NRDC
THE EARTH'S BEST DEFENSE

NATURAL RESOURCES DEFENSE COUNCIL

Administrator Lisa P. Jackson
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

May 7, 2010

Re: Petition to Remove HFC-134a from the List of Acceptable Substitutes under the Significant New Alternatives Policy Program

Dear Administrator Jackson:

The Natural Resources Defense Council (NRDC) and the other undersigned organizations hereby petition the Environmental Protection Agency (EPA) to remove HFC-134a from the list of acceptable substitutes for CFC-12 in motor vehicle air conditioning systems maintained under EPA's Significant New Alternatives Policy (SNAP) program, and to remove HFC-134a from such list in any other end-use category (e.g., aerosols, stationary refrigeration) where more benign alternatives are available. This petition is filed pursuant to Section 612(d) of the Clean Air Act and 40 C.F.R § 82.184(b)(3). Under section 612 of the Clean Air Act, EPA has the authority to evaluate alternatives to ozone-depleting substances (ODS) identified in section 602 and to publish a list of acceptable and unacceptable substitutes through the SNAP program. EPA also has the authority to revise this list on its own, or in response to a petition, to remove a substitute previously listed as acceptable.

Motor Vehicle Air Conditioning Systems

CFC-12 is a Class I ozone-depleting chemical under section 602. EPA was required to identify acceptable substitutes for CFC-12 by considering their "atmospheric effects and related health and environmental impacts," the "general population risks from ambient exposure to compounds with direct toxicity to increased ground-level ozone," "ecosystem risks," "occupational risks," "consumer risks," "flammability," and "cost and availability of the substitute."[1] In 1995, EPA determined HFC-134a to be an acceptable substitute for CFC-12 in motor vehicle air conditioning (MVAC) systems because it has an ozone-depleting potential (ODP) of zero and a global warming potential (GWP) of 1300, as compared to CFC-12's ODP of 1 and GWP of 10,890.[2] Since then, more attractive

[1] Significant New Alternatives Policy Program, Agency Review of SNAP Submissions, 40 C.F.R. § 82.180(a)(7)(i)-(ii) (2009).
[2] Protection of Stratospheric Ozone, 60 Fed. Reg. 31,092, 31,097 (June 13, 1995).

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alternatives for MVAC systems have become available. Currently, there are other substitutes for CFC-12 that have been approved or are in the approval process with significantly lower ODPs and GWPs than CFC-12 and HFC-134a – carbon dioxide (CO_2),[3] HFC-152a,[4] and HFO-1234yf.[5] In light of the health and environmental goals of the SNAP program and the availability of MVAC substitutes that present much lower risks to health and environment than those associated with HFC-134a, NRDC and its co-petitioners request that EPA remove HFC-134a from the acceptable substitutes list for MVAC systems.

The Significant New Alternatives Policy program implements section 612 of the Clean Air Act. The SNAP program was created to assure the health and environmental safety of alternatives for ozone-depleting substances that were being phased out under Section 602 of the Act. The purpose of the SNAP program is "to allow a safe, smooth transition away from ozone-depleting compounds by identifying substitutes that offer lower overall risks to human health and the environment."[6] Section 602 of the Clean Air Act contains a list of Class I and Class II ozone-depleting substances which have been or are being phased out. Under the SNAP program EPA evaluates proposed substitutes to these ODS and classifies the substitutes as acceptable, acceptable subject to use limits or conditions, or unacceptable.[7] The SNAP approval process provides EPA an opportunity to review proposed alternatives before they enter the marketplace. SNAP determinations thus can drive commercial development towards substitutes that present a lower overall risk to human health and the environment.

