strips Calif. of Auto Emissions Authority*, LAW360 (Sept. 19, 2019), <https://www.law360.com/articles/1200644> [<https://perma.cc/J97H-K4JM>]. See also discussion *infra* Part IV.

60. U.S. CLIMATE ALL., *supra* note 56, at 20. While only California and Washington are discussed within this note, there are multiple other states within the U.S. Climate Alliance that are currently working to implement their own regulations, legislation, or guidance documents, *Id.*, but were not included in the interest of brevity.

61. S. 1013, 2018 Leg., Reg. Sess. (Cal. 2018).

62. *Id.*

63. U.S. CLIMATE ALL., *supra* note 56, at 20.

whether the refrigeration encompasses air conditioning within units and/or within vehicles.⁶⁴

As such, this will be analyzed in the context of California's newly revoked emissions waiver under the Clean Air Act, and whether vehicular refrigerants within mobile air conditioners can be regulated at the state-level, taking into consideration preemption and dormant commerce clause issues. Part IV will address this in further detail, and provide the analysis dictated above, while Part V will discuss the next steps that state-governments can take with California's Clean Air Act emissions waiver revoked.

C. State-Regulation of Hydrofluorocarbons—Washington

Washington's bill, on the other hand, is identified as Engrossed Second Substitute House Bill 1112.⁶⁵ This bill was proposed by Washington's House of Representatives on March 1, 2019, passed by the state's Senate on April 22, 2019, and finally became effective on July 28, 2019.⁶⁶ Similar to California's bill, Washington took the initiative to address HFCs at the state level instead of waiting for Congress to clarify the scope of EPA's authority to regulate HFCs. Therefore, the main thrust of Washington's HFC bill focuses on the "transition to the use of less damaging hydrofluorocarbons or suitable substitutes . . . in a manner similar to the regulations that were adopted by the environmental protection agency."⁶⁷ The regulations referred to within Washington's bill are the SNAP regulations and program that were effectively vacated by the U.S. Supreme Court case of *Mexichem Fluor, Inc., v. EPA*.⁶⁸

Similar to California's legislation, Washington focuses on end-uses that do not include new light duty vehicles, including propellants, polyurethane applications and spray foams, supermarket systems, residential consumer refrigeration products, and centrifugal chillers, among other examples.⁶⁹ However, unlike California, Washington does include within its regulations a

64. See Cal. S. 1013.

65. H.R. 1112, 66th Leg., Reg. Sess. (Wash. 2019).

66. *Id.*

67. *Id.*

68. Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program, 80 Fed. Reg. 42,870, 42,870 (Jul. 20, 2015) (to be codified at 40 C.F.R. pt. 82).

69. Wash. H.R. 1112.

provision that explicitly refers to “new light duty vehicles,” and reads, “[w]ithin twelve months of another state’s enactment or adoption of restrictions on substitutes applicable to new light duty vehicles, the department may adopt restrictions applicable to the sale, lease, rental, or other introduction into commerce by a manufacturer of new light duty vehicles consistent with the restrictions identified in appendix B, Subpart G of [the SNAP regulations].”⁷⁰ In theory, while this is particularly exciting because it allows Washington to adopt the regulatory scheme of SNAP through another state’s legislation, it is also concerning, at this point in time, due to the revocation of California’s emission waivers.

Prior to the emission revocation, the more important legal issue to understand and analyze regarding the efficacy of regulation of HFCs in vehicle air conditioners was the Dormant Commerce Clause, due to the inherent nature of motor vehicles being able to cross state lines. Now, states have to contend with preemption issues since EPA has explicitly reserved GHG vehicle emissions to themselves, removing the carve-out of more stringent standards that California has capitalized on for decades.⁷¹

EPA’s waiver revocation aside, another interesting facet of the bill is the requirement of manufacturers to “disclose the substitutes used in its products or equipment.”⁷² Furthermore, the bill continues to explain what particular form the disclosure must take, specifying that the disclosure must be, “[a] label on the equipment or product. The label must meet requirements designated by the department by rule. To the extent feasible, the department must recognize existing labeling that provides sufficient disclosure of the use of substitutes in the product or equipment.”⁷³ This language is also significant from a legal analysis standpoint because, not taking into consideration the added dimension that the California emissions waiver revocation instills, labeling in and of itself can invoke both preemption and dormant commerce clause analyses as well as extraterritoriality issues. That is, the legislation may have “the ‘practical effect’ of

70. *Id.*

71. 42 U.S.C. § 7543(b)(1).

72. Wash. H.R. 1112.

73. *Id.*

regulating commerce occurring wholly outside that State's borders" and thus be in violation of the Commerce Clause.⁷⁴

Lastly, the Washington bill includes guidelines for monetary reparations when violations occur.⁷⁵ Again, as explained above in the analysis of California's HFC legislation, other states in conjunction with the U.S. Climate Alliance have also made impressive strides to utilize state power in regulating HFCs. However, as of the date of this Note, there are no states within the U.S. Climate Alliance that have included the regulation of greenhouse gas emissions from vehicles, light duty or otherwise, in their legislation.⁷⁶ As such, regulation of HFCs within vehicles will be analyzed in detail in the next section, followed by a discussion of California's emissions waiver and subsequent revocation.

IV. EPA REVOCATION OF CALIFORNIA'S CLEAN AIR ACT EMISSIONS WAIVER AND ITS EFFECT ON STATE-LEVEL HFC REGULATION IN VEHICLES

A. California Emissions Waiver—History and Background in the Context of the Clean Air Act

Since the early 1940s, California has been forced to deal with severe air quality issues as a result of surges in population, an explosion of vehicular usage, a niche weather scheme, and unique geography. These factors combined dangerously in 1943, when visibility was barely three blocks in downtown Los Angeles.⁷⁷ This eventually led to the formation of various air quality committees, boards, and scientific initiatives to determine the root cause of the California "smog."⁷⁸ The cause of the problem was determined initially to be Nitrogen oxides (NO_x), produced by the rapidly

74. *Healy v. Beer Inst.*, 491 U.S. 324, 332 (1989); U.S. CONST. art. I, § 8, cl. 3. *See infra* Part IV and accompanying text.

75. Wash. H.R. 1112.

76. *See, e.g.*, S. 1013, 2018 Leg., Reg. Sess. (Cal. 2018); Wash. H.R. 1112; Assemb. 5583, 218th Leg., Reg. Sess. (N.J. 2020) (clarifying that if another state enacts restrictions applicable to new light duty vehicles, then New Jersey can adopt these restrictions).

