PROMOTING AMERICAN INNOVATION AND JOBS: LEGISLATION TO PHASE DOWN HYDROFLUOROCARBONS

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND CLIMATE CHANGE

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C O N T E N T S

WITNESSES STATEMENT

SUBMITTED MATERIAL

[1]Ms. Newberg did not answer submitted questions for the record by the time of publication.

[2]The information has been retained in committee files and also is available at https://docs.house.gov/meetings/IF/IF18/20200114/110388/BILLS-116HR5544ih-U2.pdf.

PROMOTING AMERICAN INNOVATION AND JOBS: LEGISLATION TO PHASE DOWN HYDROFLUOROCARBONS

TUESDAY, JANUARY 14, 2020

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT AND CLIMATE CHANGE,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:32 a.m., in room 2322, Rayburn House Office Building, Hon. Paul Tonko (chairman of the subcommittee) presiding.

Present: Representatives Tonko, Clarke, Peters, Barragán, Blunt Rochester, Soto, Matsui, McNerney, Ruiz, Dingell, Pallone (ex officio), Shimkus (subcommittee ranking member), Rodgers, McKinley, Johnson, Long, Flores, Mullin, Carter, and Walden (ex officio).

Also Present: Representative Olson.

Staff Present: Jacqueline Cohen, Chief Environmental Counsel; Adam Fischer, Policy Analyst; Jean Fruci, Energy and Environmental Policy Advisor; Caitlin Haberman, Professional Staff Member; Rick Kessler, Senior Advisor and Staff Director, Energy and Environment; Brendan Larkin, Policy Coordinator; Dustin Maghamfar, Air and Climate Counsel; Mike Bloomquist, Minority Staff Director; William Clutterbuck, Minority Staff Assistant; Jerry Couri, Minority Deputy Chief Counsel, Environment and Climate Change; Tyler Greenberg, Minority Staff Assistant; Ryan Long, Minority Deputy Staff Director; Mary Martin, Minority Chief Counsel, Energy and Environment and Climate Change; Brandon Mooney, Minority Deputy Chief Counsel, Energy; Brannon Rains, Minority Legislative Clerk; and Peter Spencer, Minority Senior Professional Staff Member, Environment and Climate Change.

Mr. TONKO. The Subcommittee on Environment and Climate Change will now come to order. I recognize myself for 5 minutes for the purposes of an opening statement.

OPENING STATEMENT OF HON. PAUL TONKO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Today the subcommittee will examine H.R. 5544, the American Innovation and Manufacturing Leadership Act of 2020, which was introduced last week by Representatives Olson, Peters, Stefanik, and myself.

Hydrofluorocarbons, commonly known as HFCs, are a class of chemicals primarily used as refrigerants in heating, ventilation, air conditioning, and refrigeration. HFCs gained widespread use in the

1990s as replacements for ozone-depleting substances, such as CFCs and HCFCs. But HFCs have their own challenges, which is why a global transition to the next generation of refrigerant technologies is currently underway.

United States manufacturers are already investing billions of dollars in the research and development of new products and equipment to maintain their competitiveness. In fact, American companies are global leaders in the development of HFC substitutes.

One such class of substitutes are known as HFOs. HFOs are more environmentally friendly. But even more importantly, American manufacturers stand to gain the most in the global marketplace by leaning into this transition.

According to a study by the Interindustry Forecasting at the University of Maryland, the HFC phase-down will drive the creation of some 33,000 new United States manufacturing jobs, $12.5 billion more in direct manufacturing output annually, a significant trade balance improvement in equipment and chemicals, and a 25 percent growth of the U.S. share of the global export market. These projected benefits are not small.

Just as important, American businesses recognize that any lagging on our part will open the door for China and other nations to erode our existing global market share. This bill supports the industry in anticipating such competition and would help propel America's industry.

I would like to explain briefly a few aspects of this bipartisan proposal.

First, we are not proposing a ban. This bill would phase-down the production and consumption of HFCs over 15 years, limiting the production and consumption to 15 percent of baseline levels beginning in 2036.

The benefits include certainty for manufacturers and consumers and an orderly and predictable transition to next-generation technologies, while still allowing for exceptions for essential uses for which no substitute is available.

The legislation is modeled on Title VI of the Clean Air Act, which was enacted in 1990 with 401 bipartisan votes in the House and proved an able vehicle to foster an orderly, market-based phase-down of HFCs' predecessors. In fact, that earlier transition away from ozone-depleting substances was successful at an even lower cost than originally anticipated.

Second, this bill will not force consumers to replace equipment before the end of its useful life. Today, some older equipment is still using CFCs. This framework will guarantee that consumers are protected during the transition.

These benefits are why a phase-down of this kind has received incredibly broad support. I have served on this subcommittee for seven years. I cannot remember a time when we had the United States Chamber of Commerce, the National Association of Manufacturers, and the Natural Resources Defense Council in complete agreement on anything, let alone granting new targeted authority to EPA.

Companion legislation has received significant bipartisan support in the Senate, with 32 cosponsors, half Republican and half Democratic.

On Capitol Hill, the phrase "commonsense legislation" gets thrown around a lot, but this bill truly fits that description. It addresses an environmental concern in a manner that will spur innovation and make U.S. manufacturers more globally competitive.

This bill presents us a bipartisan opportunity to ensure the next generation of refrigerants are American made and that our constituents experience the significant economic and job benefits that come from American-led innovation.

I want to thank Mr. Olson for co-leading this effort, and I yield the remainder of my time to him.

[The prepared statement of Mr. Tonko follows:]

PREPARED STATEMENT OF HON. PAUL TONKO

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I want to thank Mr. Olson for co-leading this effort, and I yield him the balance of my time.

I yield my remaining time to Representative Olson.

Mr. OLSON. Thank you, Chairman Tonko, lead Republican Member Shimkus, and members of the subcommittee, for letting me waive on this morning.

Now, this hearing is about H.R. 5544, the so-called AIM Act. This is a rare bipartisan bill that, as was mentioned, is supported by normal combatants like the ATR, FreedomWorks, and the NRDC. They appreciate the hard work done by Chairman Tonko. Seven thousand people back home working for Dicon, living in Katy, Texas, in Texas 22, appreciate your hard work, too, sir. And people in America, manufacturers, appreciate all this hard work to get this bill where it is today.

I am proud of H.R. 5544. The AIM Act is a commonsense approach that will create American jobs, expand exports, and encourage more investment in our economy. New jobs, about 33,000 are expected. We will keep jobs here in America that may go overseas.

This bill provides a clear, deliberate framework to transition from HFCs, and puts American manufacturers, American workers, and American consumers first. It ensures we keep doors open to foreign markets that have been opened because of our new competitive Tax Code.

Mr. SHIMKUS. Mr. Chairman, my colleague is 33 seconds over.

Mr. OLSON. I thank the chairman. I thank the ranking member. I am proud to support this bill. I yield back.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes Mr. Shimkus, ranking member of the Subcommittee on Environment and Climate Change, for 5 minutes for his opening statement.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Thank you, Mr. Chairman, for recognizing me.

Today's legislative hearing demands a certain baseline amount of knowledge about the subject, particularly to review a bill on this multilayered subject and whose text itself belies the many issues it is trying to address.

If I didn't know better, I would think, as we are going to hear today, that this is a simple subject that certain parts of the industry have worked with a few environmental advocacy organizations to solve. I want to believe that tidy story, but the more I look into this issue, the more my eyes notice a story much different from the one my ears are hearing.

The issues we are discussing in this bill before us today go back five decades. In fact, the last time this committee addressed ozone-

depleting substances and the Montreal Protocol, only one-third of the members of both this committee and the full committee was on the panel.

This issue is far too big and has far too many implications on the American consumer for our committee to put members in a position of asking questions about legislation for which they have little background.

Moreover, Mr. Chairman, after the minority outlined the need for a comprehensive and fair look at both the issue and the bill, since the committee had not done anything to put them in context for us, the majority denied the minority a second witness for this hearing.

This was not because that perspective was already covered. This was not because there were time pressures or the panel was already unwieldy. No, this rejected request was done to suppress dissenting voices. It is unseemly and sours the desire that some have to get to, quote, unquote, "yes" on this bill.

Speaking of the bill, I do have some questions about that I want to explore based upon what I do know about this subject. This bill seeks to phase-out production of HFCs or hydrofluorocarbons. I question how much a bill like this is needed.

Why? The Illinois-based North American Association of Food Equipment Manufacturers is the lead trade association for commercial food service refrigeration projects. It hasn't taken a position on this legislation, but, since 2015 has proactively, on their own, undertaken transitioning away from HFCs to meet customers' demands.

How many other parts of the impacted universe are also making this transition without a government mandate? If it is necessary, I understand the bill's industry advocates want a law because States like California are acting in a way that is creating an uneven national marketplace. Yet this legislation contains no preemption provisions.

Perhaps the States didn't engage much after Montreal almost four decades ago, but as TSCA and CAFE debates have recently shown, increasing Federal action is no barrier to additional State action and sometimes serves as an incentive for more State action.

The accelerated phaseout and technology transition provisions in this legislation also give me pause. I worry that, as Justice Kavanaugh found with certain Significant New Alternatives Program, commonly known as SNAP rules, these provisions can be gamed by market actors for competitive advantage at the expense of consumers.

Likewise, these provisions could be used by nonmarket actors to drive technology that is infeasible and without EPA needing much of a basis to make that leap.

Finally, I think it bears mentioning that we should be exploring the constitutional precedent of this proposal, in an effort to implement requirements necessary for participation in the Kigali Amendment to the Montreal Protocol.

This amendment has not been submitted to the Senate for ratification by either the Obama or the Trump administrations. While I understand the attractiveness of a proposal like this to some, I wonder whether a Federal court would see this as a durable solution.

Mr. Chairman, although I wish we had a legitimate small business and other sector perspectives represented, I want to welcome our witnesses here this morning.

I especially welcome Energy and Commerce Committee staff alumnus Ben Lieberman to our second panel. Ben served our committee with honor for nearly ten years on these issues and it is good to have his friendly face back in the committee room.

And, Mr. Chairman, going off script for a second, I had constantly defended the majority over the past year through our rush to legislate, bypassing regular order, which would define it as having a hearing on the general subject and then doing a subcommittee legislative hearing and then going through markup.

We are in a new year. It is hard to continue to defend that position of not going through regular order when we haven't had a hearing on the Montreal Protocol, HFCs, or CFCs in over a decade, which makes it more difficult for my colleagues. As I said in the opening statement, one-third of us have never had this before us.

So with that, I wish we would return to regular order. And I yield back my time.

[The prepared statement of Mr. Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS

Thank you, Mr. Chairman for recognizing me for this opening statement.

Today's legislative hearing demands a certain baseline amount of knowledge about this subject. Particularly to review a bill on this multi-layered subject and whose text itself belies the many issues it is trying to address.

If I didn't know better, I would think—as we are going to hear today - that this is a simple subject that certain parts of the industry have worked with a few environmental advocacy organizations to solve. I want to believe that tidy story, but the more I look into this issue, the more my eyes notice a story much different from the one my ears are hearing.

The issues we're discussing in the bill before us today go back five decades. In fact, the last time this Committee addressed ozone depleting substances and the Montreal Protocol, only one-third of the members of both this subcommittee and the full committee were on this panel. This issue is far too big and has far too many implications on the American consumer for our Committee to put members in the position of asking questions about legislation for which they have very little background.

Moreover, Mr. Chairman, after the Minority outlined the need for a comprehensive and fair look at both the issue and the bill—since the Committee had not done anything to put them in context for us—the Majority denied the Minority a second witness for this hearing. This was not because that perspective was already covered, this was not because there were time pressures, or the panel was already unwieldy. No, this rejected request was done to suppress dissenting voices—it is unseemly and sours the desire some might have to get to "yes" on this bill.

Speaking of the bill, I do have some questions about it that I want to explore based upon what I do know about this subject.

This bill seeks to phase out the production and use of HFCs or hydro-fluoro- carbons. I question how much a bill like this is needed.

Why?

The Illinois-based North American Association of Food Equipment Manufacturers (NAFEM) is THE lead trade association for commercial foodservice refrigeration products. It not only has not taken a position on the legislation, but since 2015, has proactively undertaken transitioning away from HFCs to meet customer demands. How many other parts of the impacted universe are also making this transition without a government mandate?

If it is necessary, I understand the bill's industry advocates want a law because states, like California, are acting in a way that is creating an uneven national marketplace. Yet, this legislation contains NO PREEMPTION provisions. Perhaps the States didn't engage much after Montreal almost four decades ago, but as TSCA and CAF debates have recently shown, increasingly Federal action is NO barrier to additional State action and sometimes serves as an incentive.

The accelerated phase-out and technology transition provisions in the legislation also give me pause. I worry that, just as Justice Kavanaugh found with certain SNAP rules, these provisions can be gamed by market actors for competitive advantage at the expense of consumers. Likewise, these provisions could be used by non-market actors to drive technology that is infeasible and without EPA needing much of a basis to make that leap.

Finally, I think it bears mentioning that we should be exploring the constitutional precedent of this proposal—an effort to implement requirements necessary for participation in the Kigali Amendment to the Montreal Protocol. This Amendment has not been submitted to the Senate for ratification by either the Obama or Trump Administrations. While I understand the attractiveness of a proposal like this to some; I wonder whether a Federal court would see this as a durable solution.

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Mr. TONKO. The gentleman yields back.

The Chair now recognizes Mr. Pallone, chair of the full committee, for 5 minutes for his opening statement, please.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Chairman Tonko.

We are here this morning to discuss H.R. 5544, the bipartisan American Innovation and Manufacturing and Leadership Act. This legislation is supported by both industry and the environmental community. It will benefit our economy, maintain American manufacturing leadership, create jobs, and protect the environment.

I want to congratulate Chairman Tonko and Representatives Olson, Peters, and Stefanik for seizing this opportunity.

The bill will help the United States maintain its position as a leader in the chemical, appliance, and equipment industries. It will also allow us to continue as a leader in innovation and on global environmental issues.

H.R. 5544 builds upon our previous experience in phasing out CFCs and their replacement chemicals, HCFCs. Our success working with other nations within the global framework of the Montreal Protocol is healing the ozone layer and reducing risks associated with higher exposures to ultraviolet radiation.

Because CFCs and HCFCs are also potent greenhouse gases; their phaseout also averted additional global warming. And their replacement chemicals, hydrofluorocarbons, or HFCs, helped us to address the ozone problem, but are also potent greenhouse gases.

Fortunately, American companies are innovating new substitutes for HFCs, and that means we have an opportunity to gain additional environmental benefits.

Innovation by industry resulted in a transition away from CFCs that was less costly to business and consumers than originally anticipated, and I am confident we can achieve the same outcome in the transition away from HFCs.

The European Union and other nations, like Japan, Canada, and China, are already transitioning away from HFCs. This legislation will provide the certainty and stability American companies need to do the same. Not only will it help these companies remain competitive in the global market for air conditioning, heating, and

other consumer products, but it will also help them increase their share of the global market and it has the potential of creating tens of thousands of high quality American jobs.

The bill, H.R. 5544, braces innovation and the power of the market to add billions to our economy while delivering environmental benefits, phasing down the use of HFCs, and transitioning to next-generation technologies, provides the policy certainty American companies need to capitalize on their investments and innovation, and provide consumers with quality products that are anticipated to have lower operating cost.

So I think this bill is good for workers, good for the economy, good for consumers, and good for the environment. And I thank our witnesses for being here today.

I want to welcome back to the committee Ben Lieberman, who once served on the Republican staff.

And I would like to yield the remaining time to Representative Peters.

[The prepared statement of Mr. Pallone follows:]

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H.R. 5544 embraces innovation and the power of the market to add billions to our economy while delivering environmental benefits. Phasing down the use of HFCs and transitioning to next-generation technologies provides the policy certainty American companies need to capitalize on their investments in innovation and provide consumers with quality products that are anticipated to have lower operating costs.

H.R. 5544 is good for workers, good for the economy, good for consumers, and good for the environment. I thank our witnesses for being here today, and welcome back to the Committee Ben Lieberman, who once served on the Republican staff.

I yield my remaining time to Representative Peters.

Mr. PETERS. Thank you very much, Mr. Chairman.

Today is a good day. We are here to discuss the American Innovation and Manufacturing Leadership Act of 2020, a bipartisan bill

that enjoys widespread support from industry groups and environmental organizations, Democrats and Republicans, and both Chambers of Congress. It is also a bill that I am proud to support as an original cosponsor.

As we will hear today, the global phase-down of HFCs has begun. Their transition provides an opportunity for the United States to establish new domestic production facilities and innovative industrial processes to meet the growing demand for HFC alternatives from countries around the world. There is plenty of evidence that the private sector is poised to lead this transition if they have the right legal framework.

First, major manufacturers in the U.S., but also Japan, China, and India, are developing low-cost alternatives to HFC. In California, there are more than 5,500 direct jobs in the HVACR industry alone, and the bill's orderly phase-down of HFCs is projected to create tens of thousands more jobs nationally.

Second, phasing down the use of HFCs is certainly profitable. The Chamber of Commerce and the Consumer Goods Forum, which represents over 400 member companies, enthusiastically support the bill.

Third, companies that use HFCs in their operations and supply chains will benefit from the clarity and certainty this bill provides.

Fourth, this bill will protect American businesses against highly anticompetitive practices that include the dumping of highly subsidized HFCs. Right now, there are no limits on how much HFCs can be imported and this bill would change that.

And finally, placing HFCs with non-HFC alternatives has no downside. It protects the environment while also promoting industry.

So I am eager to get this hearing underway. I thank my colleagues and committee staff for assembling this important hearing. I am proud to be a cosponsor. I yield back.

Mr. TONKO. The gentleman yields back.

I now recognize Mr. Walden, ranking member of the full committee, for 5 minutes for his opening statement, please.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WALDEN. Good morning, Mr. Chairman.

Today's hearing obviously examines a bill that would mandate a rapid phase-down in the U.S. of the use of hydrofluorocarbons, or HFCs.

Now, these substances, which, as we all know, contribute to climate change when emitted into the atmosphere, serve many important uses, including as a very critical ingredient in cooling and refrigeration equipment throughout our society.

Scrutiny of this issue for the purpose of addressing risk to the climate is important and it is welcome. However, the approach today falls short of what is necessary to make good policy decisions.

Indeed, there appears to a rush towards a prepackaged legislative solution without having developed a full understanding of the problem we are trying to solve or whether this regulatory approach is truly the most appropriate way to work in a dynamic and very

complex marketplace or in the best interests of the American consumer or even who specifically benefits from this.

To do this completely requires more upfront work in terms of oversight and background hearings, as we heard from Mr. Shimkus, so we can have a record that we can rely upon as we consider pretty major policy options that have long-term implications for environmental policy, for market competition, and household economics.

This is especially the case in policy areas like this one, where most members have, frankly, pretty limited experience. Not all, however.

Consider that the broad backdrop of this legislation or concerns about international emissions in the international agreement under the Montreal Protocol in substances that deplete the ozone layer. That was finalized in the late 1980s.

Yet the committee, which was instrumental in developing provisions to address implementation of the protocol in the Clean Air Act, has not had a single hearing on that topic for more than a decade.

Meanwhile, we are considering a bill that implicates U.S. participation under the protocol, and I would like to better understand how this will work in real life and practice.

Recent amendments under the protocol, which have not been ratified by the United States Senate, anticipate a rapid growth of demand for refrigerants in cooling that is occurring in the developing world. How to address the needs of the developing world is a key policy matter. For example, we should understand how mandating U.S. conversion to new technologies addresses development internationally and whether it is this bill or amendment ratification that is the linchpin in the Kigali Amendment ratification.

It is worth noting that certain industries were already innovating towards non-HFC substances, which begs the question, does this have to be mandated phase-down? What are the problems in the marketplace that require government intervention at this time rather than the natural turnover to newer, more innovative technologies?

We would also benefit from a deeper understanding of the implications of any policies to phase-out HFCs on existing U.S. stock of refrigeration and cooling equipment in businesses and in households and automobiles and what those costs might be.

Are there safety issues to consider with replacement substances? We haven't heard about that. Are there energy efficiency issues? We should learn more. Will routine repair and maintenance costs accelerate for consumers? Will States implement their own more accelerated schedules for phasing out HFCs that will send the market into further turmoil?