Applicants for listing of potential substitute applications must provide certain information, including the name and description of the substitute, physical and chemical information, toxicity data, and health and safety studies.[8] In addition, applicants must include information concerning the ozone-depleting potential and global warming impacts of the substance, including "information on the GWP index and the indirect contributions to global warming caused by the production or use of the substitute."[9] EPA's acceptability determinations are comparative evaluations, where EPA looks not only at the proposed substitute in comparison to the relevant Class I or Class II substance listed in Section 602, but also in comparison to "other substitutes for the same end-use." As such, EPA must consider not only the original ODS but also the other listed substitutes for that substance in analyzing whether to list new alternatives. For example, in the context of MVAC systems, HFO-1234yf is being evaluated as a substitute for both CFC-12 and HFC-134a. In comparing these substitutes directly with each other, EPA then may "prohibit the use of those substitutes found, based on the same comparisons, to

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[3] Protection of Stratospheric Ozone, 59 Fed. Reg. 13,044, 13,082 (Mar. 14, 1994).
[4] Substitute Listing in the Motor Vehicle Air Conditioning Sector, 71 Fed. Reg. 55,140 (Sept. 21, 2006).
[5] Protection of Stratospheric Ozone: New Substitute in the Motor Vehicle Air Conditioning Sector Under the Significant New Alternatives Policy (SNAP) Program, 74 Fed. Reg. 53,445 (proposed Oct. 19, 2009).
[6] Environmental Protection Agency, Significant New Alternatives Policy (SNAP) Program, http://www.epa.gov/ozone/snap/index.html (last visited Mar. 17, 2009).
[7] *Id.*
[8] Significant New Alternatives Policy Program, Information Required to be Submitted, 40 C.F.R. § 82.178 (2009).
[9] *Id.*

increase overall risks."[10] This progressively comparative analysis allows the SNAP program to continually promote new and less environmentally harmful substitutes as they are developed and listed.

EPA's criteria for risk comparison in the SNAP program support Title VI's goal of phasing out ODS from the marketplace in conjunction with the Montreal Protocol. EPA must explicitly analyze, among other things, "[a]tmospheric effects and related health and environmental impacts. . .[and] [g]eneral population risks from ambient exposure to compounds with direct toxicity and to increased ground-level ozone."[11] In promulgating the initial SNAP rule in 1994, the agency noted that they had "followed several guiding principles in developing the SNAP program."[12] The rule outlines a comparative risk framework, where

> [t]he Agency's risk evaluation compares risks of substitutes to risks from continued use of ozone-depleting compounds as well as to risks associated with other substitutes. This evaluation considers effects due to ozone depletion as well as effects due to direct toxicity of substitutes[13]

The proposed rule outlining the SNAP program elaborates on the climate-focused nature of this risk analysis, where the "'overall risk' characterization will consider such factors as: Toxicity and exposure -- both human health and ecological; chlorine loadings; ozone-depletion potential; global-warming potential; and flammability."[14]

In light of the comparative nature of the SNAP analysis and given that other acceptable substitutes are on the market or soon to be available, we request that EPA remove HFC-134a from the list of acceptable alternatives for MVAC purposes, on a schedule that is based on the most rapid feasible introduction of one or more of the above-mentioned acceptable alternatives – including HFO-1234yf on the assumption that it receives final SNAP approval as soon as possible. Due to the comparative and progressive nature of the SNAP program, HFO-1234yf and other potential substitutes should be considered substitutes not only for CFC-12 (the initial ODS at issue) but also for alternatives already listed, including HFC-134a. In light of this, we request that EPA establish a schedule for rapidly phasing out the use of HFC-134a in new vehicles and a schedule for subsequently phasing out its use in older vehicles. This approach will allow the auto industry to rapidly transition to HFO-1234yf or other acceptable alternatives in MVAC systems.

EPA initially approved HFC-134a for use as an acceptable alternative in 1995. The initial approval stated that:

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[10] Significant New Alternatives Policy Program, Purpose and Scope, 40 C.F.R. § 82.170 (2009).
[11] Significant New Alternatives Policy Program, Agency Review of SNAP Submissions, 40 C.F.R. § 82.180(a)(7)(i)-(ii) (2009).
[12] 59 Fed. Reg. at 13,046.
[13] *Id.*
[14] Protection of Stratospheric Ozone; Request for Data and Advanced Notice of Proposed Rulemaking, 57 Fed. Reg. 1984, 1985 (Jan. 16, 1992).