77. *History*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/about/history> [<https://perma.cc/7PWW-RW7K>].

78. *Id.*

increasing vehicular internal combustion processes.⁷⁹ However, as the science developed, many other types of noxious chemicals were identified within the emissions from vehicle tail pipes, and, due to the factors described above, California had to respond.

Therefore, in 1967, prior to the enactment of the federal Clean Air Act, the California Air Resources Board (CARB) was established to address smog and air pollution at a local level.⁸⁰ Also in 1967, the Federal Air Quality Act was passed.⁸¹ This Act included a waiver provision that allowed California to enact and enforce emission standards for new motor vehicles that are at least as protective, in the aggregate, as federal government standards.⁸² This carve-out was only included for California because of their unique situation in regards to smog and heavy air pollution, and due to the fact that prior to the enactment of the Federal Air Quality Act of 1967, CARB had already initiated its own state-level emissions guidelines.⁸³ This policy waiver has carried through from the Federal Air Quality Act of 1967 to the Clean Air Act, originally codified in 1969, and up until the present day version of the Clean Air Act.⁸⁴

Furthermore, almost as important as the carve-out for California's emission regulations is Section 177 of the Clean Air Act, which gives other states the authority to adopt California's emissions guidelines and restrictions as long as they are more stringent than the federal government's guidelines.⁸⁵ This is an extremely important provision to the Clean Air Act and the nation's emissions as a whole because approximately fourteen states, including California, have adopted the more stringent emissions guidelines that CARB has set, which, prior to the waiver revocation, also includes restricting and dialing back greenhouse gas emissions from vehicular tail pipes.⁸⁶

79. *Id.*

80. *Id.*

81. *Id.*

82. U.S. GOV'T ACCOUNTABILITY OFF., GAO-09-249R, CLEAN AIR ACT: HISTORICAL INFORMATION ON EPA'S PROCESS FOR REVIEWING CALIFORNIA WAIVER REQUESTS AND MAKING WAIVER DETERMINATIONS 1 (2009).

83. *Id.*

84. 42 U.S.C. § 7543(b).

85. 42 U.S.C. § 7507.

86. CAL. AIR RES. BD., STATES THAT HAVE ADOPTED CALIFORNIA'S VEHICLE STANDARDS UNDER SECTION 177 OF THE FEDERAL CLEAN AIR ACT (Aug. 2019),

Additionally, throughout all of these years, EPA and the federal government have never attempted to revoke California's emissions waiver. A waiver preemption request was only denied once, in 2005, when California initially attempted to include greenhouse gas emitting chemicals within the fuel pipe emissions under the waiver.⁸⁷ The EPA administrator, under Section 209(b), must not issue a waiver if it is found that: "(1) the state's protectiveness determination was arbitrary and capricious, (2) the state's standards are not needed to meet 'compelling and extraordinary conditions,' or (3) the state's standards are inconsistent with certain Clean Air Act provisions related to technical feasibility and lead time to manufacturers."⁸⁸ In a decision published to the Federal Register in 2008, the EPA initially denied California's waiver;⁸⁹ however, upon reconsideration, they reversed after opening up an additional public comment period⁹⁰ and re-evaluating the greenhouse gas emissions portion of the waiver against the backdrop of *Massachusetts v. EPA*.⁹¹ Nevertheless, EPA published a final rule in September 2019 revoking California's authority to receive emissions waivers under the Clean Air Act for the foreseeable future.⁹² This is uncharted territory and has never been done or contemplated before.

<https://ww2.arb.ca.gov/sites/default/files/2019-03/177-states.pdf>
[<https://perma.cc/RSP8-UVNR>]. See California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption, 78 Fed. Reg. 2112 (Jan. 9, 2013).

87. California State Motor Vehicle Pollution Control Standards; Within the Scope Determination for Amendments to California's Motor Vehicle Greenhouse Gas Regulations; Notice of Decision, 76 Fed. Reg. 34,693, 34,693 (June 14, 2011).

88. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 82, at 1.

89. California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption, 73 Fed. Reg. 12,156 (Mar. 6, 2008).

90. California State Motor Vehicle Pollution Control Standards; Within the Scope Determination for Amendments to California's Motor Vehicle Greenhouse Gas Regulations; Notice of Decision, 76 Fed. Reg. at 34,693.

91. California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption, 74 Fed. Reg. 32,744, 32,745, 32, 766 (July 8, 2009) (denial reversed, taking into consideration decision in *Massachusetts v. EPA*, 549 U.S. 497 (2007)).

92. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, 84 Fed. Reg. 51,310, 51,310 (Sept. 27, 2019) (to be codified at 40 C.F.R. pts. 85, 86 and 49 C.F.R. pts. 531, 533).

B. EPA's Revocation of California's Clean Air Act Emissions Waiver

On September 19, 2019, EPA Administrator Andrew Wheeler and the acting Administrator of the National Highway Traffic Safety Administration (NHTSA), James C. Owens, promulgated the “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (“One National Program Rule”).” The Final Rule primarily serves two functions: 1) to revoke California’s emissions waiver under Section 209 of the Clean Air Act; and 2) to finalize NHTSA’s amended new greenhouse gas emissions standards and Corporate Average Fuel Economy (CAFE) standards for nationwide and nationally-applicable fuel economy standards.⁹³ This effectively preempts state programs already in place that previously followed California’s more stringent GHG tailpipe emissions standards and ZEV mandates.⁹⁴ In revoking California’s waiver, EPA and NHTSA continued the Trump Administration’s trend of strategic regulatory roll-backs of Obama administration climate change mitigation and environmental administrative programs and initiatives.⁹⁵

While not the issue at hand in this particular case study, it is interesting to note that this particular revocation of California’s waiver is currently in the preliminary stages of a hotly contested lawsuit, which will likely be litigated for the foreseeable future.⁹⁶ The State of California and approximately twenty-two states and four cities brought suit against the EPA, DOT, and NHTSA (and their respective Administrator’s/Secretaries) in the U.S. District Court of the District of Columbia, seeking judicial review of the Final Rule.⁹⁷ The Final Rule itself explains the basis for the authority of the EPA to revoke California’s waiver; essentially, it boils down to

93. *Id.*

94. *Id.*

95. See Maegan Vazquez, *Trump’s Dismantling of Environmental Regulations Unwinds 50 Years of Protections*, CNN POLITICS (Jan. 25, 2020), <https://www.cnn.com/2020/01/25/politics/trump-environmental-rollbacks-list/index.html> [https://perma.cc/4RRC-RARF]; see also *Tracking Deregulation in the Trump Era*, BROOKINGS (Sept. 9, 2020), <https://www.brookings.edu/interactives/tracking-deregulation-in-the-trump-era/> [https://perma.cc/5BNS-MX6B].