I am hopeful the witnesses can help us answer some of these questions today and help us understand other areas that may be worth exploring.

There appears to be strong support from industry, environmentalists, and others to work on this legislation and to be clear; I am open to working on it. But we should look to do more regarding HFCs and related greenhouse gasses and we should be open to practical policies, and I am.

Maybe this legislation is a good starting point. But I think we have to look carefully to be sure it will provide the benefits promised and actually work in the best interests of American consumers.

So I should note we have some quality witnesses here this morning, including Ben Lieberman.

We are delighted to have you back.

He served on our committee staff for many years, did great public service, and did much to ensure we were keeping the consumer in mind.

So with that, Mr. Chairman, I would willfully yield back the remaining minute of my time so we can get about the hearing. And thank you.

[The prepared statement of Mr. Walden follows:]

PREPARED STATEMENT OF HON. GREG WALDEN

This morning's hearing will examine a bill that would mandate a rapid phase down, in the United States, of the use of hydrofluorocarbons, or HFCs.

These substances, which contribute to climate change when emitted into the atmosphere, serve many important uses, including as a very critical ingredient in cooling and refrigeration equipment throughout our society.

Scrutiny of this issue for the purpose of addressing risks to the climate is important, and welcome. However, the approach today falls short of what is necessary to make good policy decisions.

Indeed, there appears to be a rush towards a pre-packaged legislative solution, without having developed a full understanding of the problem we are trying to solve or whether this regulatory approach is truly the most appropriate way to work in a dynamic and complex marketplace or in the best interest of the American consumer.

To do this competently requires more upfront work in terms of oversight and background hearings so we can have a record to rely upon as we consider policy options that have long term implications for our environmental policy, market competition, and household economics. This is especially the case in policy areas like this one where most members have limited experience.

Consider that the broad backdrop for this legislation are concerns about international emissions and the international agreement under the Montreal Protocol on Substances that Deplete the Ozone Layer, which was finalized the late 1980s. Yet the Committee, which was instrumental in developing provisions to address implementation of the Protocol in the Clean Air Act, has not had a single hearing on the topic for more than a decade.

Meanwhile, we're considering a bill that implicates U.S. participation under the Protocol. I would like to better understand how this will work in practice.

Recent amendments under the Protocol, which have not been ratified by the U.S. Senate, anticipate a rapid growth of demand for refrigerants and cooling that is occurring in the developing world.

How to address the needs of the developing world is a key policy matter. For example, we should understand how mandating U.S. conversion to new technologies addresses development internationally and whether it is this bill or Kigali Amendment ratification that is the lynch pin.

It is worth noting that certain industries are already innovating towards non HFC substances, which begs the questions: Does this have to be a mandated phase down? What are the problems in the marketplace that require government intervention, rather than the natural turnover to newer, more innovative technologies?

We would also benefit from a deeper understanding of the implications of any policies to phase out HFCs on the existing U.S. stock of refrigeration and cooling equipment-in businesses and in households, in automobiles- and what the costs of that are. Are there safety issues to consider with replacement substances? Are there energy efficiency issues? Will routine repair and maintenance costs accelerate for consumers? Will states implement their own, more accelerated schedules for phasing out HFCs that will send the market into further turmoil?

I am hopeful the witnesses can help us answer some of these questions today and help us understand other areas that may be worth exploring.

There appears to be strong support-from industry, environmentalists, and others-to work on this legislation. And to be clear, I am open to working on it. We should look to do more regarding HFCs and related greenhouse gases and we should be open to practical policies. Maybe this legislation is a good starting point, but I think we have to look carefully to be sure it will provide the benefits promised and actually work in the best interests of American consumers.

I should note we have some quality witnesses this morning, including Ben Lieberman, who served on the Committee staff for many years, and did much to ensure we were keeping the consumer in mind.

Mr. TONKO. Thank you, Representative Walden. The gentleman yields back.

The Chair would like to remind members that, pursuant to committee rules, all Members' written opening statement shall be made part of the record.

I now will introduce the witness for our first panel, a single witness at today's hearing, Ms. Cynthia Newberg, director of the Stratospheric Protection Division, Office of Atmospheric Programs, at the U.S. Environmental Protection Agency, Office of Air and Radiation.

Before we begin, I would like to explain the lighting system. In front of you are a series of lights. The light will initially be green. The light will turn yellow when you have 1-minute remaining. Please begin to wrap up your testimony at that point. The light will turn red when your time has expired.

So at this time, the Chair recognizes Ms. Newberg for 5 minutes; please to provide your opening statement.

STATEMENT OF CYNTHIA NEWBERG, DIRECTOR, STRATOSPHERIC PROTECTION DIVISION, OFFICE OF ATMOSPHERIC PROGRAMS, U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF AIR AND RADIATION

Ms. NEWBERG. Good morning, Chairman Tonko, Ranking Member Shimkus, and members of the subcommittee. My name is Cindy Newberg, and I am the director of the Stratospheric Protection Division in the Office of Atmospheric Programs in the Office of Air and Radiation at the U.S. Environmental Protection Agency.

The Stratospheric Protection Division implements the Montreal Protocol and substances that deplete the ozone layer in Title VI of the Clean Air Act, which have the shared goal of restoring the ozone layer.

I appreciate the opportunity to testify today regarding H.R. 5544. Although the Agency does not have a formal position on the bill, my testimony today will focus on how EPA implements current stratospheric protection programs, as well as technical aspects of the committee's bill to address hydrofluorocarbons, or HFCs, which are substitutes for certain ozone-depleting substances.

To provide a brief background, I have been with EPA for more than 27 years and have served on delegations for the Montreal Protocol representing the United States and EPA's interests under the last three administrations.

The Montreal Protocol is a global agreement to protect the Earth's ozone layer by phasing out production and consumption of chemicals that deplete it. The protocol was signed by the United States in 1987 and ratified by the Senate in 1988. Today, all countries that are members of the U.N. are parties to the protocol.

By restoring the ozone layer we reduce risk of skin cancer and cataracts. For Americans, full implementation of the Montreal Protocol is expected to result in the avoidance of more than 280 million cases of skin cancer and more than 45 million cases of cataracts in the United States alone.

Ozone-depleting substances have been used in many households, industrial and military applications. The phase-out of the U.S. production and consumption of ozone-depleting substances is managed by issuing tradable allowances through rulemaking.

In addition, Title VI of the Clean Air Act includes complementary measures to smooth transition to alternatives, including provisions to support recovery and reuse of existing chemicals and identification of alternatives for relevant applications.

To facilitate transition, EPA has implemented domestic regulations and partnership programs that have enabled the United States to not only meet, but to exceed our commitments outlined in the Montreal Protocol. Many other countries have looked at our programs as models. And at the same time, U.S. companies have shown great leadership with the development and deployment of alternatives.

In the wake of the Montreal Protocol and Title VI of the Clean Air Act, the U.S. has been substituting ozone-depleting substances with alternatives, including, to a large extent HFCs. And at the same time, global demand for refrigeration and air conditioning has increased and more HFCs are being used, particularly in cooling applications.

While HFCs do not deplete the ozone layer, most HFCs are potent greenhouse gases. The AIM Act would establish new domestic authority to phase-down production and consumption of HFCs. If signed, the AIM Act would require the EPA to do many of the same types of activities for HFCs that we have done and continue to do for the ozone-depleting substances.

The bill would require EPA to publish a list of HFCs and their exchange values, which are defined in the bill. It would require periodic reporting to the EPA for HFCs that are produced, imported, exported, reclaimed, destroyed, used and consumed in the manufacture of other chemicals. It would establish a baseline which would be used to help create an allowance and trading program.

The EPA Administrator would bear responsibility for allocating allowances on either an annual or multiyear basis, following a phase-down schedule for production and consumption. Transfer of allowances between companies would be allowed, and the Administrator could be petitioned to increase the speed of the phase-down schedule.

The Administrator would also be required to promulgate regulations to establish standards for the management of HFCs to control practices for servicing, repairing, disposing, or installing of equipment.

Furthermore, the Administrator would be authorized to facilitate transition to next-generation technologies by establishing restrictions on specific uses of HFCs based on availability of alternatives.

Again, while EPA does not have a position on the legislation, I am here on behalf of the agency to discuss technical aspects of the

bill and provide a perspective on our stratospheric protection programs.

In conclusion, the AIM Act would provide EPA authority to phase-down production and consumption of HFCs in the United States, as well as authority to establish complementary measures.

Thank you again for the opportunity to testify, and I look forward to answering your questions.

[The prepared statement of Ms. Newberg follows:]

Statement of Cindy Newberg

Director of the Stratospheric Protection Division

U.S. Environmental Protection Agency

Legislative Hearing on

The American Innovation and Manufacturing Leadership Act of 2020

Subcommittee on Environment and Climate Change

House Energy and Commerce Committee

January 14, 2020

Good Morning Chairman Tonko, Ranking Member Shimkus, and members of the subcommittee. My name is Cindy Newberg, and I am the Director of the Stratospheric Protection Division in the Office of Atmospheric Programs in the Office of Air and Radiation at the U.S. Environmental Protection Agency (EPA). The Stratospheric Protection Division oversees implementation of the *Montreal Protocol on Substances that Deplete the Ozone Layer* and Title VI of the Clean Air Act, which have the shared goal of restoring the ozone layer.

I appreciate the opportunity to testify today regarding the Committee's American Innovation and Manufacturing Leadership Act of 2020. Although the Agency does not have a formal position on the bill, my testimony today will focus on how the EPA implements current stratospheric protection programs, as well as the technical aspects of the Committee's bill to address hydrofluorocarbons (HFCs), which are substitutes for certain ozone-depleting substances.

To provide a brief background, I have been with EPA for more than 27 years and served on delegations for the Montreal Protocol representing the United States and EPA's interests under the last three administrations. The Montreal Protocol is a global agreement to protect the Earth's ozone layer by phasing out production and consumption of the chemicals that deplete it. The Protocol was signed by the United States in 1987 and ratified by the United States Senate in 1988. Today, all countries that are members of the United Nations are parties to the Protocol. By restoring the ozone layer, we reduce risks of skin cancer and cataracts. For Americans, full implementation of the Montreal Protocol is expected to result in the avoidance of more than 280 million cases of skin cancer, approximately 1.6 million skin cancer deaths, and more than 45 million cases of cataracts in the United States alone.

Ozone depleting substances have been used in many household, industrial, and military applications. The phaseout of the U.S. production and consumption of ozone-depleting substances is managed by issuing tradeable allowances through rulemaking. In addition, Title VI of the Clean Air Act includes complementary measures to smooth transition to alternatives for ozone-depleting substances including provisions to support the recovery and reuse of existing chemicals and identification of alternatives for all relevant applications. To facilitate smooth

transition to a range of alternatives, EPA has implemented domestic regulations and partnership programs that have enabled the United States to not only meet but to exceed the commitments outlined in the Montreal Protocol. And at the same time, U.S. companies have shown great leadership with the development and deployment of a range of alternatives. Many of these programs have served as models for other countries, who regularly consult with EPA for our technical expertise.

In wake of the Montreal Protocol and Title VI of the Clean Air Act, the U.S. has been substituting ozone depleting substances with alternatives, including to a large extent with HFCs. Meanwhile, as global demand for refrigeration and air conditioning increases, more HFCs are being used as substitutes, particularly in cooling applications. While HFCs do not deplete the ozone layer, most HFCs are potent greenhouse gases.

The AIM Act, as drafted, would establish new domestic authority to phase down the production and consumption of HFCs. If signed into law, the AIM Act would require the EPA to do many of the same types of activities for HFCs that we have done and continue to do for the ozone-depleting substances.

The bill would require EPA to publish a list of HFCs and their exchange values, which are defined in the bill. It would subsequently require affected entities to periodically report to the EPA the amount of regulated substances produced, imported, exported, reclaimed, destroyed, used and consumed in the manufacture of other chemicals, or used as process agents. It would establish a baseline which would then be used to help create an allowance and trading program to phase down production and consumption of HFCs. The EPA Administrator would then bear responsibility for allocating allowances on either an annual basis or for multiple years based upon a schedule for the phase down of production and consumption of HFCs. Transfer of allowances between companies would be allowed. The Administrator may be petitioned to increase the speed of the scheduled phase down.

The Administrator also would be required to promulgate regulations to establish standards for the management of HFCs to control, as appropriate, practices, processes or activities for servicing, repairing, disposing, or installing equipment involving regulated substances. Furthermore, the Administrator would be authorized to facilitate transitions to next-generation technologies by establishing restrictions on specific uses of HFCs and evaluating availability of substitutes for the regulated HFCs. These are the same actions we do today for ozone-depleting substances.

Again, while the EPA does not have a position on the legislation, I am here on behalf of the Agency to discuss the technical aspects of the Committee's bill and provide a perspective on how current EPA stratospheric protection programs are being implemented.

In conclusion, the AIM Act of 2020 would directly provide EPA the authority and direction to phase down production and consumption of HFCs in the United States, as well as authority to establish complementary programs to address HFC management and use. Thank you again for the opportunity to testify. I look forward to answering your questions regarding details of the bill.

Mr. TONKO. Thank you very much. And we are indeed fortunate to have you here today because of your wealth of technical expertise on many issues before us. But in regard to this committee hearing, and subcommittee hearing, thank you for being here for the technical assistance that EPA is providing to the committee and subcommittee on this legislation.

So, Ms. Newberg, I would like to begin broadly. First, subject to the technical assistance EPA has provided, does EPA have any concerns about its ability to implement this legislation?

Ms. NEWBERG. Thank you very much, Chairman Tonko.

I believe our view is that, based on the technical assistance that we provided that were taken up in the bill, we believe that it could be implemented.

Mr. TONKO. Thank you.

And how goes the regulatory program that this legislation creates compare to existing programs under Title VI of the Clean Air Act.

Ms. NEWBERG. There are many similarities between what is in this bill and what is in the current Title VI Clean Air Act and how we implement that in the domestic program. There are a few differences between the two, but there are relatively provisions that are more niche. And most of the main components, particularly the phase-down, is very similar.

Mr. TONKO. Thank you.

And do you foresee EPA implementing a program that phases-down HFCs in a substantially similar manner as to how CFCs and HCFCs were addressed?

Ms. NEWBERG. I can speak to what is in this bill, and if we were to implement something that was based on this bill, then there is certainly a likelihood that we would do so in a similar manner.

Mr. TONKO. Thank you.

And for entities already subject to regulation under Title VI, does EPA believe it could implement this legislation in an efficient and streamlined manner that minimizes additional burdens on regulated entities?

Ms. NEWBERG. I believe that we would look at our existing regulations and seek to find ways to make sure that they were taken up together. There are a few places in this bill where specifically coordination with existing programs is mentioned. And there is at least, I can recall, at least one other instance in our technical assistance where we suggest similar coordination should be requested.

Mr. TONKO. Thank you.

And, Ms. Newberg, if I could please direct your attention to section 3, paragraph (d), of the draft bill.

My understanding—do you have the section?—my understanding of the intent of this provision is to preclude the Agency from listing a blend of substances as a regulated substance. That way, if the blend contains a regulated HFC and some other chemical, the non-HFC chemical would now become subject to the phase-down.

I do not believe the intent was to affect the regulation of any listed HFC that may be used in such a blend. Does EPA believe this legislative text accomplishes this intent?

Ms. NEWBERG. In the technical direction that we provided, EPA actually did speak to this particular provision, and we indicated that we thought that, based on our understanding and based on what you have just said now, it looked to us like the provision may have been drafted perhaps more broadly than what was intended.

It looked like the intent may be to effect insurance that we would not somehow be listing twice chemicals under the phase-down schedule and our suggestion was to perhaps narrow that provision and we provided some text.

Mr. TONKO. OK. And the draft legislation requires EPA to include isomers in the initial list of regulated substances. I understand the Agency has suggested there may not be any benefit to this requirement.

Ms. Newberg, would you please explain why the Agency does not think it is necessary to include isomers in the list of regulated substances?

Ms. NEWBERG. I would be happy to.

The schedule and the list of chemicals that were provided on the HFCs would be the only chemicals, in our understanding, that would be subject to the provisions. So our view was that collecting information on isomers could be burdensome and would not be necessary to effectuate what was being asked for in the legislation.

Mr. TONKO. Thank you.

Those are the questions I have. I will now allow Mr. Shimkus, our subcommittee ranking member, to have 5 minutes for questioning please.

Mr. SHIMKUS. Thank you, Mr. Chairman. And thanks for identifying section 3(d), because I want to go originally to there also.

And based upon the questions that the chairman already asked, I guess my follow-up question would be, what would be the practical impact of having this provision remain so ambiguous? If not changed, based upon your advice, identifying it as ambiguous, what is the risk?

Ms. NEWBERG. I appreciate the question and I believe it is also one that I would want our general counsel to consult with, so we may have to come back to you on that. I think our view is that we may have to take up some better understanding of this.

Mr. SHIMKUS. So you do agree, as you replied to the chairman, that it is ambiguous and needs more legislative scrutiny?

Ms. NEWBERG. I believe the terms I used were a little bit different. I think what I said was in our technical advice, we had suggested that if it were intended to be limited to just the phase-down schedule that it needed to be more narrowly aimed. I don't believe I had indicated——

Mr. SHIMKUS. More narrowly named, OK, more specific, more narrowly focused.

Ms. NEWBERG. If that is the intent.

Mr. SHIMKUS. Yes. And that is why we have legislative hearings.

Let me go to then; I want to ask about transparency and the public's ability to know what is happening at the Agency on this matter.

Is it your opinion that section 7(c)(3) provides transparency on decisions regarding the evaluation of petitions.

Ms. NEWBERG. Thank you very much.

And, again, I will refer to the fact that we did provide some technical assistance on this section as well. And in particular, what we had commented on was that the provision seems to indicate that petitions that were denied would be subject to providing that information in the Federal Register. And I think our suggestion was that both petitions that were granted or denied should be treated in the same manner.

Mr. SHIMKUS. So by filing in the Federal Register, then you are saying that is the transparency of the basis of my question?

Ms. NEWBERG. I believe that the technical advice suggests that on the grounds that we did believe a transparent process would be necessary.

Mr. SHIMKUS. So let's go to section 7(c)(5). Does this section ensure petitions are available to the public?

Ms. NEWBERG. As drafted, it would ask that we publish the full petition, so that would make them available to the public. We did provide some advice on perhaps we could notify that they were available and make them available on a docket, rather than publish the full petition in the Federal Register.

Mr. SHIMKUS. Should the criteria established in section 7(d) apply to regulations promulgated under both section 7(a) and in response to a petition under section 7(c)?

Ms. NEWBERG. So. Again, referring back to our technical assistance, that was the suggestion that we did make.

Mr. SHIMKUS. OK. Let me just ask some general questions. This is coming from the Democratic memo.

On page one, they say a global transition away from hydrofluorocarbons is beginning. Do you agree with that general statement?

Ms. NEWBERG. I think generally we are seeing that.

Mr. SHIMKUS. OK. And that is without any movement of any legislation. That is just a global movement away from HFCs.

And on their second page, they have a statement: Since then, the United States has led the world in the transition away from ozone-depleting substances. Would you agree with that statement?

Ms. NEWBERG. I would.

Mr. SHIMKUS. On their third page, they identify that EPA's refrigerant management regulations established requirements for the handling, recovering, and disposal of refrigerants, as well as the prevention and repair of leaks. This framework has led to more than 168 million pounds of refrigerants being reclaimed from 2000 to 2016, which has avoided significant ozone-depleted substance emissions to the atmosphere. In addition, EPA regulations have successfully facilitated transitions away from ozone-depleting systems in specific applications.

Would you agree with that?

Ms. NEWBERG. I would need to go back and work with my congressional affairs to provide you with that answer. We do have information reported to the Agency on reclaimed refrigerant on an annual basis, so we could provide it that.

Mr. SHIMKUS. Yes. And I think that is going to be one of the points as we raise this again.

My other concern has been that we will have industry, we will have the environmental community. We will not have small busi-

nesses representing or consumers being represented in this hearing. We are going to make an attempt to make sure their voices are heard.

And with that, Mr. Chairman, I yield back my time.

Mr. PETERS [presiding]. Thank you. The gentleman yields back.

The Chair now recognizes himself for 5 minutes for the purpose of asking questions.