> HFC-134a does not contribute to ozone depletion. HFC-134a's GWP and atmospheric lifetime are close to those of other alternatives which have been determined to be acceptable for this end-use. However, HFC-134a's contribution to global warming could be significant in leaky end-uses such as motor vehicle air conditioning systems (MVACS). EPA has determined that the use of HFC-134a in these applications is acceptable because industry continues to develop technology to limit emissions. In addition, the number of substitutes available for use in MVACS is currently limited. HFC-134a is not flammable and its toxicity is low.[15]

This analysis, though it may have been appropriate in 1995, does not hold true today, and highlights the necessity of phasing out HFC-134a. First, HFC-134a's GWP of 1300 is no longer close to that of other alternatives. For example, CO_2 has a GWP of 1, and HFO-1234yf has a GWP of 4.[16] Further, the clean car rules jointly promulgated by EPA and the National Highway Traffic Safety Administration (NHTSA) specifically note that leakage of HFC-134a from MVAC systems continues to be a significant contributor to global warming emissions from motor vehicles.[17] Finally, both Europe and California have plans to ban use of HFC-134a in MVAC systems, *infra*, and the automobile industry should begin to phase out this substance in preparation for this change. In short, the properties of HFC-134a make it unacceptable as an approved alternative for MVAC systems under the SNAP program in light of current available alternatives. The additional step of removing HFC-134a from the list of acceptable substitutes will signal the automobile industry to accelerate the pace of the transition to more benign alternatives.

The most promising alternative poised to enter the market is HFO-1234yf. EPA has proposed to add HFO-1234yf to the list of approved alternatives for MVAC systems under the SNAP program.[18] HFO-1234yf has an ODP of zero, a GWP of 4, and a very short atmospheric lifetime of only 11 days.[19] Further, the substance can be used in both new MVAC systems and retrofitted for older systems. In its comments to this proposed rule, NRDC noted that EPA had identified some potential for HFO-1234yf to contribute to ground-level ozone.[20] NRDC's comments noted several reasons why the analysis prepared for EPA's proposal may have overstated its contribution to ground-level ozone and requested that EPA evaluate the current science to ensure that the substance's contribution to ground-level ozone is properly estimated. For these reasons, NRDC stated that it saw no reason to object to approval of HFO-1234yf for use in MVACs with the use conditions included in the proposed approval.

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[15] 60 Fed. Reg. at 31,097.
[16] *See supra*, notes 2, 4.
[17] Environmental Protection Agency, Final Rulemaking: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards at 207, http://www.epa.gov/otaq/climate/regulations/ldv-ghg-final-rule.pdf (last visited April 22, 2010).
[18] Protection of Stratospheric Ozone: New Substitute in the Motor Vehicle Air Conditioning Sector Under the Significant New Alternatives Policy (SNAP) Program, 74 Fed. Reg. 53,445 (Oct. 19, 2009).
[19] *Id.* at 53,447.
[20] Comments of Natural Resources Defense Council on *Protection of Stratospheric Ozone: New Substitute in the Motor Vehicle Air Conditioning Sector under the Significant New Alternatives Policy (SNAP) Program; Proposed Rule*, 74 Fed. Reg. 53, 445 (Oct. 19, 2009), Docket No. EPA-HQ-OAR-2008-0664.

In addition to HFO-1234yf, other alternatives are available for MVAC end-uses. The presence of these approved alternatives under the SNAP program provides additional support for phasing out HFC-134a use in MVAC systems. In a recent proposed rulemaking regarding CO_2 and HFC-152a, EPA explicitly considered the risks associated with those substances "in relation to the risks associated with the predominant ozone-depleting substance (ODS) refrigerant substitute in MVACs, HFC-134a."[21] The structure of EPA's comparison of these three accepted alternatives emphasizes the overall objective of the SNAP program to shift the market towards increasingly less environmentally harmful substitutes. Further, as the market shifts towards these less harmful substitutes, the SNAP program encourages further environmental gains through the approval of increasingly more environmentally friendly substitutes, to entirely replace previous alternatives that pose greater risks.