96. Juan Carlos Rodriguez, *Calif., Allies Sue EPA Over Clean Air Act Waiver Rescission*, LAW360 (Nov. 15, 2019), <https://www.law360.com/articles/1220493/calif-allies-sue-epa-over-clean-air-act-waiver-rescission> [https://perma.cc/F6C9-ZEW8].

97. *Id.*

the EPA's interpretation that California does not have the requisite "compelling and extraordinary conditions" for the waiver in relation to the GHG emissions, due in part to Administrator Wheeler's distinction between the "uniquely-bad" local issues of smog and the global and world-wide problem of greenhouse gasses contributing to climate change.⁹⁸ This Final Rule justifies the above distinction by finding that, "even if California does have compelling and extraordinary conditions in the context of global climate change, California does not 'need' these standards [under CAA section 209(b)(1)(B)] because they will not meaningfully address global air pollution problems of the sort associated with GHG emissions."⁹⁹

This then brings us back to state-level regulations and what power the states still retain after this Final Rule was promulgated. In the next couple of sections, this Note analyzes whether, and to what extent, states can regulate HFCs within vehicles, taking into consideration preemption, dormant commerce clause, and extraterritoriality issues. Following these analyses, I will provide a framework and examples of federal and state actors who are pushing the envelope on regulating HFCs and SLCPs and what the future may hold in regard to this highly contentious and relevant issue.

C. State-Level Regulation of HFCs within Vehicle Refrigerants—Preemption Issues

The idea of preemption can be traced back to our founding fathers and Article VI of the United States Constitution, which states, "This Constitution, and the laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding."¹⁰⁰ Over the years, this single line has been repeatedly litigated. As such, the case law is applicable to many different cases and fact patterns. In the context of state-level regulation of HFCs, and analyzing preemption in this context, there are three separate types of preemption that must be discussed:

98. Rodriguez, *supra* note 59.

99. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One, 84 Fed. Reg. at 51,347.

100. U.S. CONST. art. VI, cl. 2.

express preemption, conflict preemption, and field preemption.¹⁰¹ Express preemption occurs when Congress (or the regulating agency) includes a specific provision within the statute or regulation that “expressly” details the bounds of the preemption and how it applies to state statutes and regulations.¹⁰² Express preemption provisions typically employ different types of commonly-used language that will tip off the reader that an express preemption clause may exist, such as “related to,”¹⁰³ “covered,”¹⁰⁴ “in addition to, or different than,”¹⁰⁵ and, “requirements,” “laws,” “regulations,” and “standards.”¹⁰⁶

In addition to express preemption, preemption provisions can be read into statutes and regulations, referred to as “implied” examples of preemption. The Supreme Court has recognized two different types of implied preemption: conflict preemption and field

101. *Hillsborough Cnty. Fla. v. Automated Med. Labs, Inc.* 471 U.S. 707, 713 (1985); *Bedoya v. Am. Eagle Express*, 914 F.3d 812, 817 (3d Cir. 2019); Thomas O. McGarity, *Trumping State Regulators and Juries*, AM. PROSPECT (Apr. 14, 2017), <https://prospect.org/power/trumping-state-regulators-juries/> [<https://perma.cc/MKB9-WQCP>].

102. *Altria Grp., Inc., v. Good*, 555 U.S. 70, 76–77 (2008); see JAY B. SYKES & NICOLE VANATKO, *FEDERAL PREEMPTION: A LEGAL PRIMER 2* (2019) (explaining that express preemption occurs when a “federal statute or regulation contains explicit preemptive language”).

103. See, e.g., 29 U.S.C. § 1144(a) (statute’s preemption clause mandating that ERISA’s laws preempt all state laws that “relate to” regulated employee benefit plans”); 49 U.S.C. § 41713(b)(1) (Airline Deregulation Act prohibiting states from enacting laws “relating to a price, route, or service of an air carrier”).

104. E.g., *CSX Transp. Inc. v. Easterwood*, 507 U.S. 658, 664–65 (1993) (allowing states to enact laws related to railroad safety under the Federal Railroad Safety Act until expressly preempted by federal regulations “covering the subject matter” of such laws).

105. E.g., 7 U.S.C. § 136v(b) (A State “shall not impose or continue in effect any requirements for labeling or packaging in addition to or different from those required under this subchapter.”); *id.* § 467e (“Marking, labeling, packaging, or ingredient requirements . . . in addition to, or different than, those made under this subchapter may not be imposed by any State”); 21 U.S.C. § 1052(b) (“Requirements within the scope of this chapter with respect to premises, facilities, and operations of any official plant which are in addition to or different than those made under this chapter may not be imposed by any State”).

106. E.g., 46 U.S.C. § 4306 (“[A] state . . . may not establish, continue in effect, or enforce a law or regulation establishing a recreational vessel or associated equipment performance or other safety standard or imposing a requirement for associated equipment . . . that is not identical to a regulation prescribed under . . . this title.”); 49 U.S.C. § 30103(b)(1) (“When a motor vehicle standard is in effect under this subchapter, a State . . . may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this subchapter.”).

preemption.¹⁰⁷ Conflict preemption occurs in situations where a federal statute or regulation and a corresponding state-level statute or regulation cannot be implemented or effectively followed without contradicting or conflicting with each other.¹⁰⁸ Field preemption exists in situations where “state law occupies a ‘field reserved for federal regulation,’ leaving no room for state regulation,”¹⁰⁹ such as federal immigration law.¹¹⁰ Additionally, in order for preemption to apply in the first place, a preemption analysis must first address the “presumption against preemption,”¹¹¹ which requires that, “if confronted with two plausible interpretations of a statute, we ‘have a duty to accept the reading that disfavors pre-emption.’”¹¹² However, this analysis has been challenged in various Supreme Court cases recently, and, as such, the law is not as clear as to when this presumption applies, especially in the context of “fields traditionally regulated by the federal government.”¹¹³ In the context of the regulation of greenhouse gasses, and specifically for this particular analysis of HFCs, I will focus more on the substantive issues relating to the express and implied preemption prongs. Local, state, and federal government have all historically regulated environmental and energy-related issues, and it is uncertain

107. *E.g.*, *Gade v. Nat’l Solid Wastes Mgmt. Ass’n*, 505 U.S. 88, 98 (1992); *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947) (holding that federal law preempts state law where Congress has manifested an intention that the federal government occupy an entire field of regulation); *Arizona v. United States*, 567 U.S. 387, 401–02 (2012) (holding federal immigration law preempts field of alien registration).