Thank you again, Ms. Newberg, for being here.

I wanted to ask you a little bit about small users and the phase-down. So the legislation requires a phase-down in the production and consumption of the listed HFCs—and I take the gentleman's point about isomers; we will follow up on that—by 85 percent over 15 years. It is not a ban. I think you have seen things like this in other contexts.

When the phase-down is complete in 2036, 15 percent of baseline levels of production and consumption will still be available.

So, Ms. Newberg, can you put the 15 percent amount in context? Is that a sufficient amount to allow small or niche users of these materials to continue to use HFCs?

Ms. NEWBERG. Thank you very much.

There may be a couple points to that that are worth noting. First, there are provisions that are included in here that seem to allow for additional production or consumption if there are needs that are going unmet. So that may be something that is there.

In terms of the 15——

Mr. PETERS. In addition to the 15 percent potentially.

Ms. NEWBERG. Additional. That is our read of what is written.

Mr. PETERS. Correct.

Ms. NEWBERG. With regard to the 15 percent, for the ozone-depleting substances, the phase-outs have been complete to zero, and we have had at times had to look at whether or not there were additional uses.

Typically, those were not for small business. It was more for human health. For example, for metered dose inhalers for asthmatics. And in those cases, we have always found a way to work with those uses.

From a point of view in terms of the percentage, the 15 percent number seems consistent with numbers that we looked at to ensure that we would not have to look at any kind of additional amounts needed in order to service existing equipment, ensure that equipment met its useful lifetime, and ensure that if there were any niche applications that were consumer based or military or others that those uses could get met.

Mr. PETERS. And just to follow up then, if the 15 percent somehow isn't enough, there are other protections in the bill for small uses that don't have substitutes available for their applications. Is that correct?

Ms. NEWBERG. That seems consistent with what is in the bill.

Mr. PETERS. OK. Good.

On the subject of developing substitutes for the use of HFCs, how has EPA considered lead times for transitions away from certain chemicals when acting under Title VI?

Ms. NEWBERG. In this particular space, chemicals are used in a wide variety of applications. So anywhere from an aerosol or a solvent wipe to foam products.

So for the ozone-depleting substances—and HFCs are used in all of the same applications as their predecessor chemicals—we have seen lead times vary, industry by industry, end use by end use, and without any specific minimum time needed.

Mr. PETERS. OK. So you do see a variation.

And then are there restrictions under Title VI on the import of HFCs at this time.

Ms. NEWBERG. There are no restrictions under Title VI for the import of HFCs.

Mr. PETERS. So if H.R. 5544 became law, imports of the HFCs to be phased-down under the law would be subject to the allowance-based phase-down program. Is that true in your understanding?

Ms. NEWBERG. Our understanding is that we would be establishing an allowance-based program.

Mr. PETERS. OK. Good. Well, thank you very much.

I don't have any more questions, so I will yield back and at this time, recognize Mrs. McMorris Rodgers from Washington for 5 minutes.

Mrs. RODGERS. Thank you, Mr. Chairman.

While a stated goal of this legislation is to provide certainty to U.S. companies to phase down the use of HFCs and to invest in next-generation coolants, I am concerned that this bill will just add to a growing patchwork of State laws phasing outs these chemicals.

This past year, Washington State, along with California and Vermont, passed legislation to phase them out. More States are expected to follow suit.

Like other debates we are having in the committee, for example on CAFE standards and privacy, having one national standard often makes the most sense for providing that regulatory certainty.

Ms. Newberg, I am concerned about the danger of unrealistic, legally enforceable timelines and increasing litigation. Does the Agency believe 90 days is enough time for the Agency to meet the listing requirements in section 3(a), including the requirement to list all isomers?

Ms. NEWBERG. Thank you very much for the question.

The Agency did provide technical assistance suggesting that 180 days would be more appropriate and suggesting that the trigger not be based on publication in the Federal Register since publication is outside of our scope.

Mrs. RODGERS. Should the obligation to create such a list by a date certain or to publish it—should the obligation be a date certain or a date to publish it in the Federal Register?

Ms. NEWBERG. Our technical assistance indicated that we could—we would be able to implement something that was within 180 days. We did not suggest that we needed to have no date included in the bill.

Mrs. RODGERS. Why do you think it is important to have a date?

Ms. NEWBERG. I think that is up to Congress.

Mrs. RODGERS. But you are advising 180 days.

Ms. NEWBERG. We were advising 180 days as opposed to 90 day, that is right.

Mrs. RODGERS. OK. Thank you. I don't have any further questions.

Mr. PETERS. The gentlelady yields back.

The chair now recognizes the gentlelady from Delaware, Ms. Blunt Rochester, for 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman.

And I want to thank the members who worked very hard on this legislation, H.R. 5544.

And thank you, Ms. Newberg, for being here today and for the technical assistance that you provided on this legislation.

I would like to begin with a few questions about how consumers will be affected. And my first question is, have you evaluated the cost to consumers of an HFC phase-down, and if so, what are the results of the Agency's evaluation?

Ms. NEWBERG. So we have not provided—I am sorry, we have not prepared a cost assessment of this particular bill.

Ms. BLUNT ROCHESTER. OK. Do you intend to?

Ms. NEWBERG. We have not been asked to.

Ms. BLUNT ROCHESTER. OK. I think we might want to ask you to do that. OK.

Would this legislation result in consumers having to replace equipment using HFCs before the natural end of life for that equipment? For example, let's say my air conditioner is only a couple of years old. If this legislation passes, will I have to replace my air conditioner?

Ms. NEWBERG. No. In reading this bill and our understanding of the provisions, particularly the provisions in the section, I believe it is in section 6, we do not believe that that would at all force anyone to replace their air conditioner before it reaches the end of its useful lifetime.

Ms. BLUNT ROCHESTER. So what about for servicing my air conditioner, will service technicians still have access to the HFC in my air conditioner if, for example, it needs to be topped up?

Ms. NEWBERG. So, again, looking at section 6, it does appear that that section would promote recover, recycle, reuse of existing chemicals. I can say from our history on the ozone-depleting substances, we phased out of CFCs in 1996 and we still have CFCs available for servicing equipment. So the history shows that it should be available.

Ms. BLUNT ROCHESTER. OK. And can you describe how this worked for the phase-out of CFCs and HCFCs? And specifically, were there early equipment retirements necessary or were there sufficient CFCs and HCFCs available to continue servicing existing equipment?

Ms. NEWBERG. Based on looking at the programs that we have in place today, and those programs have been in place since the 1990s, we have not seen situations where people have replaced equipment because they have not had access to CFCs or HCFCs. And the recovered CFCs and HCFCs need to meet the same purity standard as newly manufactured chemicals.

Ms. BLUNT ROCHESTER. And I understand that refrigerant management, such as requiring that refrigerants be recovered and ad-

dressing leaks, is critical to minimizing emissions to the atmosphere of refrigerants like HFCs. Does section 6 of the bill give EPA sufficient authority to address refrigerant management and work to minimize emissions?

Ms. NEWBERG. I believe our review of it seems to indicate that it would provide sufficient authority to establish recovery, recycling, and reclamation programs.

Ms. BLUNT ROCHESTER. And under Title VI, does EPA currently address things like training for HVAC technicians? And is that done broadly, or does it have to be focused on an environmental focus?

Ms. NEWBERG. Currently, Title VI has provisions that we have implemented that do require that technicians are certified to work on equipment that contains ozone-depleting substances and non-exempt chemicals. In those instances, the training is focused really much more on the environmental outcome. We don't see ourselves as establishing trade programs.

Ms. BLUNT ROCHESTER. OK. And, Ms. Newberg, we are obviously interested in making sure that this new regulatory program would be implemented efficiently and in coordination with existing requirements for regulated businesses, such as under Title VI. With respect to section 7 of the legislation, does EPA have sufficient authority to coordinate any regulations issued under section 7 with other regulatory requirements?

Ms. NEWBERG. We did note in our technical assistance that language that was similar to language that is in section 6 would be useful to ensure that there was coordination and that we did not create duplicative requirements.

Ms. BLUNT ROCHESTER. And I want to thank you, and just ask a more broad question. Is it your expectation that, if passed, EPA would implement this legislation by integrating and coordinating the HFC phase-down with the existing regulatory structure of Title VI?

Ms. NEWBERG. I believe that is a question I would need to take back and we would need to consider that within the Agency. But I think based on what is here, there are a lot of similarities to Title VI.

Ms. BLUNT ROCHESTER. Thank you so much for your testimony.

And I would close by just saying it is not often, especially in these times, that we see things that are bipartisan, members of both Houses, both Chambers, in support, and industry and advocates. And so I am strongly in support of this bill, and I hope that my colleagues will also recognize the time is now.

Thank you, and I yield back.

Mr. PETERS. The gentlelady yields back.

The chair now recognizes the gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman.

And, Ms. Newberg, thanks for being with us today.

And I know you already know this. The Kigali Amendment to the Montreal Protocol aims to phase down the use of HFCs but has not been ratified by the United States.

If the legislation before us today is enacted, what would still need to be done to align our domestic laws in a way that ensures full compliance with the Kigali Amendment?

Ms. NEWBERG. Thank you very much, and I appreciate the question.

We have not done an assessment of how this bill compares to Kigali. That process would be an interagency process that would include the Department of State.

Mr. JOHNSON. OK. How could this lack of full compliance affect U.S. interactions with other countries that have already ratified the agreement?

Ms. NEWBERG. Well, again, we haven't done an assessment of that.

Mr. JOHNSON. So you would address that issue in your assessment?

Ms. NEWBERG. I think that the process for determining whether or not an international treaty and how that works with domestic regulation, typically that is a process that is led by the Department of State. EPA certainly participates, but typically that is a Department of State-led process.

Mr. JOHNSON. OK.

I would like to get a better understanding of the language used in H.R. 5544. And if you can't answer some of these now, just say so, and I would appreciate an answer for the record if we get to that point.

Does H.R. 5544's definition of consumption allow an importing country to have established the same or similar requirements to those in the bill?

Ms. NEWBERG. I am sorry. To allow an importing country?

Mr. JOHNSON. Yes.

Ms. NEWBERG. I think I would need to take that back. Typically we think about companies, not countries.

Mr. JOHNSON. OK. All right.

Does H.R. 5544's definition of exchange value have clear direction for purposes of calculations under this act, since other provisions provide for different calculations aside from the exchange value?

Ms. NEWBERG. I believe we provided some technical assistance with regards to different areas in the draft—in the legislation—that would rely on the exchange value. So we can go back and provide additional information if needed and see. But I think generally, we have already addressed that in the technical assistance.

Mr. JOHNSON. OK.

And does H.R. 5544's definition of produce, produced, and production operate similarly to how EPA implements Title VI of the Clean Air Act when it comes to excluding regulated substances that were destroyed?

Ms. NEWBERG. We did make a suggestion in our technical assistance that there should be maybe an addition of a phrase at the end of that section just to be more clear that destruction would be excluded.

Mr. JOHNSON. OK. All right. Thank you.

Mr. Chairman, I am going to yield the remaining balance of my time to my colleague from Oklahoma, Mr. Mullin.

Mr. PETERS. The gentleman is recognized.

Mr. MULLIN. Thank you, Mr. Johnson.

I would like to address some of the stuff that Ms. Rochester, who is a good friend of mine, brought up.

Ms. Newberg, are you in the HVAC business?

Ms. NEWBERG. I am not.

Mr. MULLIN. You are not? Well, it is interesting to me how you could certainly answer questions about refrigerant and about replacement parts when she was asking you about service and repair, such as, have you seen that the equipment runs its full life span without replacement? And you said: We have not seen that.

Well, I have been in the business 20 years—actually 23 years. I have seen it.

Because what happens is the R–22, which is the ODS that is being phased out right now—so you don't have to go back to counsel on this one, which you did the rest of them, but I appreciate your answering with certainty some of these questions—the R–22, when you do a replacement drop-in, what we call a drop-in of new refrigerant, what ends up happening is you lose 80 percent of the capacity of the unit.

So if you go from an R–22 and you are going to do a drop-in of like, say, a 421A—which I am sure you are probably not familiar with that—or you are going to do a drop-in of a 422 or an R–453A, what happens is you lose 80 percent of your capacity.

And then your PSIs on your compressor runs at 136 PSI, which is your pressure, at 80 degree temperature day. And when you do your replacement, it jumps that PSI for your compressor to run up to 236 to 240 PSI, which burns out the unit, with less efficiency and less capacity.

So what happens is, yes, you do have to replace it. So when you talk about a phase-out, you are talking about phasing out a system; 60 to 65 percent of all the systems out there right now are still running on R–22. And we haven't even phased out R–22 and we are supposed to be phasing it to the 410A, and now you are saying we are going to phase it out. There is a problem here.

Mr. JOHNSON. Sorry, Mr. Mullin, I am going to reclaim my time.

And, Mr. Chairman, I yield back.

Mr. PETERS. The gentleman's time has expired.

The Chair now recognizes the gentleman from Florida, Mr. Soto, for 5 minutes.

Mr. SOTO. Thank you, Mr. Chairman.

And thank you, Ms. Newberg, for being here today. I am from Florida, and we have a lot of sun, and obviously a lot of ACs, and care deeply about the ozone layer and about clean air.

I wanted to ask you about section 4 monitoring and reporting. Does section 4, as drafted provide the EPA with all of the information that it would need to implement the phase-down?

Ms. NEWBERG. It provides some technical assistance with regards to section 4. Generally speaking, I think we did feel like the section did provide us with the information that the Agency needed. In a few instances, we noted that some of the information being requested, we may already have that information, particularly information with regards to the 1989 baselines.

Mr. SOTO. Right. And I have in my notes that you all have been collecting it since that day. So to confirm, is the current requirement that persons subject to the reporting requirement report data for the baseline years of 2011, 2012, and 2013, helpful? Is that helpful to you all?

Ms. NEWBERG. I am sorry; I may need to look back at that. I believe for 2011 and 2013 the information would be helpful in the sense that those are the years that are the baseline years. The Agency has some information already reported, but we did not feel that we necessarily would have a perfect set. We would have to go back and look at that. So having something included would be helpful.

Mr. SOTO. I would direct your attention to section 4, paragraph (d), entitled "Coordination." Does this paragraph provide sufficient authority to EPA to allow for efficient integrated reporting between this legislation and existing reporting requirements?

Ms. NEWBERG. We believe the paragraph on coordination was very helpful and would allow for us to streamline some of the reporting requirements.

Mr. SOTO. I appreciate your assistance.

And I yield back.

Mr. PETERS. The gentleman yields back.

The Chair now recognizes the ranking member of the full committee, Mr. Walden, for 5 minutes.

Mr. WALDEN. Well, thank you, Mr. Chairman. As you know, we have got this other subcommittee going on downstairs. So I wanted to ask a couple of questions, and hopefully, they haven't been already asked.

Section 7 of H.R. 5544 calls for the EPA to engage in negotiated rulemaking with the stakeholders and promulgate regulations on the sector level, meaning a limited list of stakeholders may participate.

Since consumers are left out of this engagement, do you think it is appropriate to have the consumers' voices and not just the manufacturers' made a part of this rulemaking discussion about the products they will be able to buy?

Ms. NEWBERG. I believe in any rulemaking that the Agency does that participation by the public is always welcome and always encouraged.

I have not personally had experience with a negotiated rulemaking, so that would be something I would want to check back as to how best we would make sure that other voices are heard in the process.

Mr. WALDEN. All right. Section 5(d)(2) of H.R. 5544 allows any outside party to petition the Agency to accelerate the scheduled phase-down of HFCs. Section 7(c) of the bill allows any outside party to petition the Agency to restrict the use of an HFC in a specific industry.

It appears that the Agency grants these petitions; they automatically must issue regulations with the requested outcomes, thereby limiting public input.

So do you believe it is clear how the petition process described in these sections and their subsequent rulemaking processes relate to one another?

Ms. NEWBERG. So the Agency did provide technical assistance suggesting that in instances both where we grant and deny a petition, in both instances that information should be put in the Federal Register and should be in a more transparent way so that the public is aware of that.

Mr. WALDEN. But do you think—well, when would the public have the opportunity for meaningful participation in that kind of decisionmaking?

Ms. NEWBERG. I would probably need to go back and consult with our general counsel. Generally, in our rulemaking process, obviously, we do provide comment periods. In this particular instance with this language, I would want to go back and consult.

Mr. WALDEN. It is an issue, question we have. So that would be helpful to know.

And could either of these subsections be read to prejudge the outcome of a rulemaking process?

Ms. NEWBERG. We noted in our technical assistance that (c)4 could be read to prejudge the outcome and we had suggested changes to that language on that basis.

Mr. WALDEN. Did those changes get incorporated into the draft?

Ms. NEWBERG. To my knowledge, they have not yet been incorporated.

Mr. WALDEN. OK. All right.

I would yield to the ranking member.

Mr. SHIMKUS. Just to jump in on your question. I think you are debating between the words or the proposals of promulgating and promote. And I think if an outside group can appeal and there is a ruling, a decision made, that does exclude the public from that debate. And I would hope that we wouldn't want to do that.

And I would yield back.

Mr. WALDEN. Yes. No, I would hope that, too. I can't imagine that is actually the intent of the authors, but it may be the consequence, which is why I think having additional time to fully consider these matters is pretty important.

So with that, I would yield back, Mr. Chairman.

Mr. PETERS. The chairman yields.

The Chair now recognizes the gentlewoman from Michigan, Mrs. Dingell, for 5 minutes.

Mrs. DINGELL. Thank you, Mr. Chairman.

And I want to thank the committee ranking, the chair and the ranking minority, for holding and participating in this because I think this is very important legislation. I think that if you are not in your position a lot of people that are watching this hearing probably don't understand a lot of what they are listening to.

But it is—this is a good, strong bill. It does have bipartisan support. And it is important that we stay at the forefront of innovation in this country, strengthen our economy, protect our consumers, and protect our environment at the same time.

As Mr. Shimkus asked earlier in his questioning; it is clear that the transition away from hydrofluorocarbons is already happening globally, and if we are to remain competitive, we can't afford to sit on the sidelines.

Michigan is home to nearly 3,900 direct jobs in the heating, ventilation, air conditioning, and refrigeration industry. This bill

would not only sustain those jobs and another 134,500 manufacturing jobs in the United States, but it would create another 33,000 high quality American jobs.

So I thank you for being here. I thank you for providing testimony and your expertise. And I thank the second panel as well.

So I am going to ask a basic question, because I think a lot of people don't understand this question. How do hydrofluorocarbons enter the environment? And why do they matter?

Ms. NEWBERG. Thank you. They are generally released at some point in time, either through—if it is in an aerosol, then it is a direct release. If it is air conditioning or refrigeration equipment, then it would maybe leak out over time. Or if it were not properly recovered and recycled at the end of life from a piece of equipment, it would be emitted as well. There are other ways as well. Equipment that has been landfilled, sometimes the degradation products over time will lead to emissions.

Mrs. DINGELL. And it is ending up in our air, our land, and our water, correct, or at least our air and land?

Ms. NEWBERG. I am not familiar on the water side.

Mrs. DINGELL. All right, I take that back. And how would EPA go about promulgating a new regulation as directed in this bill to establish standards for the management of HFCs as you also mentioned in your testimony?

Ms. NEWBERG. What the bill seems to be identifying is for the agency to promulgate notice and comment rulemaking, and we would do so following both the requirements to do that and using an information and availability for our partnership programs as well.

Mrs. DINGELL. We talked about earlier—my colleague, Mr. Shimkus, raised it that the worldwide transition away from HFCs is beginning. Are you aware of any other countries who are implementing a regulatory framework to manage this transition successfully, and are there lessons learned?

Ms. NEWBERG. I am certainly aware of a number of countries that are already implementing restrictions and phase-downs of HFCs. We have not evaluated whether or not there are lessons learned from those.

Mrs. DINGELL. Would it be a good idea to do that?

Ms. NEWBERG. I am sure we can take that back. It is always a positive way to look at other countries and see what works and what doesn't work.

Mrs. DINGELL. And in your technical opinion, does H.R. 5544 give the EPA the necessary authority to phase-down HFCs responsibly that provides both economic and environmental benefits?

Ms. NEWBERG. We have not evaluated the bill in particular on either the economic or environmental benefits in any kind of specific way. It does appear to provide the authority that would be needed to phase down HFCs.