Carbon dioxide is currently a proposed alternative with use conditions for MVAC systems. CO_2 has an ODP of zero, and a GWP of one. EPA's final rule entitled "Protection of Stratospheric Ozone" listed CO_2 as an acceptable substitute for CFC-12, and noted that CO_2 is a

> well-known, nontoxic, nonflammable gas. Its GWP is defined as 1, and all other GWPs are indexed to it. Since it is readily available as a waste gas, no additional chemical will need to be produced. Thus, the use of CO_2 as a refrigerant will not contribute to global warming.[22]

EPA updated its data on CO_2 recently in a proposed rule regarding CO_2 and HFC-152a, adding use conditions to the acceptability determination on CO_2.[23] EPA noted there were some health concerns for motor vehicle passengers and those who service the vehicles from high levels of carbon dioxide exposure. Nonetheless, as compared to HFC-134a, which has a GWP of 1,430, CO_2 is an attractive proposed alternative for MVAC systems in the context of global warming.

HFC-152a is a listed approved substitute for MVAC systems under the SNAP program. HFC-152a has an ODP of zero, a GWP of less than 150 and a toxicity profile that EPA has stated is "comparable to CFC-12 and its most prevalent substitute, HFC-134a."[24] EPA has noted flammability concerns with HFC-152a at concentrations above 3.7%, but with proper management techniques to reduce leakage HFC-152a can be used successfully.[25] The existence of HFC-152a in the marketplace provides EPA with additional rationale to phase out and remove HFC-134a from the list of acceptable alternatives for the MVAC sector.

The joint rulemaking between EPA and NHTSA establishing fuel economy and emissions standards, further emphasizes the benefit of replacing HFC-134a with lower global warming potential, such as HFO-1234yf, CO_2, and HFC-152a. The rule contains a

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[21] 71 Fed. Reg. at 55,142.
[22] 59 Fed. Reg. at 13,082.
[23] 71 Fed. Reg. at 55140.
[24] 71 Fed. Reg. at 55,144.
[25] *See, e.g.*, 73 Fed. Reg. at 33,306.

mechanism through which automobile manufacturers can generate credits from reducing MVAC leakage or adopting lower-GWP alternative refrigerants – credits that count towards compliance with EPA's greenhouse gas emission standards.[26]

EPA has identified two ways that MVAC refrigerants contribute to vehicles' total emissions of greenhouse gases: leakage of refrigerant into the atmosphere and consumption of fuel to provide power to the air conditioning system. The rule estimates that together these factors account for approximately 9% of GHG emissions from light-duty cars and trucks.[27] EPA points directly to HFC-134a and its high global warming potential as the reason that leakage contributes so greatly to GHG emissions. The rule states:

> [D]ue to the high GWP of this HFC, a small leakage of the refrigerant has a much greater global warming impact than a similar amount of emissions of CO_2 or other mobile source GHGs. Manufacturers can reduce A/C leakage emissions of CO_2 or other mobile source GHGs. Manufacturers can reduce A/C leakage emissions by using leak-tight components. Also, manufacturers can largely eliminate the global warming impact of leakage emissions by adopting systems that use an alternative, low-GWP refrigerant.[28]

EPA puts forward these "A/C leakage credits" as a way to achieve reductions through the fleet averaging program.[29] The rule notes that Europe and California have plans to phase out HFC-134a, and in light of this:

> [R]ecognizes that substituting a refrigerant with a significantly lower GWP will be a very effective way to reduce the impact of all forms of refrigerant emissions, including maintenance, accidents, and vehicle scrappage.[30]

In noting the benefit of phasing out HFC-134a, the rule explicitly points to HFO-1234yf as the preferred alternative. In light of this attractive alternative, MVAC systems going forward will not have to rely on older alternatives with higher ODPs and GWPs.

HFC-134a has a very high GWP, and its leakage from MVAC systems contributes significantly to GHG emissions from motor vehicles. There are other, less environmentally harmful substances available for use in MVAC systems, among them HFC-152a and potentially HFO-1234yf and CO_2. Moreover, Europe and California have plans to ban HFC-134a. EPA should speed up the phase-out of HFC-134a to facilitate and expedite automakers' smooth transition from this harmful substance to other approved alternatives for MVAC systems, in line with the stated goals of the SNAP program. Not only would this speed up what is an inevitable transition, but an expedited phase-out of HFC-134a would greatly reduce the overall GWP of MVAC systems.