108. *Gade*, 505 U.S. at 108; *Fla. Lime & Avocado Growers v. Paul*, 373 U.S. 132, 142–43 (1963) (finding implied conflict preemption where it is impossible for regulated parties to comply with both state and federal laws); *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941) (finding federal law impliedly preempts state laws that pose an obstacle to full purpose and objectives of Congress); *Holk v. Snapple Beverage Corp.*, 575 F.3d 329, 339 (3d Cir. 2009).

109. *Holk*, 575 F.3d at 336 (quoting *United States v. Locke*, 529 U.S. 89, 111 (2000)).

110. *Arizona*, 567 U.S. at 402.

111. *Rice*, 331 U.S. at 230 (“[W]e start with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress”); *Holk*, 575 F.3d at 339.

112. *Holk*, 575 F.3d at 334.

113. *See, e.g.*, *United States v. Locke*, 529 U.S. 89, 108 (2000); *Wyeth v. Levine*, 555 U.S. 555, 581 (2009).

whether and in what form the aforementioned presumption might apply.¹¹⁴

Since California began regulating its emissions prior to the passage of the Clean Air Act, preemption questions began to arise. In regulating HFCs under the carve-out emissions' waiver of the Clean Air Act, the express preemption provision states that “[n]o State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part.”¹¹⁵ This is an express preemption and specifically designated as an example of a “related to” provision. While this is a pretty clear example of the federal agency’s purpose and intent to regulate this field and, thus preempt state actors from setting standards for vehicle emissions, some may argue that the regulation of air conditioning units in vehicles (and thus HFCs in vehicles) would not be preempted because it does not directly involve the emissions from motor vehicles.

The abovementioned express preemption provision most clearly applies to emissions from the *tailpipes* of vehicles, and the particular GHGs emitted from said tailpipes. Air conditioning chemicals are a completely separate entity from the chemicals most associated with tailpipes, such as those burned off and emitted through the use of petroleum and oil, and thus HFCs would not likely directly involve emissions from motor vehicles. However, a counter argument to this point is that the regulation of GHGs within air conditioning units in vehicles indirectly influence and involve the emissions from tailpipes because the fuel efficiency of cars can be directly related to the energy load that air conditioners place on the car itself. Therefore, regulating and/or changing the type of refrigerant or type of system utilized within the vehicles can influence the emissions of chemicals from the tailpipe. As such, even though HFCs would not likely be included under the “tailpipe emitters” category, the regulation of HFCs still will likely be “related to” the control of emissions from tailpipes, thus preempting state regulatory agencies from setting standards.

114. See generally *State and Local Regulation of Climate Change*, REGUL. REV. (Feb. 19, 2018), <https://www.theregreview.org/2018/02/19/state-local-regulation-climate-change/> [<https://perma.cc/8F5H-JJBF>]; *Federal Action on Climate*, CTR. FOR CLIMATE & ENERGY SOLS., <https://www.c2es.org/content/federal-action-on-climate/> [<https://perma.cc/7MVG-CV33>].

115. 42 U.S.C. § 7543(a).

However, as set out in Part IV(B), California's emissions preemption waiver allows the state to apply to the Administrator of the agency enforcing the Act (here, EPA) for waiver of the preemption provision as long as the state standards set are "at least as protective of public health and welfare as applicable Federal standards," which is determined by the state itself (here, the state of California and CARB).¹¹⁶ Therefore, California is expressly allowed to regulate vehicle emissions at a standard more stringent than the federal government's, and other states around the country can then adopt California's standards, fourteen of which are currently doing so.¹¹⁷

However, now that EPA has revoked California's emissions preemption waiver, the question becomes whether all of the programs, regulations, initiatives, and state statutes that California has implemented (and thirteen other states have adopted and implemented) are thus preempted by the new federal emissions standards as defined in CAFE and administered by NHTSA.¹¹⁸ This analysis strictly focuses on the regulation of HFCs within vehicles and, currently, no state has implemented vehicular language into its HFC and GHG emissions regulations or statutes based on California's emissions waiver.¹¹⁹ Accordingly, the waiver is not as applicable to this analysis. Still, this is a pressing matter, and whether EPA has the authority to revoke California's waiver will likely be resolved in litigation. Keeping this in mind, the first analysis that follows is conducted under the assumption that a court will reverse the waiver revocation, followed by an analysis that the waiver will stand.

First, if the revocation waiver of California's emissions exemption stands, it is likely that any forthcoming HFC state-standards that attempt to regulate vehicle air conditioners will be

116. 42 U.S.C. § 7543(b); *About*, CAL. AIR RES. BD., <https://ww2.arb.ca.gov/about> [<https://perma.cc/VJE2-YYBF>].

117. See discussion *supra* Part IV.A.

118. See 49 U.S.C. § 32919(a) (EPCA preemption language regarding fuel economy standards); see also William C. Schillaci, *EPA's Repeal of California Waiver Sets Up Legal Contest*, EHS DAILY ADVISOR (Sept. 24, 2019), <https://ehsdailyadvisor.blr.com/2019/09/epas-repeal-of-california-waiver-sets-up-legal-contest/> [<https://perma.cc/3HFU-TGHP>].

119. See U.S. CLIMATE ALL., *supra* note 2 (noting the absence of language relating to regulation of vehicular end uses among list of Climate Alliance states with HFC regulations).

preempted by either Section 209 of the Clean Air Act¹²⁰ or the fuel economy standards preemption section of the Energy Policy and Conservation Act of 1975 (EPCA).¹²¹ As enumerated above, Section 209 of the Clean Air Act would likely apply through conflict preemption because, even though not emitted through vehicle tailpipes when the air conditioners they are utilized in are leaky or otherwise failing, HFCs are still indirectly “related to” the emissions of GHGs through vehicle tailpipes due to the effect that refrigerants and air conditioning systems have on fuel efficiency and thus tailpipe emissions.