Mrs. DINGELL. I thank you for those answers, and I yield back my time.

Mr. PETERS. The gentlelady yields back.

The Chair now recognizes the gentleman from Oklahoma, Mr. Mullin, for 5 minutes.

Mr. MULLIN. Thank you, Chairman.

Can I go back to a question that was asked earlier too about licensings. Ms. Newberg, starting with page 22, line 23, it says regulations to control, where appropriate, any practice, process, or activity regarding a service repair, disposal, or installation of equipment that involves a regulated substance or substitute for regulated substance that the EPA administrator basically would set those standards. You would be over the licensings of insulation, repair, service, everything. Are you guys prepared to take over the licensing of that?

Earlier you said—when Ms. Rochester asked the question, you said that you guys are already in that space. You are not in the space where I am at for the install, repair. You are not in that space.

Ms. NEWBERG. Under Title 6 of the Clean Air Act, there are regulations today that do guide air conditioning service and repair.

Mr. MULLIN. About emitting. It is emitting. It is when it is released. That is where you guys are in it, when we release the product that is being used. It is illegal.

Ms. NEWBERG. There are additional requirements on recovery, recycling——

Mr. MULLIN. Sure.

Ms. NEWBERG [continuing]. And reclamation, including provisions that deal with servicing practices.

Mr. MULLIN. But you are not into the repair side of it. Specifically, when this talks about licensing, that you are going to be overseeing the regulations to control, where appropriate, any practice, process, or activity, any, any practice, process, or activity regarding the servicing, repair, or disposal or the installation, that is the whole product. That is everything. That is not the refrigerant at this point. You guys are in the refrigerant space, not in this.

Ms. NEWBERG. So I will need to go back and consult and work through our congressional affairs to provide——

Mr. MULLIN. Well, while ago when you was asked the question, you said that you guys are already in that space, and so I want to clarify, you are not in that space. You are just in the refrigerant space, right? And underneath this, it gives you authority to enter in broadly, more broadly into the licensing of service techs, of our technicians.

Ms. NEWBERG. So Title 6 under subsection 608, we do have a licensing presence.

Mr. MULLIN. Not Title 6. I am talking about this.

Ms. NEWBERG. Yes.

Mr. MULLIN. Underneath this, this gives you more broad authority. Does it not?

Ms. NEWBERG. I would like to make sure I answer your question correctly.

Mr. MULLIN. Yes.

Ms. NEWBERG. You asked about the licensing. So EPA does provide licenses for air conditioning and refrigeration technicians, both for motor vehicles and for stationary equipment.

Mr. MULLIN. For the recovery of the refrigerant.

Ms. NEWBERG. For including servicing practices associated with——

Mr. MULLIN. Not the servicing practicing because that comes from the—our licensing that we do comes from the construction industry board in the State of Oklahoma. And if we go to a different State, that is where our licensing comes from. Where you guys are over is when we start recovering or filling the refrigerant of the units.

Ms. NEWBERG. I am happy to take this back and work with our congressional affairs.

Mr. MULLIN. Right.

Ms. NEWBERG. I believe the language is opening in our regulation, so it is opening the system, but I am happy to——

Mr. MULLIN. Right, which is the refrigerant. When we open it, it is reclaiming the refrigerant.

Ms. NEWBERG. If you are asking if we have licensing on the electrical side——

Mr. MULLIN. I am not talking about the electrical side. I am talking about what this says. It says any practice. And my whole point that I am getting to is this is much more broader language than what it is, which opens the door for interpretation. So I am not—I am telling you where our licensing already comes from versus reading this.

Now, going back, when we start talking about the recovery of the refrigerant, is it illegal right now for the refrigerant to be released into the air?

Ms. NEWBERG. There is a prohibition in the Clean Air Act that prevents it.

Mr. MULLIN. Right. And so what is the fine for that?

Ms. NEWBERG. I will have to check with the——

Mr. MULLIN. Five thousand dollars. It is $5,000 per occurrence is what we would get fined, according to our training from the EPA, if we were to get caught releasing the refrigerant. And so I say that because 65 percent of all the units that are out there right now are still on the old R–22 system because when you was asked questions earlier, you was asked can a system run its full cycle? Well, the full cycle is 15 to 20 years is what your system works.

And they phase-out—when you are phasing this stuff out, you phase-out the parts to it too. That is why this has been getting phased out since the Montreal Protocol, but yet 65 percent of the system, 60 to 65 percent of the systems, are still working on the old system, the R22 system. And now we are already trying to phase out the new system to which is supposedly supposed to go to the 410A. What is the measurement that you are using to say that the 410A needs to be phased out, too, because in your testimony, you stated that while HFCs do not deplete the ozone layer, most HFCs are potent greenhouse gases? How are you measuring that because more of the systems right now are still using the old system?

Ms. NEWBERG. I am sorry.

Mr. MULLIN. What is the need——

Mr. PETERS. Mr. Mullin—Mr. Mullin, ask her a question and allow her to answer it, but your time has expired.

Mr. MULLIN. I think she was answering me.

Mr. PETERS. OK.

Mr. MULLIN. What is the purpose to phase-out the HFCs? What is causing the urgency to phase it out?

Ms. NEWBERG. Well, that is a question for Congress. That is a policy question, and I can only answer based on what I can interpret in the bill.

What your question was regarding the measurement, I believe what they—of greenhouse gasses, I believe, was your question, and the list that seems to be being used is an IPCC list of greenhouse gas substances and their potency.

With regards to your question on fines, I believe it is more like $50,000, but I would need to check that. I believe it is $50,000 per incident per day is the maximum fines, but that is——

Mr. MULLIN. It depends on the——

Mr. PETERS. The gentleman's time has expired. The Chair now recognizes Mr. Carter from Georgia for 5 minutes.

Mr. CARTER. Ms. Newberg, thank you for being here. We appreciate you being here very much.

Ms. Newberg, I want to ask you about the—you are obviously very familiar with—thank you—with the Kigali—Kigali, is that the way you pronounce it?

Kigali.

Mr. PETERS. He is from Georgia, he doesn't speak Georgia.

Mr. CARTER. Kigali is the way you pronounce it in Geechee. That is what we speak down in south Georgia. OK. And pay no attention to my colleagues here up on the dais, but nevertheless, you know, help me understand this. I am a pharmacist. I am not in this area, necessarily, but I just want to understand the difference, the basic difference between the HFCs and the HFOs and how they differ in utilization.

Ms. NEWBERG. Between the HFCs and the HFOs?

Mr. CARTER. Right.

Ms. NEWBERG. The HFOs are another class of substitute chemicals. There are a lot of substitutes, ozone depleting substances. They are not all HFCs. They are not all HFOs. Hydrocarbons, carbon dioxide, many other types of chemicals have been used, Methylene——

Mr. CARTER. Right. So how much do we know about the HFOs?

Ms. NEWBERG. I think that may be a question——

Mr. CARTER. I think the question that was asked earlier about how can you measure this if we haven't been using them, that is what I am concerned with here.

Ms. NEWBERG. So HFCs have been used in the United States since at least the early 1990s, probably certainly before then. They have been used in a variety of uses for a very long time. They are not new chemistry from that perspective.

Mr. CARTER. OK. One last question and that is—Mr. Chairman, I want to ask unanimous consent to enter into the record a letter from the National Marine Manufacturers Association.

Mr. PETERS. Without objection, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. CARTER. Thank you. One thing, one point that the boat makers make is that they do not have an option now, an alternative, if they are not using the HFCs for certain parts of the boats. Now, they have decreased, they have decreased their use of them 80 to

90 percent. However, it adds to the weight on it if they don't use the HFCs, and therefore, they use more fuel. Are we not just shooting ourselves in the foot here if we try to solve one problem but we create another problem?

Ms. NEWBERG. I think there is a policy question in there that has to be taken up in how this legislation is developed, but in terms of your question on whether or not they have alternatives, or any group has alternatives, I think the way this is structured in the legislation is, that is something that we would look at as sector-by-sector basis.

And the technical assistance we provided is that we should actually cut that even finer and not just look at the sector but look at the individual end uses. Because foams used in boats is going to be different used than foams used, for example, in chairs or foams used in building insulation.

Mr. CARTER. So what you are telling me is, you may have exemptions, exceptions?

Ms. NEWBERG. I believe the legislation is set up both to allow for that, and also the gradual phase-down means that different sectors could go at very different times.

Mr. CARTER. OK. I am going to yield the rest of my time to the gentleman from Oklahoma.

Mr. MULLIN. What is the reason for the change to phase-out 410A to A2L?

Ms. NEWBERG. So A2L is a designation by ASHRAE as to types of refrigerant. It is not a specific type. There are a number of refrigerants that are both HFCs and non-HFCs that would meet that designation.

Mr. MULLIN. But to phrase out from the 410L to the new refrigerant that we are going to, what is the need for that? Why do we feel the need for it if it is not depleting the ozone?

Ms. NEWBERG. Well, I mean, I noted in my testimony, they are put in greenhouse gases, but I believe that is a question for the cosponsor of the bill.

Mr. MULLIN. But isn't the A2L, isn't it flammable? The refrigerant that we are going to, we go from a non-flammable refrigerant to a flammable refrigerant, is that not true?

Ms. NEWBERG. So there are both flammable and non-flammable refrigerants in use broadly today, including, you mentioned 410A——

Mr. MULLIN. The one that we are specifically talking about, that we use daily, each day, inside customers' air conditioners, consumers, it is non-flammable?

Ms. NEWBERG. I believe you are referencing a particular product.

Mr. MULLIN. The 410A to which we are going out, to which we are phasing out because it is part of the FHCs, we are phasing that out, and we are going to a flammable, to, the manufacturer says, a mildly flammable refrigerant. Is that not accurate?

Ms. NEWBERG. I don't believe there is anything that legislation that dictates a specific choice on what manufacturers——

Mr. MULLIN. But that is the direction that we are going to. That is what the manufacturers are phasing out to. The manufacturers are even claiming that it is mildly flammable.

Ms. NEWBERG. So I believe there are a full range of flammable, non-flammable, and mildly flammable alternatives. It would depend on the end use and the manufacturer——

Mr. MULLIN. Not widely used right now. We are not putting flammable refrigerant in consumers' homes.

Ms. NEWBERG. I believe in certain products we are.

Mr. MULLIN. Not for refrigerant, we are not putting them in because we are not allowed to. I am not allowed to put those in. The only way they can come in is they come in with a closed-loop system, and then we are not allowed to work on those. That takes a whole other classification. I yield back.

Mr. PETERS. The gentleman's time has expired. The chair now recognizes the gentleman from West Virginia, Mr. McKinley, for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman. And I would really like to give more of the time to Representative Mullin to continue his questioning if he could, please. I yield to him.

Mr. PETERS. OK.

Mr. MULLIN. Coming back to the question that I was asking, to reference it again—and I will try to give you more time to answer it here—if we are still using the old, old system, which is the R22, if we are still using the old, old system, it is 60 to 65 percent of all the air conditioners that are still in customers' homes that are being used today, and only 30 to 35 percent of the systems are running on the HFCs, which is the 410A system for customers that are running refrigerant, my whole point that I am trying to get to is, does it seem reasonable that we are phasing out the 410As when they are not even widely used yet? So we really don't have a way to measure what their impact is on the environment. Would you say that is accurate?

Ms. NEWBERG. So we have not installed new equipment in the United States, at least not legally, since 2010, using R22. Since that time——

Mr. MULLIN. All right. There is a complete phase-out in 2015. You couldn't even buy replacement parts in 2015, and then, of course, in 2020, this year, you can't even buy the drop-in refrigerant anymore for what we call for the R22s.

Ms. NEWBERG. So R22 is available today. It is just not newly manufactured. It is recovered and recycled. It is still available today. It has not been available for new equipment since 2010.

Mr. MULLIN. Right.

Ms. NEWBERG. And then I think to answer your other question, the agency hasn't approved any A2L refrigerants for split systems for— I believe what you are talking about is what we would commonly call essential air conditioning. We have not approved an A2L refrigerant for that application to date.

Mr. MULLIN. Well, the manufacturers are already saying that the phase-out, the replacement for the 410A will be the A2L, and they openly say that it is mildly flammable.

Ms. NEWBERG. A2L is an ASHRAE designation——

Mr. MULLIN. I know that.

Ms. NEWBERG. —it might be mildly flammable, but my understanding—and I am not—I think you have a panel coming up of in-

dustry experts, so you may be better off having that conversation with them.

Mr. MULLIN. Well, but we are talking about the environment. My whole point that I am trying to get to, is it really safe? Is it really safe for us to be going to a non-flammable to a flammable when the product that we have right now is safe to be in a home, it is not ozone-depleting, it is against the law to release it, we have to recover it, we have to measure it? For your account, you are saying 50,000; for our account, it is 5,000 depending on what level of claims that you are bringing into it—for the fines to be able to release it.

And all I am saying is, the consumer is the one that is getting hit with this. Because when you replace the system, the system for a three-ton unit which is the average for a average home inside the United States, the replacement cost it roughly $6,500. For a five-ton system which is what you have in a lot of Midwest because the homes are slightly larger, the replacement cost is roughly $10,000. So that is today.

And so I am trying to figure out, what is the consumer benefit of this. We are going to cause the consumer to switch to a new system that is going to be already out in another 15 years. So we are going to take out—we are going to say, you can't put in the R22 systems anymore, so you got to go to the 410A systems. And by the way, when you put that 410A system in it, by the time it is going to start needing repairs, which is about 15 years, it is not going to be able to be repaired, and you are going to replace the system again to the new A2L, which by the way, that is flammable. We are going to put—now we are going to put a flammable product into your system. How is that best for the consumer?

And when you start talking about, according to you, the 410L—or 410A isn't ozone depleting, what is the measurable reason then that we would put the consumers' safety at risk over a possible greenhouse gas potential leak?

Ms. NEWBERG. I think if you—we would be happy to follow up through my Congressional Affairs Office and provide you with information on refrigerant safety.

Mr. MULLIN. But that is not answering the question. Is it—in your opinion, is that the right way to do, to put—to switch, to go from a non-flammable product to a mildly flammable product?

Ms. NEWBERG. I believe that is a question that I can take back and work with you with our Congressional Affairs to provide you with information.

Mr. MULLIN. OK. With that, I yield back.

Mr. PETERS. The gentleman yields. The Chair now recognizes the gentleman from Texas, Mr. Flores, for 5 minutes.

Mr. FLORES. Thank you, Mr. Chairman. Ms. Newberg, thanks for joining us today. I have two quick questions for you. In section 5, there is an outline for a timeline for the phase-down of regulated substances. But that timeline also allows exemptions under certain circumstances. So my question is this. Do you believe that section 5 is clear when it comes to specifying for when and what and why exemptions would be allowed under the HFC phase-down?

Ms. NEWBERG. Thank you. I believe we provided in our technical assistance, and I am just looking now, that we did believe that

there were some small changes that could be made to make that a little bit more clear and connect that information.

Mr. FLORES. OK. Great. I appreciate that. My next question builds on the question that GOP Leader Walden was asking about, section 7. There is an evaluation provision that is designated as "E" under section 7 for technology transitions. It is clear in that provision that the EPA shall consider the availability of alternatives to regulated substances for potential rulemaking procedures. And so my question in this regard is, what would help facilitate this process and also to make sure that there is transparency for the public in this process?

Ms. NEWBERG. Thank you. I appreciate the question. And I will note that one of the conditions that the EPA is supposed to look at is safety in particular. I believe we provided technical assistance that also noted for more transparency what might be helpful is for some language to be added in, language that could be consistent with Title 6 on a clearinghouse, which would be just for folks to understand what alternatives we are looking at in terms of availability.

Mr. FLORES. OK. Great. I appreciate the responses on that. I am going to yield the balance of my time to the gentleman from Oklahoma, Mr. Mullin.

Mr. MULLIN. Ma'am, I am sorry you and I get to talk so much. It is just that this is a very passionate point for me because at the end of the day, the consumer, I think, is the one that is being left out of this conversation.

I know we have heard from different people up here that they said it is rare that the manufacturers and the chamber come together on an agreement, but as our—Ranking Member Shimkus pointed out, the small businesses and the customer, the consumer, our constituents, are left out. And the whole thing that I am trying to get to is, is we talk about certainty inside the industry through regulation, but what about the uncertainty to the consumer?

As I said, we haven't even completely finished out the phase-out of the R22. And I go back to the same question. I can't figure out what the need is if we haven't already phased out the R22, the 410A, what is the need to go ahead and phase-out the HFCs which is the 410A? What is—your expert opinion, what is driving the need to do this?

Ms. NEWBERG. I appreciate the question and I do believe that is a question for the drafters of the bill. It is a policy question as to what the——

Mr. MULLIN. OK. Well, in your opinion, do you feel like there is actual need to phase-out HFCs?

Ms. NEWBERG. I am not here in my personal capacity. I am here as a representative of my agency and providing technical assistance on draft legislation.

Mr. MULLIN. I understand that, but the drafters of the bill was pointing towards the environment.

Ms. NEWBERG. I understand that.

Mr. MULLIN. And you are the EPA.

Mr. SHIMKUS. If the gentleman would yield?

Mr. MULLIN. Yes.

Mr. SHIMKUS. I have been in this position numerous times. She is not supposed to give her personal opinion. She is just supposed to comment on the legislative language of the bill and whether it can be enacted or it can't or some other——

Mr. MULLIN. OK. I will rephrase my question then. Is there a concern at the EPA that 410A is hurting the environment?

Ms. NEWBERG. The agency already has regulations on 410A because of recovery recycling and to prevent the venting of the refrigerant.

Mr. MULLIN. But do you feel like the 410A, the HFCs are hurting the environment?

Ms. NEWBERG. The agency made a determination that it was not exempt from the venting prohibition, that it needed to be recovered and recycled under section 608—I am sorry—it needed to be not vented.

Mr. MULLIN. But with the recycling going on, is HFCs hurting the environment?

Ms. NEWBERG. So the agency made a determination in 2001 that it was not exempt, meaning, it did not find that there was no environmental impact. In other words, we found there was an impact. Otherwise, we would have exempted it from the section 608 prohibition.

Mr. MULLIN. That is back from 2001?

Ms. NEWBERG. That is back since 2001 and before then, the agency had determined, based on what Congress gave us in the Clean Air Act under section 608, that we could not allow the releases during service, maintenance, repair, and disposal of air conditioning refrigeration equipment.

Mr. MULLIN. OK.

Mr. PETERS. The gentleman's time has expired. The chair now recognizes the gentleman from Texas, Mr. Olson, for 5 minutes.

Mr. OLSON. Yes, I thank the Chair, and welcome to our witness. Ma'am, my home in southeast Texas, I have lived there since 1972. Now, I am a Texan, so I don't talk funny like my friend from Georgia, but we moved there with one car, a 1963 Chevy station wagon with no AC. That car was in my family for, maybe, two days maximum in Texas. We could not live without air conditioning. The forecast in southeast Texas is the same from late April to mid October. It is 95 degrees or more, and 95 percent humidity or more.

Without air conditioning, my home region would not be the fastest growing region in the country with Houston, Texas, about to become the third biggest city in America.

The Texas Medical Center, Texas Children's Hospital in the medical center, M.D. Anderson Cancer Center, all those great research places for kids get care, cancer cured, they would not be here without air conditioning.

The 8th wonder of the world, a building called the Houston Astrodome, was solely built for air conditioning. We have a little park out there called Colts Park, outside, heat, humidity, they cannot play there. The mosquitoes were as big as flies. They kept swarming. So my point is, air conditioning is a part of our life that we have to have in Houston, Texas.

We just replaced my air conditioner in my house. Have two ACs, had to replace one because it got old. My question is, if this bill

becomes law, do I have to replace my air conditioner within 15 years, 20 years, 25 years, or can I keep it as long as it is working?

Ms. NEWBERG. You do not need to replace it. You can keep it as long as it is working.

Mr. OLSON. OK. That is good news for my wife. I want to talk about the commercial aspect. As I mentioned in my opening statement, a company called Daikin, which is a Japanese company that has got 7,000 people working in Texas 22, they make air conditioners. Their sales last year, $17 billion. They operate in 150 countries. Their research and development budget last year, $300 million. Been in business now since 1924, 96 years.