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[26] *Supra*, note 17 at 207.
[27] *Id.*
[28] *Id.* at 207-8.
[29] *Id.* at 209.
[30] *Id*. at 212.

Aerosols

HFC-134a is also a listed alternative for aerosol end-uses. It is listed as an alternative for CFC-11, HCFC-22, and HCFC-142b in this use category.[31] At this time, however, there are many other approved alternatives for these ODS in the aerosol products, rendering HFC-134a unacceptable as a substitute. The SNAP program requires EPA to analyze newly listed alternatives in comparison with both the original ODS for which alternatives were required and available alternatives. In comparing alternatives against each other to continually increase the SNAP program's efficacy, other approved alternatives emerge as superior to HFC-134a in the aerosols sector. HFC-152a is an acceptable alternative for all of the ozone-depleting aerosols. HFC-152a's GWP (<150) is much more attractive than that of HFC-134a (1300), and as with MVAC systems, this comparison indicates that EPA should cancel the use of HFC-134a as an alternative in the aerosols sector.

Saturated Light Hydrocarbons such as C3-C6 are also approved alternatives for these aerosol end-uses. Even more so than for HFC-152a, the comparison of C3-C6 and comparable hydrocarbons with HFC-134a strongly support HFC-134a's removal from the SNAP alternatives list. These hydrocarbons are both "zero-ODP and zero-GWP."[32] Not only are they an "excellent propellant" but they are also "inexpensive" and "readily available from most chemical manufacturers."[33]

Other approved alternatives, which provide a similar rationale for removing HFC-134a in the aerosols sector, include dimethyl ether, compressed gasses such as carbon dioxide and nitrous oxide, and non-aerosol delivery systems. Compressed gasses have "low toxicity and industrial practices for using these substitutes are well established.[34] Alternative processes such as "finger and trigger pumps" do not even require the use of chemicals, and the only real concern with these processes is that "persons using manual pumps or sprays on a continuous basis may become fatigued… thus reducing consumer satisfaction."[35] Dimethyl ether does have some ability "to contribute to ground-level ozone," but EPA states "increases in ground level ozone formation from use of DME can be controlled through existing VOC regulations."[36] All of these available and approved alternatives make the continued acceptability of HFC-134a inappropriate for aerosol end-uses.

Other End-Uses

EPA currently lists HFC-134a as an acceptable alternative for fire suppression and explosion protection foam blowing agents, and, as noted above, for the aerosol and refrigerant and air conditioning sectors. There are many other alternatives approved for

[31] Environmental Protection Agency, Substitute Aerosol Solvents and Propellants under SNAP as of September 28, 2006, http://www.epa.gov/ozone/snap/aerosol/aerosol.pdf (last visited Mar. 30, 2009).

[32] Protection of Stratospheric Ozone: Final Rule, 59 Fed. Reg. 13,044, 13,083 (Mar. 18, 1994).
[33] *Id.* at 13,114.
[34] Protection of Stratospheric Ozone: Notice of Proposed Rulemaking, 58 Fed. Reg. 28094, 28155 (May 12, 1993).
[35] *Id.* at 28,153.
[36] 59 Fed. Reg. at 13,116.

each sector and within each end-use, and so EPA should analyze HFC-134a within each of these sectors as it compares to other acceptable uses. For the SNAP program to continue to function effectively, the agency must identify those alternatives, such as HFC-134a, that have very high ODPs or GWPs, and compare them to other alternatives approved within that end-use. In identifying and eliminating these more harmful alternatives, the program can continue to phase out harmful ODS and move continuously towards less environmentally harmful alternatives.

In conclusion, EPA should approve this petition to remove HFC-134a from the list of acceptable substitutes for new and retrofitted MVAC systems, aerosols, and other appropriate end-uses. HFC-134a was approved at the inception of the SNAP program almost twenty years ago, but is now often the most damaging of the alternatives listed for particular end-uses, and to meet the statutory requirements of the SNAP program, EPA must now remove HFC-134a from the list of acceptable alternatives.