As for the fuel economy standards of the EPCA, the particular preemption language that applies here is outlined as follows:

[w]hen 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 this chapter.¹²²

As discussed above, this is an express preemption and is specifically designated as an example of a “relating to” provision. However, unlike the Clean Air Act provisions, this deals strictly with laws or regulations relating to fuel economy standards rather than emissions relating to any chemicals that are emitted from the tail pipes of vehicles. In turn, GHGs that could potentially be included under this provision are those that are byproducts of the burning of fuel specifically such as carbon dioxide.¹²³ However, HFC regulations or laws would likely be preempted under this statute as they are related to the indirect emissions results that air conditioning regulations can have on fuel efficiency and inherent fuel emissions. Thus, if the waiver stands, direct standard-setting for emissions of HFCs from vehicle air conditioners will likely be preempted by the federal government under the provision of the CAA and EPCA. However, this is not to say there are no alternatives.¹²⁴

120. 42 U.S.C. § 7543(b)(1).

121. 49 U.S.C. § 32919.

122. *Id.* § 32919(a) (emphasis added).

123. U.S. DEP’T OF TRANSP. & U.S. EPA, FACT SHEET: EPCA PREEMPTION, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/fact_sheet_-_epca_preemption_final_clean_080218_v1-tag.pdf [<https://perma.cc/JQ2L-SWQE>].

124. See discussion *infra* Part V.

Second, if the waiver of California's emissions exemption is reversed, it is a much closer question as to whether the state-level regulation of vehicular HFCs would be preempted by federal law. Prior to California's waiver being revoked, both California and Washington passed legislation regarding the regulation of HFCs in refrigerants, and neither addressed HFCs within vehicle air conditioners.¹²⁵ One potential reason for this may be due to the requirement of labeling of chemicals within vehicular air conditioning systems.¹²⁶ The source of this labeling requirement is the CAA provisions giving effect to the Montreal Protocol, specifically Title VI, which was amended and added in 1990, and Sections 611 and 612.¹²⁷ Section 611 details the labeling requirements for the unacceptable ozone depleting chemicals, stating that products containing the said chemicals must contain the following visible labeling: "Warning: Manufactured with [insert name of substance], a substance which harms public health and environment by destroying ozone in the upper atmosphere."¹²⁸ Section 612 details the Safe Alternatives Policy, and provides the EPA Administrator the authority to "publish a list of (A) the substitutes prohibited under this subsection for specific uses and (B) the safe alternatives identified under this subsection for specific uses."¹²⁹ EPA has promulgated various regulations in accordance with the authority granted under this statute that detail labeling requirements and conditions of use for the safe alternatives, including HFCs.¹³⁰ For example, the regulations still currently in effect regarding car manufacturers and refrigerant manufacturers labeling of HFCs, particularly HFC-134a, detail a specific set of standards and specifications for how these particular chemicals must be labeled,

125. See H.R. 1112, 66th Leg., Reg. Sess. (Wash. 2019); S. 1013, 2018 Leg., Reg. Sess. (Cal. 2018).

126. *Unique Fittings & Label Colors for MVAC*, EPA, <https://www.epa.gov/mvac/unique-fittings-label-colors-mvac-refrigerants> [<https://perma.cc/7DF9-6LYH>] (Oct. 4, 2017).

127. *Ozone Protection under Title VI of the Clean Air Act*, EPA, <https://www.epa.gov/ozone-layer-protection/ozone-protection-under-title-vi-clean-air-act> [<https://perma.cc/94AN-CMW4>] (Oct. 4, 2017); *Labeling Ozone-Depleting Products*, EPA, <https://www.epa.gov/ods-phaseout/labeling-ozone-depleting-products> [<https://perma.cc/G64V-YYQE>] (Oct. 14, 2020).

128. 42 U.S.C. § 7671j(d)(1).

129. *Id.* § 7671k(c).

130. See 40 C.F.R. §§ 82.100–82.124 (2020).

including a particular color scheme and set of warnings and disclosures.¹³¹

Therefore, if a state were to regulate HFCs within vehicles, which would inherently require labeling similar to Washington's labeling requirements of stationary refrigerant sources,¹³² a manufacturer may have to attempt to comply with two sets of labeling requirements and regulations, one state and one federal, thereby invoking preemption issues.

As discussed above, there are different types of preemption to consider. In this narrow hypothetical, it is likely that only implied conflict preemption would be invoked. There is no explicit federal provision that would forestall state regulations from regulating HFCs, specifically in the context of labeling of HFCs. Therefore, this would not likely bring into question express preemption. Furthermore, field preemption would not likely be invoked. Field preemption applies when there is a demonstration that Congress left no room for states to regulate particular matters.¹³³ Additionally, the state law must occupy a "field reserved for federal regulation,"¹³⁴ where the "federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject."¹³⁵

In *Holk v. Snapple Beverage Corp.*, the Third Circuit reversed the District Court's holding that field preemption applied to a dispute between labeling requirements under the Food and Drug Act (FDA) and state law labeling requirements.¹³⁶ The Court found that even though the FDA has a comprehensive and vast regulatory scheme regarding food and drug laws and labeling requirements, "we are reluctant to find field preemption predicated solely on the comprehensiveness of federal regulations," and the "mere existence of a federal regulatory scheme . . . does not by itself imply preemption of state remedies."¹³⁷ This is similar to the facts analyzed here. While the Clean Air Act is an incredibly comprehensive and vast regulatory scheme, its main purpose is to regulate air emissions from stationary

131. *Id.* §§ 82.106, 82.108, 82.110, 82.114.

132. H.R. 1112, 66th Leg., Reg. Sess. (Wash. 2019).

133. *Holk v. Snapple Beverage Corp.*, 575 F.3d 329, 336 (3d Cir. 2009).

134. *United States v. Locke*, 529 U.S. 89, 111 (2000).

135. *English v. Gen. Elec. Co.*, 496 U.S. 72, 79 (1990).

136. *Holk*, 575 F.3d at 339.

137. *Id.*

and mobile sources,¹³⁸ which differs from the Food and Drug Act in that labeling is a major requirement and purpose of the Food and Drug Act.¹³⁹ Here, labeling is simply an offshoot of particular requirements for a very specified, very minute portion of the Clean Air Act. In *Holk*, the Third Circuit still held that field preemption did not apply, even though labeling requirements are so pervasive and important throughout the Act.¹⁴⁰ Therefore, as labeling requirements simply do not rise to the same level within the Clean Air Act, it follows that field preemption would likely not bar the states from regulating and imposing labeling requirements on the HFC manufacturers.