My question is, if this bill does not become law, what happens to Daikin here in America? Can they stay here? Will they stay here? Or will they be forced to go overseas because we can't compete with old laws?

Ms. NEWBERG. I appreciate the question. I don't think I could speak to the ramifications on any particular company or business based on the legislation. We haven't done that type of analysis.

Mr. OLSON. But you said in your statement, though, lots of countries right now, overseas, are switching to, you know, getting rid of the CFCs, and we are behind that curve. So if we don't adapt and give a phased, defined timeline, does that hurt a company like Daikin that wants to stay here, that may have to go somewhere else because the whole world is doing something with HFCs and we are not?

Ms. NEWBERG. I appreciate the question, and it may be better for the industry or others to weigh in on that more than from the EPA's perspective. I think what we have seen before and what we have spoken to is, the time—the time differences could impact different industries in different ways, but we haven't done any analysis on a particular company.

Mr. OLSON. And this is not something new, right? EPA has done this in the past where you phase in some new process or some new chemical. We talked about what we did the last time with the, you know, the Montreal Protocol. This is nothing new, right? Not a big deal for EPA to adapt, correct?

Ms. NEWBERG. So Title 6 of the Clean Air Act set in motion for EPA implementation of the Montreal Protocol and phase-out of alternatives as well as—sorry—phase-out of the ozone-depleting substances and identification of alternatives. The legislation does seem to request the agency to do many of the same activities.

Mr. OLSON. So again we have been down this road once before. It is not some radical path we are going down right now with this bill.

Mr. Chairman, I would like to offer unanimous consent four documents of support for the record. The first one is from five Senators—Mr. Kennedy and Mr. Cassidy, Ms. Collins, Mr. Cotton, and Mr. Graham. The second one, it was mentioned by my colleague from Georgia. It is from the National Marine Manufacturers Association. The third is from the U.S. Chamber of Commerce and National Association of Manufacturers. And the fourth one is from the Americans for Tax Reform, Freedom Works, and the ACCF, the American Council for Capital Formation.

Mr. PETERS. Without objection, those will be ordered.

[The information appears at the conclusion of the hearing.]

Mr. OLSON. Thank you. I yield back.

Mr. PETERS. OK. The gentleman yields back. That concludes our first panel. I would like to thank Ms. Newberg for joining us today. Thank you for being here.

I would like to recognize that Mr. Olson cannot not talk about the Astros, no matter happens.

Mr. OLSON. Well, we got caught——

Mr. CARTER. Well we can talk about the Astro's we can talk about them——

Mr. PETERS. No matter what happens, he has got to mention the Astros.

At this time, I would ask the staff to prepare the witness table so we can get begin our second panel shortly. The committee is in recess for 5 minutes.

[Recess.]

Mr. PETERS. All right. We will call the committee to order. We are now ready for our second panel, and I will now introduce the witnesses.

Thank you all for being here very much. Mr. John Galyen is president of Danfoss North America. He is testifying on behalf of the Air Conditioning, Heating, and Refrigeration Institute.

Ben Lieberman, senior fellow, Competitive Enterprise Institute, and I understand, Mr. Lieberman, you spent some time with this committee before, so welcome back.

Mr. David Doniger, senior strategic director of Natural Resources Defense Council.

Mr. Gary Bedard, president and chief operating officer of Lennox International, who is testifying on behalf of the Alliance for Responsible Atmospheric Policy.

Before we begin, just an explanation about the lighting system. In front of you are a series of lights. The light will initially be green. The light will turn yellow when you have 1 minute left. Please begin to wrap up your testimony at that point. The light will turn red when your time expires.

At this time, Mr. Galyen, you are recognized for 5 minutes for your opening statement.

STATEMENTS OF JOHN GALYEN, PRESIDENT, DANFOSS NORTH AMERICA, ON BEHALF OF THE AIR–CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE; BEN LIEBERMAN, SENIOR FELLOW, COMPETITIVE ENTERPRISE INSTITUTE; DAVID D. DONIGER, SENIOR STRATEGIC DIRECTOR, NATURAL RESOURCES DEFENSE COUNCIL; AND GARY BEDARD, PRESIDENT AND CHIEF OPERATING OFFICER, LENNOX INTERNATIONAL, INC., ON BEHALF OF THE ALLIANCE FOR RESPONSIBLE ATMOSPHERIC POLICY

STATEMENT OF JOHN GALYEN

Mr. GALYEN. Good morning, everyone. And thank you, Mr. Chairman and Ranking Member Shimkus, and the members of the subcommittee.

As already stated, my name is John Galyen, and I am the chairman of the board of directors at the Air-Conditioning, Heating, and

Refrigeration Institute, the trade association of manufacturers of HVACR and water heating equipment. AHRI is more than 300 member companies, manufacture quality, efficient and innovative residential and commercial air conditioning, space heating, water heating, and commercial refrigeration equipment and components for sale in North America and around the world.

AHRI member companies produce more than 90 percent of the previously named equipment used here and around the world. I also serve as president of Danfoss North America, a manufacturer and a member company of AHRI. Thank you for this opportunity to provide comments on this important bill.

The companies in this industry, with significant business and manufacturing operations here in the United States, are among the recognized world leaders in HVACR technologies with decades of substantial investments in innovation and R&D that has enabled us to lead and support successful transitions in refrigerant technologies over the past 30 years.

I would like to highlight that the swift enactment of the AIM Leadership Act would establish a Federal framework to guide the transition out of the group of substances known as hydrofluorocarbons, commonly referred to as HFCs, into the next-generation technologies, many of which are made here in the United States.

HFCs are used as refrigerants as well as solvents, foam-blowing agents, propellants, fire suppressants, and aerosols. Some have asked, why is Federal legislation needed to phase- down HFCs? Without Federal legislation, or passage of this bill, we face a disorderly transition that puts American industry and innovation at risk. This will add significantly more cost and complexity that will be especially burdensome for small and mid size businesses that have limited resources and without the scale to absorb the incremental investments required.

Many of the new technologies needed in the transition will be developed here in the United States which can be a major advantage for American business, workers, and consumers. However, there is a big difference between an orderly transition guided by Federal legislation and a disorderly transition, which will occur in the absence of a Federal framework.

With an orderly transition, the American HVACR industry has certainty, stability, and predictability with regard to product lines, supply chains, distribution networks, and legal and regulatory requirements. This will enable businesses to invest and innovate. This is where all the economic benefits come from, 33,000 new jobs, $12 billion in direct manufacturing output, and a 25 percent increase in exports.

In an orderly transition, we have a pretty clear picture of how to manage the HFC transition and we can plan, invest, hire, and build accordingly and to transition in a shorter timeframe. In a disorderly transition, where there is no Federal framework, it is likely that chaos will prevail. And it is uncharted water for us, since all prior refrigerant transitions were all guided by an early Federal framework.

In a disorderly transition, a company, in order to remain competitive, will have to maintain multiple product lines without a na-

tional framework. This complexity would extend into supply chains, warehousing, distribution networks, and significantly increase the cost of regulatory compliance. A smaller company may be forced to compete in some regions and not in others due to the extra costs and complexity.

The AIM Leadership Act puts us on a path for an orderly transition away from HFCs. The American HVACR manufacturing industry and the AHRI member companies are in strong support of the AIM Leadership Act.

NAM and the U.S. Chamber of Commerce also support H.R. 5544. We believe it would create regulatory certainty, stability, and predictability. This protects the interests of large and small manufacturers and all consumers, while also encouraging new technology investment and development that would result in jobs creation and increased trade.

I urge Congress to act swiftly in the passage of this bill for the benefit of American manufacturers, workers, and consumers.

Thank you for the opportunity to testify, and I welcome any questions you might have.

[The prepared statement of Mr. Galyen follows:]

Testimony

of John Galyen

Chairman, Board of Directors, Air-Conditioning, Heating, and Refrigeration Institute (AHRI)

President, Danfoss North America

before the House Committee on Energy and Commerce

Subcommittee on Environment and Climate Change

On the American Innovation and Manufacturing Leadership Act (H.R. 5544)

January 14, 2020

Testimony of John Galyen

before the House Committee on Energy and Commerce
Subcommittee on Environment and Climate Change

On the American Innovation and Manufacturing Leadership Act (H.R. 5544)

January 14, 2020

Good morning, Chairman Tonko, Ranking Member Shimkus, and members of the Subcommittee. My name is John Galyen, and I am the Chairman of the Board of Directors of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), the trade association for manufacturers of HVACR and water heating equipment.

AHRI's more than 300 member companies manufacture quality, efficient, and innovative residential and commercial air conditioning, space heating, water heating, and commercial refrigeration equipment and components for sale in North America and around the world. AHRI also develops standards for, and certifies the performance of, many of these products. AHRI member companies produce more than 90 percent of the previously named equipment used in the United States and more than 70 percent that is used around the world. Simply put, each of your constituents depends on the equipment produced by our member companies multiple times each day to ensure their health, safety, comfort, and productivity.

I also serve as President of Danfoss North America, a manufacturer and member company of AHRI.

Thank you for the opportunity to provide comments on this important bill; a bill that I am happy to note does not require funding to pass.

I would like to highlight that swift enactment of the H.R. 5544, the *American Innovation and Manufacturing Leadership Act of 2020* -- would create a federal schedule to phase down a class of chemicals known as hydrofluorocarbons, or HFCs and would, at the same time, create American jobs, stimulate investment, and boost exports. This rare opportunity for bipartisan leadership, with its job creation, investment stimulant, and export increase, will ensure that American companies can continue to lead a rapidly growing and increasingly competitive global market for heating, ventilation, air conditioning, and refrigeration products and equipment. Without passage of this bill, we risk a disorderly transition that put American industry and innovation at risk.

The Heating, Ventilation, Air Conditioning, and Refrigeration (HVACR) industry was born right here in the U.S. and supports 1.3 million American jobs and annually contributes $158 billion worth of goods and services to the U.S. economy. The companies in this industry with significant business and manufacturing operations here in the United States are among the recognized world leaders in HVACR technologies, with decades of substantial investments in

innovation and R&D that has enabled us to lead and support the successful local and global transitions in refrigerant technologies over the past 30 years.

The lack of federal HFC regulation places at risk that hard-earned leadership role and is giving our foreign competitors an advantage as they develop the next generation technologies that the world will use to ensure health, safety, comfort, and productivity. American-based companies have been preparing for a transition from HFCs for nearly a decade, investing billions of dollars in the development of new refrigerants that will be vital to the next generation of HVACR products and equipment. Without this bill, our investments and leadership are at risk and we face the loss of global, technical innovation and jobs.

The commitment to innovation is one of the hallmarks of the U.S. HVACR industry and American manufacturing in general. Innovation has conferred substantial economic benefits to manufacturers based here in the United States as well as to American workers and consumers. It also has provided important environmental benefits, with each generation of refrigerant technologies designed to be significantly more environmentally friendly, both in terms of impacts on the stratospheric ozone layer and the climate and also in terms of the energy efficiency and overall performance of equipment.

The refrigerants at issue in this bill, hydrofluorocarbons, or HFCs, are commodity chemicals used as refrigerants, solvents, foam blowing agents, propellants, fire suppressants,

and aerosols. HFCs were initially commercialized as substitutes for previous generations of refrigerants and fire suppressants, such as chlorofluorocarbons (CFCs), halons, and HFCs' immediate predecessors, hydrochlorofluorocarbons (HCFCs), which were found to deplete the stratospheric ozone layer. Those chemicals were phased out under the Montreal Protocol, which was negotiated and signed by President Ronald Reagan in 1987. The Montreal Protocol, which is universally recognized as the world's most successful international treaty, was ratified unanimously by the Senate in 1988.

About 15 years ago, American-based companies began preparing for a transition away from HFCs, investing billions of dollars in the research and development of new refrigerants as well as the products and equipment in which they would be used, so our companies could be among the first to bring to market these technologies.

American companies have invested the most in innovation for the next generation of refrigerants and equipment, compared to their global counterparts, and are as a result best prepared to benefit from a transition from HFCs and into American-made next generation refrigerant technologies. What is lacking, is a federal framework for an HFC phase down. This absence of a federal framework leaves American manufacturers at a disadvantage with their foreign counterparts, who are already operating under their own federal frameworks.

The *American Innovation and Manufacturing Leadership Act of 2020*, if swiftly enacted by Congress, would establish that urgently needed federal framework.

This bill does not ban or cut off the use of HFCs. Rather, it provides a framework for a gradual reduction in the production and import of HFCs over a 15-year period. This provides a market- and consumer-friendly path for transitioning to HFC substitutes. At no point would this bill force anyone to abandon existing refrigeration or air conditioning equipment simply because that equipment uses HFCs. On the contrary, consumers and building owners will be able to continue using HFC-based equipment for as long as that equipment is able to be serviced. What will change, over time, is that new, innovative equipment will become broadly available. Eventually, only equipment using HFC substitutes will be available for new purchase. We expect HFCs will be around to service existing equipment for decades to come. This is something we've done before, and the bill is based on the regulatory programs that shepherded the smooth transition away from older classes of refrigerants such as CFCs.

The legislation protects even small or niche uses of HFCs *as it* only phases *down* HFCs, rather than phasing them out completely, allowing for the use of HFCs in vital refrigerant blends. And it contains exceptions for essential uses for which no substitute is available, also following precedent set in previous refrigerant transitions.

The economic benefits of an HFC transition are significant. According to a recent study by the Interindustry Forecasting at the University of Maryland (INFORUM), 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.

These jobs and benefits extend well beyond refrigerant manufacturers to the entirety of the U.S. HVACR sector and to other sectors that utilize HFCs as solvents, propellants, fire suppressants, and other industrial and commercial applications.

For the states represented by the Members of this Subcommittee alone, the U.S. HVACR sector has a major employment footprint, with more than 62,000 direct jobs and nearly 305,000 total jobs (including direct, indirect, and induced).

Importantly, these jobs and other economic benefits depend on the kind of orderly transition a federal framework established by this legislation would provide. The HFC transition has already started, as markets unavoidably respond to innovation. In addition, many

companies, including my own, are attempting to devise their own internal technology transition timelines.

Lack of federal action is putting us on a path toward a disorderly and chaotic transition, which puts American-based companies at a decided disadvantage in a rapidly growing and increasingly competitive global HVACR market. A disorderly transition increases costs to consumers, strands investments in new products and other technologies.

Without a federal policy many manufacturers could be placed in a position where they would need to produce two types of every piece of equipment they produce. Many distributors would need to reconfigure their distribution networks, build new warehousing facilities, adjust transportation routes, and carry duplicates for every product they carry to ensure compliant products are offered in each state. This would be a huge cost for manufacturers and distributors and, as a result, a cost for consumers as well.

The *American Innovation and Manufacturing Leadership Act of 2020*, by contrast, puts us on a path for an orderly transition away from HFCs. It provides a discrete grant of authority to the Environmental Protection Agency (EPA) to phase down HFCs over the next 15 years. It is important to note that such authority is strictly limited to HFCs. It provides absolutely no authority to EPA to do anything other than phase down HFCs. The bill also reinforces the

precedent that each administration must seek new authority from Congress before attempting to regulate substances that are not expressly authorized under existing law.

The legislation is based substantially on existing EPA programs that allowed for orderly transitions from earlier generations of refrigerants in ways that protected the environment while supporting American-based companies' market objectives. This bill is a true "win-win" approach for U.S. businesses.

An HFC phase down will *not* force consumers to replace their refrigerators or air conditioners before the end of their useful lives. Just as with previous refrigerant transitions, the phase down structure is carefully designed to ensure HFCs remain available for servicing consumers' existing equipment for decades to come.

Indeed, existing equipment using refrigerants from as many as two generations ago is still able to be serviced by aftermarket supplies of recovered and reclaimed chemicals.

In sum, the American HVACR manufacturing industry is in strong support of H.R. 5544. It would create regulatory certainty and predictability by establishing a federal phase down structure that protects the interests of manufacturers and consumers, allowing the continued use and servicing of existing equipment using HFCs, while also encouraging new technology

investment and development. It would result in job creation, increased trade, vital technology development, and would promote American technological preeminence in an increasingly competitive global market where many of our foreign counterparts already are operating under their own frameworks.

Our industry has a proven track record of success, but we need the right complement of federal legislation. This bill would help us immensely, while not requiring the appropriation of any federal funds. I urge Congress to act swiftly to speed its passage for the benefit of American manufacturers, workers, and consumers.

Thank you for the opportunity to testify, and I welcome any questions you might have.

Mr. PETERS. Thank you, Mr. Galyen.

Mr. Lieberman, you are now recognized for 5 minutes for your opening statement.

STATEMENT OF BEN LIEBERMAN

Mr. LIEBERMAN. Chairman Tonko, Vice-Chairman Peters, Mr. Shimkus, and members of the subcommittee——

Mr. PETERS. Ben, pull that a little bit closer to you.

Mr. LIEBERMAN. You would think I would know that by now.

Mr. PETERS. You would think.

Mr. LIEBERMAN. Thank you for this invitation to speak today at this hearing on H.R. 5544, the American Innovation and Manufacturing Leadership Act of 2020.

My name is Ben Lieberman, and I am a senior fellow at the Competitive Enterprise Institute, a nonprofit, nonpartisan, public policy institute committed to advancing the principles of free markets and limited government.

Before that I had the distinct privilege of being a staff member for the House Committee on Energy and Commerce, including work on this subcommittee from 2011 to 2018.

Now, I know that a number of you have expressed misgivings about the Green New Deal or carbon taxes or other comprehensive climate change measures, and I certainly share those misgivings. But I also know that several of you are casting about for something you can support on climate, something less controversial and costly, the proverbial low-hanging fruit or win-win proposal, and it appears that some of you may be gravitating towards H.R. 5544, the American Innovation and Manufacturing Leadership Act of 2020 as possibly being that vehicle. But I would strongly caution against doing so.

I believe that this bill, especially in its present form, risks imposing significant and unnecessary costs on homeowners, vehicle owners, and many small business owners, and promises more economic pain than environmental gain.

The bill places limits on production of hydrofluorocarbons, or HFCs. These are the refrigerants currently used in literally hundreds of millions of air conditioning and refrigeration systems, nearly every vehicle air conditioner, many residential air conditioners and refrigerators, and the equipment used in millions of small businesses such as restaurants, for example.

Future repairs of this equipment and particularly, repairs of leaks that require additional HFCs would very likely rise if supplies of these refrigerants become restricted. In addition, the cost of HFC substitute refrigerants and the equipment designed to use them is also likely to be higher. For example, perhaps the most common HFC targeted under the bill is HFC 134A, which is the stuff used in your car air conditioner and refrigerator, as well as quite of the bit of the equipment you might see in a food store.

Well, you can go to any of a number of online supply houses and find 134A for around $5 to $7 a pound, even less if you buy it in bulk. But its substitute, something called HFO 1234YF, can be found on those same sites for something closer to $50 per pound. So make no mistake, this bill will imposes costs, both higher re-

pairs of existing equipment and a higher purchase price for new equipment.

Now, there are a few provisions in this bill that are particularly problematic, and I would like to spend a moment highlighting them. This includes the provision that lets the deadlines be accelerated. The bill sets out a schedule of a 40 percent reduction of HFCs by 2024 and an 80 percent reduction by 2034. Not great, but not terrible in terms of allowing for a gradual transition.

But the bill allows these deadlines to be accelerated. And even if EPA chooses not to do so, the bill's wide open litigation opportunities practically guarantee that environmental groups will sue to do so. This provision destroys any certainty and could lead to HFC restrictions far costlier than originally set out for all those pieces of equipment that will still need it.

At a minimum, I believe that any policy change should allow the existing generation of HFC-dependent equipment to live out its useful life relatively undisturbed without higher costs to be replaced in due course by whatever comes next. And this bill, in its present form, falls well short of that goal.

I also see problems with the lack of state preemption. Many of the issues I worked for on this committee, such as cafe standards and appliance efficiency standards were complicated by California and other States going in their direction often for the express purpose of trying to force the issue in Washington. And that is already happening with HFCs.

However, this bill does nothing to rein in States that want to continue setting conflicting HFC measures. I think one set of HFC restrictions would be enough of a challenge. We don't need a multiplicity of requirements.

I would also add that the bill's exceptions are far too narrow and do not provide relief should compliance costs prove to be high, especially for small businesses and consumers with other issues like the flammability concerns that were touched on, or not really resolved in time.

