



**Testimony on S. 2754, The American Innovation and Manufacturing Act  
Committee on Environment and Public Works  
United States Senate  
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The Natural Resources Defense Council (NRDC) appreciates the opportunity to provide written testimony on S. 2754, the American Innovation and Manufacturing Act.

NRDC supports this bipartisan legislation – sponsored by Senators John Kennedy and Tom Carper and co-sponsored or supported by more than a third of the Senate – to phase down harmful hydrofluorocarbons (HFCs) and help U.S. companies lead the world in replacing them with innovative, climate-friendlier alternatives.

NRDC is a nonprofit organization of scientists, lawyers, engineers, and other specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 3 million members and online activists. We work on a wide range of health and environmental issues in the United States and internationally from offices in New York, Washington, Los Angeles, San Francisco, Chicago, and Beijing.

NRDC has worked for more than 30 years to safeguard the ozone layer and the climate from the family of chemicals known as fluorocarbons. Under the 1987 Montreal Protocol and the 1990 Clean Air Act, the world successfully phased out chlorofluorocarbons (CFCs) and many other chemicals that were depleting the stratospheric ozone layer that protects life on earth from dangerous ultraviolet radiation.

If we had not eliminated CFCs and related chemicals, humanity would have suffered hundreds of millions of cases of skin cancer – millions of them fatal – as well as similar numbers of eye cataracts and immune disorders, and huge agricultural losses over this century.

But thanks to bipartisan U.S. leadership in negotiating and implementing a world-wide CFC phase-out, the ozone layer is on a pathway to recover by mid-century. The CFC phase-out is also the single most effective step we've taken so far to slow climate change.

That's because in addition to harming the ozone layer, CFCs are also extremely long-lived and powerful greenhouse gases, some with more than 10,000 times the heat-trapping power, pound for pound, of carbon dioxide.

It has been calculated that if we had let CFCs keep growing, the climate change impacts we are feeling now – heatwaves, droughts, wildfires, storms, flooding, sea-level rise – would have hit us *ten years ago*. Climate impacts would have been even worse today and in the future.

Hydrofluorocarbons (HFCs) were useful as one of the initial replacements for CFCs. They don't directly harm the ozone layer, because they do not contain chlorine. They have shorter lifetimes in the atmosphere than CFCs. As a result, they have lower heat-trapping power, and so they were a step in the right direction on climate change too.

But HFCs themselves still have hundreds to thousands of times the heat-trapping power of carbon dioxide. And their use and emission has been growing, in both developed and developing countries, much more rapidly than carbon dioxide.

Scientists tell us that if HFC production and use were allowed to keep growing, HFCs could add nearly another 0.5 degree centigrade (nearly a full degree Fahrenheit) to global average temperatures by 2100. At a time when the world is struggling to find policies to hold warming under 1.5 to 2.0 degrees, we cannot afford to add another half degree of more warming from HFCs.

Fortunately, this is an area of consensus and cooperation between the industries that make and use these chemicals and the environmental community. Industry leaders – both within and outside of the fluorocarbon field – have pioneered a wide range of alternatives, some new and some old, that can do the jobs HFCs do effectively, safely, and economically with much less – and in many cases, nearly zero – impact on the climate.

Alternatives include compounds called hydrofluoroolefins (HFOs), with thousands of times less warming impact than CFCs and HFCs. Other alternatives include carbon dioxide itself (now being widely adopted in supermarket cooling systems), hydrocarbons (used in home refrigerators in most of the world), ammonia (used for decades in industrial cooling applications), and more.

The transition to these alternatives has started, but – like the transition away from CFCs – it needs the framework of an orderly phase-down under federal law. That is why both industry and environmentalists are testifying in support of S. 2754 and its House companion H.R. 5544.

The bill does three main things:

- It sets a schedule for phasing down production and import of HFCs binding on all U.S. chemical makers and importers.
- It requires recovery of reusable chemicals and reducing leaks during the service and disposal of equipment containing HFCs.
- It provides for transitioning from HFCs in end uses where safer alternatives are available.

These provisions are modeled on and integrated with the current Clean Air Act requirements for ozone-depleting chemicals. The current program has successfully led the U.S. through 30 years of Montreal Protocol implementation. Consumers have saved money and enjoyed higher quality products, and industry has benefitted from a predictable and reliable framework for marketing innovative products both here and abroad.

Likewise, the AIM Act will also provide economic as well as environmental benefits. We understand that a forthcoming EPA analysis will show a net consumer savings of more than \$3 billion from this legislation. According to a recent study by INFORM (Interindustry Forecasting at the University of Maryland), a national HFC phase-down will:

- Create 33,000 new manufacturing jobs and help sustain 138,400 existing jobs,
- Increase direct manufacturing output by \$12.5 billion and total manufacturing output by \$38.8 billion,
- Improve the U.S. trade balance in equipment and chemicals by \$12.5 billion, and
- Increase the U.S. share of the global export market by 25 percent.

It is not very often that this committee hears support for the same bill from all sides – from NRDC and other public health and environmental organizations, from the chemical makers and equipment manufacturers represented by the Alliance for Responsible Atmospheric Policy and the Air Conditioning, Heating, and Refrigeration Institute, and from broad industry associations including the U.S. Chamber of Commerce and the National Association of Manufacturers.

The bill has a remarkable 34 Senate co-sponsors, drawn equally from both parties. We are confident it would pass as introduced with a strong super-majority of the Senate.

Despite the breadth of support, we have heard several concerns, primarily about (1) the adequacy of exemptions, (2) the phase-down acceleration authority, and (3) complementary state policies. These concerns are largely based on lack of familiarity with the bill, which as designed already addresses concerns in these areas. Proposed changes in the bill would, in our view, introduce damaging and unnecessary loopholes and upset the balances struck by the broad coalition that helped develop it.