If you or your staff wish to discuss this petition, please contact me at ddoniger@nrdc.org or (202) 289-2403.

Sincerely,

David D. Doniger
Policy Director, Climate Center
Natural Resources Defense Council

On behalf of:
Natural Resources Defense Council
Institute for Governance &
Sustainable Development
Environmental Investigation Agency-US

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 05 2010

OFFICE OF
AIR AND RADIATION

David Doniger
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Dear Mr. Doniger:

This letter is to inform you that the petition submitted by you on behalf of the Natural Resources Defense Council (NRDC), the Institute for Governance & Sustainable Development, and the Environmental Investigation Agency-US on May 7, 2010 is incomplete. The Environmental Protection Agency (EPA) established the Significant New Alternatives Policy (SNAP) program to implement Section 612 of the Clean Air Act. Your petition was filed pursuant to Section 612(d) of the Clean Air Act and 40 CFR 82.184(b)(3). It requests that EPA remove HFC-134a from the list of acceptable substitutes for CFC-12 in Motor Vehicle Air Conditioners (MVACs) under the SNAP program and from the list in any other end-use categories where more benign alternatives are available. To continue our review, EPA requires the following information. Based on your response, we may also request additional information before finding the petition complete.

Motor Vehicle Air Conditioning:

- With respect to MVACs, the petition states that acceptable alternatives are available or potentially available for new MVACs and for retrofitting the existing fleet of MVACs. We are currently reviewing several alternatives for use in new vehicles, e.g., CO_2 and HFO-1234yf, but are unaware of any information supporting their use as retrofits. HFC-152a has been listed as acceptable subject to use conditions in new MVACs only. We are unaware of available or potentially available alternatives for retrofits at present. Thus, we ask that you provide additional information, including risk assessments, as required in sections 40 CFR 82.178(a)(1), (3), (9), (10), and (13) through (16), in order to consider the issue for retrofits.

- The MVAC end use under SNAP covers MVACs used in light-duty vehicles (e.g., passenger cars, pick-up trucks, minivans and sport utility vehicles) as well as other types of vehicles (e.g., buses and passenger trains). For example, EPA has proposed to find HFO-1234yf acceptable subject to use conditions only for light-duty passenger vehicles. Please indicate whether you believe alternatives more benign than HFC-134a are available or potentially available across all types and applications of MVACs, or if they are available only in a narrower subset of MVACs, such as just for light-duty passenger vehicles.

Aerosols:
The aerosol sector includes a variety of consumer, medical and industrial uses of aerosols. Did you intend for EPA to find unacceptable the use of HFC-134a as a propellant for metered dose inhalers and for aerosol products used to clean energized electrical circuits?

Other End Uses:

- The stationary refrigeration sector is identified in the petition and includes a variety of end uses. Please identify the specific end uses you are requesting EPA to consider under the petition and, for those end uses, identify what alternatives are available or potentially available that you believe will reduce the overall risks to human health and the environment compared to HFC-134a.

- You asked EPA to consider other end uses as appropriate. Please identify the specific end uses you are requesting EPA to consider under the petition and, for those end uses, identify what alternatives are available or potentially available that you believe will reduce the overall risks to human health and the environment compared to HFC-134a.

Additional Information:
Are you requesting that EPA consider HFC-134a only when used by itself or to consider also HFC-134a where it is a component in a blend? For example, HFC-134a is used as a component of some SNAP acceptable alternatives (i.e., blends) for various refrigeration and air conditioning end uses. If you wish to include blends, please list specifically which blends for which end uses you are requesting EPA to consider.

Your responses to these questions will inform our review of this petition. The information can be submitted via electronic mail or hard copy. If you have questions about your submission, please contact Cindy Newberg, Chief of the Alternatives and Emission Reduction Branch at (202) 343-9729 or newberg.cindy@epa.gov.