However, conflict preemption will likely bar state regulations. Conflict preemption exists where state law “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress”¹⁴¹ or “where compliance with both federal and state regulations is a physical impossibility.”¹⁴² Here, the state regulation would likely make complying with the federal regulation a physical impossibility. The labeling requirements for HFC-134a are from the SNAP regulations, which utilizes HFC-134a as an accepted substitute for ozone-depleting chemicals.¹⁴³ Thus, the labeling requirements that the state regulation would impose would effectively attempt to remove the HFCs from service and warn the consumer that they are present within the car or that the HFCs have been removed and are no longer utilized. It would be a physical impossibility to include this abovementioned type of labeling with federal requirements that *expressly* allow HFC-134a to be utilized and, in fact, pushes it as a substitute for ozone-depleting chemicals. As such, looking at the regulation of HFCs in mobile sources (namely light duty vehicles), it is likely that state regulation may still be preempted by the federal regulations and the Clean Air Act, even if the California Clean Air Act waiver revocation is reversed in court.

138. *Summary of the Clean Air Act*, EPA, <https://www.epa.gov/laws-regulations/summary-clean-air-act> [<https://perma.cc/49N2-EEHH>] (Aug. 6, 2020).

139. *See Holk*, 575 F.3d at 331.

140. *Id.* at 338.

141. *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941).

142. *Fla. Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142–43 (1963).

143. 40 C.F.R. § 82.152 (including hydrofluorocarbons in the list of possible refrigerant substitutes for class I or II ozone-depleting substance).

D. State-Level Regulation of HFCs within Vehicle Refrigerants—Dormant Commerce Clause Issues

The Commerce Clause of the United States Constitution states that “Congress shall have Power to . . . regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.”¹⁴⁴ However, as Chief Justice John Marshall explained in *Gibbons v. Ogden*, referring to the power that the framers granted to the federal government in certain provisions of the Constitution (here, namely the power to “regulate Commerce . . . among the several states”¹⁴⁵), “power can never be exercised by the people themselves, but must be placed in the hands of agents, or lie dormant.”¹⁴⁶ Effectively, this one line sets the framework for the idea that the Commerce Clause, while granting power to the federal government to regulate commerce, also effectively restrains the states from regulating commerce among states, “even [with] those parts of the national economy that Congress has not regulated—where federal power remains dormant.”¹⁴⁷ This particular “negative” aspect of the Commerce Clause has been invoked abundantly throughout the years and most recently upon the United States Supreme Court in 2019, with affirmation of the doctrine in *Tennessee Wine & Spirits Retailers Association v. Thomas*.¹⁴⁸ There, the Supreme Court affirmed that the Dormant Commerce Clause is still in effect and reiterated that the pertinent test to sustain a law that has been determined to discriminate against “out-of-state goods or nonresident economic actors” is “a showing that [the law] is narrowly tailored to ‘advance a legitimate local purpose.’”¹⁴⁹

A general rule that has arisen from the years of case law is that the Dormant Commerce Clause prohibits state discrimination against all “out-of-state economic interests,” and “when a state statute directly regulates or discriminates against interstate commerce, or when its *effect* is to favor in-state economic *interests*

144. U.S. CONST. art. I, § 8, cl. 3.

145. *Id.*

146. *Gibbons v. Ogden*, 22 U.S. 1, 189 (1824).

147. Larry Downes, *The Commerce Clause Wakes Up*, HARV. BUS. REV. (Sept. 2005), <https://hbr.org/2005/09/the-commerce-clause-wakes-up> [<https://perma.cc/TD76-GW5G>].

148. *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*, 139 S. Ct. 2449, 2461 (2019) (holding that “in light of this history and our established case law, we reiterate that the Commerce Clause by its own force restricts state protectionism”).

149. *Id.* (quoting *Dep’t of Revenue of Ky. v. Davis*, 553 U.S. 328, 338 (2008)).

over out-of-state *interests*, [the Courts] have generally struck down the statute without further inquiry.”¹⁵⁰

Additionally, extraterritoriality may be invoked in conjunction with the Dormant Commerce Clause and will be analyzed as well. Extraterritoriality is a quasi-prong of the Dormant Commerce Clause that is invoked when it can be shown that “commerce [] takes place wholly outside of the regulating state’s borders.”¹⁵¹ Here, the analysis will surround Washington’s HFC regulation, with the hypothetical provision included that details the phase-down of HFCs within vehicular air conditioning units.

First, the hypothetical provision within Washington’s HFC bill would likely look similar, if not identical, to the provisions regarding HFCs used in light duty motor vehicle air conditioning units, contained within the now-overruled SNAP regulations,¹⁵² as the rest of the stationary HFC end-uses within Washington’s bill are adopted directly from the language of said-regulations.¹⁵³ As such, whether the regulations will invoke Dormant Commerce Clause and/or Extraterritoriality challenges will depend on the retrofitting or labeling requirements of the refrigerant systems in vehicles as well as the incentive programs mentioned within Washington’s bill as-is.

Generally, in analyzing a state statute or regulation under the dormant commerce clause, the Courts have utilized a two-tier approach. In the first step, a state statute will be deemed invalid *per se* if it “discriminates against interstate commerce in favor of in-state economic interests or if its practical effect is to control conduct beyond the boundaries of the regulating state.”¹⁵⁴ The second step then applies the “Pike Balancing Test”, which details that, when “a

150. *Granholm v. Heald*, 544 U.S. 460, 487 (2005) (emphasis added). See *Bacchus Imports, Ltd. v. Dias*, 468 U.S. 263, 271–73 (1984); *Healy v. Beer Inst.*, 491 U.S. 324, 337 n.14 (1989).

151. Susan Lorde Martin, *The Extraterritoriality Doctrine of Dormant Commerce Clause is Not Dead*, 100 MARQ. L. REV. 497, 503 (2016).

152. Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program, 80 Fed. Reg. 42,870, 42,872 (Jul. 20, 2015) (to be codified at 40 C.F.R. pt. 82); *Unique Fittings & Label Colors for MVAC Refrigerants*, *supra* note 126; *Substitutes in MVAC: Passenger Air Conditioning in Light-Duty, Medium-Duty, Heavy-Duty and Off-Road Vehicles*, EPA, <https://www.epa.gov/snap/substitutes-mvac-passenger-air-conditioning-light-duty-medium-duty-heavy-duty-and-road-vehicles> [<https://perma.cc/WM7U-SVEG>] (June 26, 2019).

