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The Kigali Amendment to the Montreal Protocol: Myth vs. Fact

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Beginning in the 1970s, concerns that the refrigerants used in most air conditioners and refrigerators were leaking into the air and depleting the Earth's ozone layer led to the negotiation and signing of the Montreal Protocol, a 1987 United Nations treaty phasing out the use of these chemicals.¹ Since then, a number of ozone-safe substitutes have been developed and are now used in most residential and vehicle air conditioners and residential and commercial refrigerators.

However, governments and environmental advocacy groups are now targeting these substitutes for phase-out because of their alleged role as contributors to global warming. In 2016 in Kigali, Rwanda, the parties to the Montreal Protocol agreed to an amendment to the treaty, known as the Kigali Amendment, restricting production of these second-generation refrigerants.² U.S. ratification of the Kigali Amendment requires a two-thirds Senate vote.

The Kigali Amendment would raise the cost of air conditioning and refrigeration across the board. Some manufacturers of Kigali-compliant refrigerants and equipment stand to benefit from the amendment. They have joined forces with environmental activists to lobby for the Kigali Amendment's ratification. In doing so, they have made a number of claims that do not stand up to scrutiny.

Myth: The Kigali Amendment will be a job creator.

Fact: Environmental measures that raise product prices are never net job creators, and Kigali is no exception.

Granted, a relative few refrigerant makers stand to gain, particularly the two that have patented costly substitutes for which they hope to secure a captive market via Kigali. Similarly, certain air-conditioning and refrigeration equipment manufacturers are better positioned than others to take advantage of a post-Kigali market. Most Kigali-compliant refrigerants cannot be used in existing models, which necessitates product redesigns that would benefit some manufacturers. Thus, certain companies may expand hiring in response to the windfall they expect to get under Kigali, but that windfall would be at the expense of their competitors, so the overall jobs impact in the refrigeration and air-conditioning sector is likely to be a wash.

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However, for the millions of businesses that *use* refrigeration, such as restaurants, hotels, supermarkets, and convenience stores, Kigali would drive up the cost of doing business and thus hurt employment. Higher air-conditioning costs will add to the deleterious impact. This treaty amendment will both raise the price of new equipment and increase repair costs for existing equipment. Increased refrigeration and air-conditioning expenses would take up money these businesses could otherwise use for other things, including new hiring.

Myth: The Kigali Amendment will not impose significant costs on American consumers and businesses.

Fact: Costs could easily reach into the hundreds of dollars per household and into the thousands of dollars for small businesses that rely on refrigeration and air conditioning.

While it is difficult to accurately predict the costs of Kigali, we do know that the most common Kigali-compliant refrigerant currently retails for more than \$60 per pound, while several refrigerants it would replace sell for less than \$7 per pound.³ A typical home air conditioner uses up to 15 pounds while a typical car air conditioner uses one to two pounds. Repair bills for existing air-conditioners and refrigerators also would go up, as these systems use the refrigerants targeted under Kigali—prices will rise as remaining supplies dwindle.

In addition, some of the Kigali-compliant refrigerants are flammable, so consumers and businesses may also face new risks.⁴ Reducing flammability risks would add to costs. For example, repair and maintenance expenses are likely to rise as service technicians must undertake additional precautions when dealing with flammable compounds.

Some Kigali proponents concede higher initial costs, but speculate that they would come down in time.⁵ Of course, the best way to ensure that costs do come down is to avoid creating a captive market under Kigali.

Myth: The Kigali Amendment gives American manufacturers an edge over their global competitors and will lead to increased exports.

Fact: American manufacturers of refrigeration and air-conditioning equipment are currently among the world's leaders in the sector, but the Kigali Amendment would confer no additional advantage on them.

To the contrary, Kigali may give global competitors an opportunity to erode America's technological lead in air conditioning and refrigeration equipment. The European Union already has Kigali-like restrictions in place.⁶ As a result, several European companies have moved more aggressively than their American counterparts in redesigning equipment to run on the new refrigerants. Japan and other Pacific Rim manufacturers have also developed Kigali-compliant equipment.⁷

As far as the chemical companies that make refrigerants are concerned, the two patent-holders of Kigali-compliant substitutes, Honeywell and Chemours, are American-based

companies.⁸ While there is no doubt that Kigali will be a windfall for these companies, both have production facilities for these new refrigerants in China as well as the U.S., so their “made in America” posturing is disingenuous.⁹

Myth: Failure to ratify the Kigali Amendment would make the U.S. a pariah state and foreclose export opportunities.

Fact: American companies are free to make Kigali-compliant refrigerants and equipment and sell them to willing buyers around the world, and they can do so with or without ratification.

The only thing Kigali does is place constraints on production of the refrigerants currently used in most existing refrigeration and air-conditioning equipment, thereby reducing competition. Any suggestion that Kigali makes markets more open has it exactly backwards.

Myth: Global demand for air conditioning is expected to grow substantially in the years ahead, especially in developing nations like China and India. The Kigali Amendment will position American manufacturers to sell to this expanding global market.

Fact: Global demand for air conditioning and refrigeration will likely grow, but the Kigali Amendment would do nothing to help American manufacturers capture any more of this market share than they would otherwise.