Sincerely,

Brian J. McLean, Director
Office of Atmospheric Programs

NRDC
THE EARTH'S BEST DEFENSE

NATURAL RESOURCES DEFENSE COUNCIL

November 16, 2010

Mr. Brian J. McLean
Director
Office of Atmospheric Programs
Office of Air and Radiation
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

Re: Petition to Remove HFC-134a from the List of Acceptable Substitutes under the Significant New Alternatives Policy Program

Dear Mr. McLean:

This letter is in response to your letter of August 5, 2010, regarding NRDC's petition to remove HFC-134a from the list of acceptable substitutes for CFC-12 in motor vehicle air conditioners (MVACs) and for certain other end uses. Your letter states that our petition was "incomplete" and requests information and clarification on a number of questions before responding to the petition. Here are our responses to those questions, responding using the headings and bullet points in your letter.

Motor Vehicle Air Conditioning:

- Your letter acknowledges that the agency has identified a number of alternatives for use in new motor vehicle air conditioners but states that EPA is "unaware of available or potentially available alternatives for retrofits at present." Without conceding the substance of that point, NRDC is willing to narrow the relief requested by the petition with respect to MVACs to delisting HFC-134a as an acceptable alternative in *new* MVACs.

- Your letter asks if we have information regarding the applicability of alternatives to HFC134a in MVACs for vehicles other than light-duty vehicles. NRDC notes that EPA recently published a fact sheet on alternative refrigerants for MVACs that included information on alternatives applicable to buses and trains. "Transitioning to Low-GWP Alternatives in MVACs," http://www.epa.gov/ozone/downloads/EPA_HFC_MVAC.pdf. These include the use of R-744, or CO_2, with a GWP of 1.0. Thus, we think there is a basis for delisting HFC-134a as an acceptable alternative for buses, trains, and potentially additional vehicle types other than light-duty vehicles. We do not believe, however, that this

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issue should slow EPA's response to the petition with respect to delisting HFC-134a in light-duty vehicle MACs.

Aerosols:

- Your letter asks if we intended the petition to request the delisting of HFC-134a as an acceptable alternative in metered dose inhalers (MDIs) and for aerosol products used to clean energized electrical circuits. NRDC does not intend to pursue replacing HFC-134a in MDIs at this time. However, we do intend the petition to request that EPA declare HFC-134a unacceptable in products "dust-off" type products, such as those used to blow debris off of computer keyboards and circuit boards. There is no reason not to use compressed air or other more environmentally benign substances in products of this kind. Likewise, we request that the agency deem HFC-134a unacceptable in such products as silly strings, and in any other aerosol product where safer alternatives exist.

Other End Uses:

- The letter asks for further information regarding the request to delist HFC-134a as an acceptable refrigerant and blowing agent in stationary refrigeration. NRDC notes two other recently published EPA fact sheets, on "Transitioning to Low-GWP Alternatives in Domestic Refrigeration," http://www.epa.gov/ozone/downloads/EPA_HFC_DomRef.pdf, and "Transitioning to Low-GWP Alternatives in Commercial Refrigeration," http://www.epa.gov/ozone/downloads/EPA_HFC_ComRef.pdf. We think the information in those fact sheets provides a basis for delisting HFC-134a as an acceptable alternative for at least some applications in these sectors. As above, however, NRDC does not believe that this issue should slow EPA's response to the petition with respect to delisting HFC-134a in light-duty vehicle MACs.

- With respect to the petition's request that EPA consider other end uses as appropriate, we also do not believe that this issue should slow EPA's response to the petition with respect to delisting HFC-134a in light-duty vehicle MACs.

Additional Information:

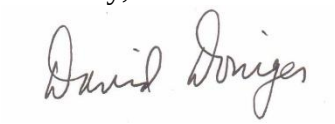
- Your letter asks whether we have specific information on applications where HFC-134a is used in blends. We do not have additional information to submit at this time, and do not believe that this issue should slow EPA's response to the petition with respect to delisting HFC-134a in light-duty vehicle MACs.

These responses should provide you with the information requested to enable you to proceed without further delay on the pending petition.

Section 612(d) of the Clean Air Act requires EPA to grant or deny a petition within 90 days of receipt. We note that the agency consumed 90 days (May 5th to August 5th)

before sending the letter to which we are responding today. However, we also acknowledge the time elapsed between the date of your letter (August 5th) and this response (November 16th). In view of these circumstances, we expect a substantive response to the original petition, as clarified by this letter, within 90 days of today.