153. See H.R. 1112, 66th Leg., Reg. Sess. (Wash. 2019).

154. *Bronco Wine Co. v. Jolly*, 29 Cal. Rptr. 3d 462, 482 (Cal. Ct. App. 2005).

statute has only indirect effects on interstate commerce and regulates evenhandedly, [the court has] examined whether the State's interest is legitimate and whether the burden on interstate commerce clearly exceeds the local benefits.”¹⁵⁵

In the Supreme Court Case of *Tennessee Wine & Spirits Retailers Ass'n v. Thomas*, the Court held that a two year residency requirement for alcohol facility licensing was in violation of the Dormant Commerce Clause because it “expressly discriminates against nonresidents and has at best a highly attenuated relationship to public health or safety.”¹⁵⁶ However, in *Bronco Wine Co. v. Jolly*, the Court held that labeling requirements for a wine company were not discriminatory to other states after it applied the Pike balancing test¹⁵⁷ and determined that “the state's interests in protecting the reputation and integrity of its vital wine industry from the use of misleading brand names outweighs the incidental effect on interstate and foreign commerce.”¹⁵⁸ Similarly, in *American Beverage Ass'n v. Snyder*, the Court found that a unique marking design indicating that the canned or bottled beverage is qualified for recycling in Michigan did not burden interstate commerce because the “unique-mark requirement burdens in-state beverage manufacturers who meet the designated thresholds to the same extent it burdens out-of-state manufacturers who meet the designated thresholds.”¹⁵⁹ However, the Court then went on to hold that the Dormant Commerce Clause was violated based off of the extraterritoriality prong since Michigan was “forcing states to comply with its legislation in order to conduct business within its state, which creates an impermissible extraterritorial effect.”¹⁶⁰

Here, in analyzing Washington's legislation regarding HFCs, by incorporating a hypothetical vehicle end-use labeling and retrofitting requirement, it is likely that the Dormant Commerce Clause will be violated on the extraterritoriality prong, similar to *Snyder*. This is likely the case because applying the labeling and retrofitting requirement is not discriminatory to other manufacturers outside of

155. *Brown-Forman Distillers Corp. v. N.Y. State Liquor Auth.*, 476 U.S. 573, 579 (1986) (citing *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970)).

156. *Tenn. Wine & Spirits Retailers Ass'n v. Thomas*, 139 S. Ct. 2449, 2474 (2019).

157. *Bronco*, 29 Cal. Rptr. 3d at 487–92.

158. *Id.* at 491.

159. *Am. Beverage Ass'n v. Snyder*, 735 F.3d 362, 373 (6th Cir. 2013).

160. *Id.* at 376.

Washington when compared to in-state manufacturers. As such, one must analyze the second prong and apply the Pike balancing test. In doing so, it is likely that the in-state economic interest to regulate HFCs and protect the State's interest of combatting climate change outweighs the incidental effect on interstate commerce. However, also similar to *Snyder*, extraterritoriality would likely be invoked because mandating auto and refrigerant manufacturers to completely change their air conditioning unit retrofitting and implement new and potentially obtrusive labeling requirements to conform with the phase-down of HFCs would likely equate to Washington "forcing states to comply with its legislation in order to conduct business within its state."¹⁶¹ As such, Washington's legislation will likely be in violation of the Dormant Commerce Clause, specifically in terms of extraterritoriality.

Furthermore, as an aside, since another piece of the analysis deals with whether the state's economic interests are favored over out-of-state interests,¹⁶² it is likely that Washington's legislation, which implements a state program that incentivizes the elimination of legacy uses of HFCs,¹⁶³ would favor in-state interests over out-of-state interests and thus violate the Dormant Commerce Clause.

V. CONCLUSION AND ALTERNATIVES TO REGULATING THE PHASE-DOWN OF HFCS MOVING FORWARD

As determined above, with the current regulations and environment regarding the phase-down of HFCs, state actors will likely face various challenges to regulation and legislation of this issue due to EPA policies promulgated during the Trump administration.¹⁶⁴ However, this is not to say that there are not alternate routes that may be taken in order to effectuate the regulation of these detrimental GHGs.

161. *Snyder*, 735 F.3d at 373.

162. *Granholt v. Heald*, 544 U.S. 460, 472 (2005).

163. H.R. 1112, 66th Leg., Reg. Sess. (Wash. 2019) (requiring a report be submitted that includes "recommendations for how to fund, structure and prioritize a state program that incentivizes or provides grants to support the elimination of legacy uses of [HFCs]").

164. See Samantha Oller, *California Strikes Back at Trump Efforts to Revoke Emissions Waiver*, CSP DAILYNEWS (Nov. 20, 2019), <https://www.cspdailynews.com/fuels/california-strikes-back-trump-efforts-revoke-emissions-waiver> [<https://perma.cc/7BT4-5VKE>].

Even though EPA has hindered HFC regulations, in April 2020, the D.C. Circuit court struck down the Trump administration's vacatur of the Obama administration's SNAP regulations. The Court found the vacatur unlawful because the proper administrative procedures were not followed.¹⁶⁵ In revoking the SNAP regulations, EPA did not provide the public an opportunity to weigh in on its decision, and thus, the D.C. Circuit Court held that "the one option EPA could not permissibly pursue was the one it chose: promulgating a legislative rule without abiding by notice-and-comment requirements and without invoking any exception to those obligations."¹⁶⁶ Thus, even though the EPA will likely appeal this ruling, there is hope at the federal administrative and judicial level to effectively regulate these detrimental chemicals once again.