This bill would be uncharted territory in a number of respects, so there should be a safety valve if things don't go quite as well as proponents are predicting.

In conclusion, there are a number of things that could be done to improve this bill, but I should add that I am not yet convinced that a bill is necessary. To put it bluntly, what would be so bad if the new stuff had to compete with the old stuff——

Mr. PETERS. Mr. Lieberman, you can conclude.

Mr. LIEBERMAN [continuing]. And let consumers decide for themselves. That is the way it usually works when the new product is introduced.

I appreciate the opportunity to participate in this hearing and look forward to any questions you may have.

[The prepared statement of Mr. Lieberman follows:]

House Subcommittee on Environment and Climate Change
2322 Rayburn House Office Building, Washington DC 20515
January 14, 2020

Promoting American Innovation And Jobs: Legislation To Phase Down Hydrofluorocarbons

Remarks of Ben Lieberman
Senior Fellow, Center for Energy and Environment
Competitive Enterprise Institute

Chairman Tonko, Ranking Member Shimkus, and Members of this subcommittee, thank you for this invitation to speak today at this hearing on H.R. 5544, the "American Innovation and Manufacturing Leadership Act of 2020." My name is Ben Lieberman, and I am a senior fellow of the Center for Energy and Environment at the Competitive Enterprise Institute, a non-profit, non-partisan, public policy institute committed to advancing the principles of free markets and limited government. Before that, I had the distinct privilege as being a staff member for the House Committee on Energy & Commerce, including work on this subcommittee, from 2011 to 2018.

I know that a number of you have expressed misgivings about the Green New Deal or carbon taxes or other comprehensive climate change measures, and I certainly share those misgivings. But I also know that several of you are casting about for something that you can support on climate, something less controversial and costly, the proverbial low-hanging fruit or win-win proposal.

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The bill places limits on production of hydrofluorocarbons (HFCs). These are the refrigerants currently in use in literally hundreds of millions of air conditioning and refrigeration systems – nearly every vehicle air conditioner, many residential air conditioners and refrigerators, and the equipment used in millions of small business such as restaurants. Future repairs of this equipment, and particularly repairs of leaks that require additional HFCs, would very likely rise if supplies of HFCs become restricted.

In addition, the cost of HFC substitute refrigerants and the equipment designed to use them is also likely to be higher. For example, perhaps the most common HFC targeted under this bill is HFC-134a, which is the stuff used in your car air conditioner and refrigerator, as well as quite a bit of the equipment you might see at a food store. You can go to any of a number of online

refrigerant supply houses and find HFC-134a for around $5.00 to $7.00 per pound. But its substitute, something called HFO-1234yf, can be found on those same sites for closer to $50 per pound. Make no mistake – this bill will impose costs, both higher repairs of existing equipment and a higher purchase price for new equipment.

There are a few provisions in this bill that are particularly problematic, and I would like to spend a moment highlighting them. This includes the provision that lets the deadlines be accelerated. The bill sets out a schedule of 40 percent reduction in HFCs by 2024 and an 80 percent reduction by 2034 – not great but not terrible in terms of allowing for a gradual transition. But the bill allows those deadlines to be accelerated, and even if EPA chooses not to do so, the bill's wide-open litigation opportunities practically guarantee that environment groups will sue to do so. This provision destroys any certainty and could lead to HFC restrictions far costlier than those originally set out for all those pieces of equipment that will still need it. At a minimum, I believe that any policy change should allow the existing generation of HFC-dependent equipment to live out it useful life undisturbed, without any higher costs, to be replaced in due course by whatever comes next. And this bill falls well short of that goal.

I also see problems with the lack of state preemption. Many issues that I worked for on this committee such as CAFE and appliance efficiency standards were complicated by California and other states going in their own direction, often for the express purpose of trying to force the issue in Washington. And that is already happening with regard to HFCs. However, this bill does nothing to rein in states that want to continue setting conflicting HFC measures. One set of federal HFC restrictions will be enough of a challenge, we don't need a multiplicity of requirements.

I would also add that the bill's exceptions are far too narrow and do not provide relief should compliance costs prove to be high, especially for small businesses and consumers, or if other issues like the flammability concerns surrounding several of the new refrigerants are not resolved in time. This bill would be uncharted territory in several respects, so there should be a safety valve if things don't go quite as well as its proponents are predicting.

There are a number of things that could be done to improve this bill, but I should add that I am not yet convinced that a bill is necessary. To put it bluntly, what would be so bad if the new stuff had to compete with the old stuff and we let the buyer decide? That's the way it usually works when a new product is introduced. And I'm sure there are consumers and businesses that would purchase air conditioners and refrigerators advertised as the environmentally-friendlier option, and continued competition between the old and the new would be best for keeping prices down.

We can debate the merits of these new refrigerants, but we should also debate the necessity of Congress stepping in and playing favorites, especially when consumers and small business may be the worse for it. I appreciate the opportunity to participate in this hearing and look forward to any questions you may have.

Mr. PETERS. Thank you.
Mr. Doniger, you are now recognized for 5 minutes.

STATEMENT OF DAVID D. DONIGER

Mr. DONIGER. Thank you very much, Mr. Chairman, Ranking Member, for the opportunity to testify.

And thank you to the cosponsors of this bipartisan legislation to phase-down harmful hydrofluorocarbons and help U.S. companies lead the world in replacing them with innovative and climate-friendlier alternatives.

I am David Doniger. I helped lead the Climate and Clean Energy Program of the Natural Resources Defense Council, and I have worked in this area for more than 30 years to safeguard the ozone layer and the climate from the fluorocarbon family of chemicals.

Under the Montreal Protocol in the 1990 Clear Air Act, we successfully phased out the CFCs that were depleting the stratospheric ozone layer. And if we had not eliminated CFCs, humanity would have suffered hundreds of millions of skin cancers, millions of them fatal, as well as cataracts and immune disorders, and huge agriculture losses over this century. You can see how bad it would have been in the 1-minute NASA video that I linked to in my testimony.

But thanks to U.S. bipartisan leadership under President Reagan and every President since, and the Congress, the ozone layer will recover in the lifetime of my children. Phasing out CFCs is also the most effective step we have taken so far to slow climate change. And that is because CFCs are also extremely powerful greenhouse gases, some more than 10,000 times the heat-trapping power, pound for pound, of carbon dioxide. If we had let CFCs keep growing, the climate change impacts we are feeling now—heat waves, droughts, wildfires, storms, flooding, sea level rise—would have hit us ten years ago, and they would be even worse today.

HFCs were an initial replacement for CFCs. They don't harm the ozone layer, they have lower heat-trapping power, so they were a step in the right direction on climate change, but not enough because HFCs themselves still have hundreds of thousands of times the heat-trapping power of CO2, and HFC emissions are growing much more rapidly than CO2.

If HFCs keep growing, they could add nearly another half degree Celsius, that is nearly a full degree Fahrenheit, to the global average temperatures we will experience by 2100.

In a world now on track for at least a 3-degree Celsius rise and struggling to find the policies to hold warming to one and a half or even two degrees, we cannot afford to add another half degree of new warming on top of everything else. So that is the imperative for replacing HFCs with climate friendlier alternatives.

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

The transition has started, but as with CFCs, we need the framework of an orderly phase-down under Federal law. That is why both industry and environmentalists are here today to testify in support of H.R. 5544.

The bill does three main things: It sets a schedule for reducing the production and import of HFCs—and I emphasis the import, because there are no restrictions on imports from China and other countries now; it requires recovering your reusable chemicals and reducing leaks; it provides for replacing HFCs in end uses where safer alternatives are available.

It is not often that the committee hears support for the same bill from all sides—from the environmental community, from the chemical makers and equipment suppliers, from business organizations like the Chamber of Commerce and the National Association of Manufacturers.

Again, we applaud Representatives Tonko, Olson, Peters, and Stefanik for their bipartisan leadership and invite all of you to join in this bill. We note that the Senate companion bill currently has 32 cosponsors drawn equally from both parties.

I will close by noting that American industries have led in bringing new alternatives and new products to the multi-hundred billion dollar international marketplace in these technologies. If we sustain that leadership, that will mean more manufacturing investment and jobs here in America and more American exports, but American firms need the encouragement and certainty of this bill. Companies in Europe, Japan, and China are already working to catch up.

This legislation will enable our country to retain its environmental leadership and our industries to maintain their commercial edge and reap the rewards. That is why environmentalists and industry alike support enacting this legislation now. I would be happy to answer your questions.

[The prepared statement of Mr. Doniger follows:]

Testimony of David D. Doniger
Senior Strategic Director, Climate and Clean Energy Program
Natural Resources Defense Council

Hearing on H.R. 5544, The American Innovation and Manufacturing Leadership Act
Before the Subcommittee on Environment and Climate Change
Energy and Commerce Committee
U.S. House of Representatives
January 14, 2020

Thank you Chairman Tonko and Ranking Member Shimkus for the opportunity to testify today in favor of this bipartisan legislation to phase down harmful hydrofluorocarbons (HFCs) and help U.S. companies lead the world in replacing them with innovative, climate-friendlier alternatives. Thank you as well, Chairman Tonko and Representatives Olson, Peters, and Stefanik, for your bipartisan leadership in cosponsoring this legislation, the American Innovation and Manufacturing Leadership Act.

My name is David Doniger. I help lead climate and clean energy program of the Natural Resources Defense Council (NRDC). 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.

I have led NRDC's work 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, we 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.

You can see how bad it would have been in this one-minute NASA presentation called *The World Avoided*.[1] But thanks to bipartisan U.S. leadership in negotiating and implementing a world-wide CFC phase-out, the ozone layer will recover within the lifetime of my children.

[1] https://www.youtube.com/watch?v=wfnVz_0Pa3c

Every country in the world belongs to the Montreal Protocol, which was negotiated under President Ronald Reagan and has been supported by every president since. And it has been supported by both industry and environmentalists.

The phase-out of CFCs and related chemicals brought us another huge benefit: It is the most effective step we've taken so far to slow climate change. That's because in addition to their effect on 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 not enough, because 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.

It has been calculated that if HFC 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. In a world now on track for at least a 3°C rise and struggling to find the policies to hold warming to 1.5° or even 2°C, we cannot afford to add another half degree of new warming on top of everything else.

So that is the imperative for replacing HFCs with climate friendlier alternatives.

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, some in the same ballpark as carbon dioxide. 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 – we need the framework of an orderly phase-down under federal law.

That is why both industry and environmentalists are here today to testify in support of H.R. 5544. Together with its Senate companion S.2754, this is a bipartisan plan to phase down

HFCs in the same orderly manner we used to transition from CFCs under the Clean Air Act of 1990.

The bill does three main things:

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

These provisions are modeled on and integrated with the current Clean Air Act requirements applicable to this industry.

It is not that often that this committee hears support for the same bill from all sides – from NRDC on behalf of the environmental community, 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 the U.S. Chamber of Commerce and the National Association of Manufacturers.

NRDC appreciates the bipartisan support for these bills. Again, we applaud Reps. Tonko Olson, Peters, and Stefanik for their leadership here in the House. We note that the Senate companion bill currently has 32 co-sponsors, drawn equally from both parties.

I will close by returning to the Montreal Protocol, which as I said has enjoyed the backing of every U.S. president of both parties beginning with Ronald Reagan. In 2016, countries agreed to an amendment to phase down HFCs. That amendment has been ratified by 91 nations and came into force last January. To this point 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.

But American firms need the encouragement and certainty that this bill will provide to maintain and extend that leadership. Companies in Europe, Japan, China, and other countries are already at work to catch up. This legislation provides all the legal tools needed for our country and our industries to meet our obligations, exercise leadership, and reap commercial rewards.

All of us – 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. So it is critical that we do not wait.

I will be happy to answer your questions.

Mr. TONKO [presiding]. I now recognize Mr. Bedard, I believe, for 5 minutes.

STATEMENT OF GARY BEDARD

Mr. BEDARD. Thank you Chairman Tonko, Ranking Member Shimkus, and members of the committee. I am Gary Bedard, the president and chief operating officer of Lennox International's global refrigeration business, and today I speak on behalf of the Alliance for Responsible Atmospheric Policy in support of H.R. 5544, the American Innovation and Manufacturing Leadership Act.

The Alliance is an organization of industry users and producers of fluorocarbon compounds established in 1980. Today the Alliance represents businesses that produce and use HFCs in air conditioning, refrigeration, appliances, foam, electronics, aerosols, and metered-dose inhalers.

Lennox International is based in Richardson, Texas, and employs 10,000 people, many of whom work in American manufacturing or engineering facilities in Georgia, Iowa, Texas, South Carolina, Arkansas, and Mississippi.

American industry has invested billions in the development of low GWP compounds and technologies and led the global development of policies to achieve a cost-effective transition to lower GWP technologies. Our future is dependent upon a rational Federal transition to low GWP refrigerants. The AIM Leadership Act facilitates an efficient and cost effective, domestic phase-down of HFC refrigerants by providing narrow authority to the EPA to transition to new substances.

The alternative is an inefficient process that increases cost for manufacturers, distributors, contractors, and ultimately consumers, your constituents. The most economical transition is a predictable and rational Federal transition. The AIM Leadership Act relies on three key components—a market-based allocation system that gradually phases down production, a flexible program for user sectors with no impact on user—on existing equipment owners, and improved management of refrigerants.

We successfully managed prior transitions yielding significant consumer benefits and environmental improvements. Independent analysis estimates a Federal transition will stimulate additional domestic investment, generating 33,000 manufacturing jobs over the first decade while increasing exports by $5 billion.

This legislation simplifies a complicated regulatory structure using known policy approaches with some key improvements from lessons learned. The AIM Leadership Act advances American-made technology, provides economic benefits and significant job growth while facilitating American leadership globally.

A Federal program also curtails illegal dumping of HFCs into the U.S. as is currently occurring, particularly from countries like China. This transition is well underway globally. More than 90 countries, including all of our major economic competitors, have a defined policy approach. The only debate remaining is the timing of the transition in the United States, the efficiency by which it occurs, and whether our industry maintains its global leadership in a market that is expected to double in the next ten years.

The domestic HVAC in our industry is lagging and falling behind both the EU and Asia as a result of uniform Federal policy—a lack of uniform Federal policy. Failure to pass this legislation into law significantly increases our regulatory burden, ensuring a costly localized refrigerant transition. This means industry will manufacture redundant product lines, increase our distribution costs, and reduce our inventory turns. Failure to pass this legislation means inefficiency wins over innovation, and American industry, workers, and consumers, lose to foreign competition.

Conversely, this legislation reduces regulation to a single, rational, efficient, and cost-effective Federal program. We strongly support smart Federal policy that enables American industry to win globally. We believe that is what H.R. 5544 offers us.

The AIM Leadership Act is supported by industry—the National Association of Manufacturers, the U.S. Chamber of Commerce, and the NRDC. We should take advantage of this rare, broad-based advocacy. Historically, Title 6 programs have experienced broad bipartisan support as a similar legislator proposal in the Senate, S. 2754, currently enjoys. We hope that this legislation will also receive bipartisan support in the House of Representatives.

The AIM Leadership Act provides regulatory simplification, implements smart, market-based, and flexible approaches that have proved cost effective over the years and are projected to do so in the future. It is pro jobs, pro trade, pro American technology, leadership, and pro environment. It deserves strong bipartisan support, and we hope you will give it favorable passage.

Thank you.

[The prepared statement of Mr. Bedard follows:]

Testimony of Gary Bedard
President and Chief Operating Officer, Lennox International Refrigeration
On behalf of
The Alliance for Responsible Atmospheric Policy

Hearing on H.R. 5544, The American Innovation and Manufacturing Leadership Act
Before the Subcommittee on Environment and Climate Change
U.S. House of Representatives
January 14, 2020

Chairman Tonko, Ranking Member Shimkus, and members of the Committee, I am Gary Bedard, the President and COO of Lennox International's global refrigeration business and today I speak on behalf of the Alliance for Responsible Atmospheric Policy in support of H.R. 5544, the American Innovation and Manufacturing Leadership Act.

The Alliance is an organization of industry users and producers of fluorocarbon compounds that was established in 1980 to address concerns of the impacts of these compounds on the Earth's atmosphere, first as ozone depleting substances. Today, the Alliance represents businesses that produce hydrofluorocarbons or HFCs, as well as manufacturers that use HFCs in air conditioning, refrigeration, appliances, foam insulation, foam products, electronics, aerosols, and metered dose inhalers.

Lennox International is based in Richardson, Texas and employs 10,000 people, many of whom work in American manufacturing or engineering design facilities in places like Tifton, Georgia; Marshalltown, Iowa; Carrollton, Texas, Columbia, South Carolina; Stuttgart, Arkansas; Grenada, Mississippi, Stone Mountain, Georgia; and Orangeburg, South Carolina.

Alliance members have worked for three decades to implement Title Six of the Clean Air Act to eliminate the use of ozone depleting substances and to introduce compounds and technologies that have allowed for the continued growth of the global market for these products, and growth that has produced products that are more energy efficient, safe, affordable and functional to consumers and the workers who manufacture these products. These transitions have led us from ozone depleting compounds such as CFCs and HCFCs, to HFC compounds on which we rely today.

HFCs were first commercialized in the early 1990s and became the refrigerant of choice for the air conditioning and refrigeration industry between 2000 and 2010. While these compounds provided a quick and safe transition away from ozone depleting substances, it was recognized at that time that HFCs still had a higher global warming potential ("GWP") than was ultimately sustainable. Since then, industry with the support of government, and environmental organizations, have invested and innovated to develop sustainable substitutes for these compounds.

U.S. industry, including the American HVACR industry, have invested billions of dollars in the development of low-GWP compounds and technologies and led the global development of a policy framework that achieves a cost-effective transition to lower GWP technologies.

The future success of our industry is dependent upon a rational federal transition from HFC refrigerants to new environmentally friendly refrigerants. I am here today to ask you to support the AIM Act, which facilitates an efficient and cost-effective domestic phase-down of HFC refrigerants by providing very narrow authority to the Environmental Protection Agency to transition away from these substances. The most economical transition for manufacturers, distributors, contractors and ultimately consumers – your constituents-- is a predictable and rational federal transition.

The AIM Act relies on three key components, a market-based allocation system for the producers of HFC compounds that gradually phases down production and use, a flexible program for user sectors with no impact on existing equipment owners, and a heightened emphasis for improved management of refrigerant substances where relevant.

Industry managed prior efficient and cost-effective federal transitions, which yielded significant consumer cost benefits, while also achieving environmental improvements.

In independent analysis from the University of Maryland's Interindustry Forecasting program (Inforum,) InForum projects implementation of a federal transition as contained in the AIM Act, will stimulate additional investment by the HVACR industry in the United States, generates an additional 33,000 manufacturing jobs over the first decade, improves the balance of trade by $12.5 billion annually, and increases exports by $5 billion. We are providing a summary of this report for the record of this hearing.

The AIM Act simplifies a complicated and confusing existing regulatory structure, relies on known policy approaches and makes improvements from lessons learned. The AIM Act advances American-made technology, provides domestic economic benefits and significant job growth, while facilitating American leadership in this industry around the globe.

Additionally, an effective federal program will also curtail illegal dumping of HFCs into the U.S. as is currently occurring, particularly from countries such as China.

The transition away from HFCs is well underway globally. More than 90 countries, including all our major economic competitors have embraced a defined policy approach. The only debate remaining is the timing of the transition in the United States, the efficiency by which it occurs, and whether our industry maintains its global leadership in the 125 billion dollar global air conditioning and refrigeration market; a market that is expected to double in the next ten years.

While all other developed economies have begun their transitions, the domestic U.S. HVACR industry is lagging and falling behind both the EU and Asia as a result of the lack of a uniform federal policy.

Failure to pass the AIM Act into law will significantly increase our regulatory burden and may potentially lead to a costly localized refrigerant transition. Instead of investments in research and development and productive manufacturing capacity, industry will manufacture redundant product lines, increase our distribution costs and reduce our inventory turns. Failure to pass the AIM Act means inefficiency wins over innovation and American industry, workers and consumers lose to foreign competition.

Conversely, the AIM Act reduces regulation to a single rational, efficient and cost-effective federal program.

We strongly support smart Federal policy that enables American industry to commercialize its next generation technologies here at home and win an increasingly expanding and competitive global market. We believe that is what H.R. 5544 offers us.