Sincerely,



David D. Doniger
Policy Director, Climate Center
Natural Resources Defense Council

Cc: Cindy Newberg, Chief, Alternatives and Emission Reduction Branch

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FEB 14 2011

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Washington, D.C. 20005

Dear Mr. Doniger:

This letter is to inform you that the petition you submitted on behalf of the Natural Resources Defense Council (NRDC), the Institute for Governance & Sustainable Development, and the Environmental Investigation Agency-US on May 7, 2010, as revised on November 16, 2010, is complete with respect to one of the specific end uses identified in the petition and incomplete with respect to others. As you are aware, the U.S. Environmental Protection Agency (EPA) established the Significant New Alternatives Policy (SNAP) program to implement Section 612 of the Clean Air Act. Your petition was filed pursuant to Section 612(d) of the Clean Air Act and 40 CFR 82.184(b)(3), and requests that EPA remove HFC-134a from the list of acceptable substitutes under the SNAP program for CFC-12 in Motor Vehicle Air Conditioners (MVACs) and for other end-use categories where more benign alternatives are available.

The MVAC end use under SNAP covers MVACs used in light-duty vehicles (e.g., passenger cars, pick-up trucks, minivans and sport utility vehicles) as well as other types of vehicles (e.g., off-road construction, mining and agricultural equipment, heavy-duty trucks, airplanes, buses and passenger trains). We are finding your May 7, 2010, petition complete for new passenger cars and light duty vehicles, as narrowed by your November 16, 2010, supplement, which petitions us to remove HFC-134a from the list of acceptable alternative in *new* MVACs only. Consistent with 40 CFR 82.184(d)(5), EPA will initiate notice and comment rulemaking in response to your petition. EPA acknowledges the need to evaluate and take comment on many factors, including, but not limited to, the time frame for the introduction of newer alternatives into the automotive market, and potential lead time for automobile manufacturers to accommodate alternatives.

We find your petition incomplete for other uses of HFC-134a; to continue our review, EPA requires the following information.

Aerosols:

- Your November 16, 2010, response clarifies that medical aerosols are not included in your petition. However, you did not provide sufficient information to allow us to determine what

other specific niche aerosol uses are to be excluded. Your petition provided examples of aerosols to ban (e.g., "dust-off" products, propellant in "Silly String"). In the past, the Agency has compiled a list of aerosol products that are considered nonessential uses of Class I ODS (§82.66(a)) and other products that are exempt from the ban on nonessential products containing class I or II ODS because of certain important properties required for those products (§§82.66(d)(2), 82.70(a)(2)). Is the amended petition intended to apply to uses such as those exempt from the ban on nonessential products or only the specific applications mentioned in your November 16, 2010 ,response (i.e., "dust-off" products and propellant in "Silly String")?

Other Sectors and End Uses:

- Your November 16, 2010, submission references information provided by EPA regarding global transition to low global warming potential (GWP) alternatives. You conclude that the information provides a basis for delisting HFC-134a for at least some applications in the Commercial Refrigeration and Domestic Refrigeration sectors. Can you be more specific as to which applications you are referring? EPA notes that the information you reference includes some substitutes that have not been listed as acceptable under the SNAP program for review. The information you referenced is general and focuses on the international community rather than the U.S. industry specifically. This information is useful as part of the overall petition review; however, the petition does not provide sufficient information on specific end uses where there may be other available or potentially available alternatives that could be used in the U.S. that will reduce the overall risks to human health and the environment compared to HFC-134a. Please identify specific applications; a complete list of SNAP refrigeration end uses can be found at: www.epa.gov/ozone/snap/refrigerants/index.html.

Your responses to these questions will inform our review of the remaining elements identified in your petition. The information can be submitted via electronic mail or hard copy. If you have questions about your submission, please contact Cindy Newberg, Alternatives and Emissions Reduction Branch Chief, at 202-343-9729 or newberg.cindy@epa.gov.

Sincerely,

Elizabeth Craig

Elizabeth Craig, Acting Director
Office of Atmospheric Programs