### *Exemptions*

A handful of companies are asking for carve-outs or exemptions that would introduce unnecessary and dangerous loopholes into this legislation. The bill already fully accommodates the supply needs they have identified.

It is important to recognize that S. 2754 creates a *phase-down* for HFCs, not a *phase-out*. Essential use exemptions and other small exemptions were needed under the 1990 Clean Air Act only because allowable CFC production was otherwise reduced to *zero*.

In contrast, S. 2754 gradually phases down HFC production by 85 percent over a 15-year period. The bill allows continued production of 15 percent of the baseline amount each year

after that. That level of continued production will ensure that more than enough HFCs are available to meet all legitimate needs.

For these reasons, the pharmaceutical companies that make metered dose asthma inhalers (which use less than one percent of current HFC production) support the bill as member of the Alliance for Responsible Atmospheric Policy.

We are aware of requests for expanded exemptions from polystyrene foam manufacturers, aviation companies, and perhaps others. Importantly, they have not presented data showing that there will be any shortage of supply. During the phase-out of ozone-depleting chemicals, essential use exemptions totaled less than one percent of baseline levels, according to data from the Environmental Protection Agency.

Looking forward, even taking into account underlying economic growth, the *total combined use* for all industries arguing for exemptions will amount at most to only a few percent of the HFC baseline amount. Considering that HFC production will phase down gradually over 15 years and stabilize at 15 percent of baseline, the needs of these industries can easily be accommodated.

As the companies themselves assure us, they are hard at work developing new alternatives, and there is every reason to expect these efforts to succeed as they have over the last 30 years. But even if there were *no* successful innovation and development of new alternatives for these uses, there would be ample supplies of HFC.

Further, beyond continued production of new HFCs, there will be a large additional supply of HFCs made available by the reclaim industry, which is already recovering these chemicals from existing equipment, purifying them, and putting them back on the market. The bank of recoverable HFCs is huge.

In addition, the bill provides for an orderly shift from HFCs in specific end-uses where suitable alternatives are already available or are expected in the near future. This provision has widespread industry support because moving in an early and orderly manner where good substitutes are already available will free up HFC supplies for use in applications where adopting alternatives may take longer.

As a final layer of insurance, the bill authorizes exemptions for additional HFC production after 2034, in the unlikely event that there are still needs that cannot be met by alternatives or by the supply of new and reclaimed HFCs.

For these reasons, additional exemptions would only add unnecessary and damaging loopholes that undercut both environmental protection and incentives to innovate.

### *Acceleration*

Some concerns have been raised over the limited authority the bill provides for EPA to accelerate the HFC production phase-down schedule. The bill already provides safeguards that meet those concerns.

First, the bill does not permit any change in the schedule before 2024, and for later years only the schedule may be changed only if there is data showing there are sufficient supplies of HFCs and approved alternatives to meet industry needs.

Specifically, EPA cannot act without concluding, after a full rulemaking, that “a more-stringent schedule is practicable, taking into account technological achievability, commercial demands, safety, and other relevant factors, including the quantities of regulated substances available from reclaiming, prior production, or prior import.”

Similar authority has been part of the Clean Air Act’s ozone-depleting substance provisions since their inception in the 1977 and 1990. History shows that initial phase-down schedules tend to be conservative. As industry leans into the development of new alternatives and the recovery and reuse of banks of existing chemicals, it has often turned out to be feasible and desirable to move more quickly.

For instance, the original schedule for CFCs called for cutting production in half between 1987 and 1996. The 1990 Clean Air Act required a full CFC phase-out by 2000. Because industry responded more quickly, it proved possible to complete the CFC phase-out even earlier, by 1996, with support from both industry and the environmental community.

Likewise, during the Bush administration in 2007, based on rapid progress in developing alternatives, both industry and environmentalists supported speeding up the schedule for eliminating production of HCFCs

For all these reasons, retaining the historical acceleration authority for HFCs is an important element of the program that is critical to both industry and environmental organizations.

### *Preemption*

Amendments have been tabled to preempt states from regulating HFCs. This would be an unnecessary intrusion into the traditional role that states play in the federal environmental programs. Principles of federalism call for respecting state authority to protect their citizens from health and environmental hazards.

The industry-environmental coalition that helped develop this legislation concluded that the most important need is to have a robust and credible federal HFC program in place. The need for state action has arisen principally because of the absence of such a program. But when there is a strong federal program, states still play an important supplementary role.

This has been true throughout the Clean Air Act's more than 30-year effort to eliminate ozone-depleting chemicals. State action waxes when the federal program falls short. State action wanes when the federal program is robust. While there was a two-year enforcement pause in the 1990 Act for a narrow set of appliances while EPA put the new federal law into operation, states have never been preempted from acting on ozone-depleting substances or their alternatives.

S. 2754 as drafted will create a solid federal program that is credible and effective, that meets the needs of every stakeholder, and that has broad bipartisan and industry-environmental support. A preemption provision would only damage that program and imperil that support.

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This is an area of action and accomplishment that has enjoyed the backing of every U.S. president of both parties beginning with Ronald Reagan. America has always led and needs to continue to lead. American industries have led in bringing new alternatives and the products that use them to the international marketplace. If we sustain that leadership, that will mean more manufacturing investment and jobs here in America, and a larger American share of the export market in these hundred billion dollar industries.

Environmentalists and industry alike support enacting this legislation *now*, in order to keep U.S. leadership in all aspects of the transition from HFCs to climate friendlier alternatives. It is critical that we do not wait.

To repeat, it is not very often that this Committee sees support for the same bill from such a broad coalition of stakeholders and with such broad bipartisan backing.

NRDC wants to work with all members of the Committee to move this legislation forward without delay.