Importantly, the AIM Act is supported by the impacted industries, the National Association of Manufacturers, the U.S. Chamber of Commerce, and the Natural Resources Defense Council (NRDC). We should take advantage of this rare broad-based support. Historically, the Title Six programs have experienced broad bi-partisan support since 1990. A similar legislative proposal in the Senate, S. 2754, currently enjoys significant bi-partisan support. We hope that this legislation, H.R. 5544, will also receive bi-partisan support here In the House of Representatives.

The AIM Act provides regulatory simplification, implements smart, market-based and flexible approaches that have proved cost-effective over the years and are projected to do so into the future. It is pro-jobs, pro-trade, pro-American technology leadership, and it is pro-environment. It deserves strong bi-partisan support and we hope that you will give it favorable consideration and quick passage.

The Aim Act is a bet on American innovation and supports American manufacturing. Industry needs your support to compete and win globally. Thank you for your time and I look forward to your questions.

The Alliance
for Responsible Atmospheric Policy

FOR IMMEDIATE RELEASE

January 8, 2020

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Alliance, Industry Back House HFC Phasedown Legislation

Important Legislation Adds to American Manufacturing Leadership and Job Growth

Arlington, VA – Today, the Alliance for Responsible Atmospheric Policy strongly commends the introduction of H.R. 5544, the American Innovation and Manufacturing Leadership Act by Representatives Paul Tonko (D-NY-20), Pete Olson (R-TX-22), Scott Peters (D-CA-52), and Elise Stefanik (R-NY-21). Like the recent Senate HFC phasedown bill, S. 2754, lawmakers from both parties, industry, and environmental groups like the Natural Resources Defense Council back H.R. 5544.

"This important legislation signals the building momentum for American jobs, trade improvement, technology leadership, and environmental stewardship, through a uniform Federal program for cost-effective HFC phasedown," said Alliance Executive Director Kevin Fay, "and we look forward to working with the strong bipartisan support to achieve these important economic and environmental benefits."

H.R. 5544 relies on three key components:

- A market-based allocation system for the producers of HFC compounds that gradually phases down their production and use.
- A flexible program for future user sectors to achieve the transition of the user technology sectors
- A heightened emphasis for improved management of refrigerant substances where relevant.

The legislation also contains a policy and program approach similar to what the industry has relied upon under Title VI of the Clean Air Act. It is also designed to be a stand-alone program and not a Clean Air Act Amendment.

Independent analysis commissioned by the Alliance projects that the American Innovation and Manufacturing Leadership Act would generate an additional 33,000 manufacturing jobs, improve the balance of trade by $12.5 billion annually, and increase exports by billions of dollars based on additional investment by the HVACR industry in the United States over the next decade.

Fay added, "Without the proposed law, American businesses are left in an uncertain position in a highly competitive global market for next generation fluorocarbon technologies."

The American Innovation and Manufacturing Leadership Act of 2020 (H.R. 5544)

The American Innovation and Manufacturing Leadership Act of 2020

- The AIM Leadership Act was introduced in the U.S. House of Representatives on January 7th by Representatives Paul Tonko (D-NY), Pete Olson (R-TX), Scott Peters (D-CA), and Elise Stefanik (R-NY).
- The U.S. heating, ventilation, air conditioning, and refrigeration (HVACR) industry supports the AIM Leadership Act, as does the U.S. Chamber of Commerce, the National Association of Manufacturers, and the Natural Resources Defense Council.
- The AIM Leadership Act phases down refrigerants known as hydrofluorocarbons (HFCs), providing an orderly, innovation-driven transition to next generation technologies for U.S. manufacturers and consumers.
- The AIM Leadership Act also authorizes EPA to harmonize refrigerant management and sector- based programs, so there would be a single Federal program for HFCs and ozone-depleting substances.
- This grant of authority is highly limited -- and cannot be used for any purpose other than phasing down HFCs. It has no precedential value, except to show EPA needs Congress to act where EPA wants to control new substances and lacks express authority under existing law.

Economic Benefits

- The AIM Leadership Act allows U.S. manufacturers to maintain technology leadership in the global fluorocarbon and equipment marketplaces, while at the same time creating new domestic jobs and driving economic growth. According to an industry study, it will:
  - Create 33,000 manufacturing jobs and sustains 138,400 existing jobs between now and 2027.
  - Increase direct manufacturing output by $12.5 billion, and total (direct and indirect) manufacturing output by $38.8 billion between now and 2027.
  - Improve the U.S. trade balance in equipment and chemicals by $12.5 billion.
- Studies also forecast the overall contribution to the economy from the HVACR industry will be 2.5 million jobs, and $621 billion in economic output by 2027.

Consumer Benefits

- American consumers will benefit from the transition from HFCs to more environmentally friendly, more efficient cooling and refrigeration products and equipment.
- As with previous technology transitions, existing consumer equipment would not be impacted by an HFC phasedown. HFCs will remain available for servicing existing equipment, as did prior transitions away from older refrigerants, such as CFCs, without harm to consumers.

AHRI
AIR-CONDITIONING, HEATING, & REFRIGERATION INSTITUTE

The Alliance
for Responsible Atmospheric Policy

Mr. TONKO. Thank you, Mr. Bedard, and all of the members of the panel for your testimony.

We will now move to Member questions, and I will start by recognizing myself for 5 minutes.

Mr. Bedard, I mentioned the broad support from the heating, ventilation, air conditioning, and refrigeration industry for this legislation. Can you help us better understand the breadth of that support?

Mr. BEDARD. Sure.

Mr. TONKO. Does it improve the entire supply chain from chemical and equipment manufacturers down to contractors? Just let us better understand.

Mr. BEDARD. Sure, Chairman. I think if you look at the AHRI, which represents the manufacturers as well as the chemical manufacturers—again, I talked about the alliance that I am representing here today. Obviously, the chemical manufacturers are part of that, but I think also included, you know, small business. The Air Conditioning Contractors Association has submitted a letter. Of course, there are small businesses, there is not a district in the country that doesn't have a small air conditioning contractor in their district, and they are supportive through their trade association.

The wholesalers, those whom we sell to that then, in turn, sell to contractors, are represented by HARDI, the wholesaler group. And they also have provided support for it as well as the Sheet Metal and Air Conditioner Contractors, SMACNA, of North America. All of those organizations have submitted letters in support of this bill.

Mr. TONKO. So there is also considerable private sector support outside of your industry, and obviously you mentioned the various end users and refrigerant consumers that will benefit from an orderly transition to this next generation refrigerant?

Mr. BEDARD. That is correct. And from a consumer point of view—obviously we are a manufacturer. We are very, very concerned about costs. We understand the costs that refrigerants have in the product. Frankly, they are a small part of the cost of the product, and we have evaluated this bill, and we have evaluated the timing, and we feel very comfortable that with the kind of road map that this bill provides, that we will be able to perform as we have in the past.

And frankly we have been able to take the cost down, and the consumers have received better product and in many cases more efficient product for similar cost.

Mr. TONKO. Thank you.

It is a little unusual for us to receive testimony from industry stakeholders, asking for the creation of a new EPA program.

So Mr. Galyen, are American manufacturers currently making investments to develop HFC substitutes?

Mr. GALYEN. Yes, most certainly, Mr. Chairman, they are, and have been for the last ten years. And most of us are also servicing not only the U.S.—is it on? Maybe I just need to get closer. Good. That we have been investing, and in fact, more than ten years, to meet the North American requirements, but it is also moving as it is already talked about globally. There is a transition that is under-

way today to move away, to more—to different chemical alternatives to the HFCs, so yes.

And we have been leading in the U.S.—this is also a key point—so we have been leading in that area, we have been leading here in the U.S. and that transitions to larger market shares and business for us internationally.

Mr. TONKO. And so does an orderly transition to next-generation refrigerants, as was done with the phase-down of ozone-depleting substances, provide the certainty or grow that certainty necessary to continue to make those investments in the U.S. so that these HFS substitutes will be American-made?

Mr. GALYEN. Without question. So I represent today the 300 member companies that manufacture for North America, as I made in my testimony. We represent 90 percent of the equipment that is produced and sold here in the U.S., and we are prepared to make this transition.

Mr. TONKO. Thank you.

Mr. Doniger, you have worked on these issues for decades. How has the phase-down of ozone-depleting substances informed your position? And did that program benefit both industry and the environment?

Mr. DONIGER. Well, we learned a great deal from that experience. In the early 1980s, the people on this panel were at odds with one another. And in about the mid-1980s, we came to a way of dealing with one other on a partnership basis.

NRDC asked for a phaseout of the CFCs over a period of time rather than an immediate ban. And the industries began to cooperate in the design of that system. They had alternatives, they had the expertise. And we have worked together for 30 years on a successful phaseout of the CFCs, the HCFCs, and now, hopefully, the HFCs.

This is really an island of cooperation and bipartisanship, and it has come with tremendous health benefits, both for ozone layer-related diseases and for the reduction of climate change, and it has come at imperceptible impact on consumers.

Mr. TONKO. Thank you very much.

I will now recognize Mr. Shimkus, subcommittee ranking member, for 5 minutes to ask questions, please.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Mr. Galyen, Mr. Bedard, and Mr. Lieberman, and Mr. Doniger also, you all talked about an orderly transition versus disorder. You all talked about a rational transition. So two questions.

Wouldn't it be more orderly, especially in this day and age, that we would allow State preemption, we would have preemption language in this bill?

And from the point of the interstate commerce—the Energy and Commerce Committee, the International Commerce Clause is the constitutional provision that gives us our power to be involved in interstate commerce issues.

So let me start with Mr. Lieberman. Would it be helpful for an orderly versus disorderly transition, using terminology that you all have stated, that there be State preemption?

Mr. LIEBERMAN. If certainty and order was the goal, there are some flaws with this bill, especially the lack of State preemption.

This is going to be a very big challenge if we set a set of Federal requirements to phase-down HFCs. And then, on top of that, California can go in its own direction, other States which are already doing that can go also in their own direction. That makes it a lot more difficult. So I think one set of standards should be enough.

I would also point out, with the accelerator clause we don't know how orderly and certain. This could happen a whole heck of a lot faster than anybody here is talking about.

Mr. SHIMKUS. My next question was on the accelerator clause.

Mr. Galyen, what certainty is there in the bill language that would allow us to change and accelerate this provision to an unknown time?

Mr. GALYEN. Probably would have been good to ask the EPA person, because I think the bill, actually provisions allow them to petition and there is a review, just as the EPA has done previously.

Mr. SHIMKUS. But don't you agree that having that provision, instead of a State—a Federal standard across the board that applies to all the States would bring more certainty versus less certainty? And then you bring in the accelerator provision, which creates more uncertainty.

Mr. Bedard?

Mr. BEDARD. Sure. I think the best way to answer that is to look at what history says, and that in the absence of a Federal program what happens is you do see that balkanization of regulation. In the past, when we have had a single Federal standard, essentially the States just follow the Federal standard.

Mr. SHIMKUS. Well, that is true for 40 years ago when we did ozone.

Mr. Lieberman, in your testimony you mentioned CAFE and the possible current actions of Federal law that don't support that issue.

I am not asking you, Mr. Doniger, I am asking Mr. Lieberman.

Mr. LIEBERMAN. Yes. Well, if we don't want the States to keep going in their own direction we should put it in writing. It is that clear.

Mr. SHIMKUS. That is the certainty aspect.

My friends, and we discussed during the legislative hearings on the side, they say, "Oh, trust us," because it didn't work for ozone, but the ozone era was 40 years ago, a different era than now when we have a California environmental agency that likens itself to be the Federal EPA. And then you have New York follow, you will have New Hampshire, you will have these States. So there is no certainty in this language because there is no State preemption.

Also, I am going to ask unanimous consent, I know you are going to look at it later on and make an approval of this, economic impact of Kigali Amendment ratification, it speaks in the language.

The first question I want to ask, Mr. Bedard, you might be able to answer this. It says in this report that 49 percent of HVAC equipment are imported into the United States. Is that accurate?

Mr. BEDARD. Forty-nine?

Mr. SHIMKUS. Eighty-nine percent. Mexico, 44 percent, China is 27, South Korea 10, Canada 4, Japan 4 percent.

Mr. BEDARD. Again, HVAC equipment is a very broad topic, so it could be room air conditioners and those types of things.

Mr. SHIMKUS. OK. My point being is we have got to be careful when we hear testimony. If these manufacturings are overseas, the impact—the reason why they are being produced overseas is because low cost, local equipment, parts. But you are spinning the hearing to say we are—we may be doing the research and development, and we may have a corporate headquarters, but we are not building the equipment.

Last question is, HFC refrigerants currently cost four to six pounds on Amazon compared to $40 to $60 per pound of HFOs. Is it that an accurate price comparison, Mr. Galyen?

Mr. GALYEN. Yes, I heard that in earlier testimony. So I don't follow the exact price of refrigerants.

Mr. SHIMKUS. Well, maybe we should. If we are going to be talking about consumers and their costs, maybe we should look at that cost.

And I yield back my time.

Mr. GALYEN. Can I continue to answer the question?

Mr. TONKO. Please.

Mr. GALYEN. Put it in context. Today, if you look at the broad base of different types of equipment, in a residential air conditioning system the cost of refrigerant represents something like one percent of the cost of that system. In a commercial system, it is something like a quarter of a percent. So it is a contributor, yes. OK?

But what I also heard earlier was talking about replacing R–134a, so it is a chemical refrigerant, it is HFC today, to a specific HFO that was mentioned. That is not the only option. There are many options. And I would say that it depends very much on the specific application.

Let me be specific. A white goods appliance refrigerator today has historically used R–134a. Around the world and the other millions of refrigerators have for more than two decades used a hydrocarbon, R–600a, Isobutane. I would, fair to say, that those prices are equal or less.

Mr. SHIMKUS. Mr. Chairman, if I may, because of the 2-minute explanation of the question, the reality is $6 per pound for HFCs versus for HFOs.

And I yield back my time.

Mr. TONKO. The chair now recognizes Mr. Peters for 5 minutes, please.

Mr. PETERS. Thank you, Mr. Chairman.

San Diego is not thought of as a big manufacturing town, but we have companies with household names in defense, aerospace, shipbuilding, and repair medical devices, even craft brewing, headquartered there. And we benefit tremendously from our close proximity to Mexico, which I mentioned many times before.

It is estimated that the value of the co-producing manufacturing supply chain in San Diego County, Imperial County, and Baja California is about $2.5 billion. So Mexico has committed to transitioning away from HFCs.

Keeping our markets aligned and maintaining a strong relationship between the U.S. and Mexico is vital to the San Diego region. And today's testimony suggested that, if enacted, the AIM Leadership Act will provide certain trade benefits.

According to one study, the transition to next-generation technologies would increase the U.S. share of global HVACR market by 25 percent, and that would lead to a $12.5 billion positive swing in the balance of trade for the HVACR sector. Conversely, if we went along with the so-called disorderly transition, the prediction is we would lose about 14 percent of our current market share.

So I would like to go ask the industry representatives, Mr. Bedard and Mr. Galyen, how does that play out? Who are the winners? And if we did not go forward with this kind of orderly transition and maybe we have to massage it to make it perfect, who are the losers?

We will start with you, Mr. Galyen.

Mr. GALYEN. Sure. Thank you for the question.

I think here that we have and are today the leaders. So our R&D, our engineers, our manufacturers are the state of the art and the reference in the global economy. And we compete globally.

If the national standards are something different than what is moving in the global standards we will not invest for that R&D here, but our competitors globally will. And they are in China, they are in Asia, they are in Europe. And they will take a lead because they are serving their own markets that are typically under a national framework to move to something—to have a phase-down framework.

Mr. PETERS. And we are trying to export to those countries with those new standards. Is that correct?

Mr. GALYEN. Correct. But if we are relying most of our production on the old way of doing it to the new way, we will not also be competitive and we will lose market share, and I think that is what the study reflects.

Mr. BEDARD. Manufacturers tend to have centers of excellence, both form a design point of view as well as from a manufacturing point of view. And to the extent that we are dissimilar from the rest of the world, those design centers and those manufacturing centers will be elsewhere.

Mr. PETERS. Let me ask you another question just about the cross-border shipments. I asked Ms. Newberg from EPA this morning about the limits on how much HFC can be imported. There is no limit right now.

She has testified that if H.R. 5544 becomes law imports would also be subject to the phase-down program. We set up a system for tracking imports, and imports would be unlawful without an allowance.

And I understand that there have been longstanding concerns among American manufacturers that foreign producers of HFCs are exporting them to the U.S., heavily subsidizing their price, which undercuts American-made products and potentially violates trade rules.

Again, Mr. Bedard, can you address how the AIM Leadership Act would address these anticompetitive practices, and particularly with reference to China?

Mr. BEDARD. So there are restrictions in the bill on the import of those substances. And from that point of view, that would limit the dumping, if you will.

Mr. PETERS. Mr. Galyen, do you have a comment on that?

Mr. GALYEN. Yes. We are aware. And actually it has been recognized that in a lot of cases China has been dumping refrigerants or being subsidized. And then while there have been some attempts to restrict that, there is the movement to other countries, which doesn't allow a benefit here. So this bill would allow regulations of all imports and put it on a level playing field.

Mr. PETERS. It just seems to me that it is rare that we have an industry sort of from small to large across the country interested in the Federal Government setting a regulatory framework that other groups don't object to. And it seems to me that we ought to take that opportunity, we ought to pursue this.

And I do understand there may be some massaging, and I have got a list of issues here that people have raised. We should do that. That is the purpose of a hearing on this legislation.

But it does strike me that it is important for trade, and for business, and for industry that we move forward today. It doesn't bother me that it is helpful to the environment as well.

So I am happy to be a cosponsor of this. I look forward to continuing work.

Mr. Chairman, thank you for the hearing, and I yield back.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes Mr. Walden, full committee ranking member, for 5 minutes, please.

Mr. WALDEN. Thank you, Mr. Chairman.

Mr. Bedard, if I heard you correctly, you said about this bill that this sets up a national single Federal standard, right? That was what you said in your testimony.

Mr. BEDARD. It does, yes.

Mr. WALDEN. But yet it doesn't have State preemption in it, correct?

Mr. BEDARD. That is correct.

Mr. WALDEN. So do you think that States won't on their own try and do something beyond this national Federal standard?

Mr. BEDARD. I mean, frankly, the States have other things to do, they have other work to do. In the absence—what I can tell you with certainty is, without a Federal standard, they will.

Mr. WALDEN. So let me ask you this. Do you oppose a preemption provision added to this bill?

Mr. BEDARD. Do I oppose it? No, I do not.

Mr. WALDEN. Mr. Doniger, do you oppose a Federal preemption if we are going to set a Federal standard?

Mr. DONIGER. I do. We would oppose it.

Mr. WALDEN. All right.

Mr. Lieberman?

Mr. DONIGER. May I explain?

Mr. WALDEN. Let me just get that answer. I will come back to you.

But, Mr. Lieberman?

Mr. LIEBERMAN. It would put some lipstick on this pig, yes.

Mr. WALDEN. All right.

Mr. Galyen?

Mr. GALYEN. The priority for industry and the AHRI members is to have a Federal framework.

Mr. WALDEN. Federal framework or a Federal preemption? That is my question. Yes or no?

Mr. GALYEN. The priority is Federal framework.

Mr. WALDEN. Is that—OK. I need to understand what you mean by Federal framework.

Mr. GALYEN. A Federal framework sets a standard of which then the States can refer to. That is the priority for our industry.

Mr. WALDEN. So that is not a preemption. So you are telling me you don't support a Federal preemption.

Mr. GALYEN. The priority for our industry is that we have a Federal framework.

Mr. WALDEN. Yes. That is different than a preemption. Because for me, and I think Mr. Shimkus' point, is we can set up a Federal framework for you, but our history is maybe different than yours in that States tend to then try and one-up the Federal Government—or precede the Federal Government, to your point, Mr. Bedard. But you don't support that.

Mr. Doniger, I said I would go back to you, and I will.

Mr. DONIGER. Thank you.

Under Title VI from the 1990 Clean Air Act, we have had no preemption and there has been no significant State activity beyond the Federal minimum. Why? Because there is a strong Federal program and the States use their resources to do other things.

States are active in this area now because there is a gap. There is an absence of Federal authority.