The increased global demand will be for the most *affordable* air conditioners and refrigerators, but Kigali-compliant products will very likely be among the priciest options available and thus avoided by consumers in developing countries.

Myth: An economic analysis of the Kigali Amendment, “Economic Impacts of U.S. Ratification of the Kigali Amendment,” made a convincing case that this provision would create tens of thousands of American jobs.¹⁰

Fact: This industry-funded study predicts that domestic air conditioning and refrigeration equipment manufacturers and related sectors will expand and add jobs in the years ahead, but nowhere does it make a plausible argument that this will only happen if the Kigali Amendment is ratified.

Moreover, the study does not attempt to look at the negative job impacts of costlier air conditioning and refrigeration on the users of this equipment, especially small businesses.

The study also fails to address the fact that many large domestic manufacturers have chosen to locate some of their assembly plants outside the U.S. Thus, the future number of domestic versus non-domestic jobs has much more to do with the location decisions these companies make than with the status of the Kigali Amendment.¹¹

Myth: The Kigali Amendment will lead to money-saving improvements in the energy efficiency of air conditioning and refrigeration equipment.

Fact: You cannot improve efficiency by restricting refrigerant choice; you can only compromise it.

To the extent the new Kigali-complaint refrigerants offer genuine efficiency advantages, they would catch on anyway. In reality, these new refrigerants are more likely to reduce energy efficiency than increase it, which is one reason their manufacturers are relying on Kigali to gain market share.

Moreover, the chemicals restricted under Kigali are also used to make insulation, which saves energy. There are concerns that Kigali-compliant insulation will not work as well in certain applications, which further adds to the potential for energy efficiency backsliding.¹²

Myth: The Kigali Amendment to the Montreal Protocol is bipartisan measure.

Fact: The Kigali Amendment is strictly a product of the Obama administration that deviates from the Montreal Protocol's stated purpose.

While the original Montreal Protocol was ratified under President Reagan and modified under both Presidents Bush, these provisions dealt exclusively with ozone depletion. The Kigali Amendment, by contrast, is an attempt to turn the Montreal Protocol into a global warming tool.

In sum, as with all the other elements of the Obama administration's climate change agenda, the Kigali Amendment would impose significant costs on the American economy, especially for consumers and small businesses. The claims that nearly everyone would be a winner under Kigali and that it would be a net job creator simply do not withstand scrutiny. For these reasons, the Trump administration would be well advised not to submit this treaty provision to the Senate.

Notes

¹ United Nations Environment Programme, “Montreal Protocol on Substances that Deplete the Ozone Layer,” 1987, <http://ozone.unep.org/montreal-protocol-substances-deplete-ozone-layer/79705/5>.

² United Nations Environment Programme, “Full Text of The Kigali Amendment,” 2016, <https://europa.eu/capacity4dev/unep/document/full-text-kigali-amendment-pt-1>.

³ Patrick Michaels, “Treaty will make AC units costly with no benefit to environment,” *The Hill*, February 22, 2018, at <http://thehill.com/opinion/energy-environment/375099-treaty-will-make-ac-units-costly-with-no-benefit-to-environment>.

⁴ Danny Hakim, “New Climate-Friendlier Coolant Has a Catch: It’s Flammable,” *New York Times*, October 22, 2016, at <https://www.nytimes.com/2016/10/23/business/energy-environment/auto-coolant-global-warming-at-what-cost.html>.

⁵ Inforum, “Economic Impacts of U.S. Ratification of the Kigali Amendment,” Report Prepared for the Air-Conditioning, Heating, and Refrigeration Institute and the Alliance for Responsible Atmospheric Policy, April 19, 2018, p. 10,

http://www.ahrinet.org/App_Content/ahri/files/RESOURCES/Kigali_JMS_04-19-18.pdf.

⁶ European Commission, “F-gas Portal: Quota Allocation, Authorisation and Reporting, 2015,” https://ec.europa.eu/clima/policies/f-gas/reporting_en.

⁷ Japan Ministry of Economy, Trade, and Industry, “Japan’s Technology to Reduce Fluorinated Gases,” http://www.meti.go.jp/policy/chemical_management/ozone/files/pamplet/DVD/ozone_e.pdf.

⁸ Honeywell, “Patents,” accessed September 12, 2018, <https://www.1234facts.com/about-us/patents/>.

⁹ ACHR News, “Honeywell Partners with Juhua to Produce 1234yf in China,” May 2, 2016,

<https://www.achrnews.com/articles/132395-honeywell-partners-with-juhua-to-produce-1234yf-in-china>.

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¹⁰ Inforum, “Economic Impacts of U.S. Ratification of the Kigali Amendment,” Report Prepared for the Air-Conditioning, Heating, and Refrigeration Institute and the Alliance for Responsible Atmospheric Policy, April 19, 2018,

http://www.ahrinet.org/App_Content/ahri/files/RESOURCES/Kigali_JMS_04-19-18.pdf.

¹¹ Ibid.

¹² House Committee on Energy and Commerce, Letter to the Honorable Gina McCarthy, April 1, 2015, pp. 2 and 5, <https://archives-energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/114/Letters/040115EPAHFCWhitfieldLetter.pdf>.