Additionally, federal legislation can still prove to be a powerful tool in addressing this issue. While local actors are working to regulate HFCs at the state-level, the federal legislature has also been working to get a bill, identified as the American Innovation and Manufacturing Act (AIM Act) of 2019, which originated in the Senate, to a vote.¹⁶⁷ This particular piece of legislation is built around the innovation of new alternative refrigerants to replace HFCs and other GHGs utilized currently in refrigerant end-uses.¹⁶⁸

On March 11, 2020, John Barrasso (R-Wyoming), the committee chair of the Senate Environment and Public Works Committee, decided that the bill would go to legislative hearing in front of the Senate on March 25, 2020 in order to "improve the legislation so it works for all American people."¹⁶⁹ This particular bill allegedly has bipartisan support in the senate,¹⁷⁰ though as of the time of this Note, a vote has not been called. Additionally, at the time of this Note, due to COVID-19 concerns, the March 25, 2020 legislative hearing was replaced with a Public Comment period in which

165. See Rachel Frazin, *Court Strikes Down EPA Suspension of Obama-era Greenhouse Gas Rule*, THE HILL (Apr. 7, 2020), <https://thehill.com/policy/energy-environment/491568-court-strikes-down-epa-suspension-of-obama-era-hfc-rule> [<https://perma.cc/44LB-KMRA>].

166. *Id.*

167. S. 2754, 116th Cong. (2019).

168. *Id.* § 6.

169. Rachel Frazin, *Senate Environment Committee to Hear HFC Proposal Stalling Energy Bill Passage*, THE HILL (Mar. 11, 2020), <https://thehill.com/policy/energy-environment/487146-senate-environment-committee-to-hear-hfc-proposal-stalling-energy> [<https://perma.cc/2PYW-L769>].

170. See *id.*

interested parties are able to send concerns and suggestions regarding the bill to the Senate Committee, which will then take the comments into consideration and post them on the Senate Committee website.¹⁷¹ As of April 29, 2020, approximately 118 representatives of various senate, industry, environmental, and state associations and entities have provided written comment and testimony regarding the AIM Act, with certain important industry, environmental, and state leaders supporting the passing of this bipartisan bill.¹⁷²

Additionally, as the presidency has changed hands, and the Biden administration has entered the White House, multiple positive updates have occurred regarding the regulation of HFCs at the federal level. Primarily, the abovementioned bipartisan AIM Act was included in an omnibus to the Consolidated Appropriations Act of 2021, identified as the American Innovation and Manufacturing Act of 2021.¹⁷³ This is incredibly exciting, and forecasts a positive step in the right direction for the phase down of HFCs at the federal level-though vehicular HFC regulation is still not expressly included within this bill.

Furthermore, on January 27, 2021, President Biden signed an Executive Order titled, “Tackling the Climate Crisis at Home and Abroad,” which explicitly directs the Secretary of State to prepare a “transmittal package” seeking the Senate’s consent to ratify the Kigali Amendment.¹⁷⁴ This is another beacon of hope for the

171. Robert Beverly, *Senate Scraps AIM Act Hearing, Adds Public Comment Process*, ACHR NEWS (Mar. 27, 2020), <https://www.achrnews.com/articles/142915-senate-scraps-aim-act-hearing-adds-public-comment-process> [<https://perma.cc/5VD4-6S58>].

172. *S. 2754, American Innovation and Manufacturing Act of 2019: Written Testimony and Questions for the Record*, U.S. SENATE COMM. ON ENV'T. & PUB. WORKS (Mar. 25, 2020), <https://www.epw.senate.gov/public/index.cfm/2020/3/s-2754-american-innovation-and-manufacturing-act-of-2019-written-testimony-and-questions-for-the-record> [<https://perma.cc/5NHF-TWZX>]. Examples of industry leaders in refrigeration supporting the bill include Arkema, Inc., ASHRAE, Air-Conditioning, Heating, and Refrigeration Institute (AHRI), National Automobile Dealers Association of America (NADA). *Id.* A few environmental leaders supporting the bill include Natural Resource Defense Council (NRDC), Earthjustice, Nature Conservancy, Sierra Club. *Id.* States and local leaders that support the bill include California Air Resources Board, U.S. Climate Alliance, New Yorkers for Cool Refrigerant Management, Attorneys General of the States of New York, California, Delaware, Illinois, Massachusetts, Minnesota, Oregon, New Jersey, Vermont, Washington, and the District of Columbia. *Id.*

173. Consolidated Appropriations Act of 2021, Pub. L. No. 116-260 (2020).

174. Exec. Order No. 14,008, 86 Fed Reg. 7,619 (Feb. 1, 2021).

resurgence of the United States' international presence in the climate arena.

Further, even though preemption or dormant commerce clause issues may arise, there is nothing stopping state actors from working with industry to determine whether feasible alternatives are available in phasing down HFCs on a state-by-state basis without invoking lawsuits. In certain states, the automotive industry has entered into agreements with state regulators in order to continue California's more stringent emissions criteria, even in light of EPA revoking the waiver.¹⁷⁵

If industry and state actors are willing to come to agreement on certain facets within the regulatory scene, HFCs may have the potential to be phased-down, even if there is pushback from the federal government. For example, companies have been working on implementing different types of air conditioning units within vehicles that are more fuel efficient and utilize HFC-152a, a chemical that has an exponentially lower GWP than the leading type, HFC-134a.¹⁷⁶ As mentioned above, while it would be ideal for all HFCs to be phased-out, if there is a possibility for a dialogue to continue between environmentalists, local and state actors, and the refrigerant/auto industry, there is a real possibility for change to occur and extremely high GWP-potential HFC refrigerants to no longer be the norm.

In tackling an overwhelmingly important and relevant issue as climate change, there are necessarily countless hurdles that must be addressed. Currently in the United States, the regulation and phase-down of exceptionally high GWP chemicals is one such hurdle that has required, and will continue to require, significant time, resources, and negotiations between government actors, environmental groups, and industry. In detailing the United States' role in climate change and GHG emission regulations, this Note has analyzed the state's power in regulating HFCs in refrigerant end-uses, specifically focusing on mobile air conditioning units. In summary, in light of the EPA's revocation of California's Clean Air

175. Oller, *supra* note 164.

176. *Green Automobile Air Conditioner Technology Demonstration Project*, CLIMATE & CLEAN AIR COAL. (Mar. 25, 2019), <https://www.ccacoalition.org/en/news/green-automobile-air-conditioner-technology-demonstration-project> [<https://perma.cc/57S8-6SSE>].

Act tailpipe emissions waiver, it is likely that the states' power to regulate HFCs is preempted, and also likely limited or barred by the Dormant Commerce Clause. However, this Note focuses on the extremely narrow window of state-level regulation of HFCs and the even narrower lens of vehicular end-uses. In the larger climate change scheme, there are legitimate routes available in which the United States, through action taken as a nation and through zealous local and state action, can regain its environmental footing and successfully combat climate change through the phase-down of HFCs.