Mr. WALDEN. OK, I am going to—I appreciate that.

Mr. DONIGER. And they, in my opinion, will stand down.

Mr. WALDEN. I am going to reclaim my time, sir. I reclaim my time. Because we have seen this happen in CAFE standards where there is a Federal standard in place and other States then have proceeded to find their own paths, which sets up all kinds of conflict.

I notice, too, that you also mentioned, Mr. Doniger, the issue of wildfires. We are seeing what is happening in Australia. My district has been ravaged by wildfires. Over the years when I chaired the committee we had multiple hearings on the air quality effects of wildfire.

And I have to confess, I looked up on your Web site NRDC's views of biomass and your hatred toward them. I guess I would call it that. I will let you read it and decide.

But if we don't do a better job of managing our Federal forests to reduce the overstocking that puts them completely out of balance with nature, you are going to have fires worse than what we are seeing in the last few years. So I would hope that we could have a discussion about that at some point.

But at this point, I will yield to my friend from Oklahoma, Mr. Mullin, the remainder of my time.

Mr. MULLIN. Thank you, Mr. Walden.

Can someone please tell me who came up with the idea of this bill? Did the EPA think there was a need to make this change in refrigerant from the 410A to the A2L? Somebody?

Mr. LIEBERMAN. This is something that has been bubbling up for about a decade or more. I think the genesis of it particularly comes

from Honeywell, which has patented a number of the substitute refrigerants.

Mr. MULLIN. So the manufacturing industry came up with it?

Mr. LIEBERMAN. Yes. And the first attempt to put it in law was the cap-and-trade bill of about a decade ago.

Mr. MULLIN. So there wasn't—the EPA didn't, like, sound the alarm that there was an environmental urgency to make this change. It was the manufacturers thought maybe it would be a good idea to go ahead and make this change. Is that fair to say? I am not trying to put words in your mouth.

Mr. BEDARD. Congressman, I think a better characterization will be that under the Montreal Protocol when the HFCs were introduced——

Mr. MULLIN. Excuse me on this one. That called for the removal of the R–22 to go to the 410A.

Mr. BEDARD. Correct. Correct. I understand, Congressman.

Mr. MULLIN. I am trying to figure out why we are making the change to go to the 410A. And all I am saying is, who came up with the idea?

Mr. BEDARD. I understand, but at that time that transition occurred industry recognized, everyone recognized that there was a global warming potential issue with the HFCs. So I would say the genesis of the concern was probably at the time of the initial transition.

Mr. MULLIN. Then why did we get sold on changing it to the 410As? If you already knew there was a concern—and I am out of time, I yield back, and I will get back to that—but why then was there an urgency to switch from the R–22 to the 410A and now going to the A2L? That is a bigger question that I don't have time to get into.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes Representative Barragán for 5 minutes, please.

Ms. BARRAGÁN. Thank you.

I want to follow up a little bit, Mr. Galyen and Mr. Bedard. We understand that this bill will help produce jobs. Can you both speak to how many jobs this bill might help protect and create? If you have any info on California in particular or southern California, that would be helpful as well.

Mr. GALYEN. I can speak to the number of jobs we have estimated by a third party, I think it was University of Maryland: 33,000 new manufacturing jobs. I can't remember the exact number. I can dig it up in my notes real quick. But it protects something more than 120,000 existing jobs today that are supporting the HVACR business.

Ms. BARRAGÁN. Great.

Mr. Bedard, do you want to add anything to that?

Mr. BEDARD. No, not necessarily, Congresswoman. We are just talking about the number of jobs throughout the U.S.

We manufacture in a number of different States. We have lots of manufacturing workers in the U.S. We do not have them in California. But we certainly have salespeople and wholesale distribution folks. And so, again, the number was 33,000 jobs and it will be spread across a number of different types.

Ms. BARRAGÁN. Great. Thank you.

Mr. Doniger, in your testimony you say that transitioning off of HFCs can curb global warming by nearly half a degree Celsius. Can you briefly speak to the scale of how great an accomplishment this could be to achieve this through a bill at no cost?

Mr. DONIGER. Yes, thank you.

Let me point out that the phaseout of CFCs before this has accomplished—already prevented one degree Celsius of warming in the Arctic. The Arctic is warming much faster than the global average. And by the middle of the century we will have avoided a degree global average. That is equivalent to postponing the effect of climate change, as I said in my testimony, by ten years. So it would be that much worse now if we hadn't acted.

The same thing is happening with HFCs. They are not as potent, but there is a lot more of them because our air conditioning industry is growing, the world air conditioning and refrigeration industry is growing, the leakage is growing. And if we let that go, we will get another half degree of warming on top of what we are expecting.

We are struggling to hold warming to 2 degrees or 1.5 degree. Already we have these fires, floods, sea level rise, and so on. It will only get worse if we layer on the additional emissions from HFCs.

So that is why it is so important to phase these chemicals down and to act now before we have to do it on an emergency basis.

Ms. BARRAGÁN. Great.

Mr. Bedard, can you speak to how the bill will strengthen the HVACR industry's competitiveness abroad?

Mr. BEDARD. Sure. I have a unique position. I have responsibility for HVAC in Europe. And I can tell you that there is more certainty in Europe, believe it or not, than in the U.S. in terms of taking a look at where things are going from an air conditioning point of view.

And if you take a look at how that strengthens us globally, is we don't have to waste our time on things that won't happen. And if you understand where the direction is, if the supply chain understands where the direction is, essentially it is a more fruitful investment throughout the entire supply chain and the market grows.

Ms. BARRAGÁN. Great.

Well, I just want to say, I want to congratulate Congressmen Tonko and Peters and Olson and Stefanik for putting this legislation together. Both this bill and the comparable Senate bill are bipartisan, something that you don't get too often on environmental concerns and issues and certainly on addressing climate change. And so to hear about what it could help do to address that, which I believe is critical, is so great.

And this particular bill has a coequal number of Democrats and Republicans that support it, which is a nice thing to see, especially in today's time. It is supported by the HVACR industry, the Chamber of Commerce, and NRDC.

And it is never easy to achieve the level of consensus that this bill has done. So this HVAC initiative is a triple win—for jobs, for consumers, and the environment. I look forward to supporting it,

and I urge all of my colleagues on the committee to do the same. And just want to thank you again for having this hearing today.

I yield back.

Mr. TONKO. The gentlewoman yields back.

The Chair now recognizes Representative McKinley for 5 minutes, please.

Mr. MCKINLEY. Thank you, Mr. Chairman.

In 2016, apparently there was a conference in Rwanda, and they developed an amendment, the Kigali—I hope I am pronouncing that correctly—this Kigali Amendment that was to phase-down the HFCs. But that never was ratified by the Senate here in the United States. So it has been sitting there since 2016.

I am curious, Mr. Chairman, is there—maybe someone here could answer—is there a difference between the Kigali Amendment and this specific legislation? Is there a difference between the two?

OK. Mr. Lieberman?

Mr. LIEBERMAN. Very small differences. This is the legislative attempt to get the U.S. on track for perhaps future ratification of the Kigali Amendment. But you are right, we haven't ratified it, so there are questions what we should be doing in the absence of ratification.

Mr. MCKINLEY. Thank you. OK.

Now, it is my understanding that under that Montreal Protocol that it wouldn't go into effect until 20-some countries had ratified that agreement. Have 20-some countries ratified that so it is in effect?

Mr. DONIGER. Ninety-one.

Mr. LIEBERMAN. It is in effect. But developing nations—which, incidentally, includes China—have generous extensions of time to continue using HFCs. They demanded and got a lot of extra time to stick with the old refrigerants. That is why the claims of exports may be overblown. These nations demanded and got extra time to continue using HFCs.

They have also said at the U.N. that they are not interested in switching to these new refrigerants unless they are subsidized to do so through something called the U.N. Multilateral Fund.

And most of the demand growth around the world is from these developing nations who just really don't have an interest in these newer and largely more expensive refrigerants.

Mr. MCKINLEY. I would like to understand maybe, Mr. Lieberman, because you have obviously been paying attention to this legislation more than I, why didn't the Senate take it up? Why did we not ratify that treaty?

Mr. LIEBERMAN. It has to be submitted by the President to the Senate. President Obama chose not to do so. President Trump chose——

Mr. MCKINLEY. OK. But my question, why not? He is the one—they agreed to the thing in Rwanda. Why didn't he submit it to the Senate for ratification?

Mr. LIEBERMAN. I could only guess. I would guess he was concerned about the number of votes at the time. That is President Obama. And I would guess that President Trump may not support this effort. But that is just a guess on my part.

Mr. MCKINLEY. OK. So someone has to submit it.

All right. I have two minutes left. If I could yield my time to the gentleman from Oklahoma, if he would like to continue his line of questioning.

Mr. MULLIN. There has been a lot of question about the industry supporting this. And while I agree that industry does—I mean, let's be honest, for industry it is great, it is job is security—I mean, wouldn't this make sure that you guys are still producing units going forward, Mr. Bedard?

Mr. BEDARD. We certainly intend to continue to heat and cool people's homes.

Mr. MULLIN. Sure. But we talk a lot about all the industry supporting it, but once again we leave out the consumer. I mean, if the consumer begins to understand what their options are going to be—for instance, then when we phase-out the 410A, what refrigerant is going to be replacing that?

Mr. LIEBERMAN. That is a good question. And we have talked a little bit about certainty, but there really isn't any frontrunner to replace 410A. So we are going to see a number of different refrigerants, some different companies going in different directions.

And as you know from your history, the proliferation of refrigerants is a very big problem. You don't know if the right refrigerant was used by the last person to repair the system. So it is the proliferation of refrigerants that is a problem and it is not helped by this bill.

Mr. MULLIN. And if you change refrigerants out then the equipment doesn't operate the same. Is that correct, Mr. Bedard?

Mr. BEDARD. The equipment is designed for certain refrigerants.

Mr. MULLIN. For certain. So if you phase-out R–22, then 410A won't work with it, and if you phase-out the 410A, then the A2L won't work very good with it, right?

Mr. BEDARD. That is correct.

Mr. MULLIN. Is the A2L, which is commonly used right now to replace the 410A, what is the problem with it?

Mr. LIEBERMAN. Well, there are some flammable refrigerants that are being introduced. Flammability risk can largely be engineered around. It can't be completely eliminated, but they can be reduced. They are more of a problem for some types of equipment than others.

I would say it is a safety issue, but it is also a cost issue, because the things you have to do in order to reduce those risks cost money. And these flammable refrigerants are particularly an issue in retail environments where there is proximity to customers and employees, and there are lease issues and insurance issues and building code issues. These issues are on their way to being worked out, but there is a long way to go and it is still silent on that.

Mr. MULLIN. And the consumer will be paying that bill, not the manufacturers or the installers.

I yield back.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes the gentlewoman from Delaware, Representative Blunt Rochester, for 5 minutes, please.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman. And in your absence, now that you are back, I would like to say thank you for

your leadership and support on this bill, as well as Mr. Peters, Mr. Olson, and Ms. Stefanik.

I also wanted to acknowledge that the senior Senator from the State of Delaware, Tom Carper, actually is the lead on this bill on the Senate side.

And I want to thank our witnesses for joining us as well.

This bill is a combination of a proven regulatory framework, an industry that is innovating next-generation technologies, providing both environmental and economic gains. It is nonetheless notable and some might say remarkable to see NRDC and two business associations sitting at the same table in support of this bipartisan legislation, and the U.S. Chamber of Commerce, the National Association of Manufacturers are also on the record for officially supporting this bill.

It is also rare, some would say these days, that Republicans and Democrats can be in support of the same thing, small, medium, and large businesses, labor, environmentalists can all agree on something. But this legislation does just that.

H.R. 5544 will boost American innovation and manufacturing, stimulate our economy, which ensures that we are competitive, and create tens of thousands of new and high quality jobs.

I am going to start my first question with Mr. Doniger.

Can you describe how the environmental and business communities came to agree to support this bill? Could you share a little bit about that?

Mr. DONIGER. Yes. As I said a little while ago, our environmental and business interests originally were very much at odds back in the early 1980s, but we found common ground. And the common ground is on the notion of a transitional period for each of these transitions, not an overnight ban, but also that it should happen with some dispatch.

And also that there was advantage in having a strong Federal framework, that the States were going to enter the area if the Federal Government did not. That is what is happening now. The States are not going to be active in this area if there is a strong Federal program.

We don't always agree. NRDC would like these transitions to go more quickly. We started work on this in the Bush administration, in the George W. Bush administration, and it took ten years to come to fruition in international negotiations.

But we have always led with domestic legislation. The international treaty is not what governs these guys. It is American legislation. And that is what we need to do now.

Ms. BLUNT ROCHESTER. Now, I only have a minute and 40 seconds left. So there are two things that keep coming up, one is cost and the other is safety. Can I ask Mr. Galyen to speak on those?

Mr. GALYEN. Yes, please. Thank you. I appreciate the opportunity, Congresswoman.

So let me say two clarifying points. So under the Montreal Protocol and the other—the CFCs, because all you guys are not that familiar with it, but that was actually a phaseout. I just need to be clear that this bill is proposing a phase-down and it is orderly over 15 years.

I have heard it come up time and time again: What about service and replacement? It is 15 years, there will be ample refrigerants available for those existing applications for service and repair for the full lifetime of those individual products.

I can then tell you switch to safety. This industry and the member companies, including my own, have a track record of safety. It is really important to us. We manage today gas furnaces which are in propane, as well as natural gas, same for water heating equipment, boilers, and the like, and we know how to do that. And it is very important and critical for the business.

Ms. BLUNT ROCHESTER. Thank you so much. Thank you all.

Mr. BEDARD. And I would just add, Congresswoman.

Ms. BLUNT ROCHESTER. Yes, Mr. Bedard?

Mr. BEDARD. Safety is very, very important to us. It is our number one consideration. I am not here to ask Congress questions, just think to yourselves how many of you have natural gas or propane in your home. You probably do.

As long as the installation practices are that way, as long as the equipment is designed for it, you can do it. We are asking for your help. The longer that we have the certainty that we have, we can exercise a fragmented supply chain to train the installation folks and get this done the right way as we have done twice in the past.

Ms. BLUNT ROCHESTER. Thank you so much. And I yield back.

Mr. TONKO. The gentlewoman yields back.

The Chair now recognizes Representative Long for 5 minutes, please.

Mr. LONG. Thank you, Mr. Chairman.

And thank you all for being here today.

And before I came to Congress, I had a 30-year career, a little over 30 years, in the auction business. And for 20 of those 30 years I did over 200 auctions a year. That is quite a few auctions. So I have wrestled with this issue for all of those 30 years, because as refrigerants would be inlawed and then outlawed, you had to be careful what you were selling, what was in that, who had done it the last time, as you have talked about here today.

It is an issue, like I say, I have wrestled with for quite a while. And you can see from the sling I am in that I wasn't very good at wrestling my daughter's poodle back on the 20th of December.

But for the rest of my time, my four minutes and 15 seconds, I am going to yield 5 minutes of that time to one of the foremost wrestlers ever to come out of the State of Oklahoma, my buddy, Markwayne Mullin.

Mr. MULLIN. I don't know if I can take that title, but I will say I was decent.

So before we quit talking a while ago, we talked about additional measures that could be done to install this safe—and, Mr. Bedard, you mentioned that just a second ago—which additional measures can be done, like ventilation, right?

Mr. BEDARD. Right.

Mr. MULLIN. Yes? I mean, if it is flammable——

Mr. BEDARD. There are a number of different things.

Mr. MULLIN. If it is flammable it has to be ventilated.

Mr. BEDARD. There are a number of different approaches, yes.

Mr. MULLIN. But you talked about natural gas appliances, and we hear every year homes exploding because of natural gas leaks. We hear of water heaters that are supposed to be ventilated correctly and the pressure relief valve isn't supposed to be capped off, but the homeowner decided to cap off the pressure relief valve on the side of the water heater, because they didn't know what it was, because it was leaking, or they cap off the ventilation because it was allowing cold air to go in, because the installers are trained on it but the homeowner isn't.

And so when we start talking about safety, we start talking about a safe way to do this, Mr. Bedard, what is a life worth to you?

Mr. BEDARD. We—we——

Mr. MULLIN. No, no——

Mr. BEDARD. Our products are safe, Congressman. Our products are safe.

Mr. MULLIN. No, no, no, I didn't ask that question. What is a life worth to you?

Mr. BEDARD. Our products are safe and we go through multiple human analysis to make sure.

Mr. MULLIN. Mr. Doniger, what is a life worth to you?

Mr. DONIGER. I am offended by the question.

Mr. MULLIN. No, I am not, because I am the installer, and if a house were to explode or a house were to catch on fire, who is liable for that life? Because we are talking about going from a refrigerant that is nonflammable to a replacement refrigerant that is flammable.

I am an installer. Believe me, safety is first and foremost. I know you don't create products to make them unsafe. You make them safer. But we are still talking about a refrigerant that we are replacing that is mildly flammable. And if you know anything about consumers, if it is mildly flammable, it is flammable.

So what is a life worth? And then who is going to be liable for this if we do lose a life? Anybody?

Mr. LIEBERMAN. I think there are a lot of issues that haven't been thought through on this.

Mr. MULLIN. Agreed.

Mr. LIEBERMAN. So with regard to flammability and flammable refrigerants, there is a reason this industry has tried to avoid using flammable refrigerants for as long as it could. They have to consider new ones now that other things, the nonflammable ones, one after another, have been replaced.

One quick point I wanted to make with regard to the claim that the Montreal Protocol was a phaseout. Actually it wasn't. It started out as a very reasonable phase-down, but it had one of these accelerator clauses. So before the ink was dry, organizations, I think including NRDC, pushed to accelerate the deadlines and we ended up with a much tougher deadline than we originally started with and that phase-down of HFCs can also be accelerated.

Mr. MULLIN. Mr. Galyen, you said that the products are available through the lifespan of the equipment. Is that right?

Mr. GALYEN. Refrigerants will be available for the service and repair of those systems for their useful life.

Mr. MULLIN. What is considered a useful life?

Mr. GALYEN. Generally in air conditioning systems around 15 years.

Mr. MULLIN. So for 15, 20 years Lennox is going to produce both refrigerants?

Mr. BEDARD. We don't produce refrigerants, Congressman. However, if you want to buy R–22 today, you can.

Mr. MULLIN. At what cost?

Mr. BEDARD. It is——

Mr. MULLIN. At what cost? Because that is the important thing, what cost is it? Because I know the cost. So what is the cost of the refrigerant right now to replace R–22, to buy R–22?

Mr. BEDARD. So I know the wholesale cost is a little bit—it is probably $12 a pound, or something like that, wholesale, for——

Mr. MULLIN. But you can't buy it wholesale right now.

Mr. BEDARD. So we sell it to contractors, so I don't sell it to consumers. The contractors in turn sell it.

Mr. MULLIN. So the point is the refrigerant is priced out. And if you price it out, then you price out the equipment.

With that, I will yield back.

Mr. TONKO. The gentleman yields back.

The Chair recognizes Representative McNerney for 5 minutes, please.

Mr. MCNERNEY. I thank the chairman.

I thank the witnesses this morning. Useful testimony.

I think it is important to highlight the fact, as Mr. Galyen mentioned, H.R. 5544 does not force anyone to abandon existing refrigeration or air conditioning equipment and really requires a phasedown as opposed to a phaseout.

Mr. Galyen, the cost difference between HFCs and HFOs has been mentioned a couple of times this morning, but is there a likely decrease in cost of HFOs as they phase in to large-scale production?

Mr. GALYEN. First, for as it becomes commercially to scale.

But I want to clarify, if I can. The HFCs are not naturally going to go to HFOs. There are—can you hear me now? Sorry.

There are many options. It is not a given that HFCs are going to transition to HFOs. There are many, many chemical options. They just all have a lower global warming potential—or near zero in some cases if we are talking about hydrocarbons and such. It will vary very much by application.

Mr. MCNERNEY. Thank you.

Mr. Bedard, I liked your comment that lists legislation proposes to use known proven policy approaches to accomplish the goals of reducing HFCs. Could you expand on that a little bit?

Mr. BEDARD. Yes, sir.

Now, I have been in the HVAC business for 30 years, so I have experienced two major transitions. One where the CFCs were transitioned in the early 1990s, and one where the R–410A replaced R–22 in 2010.

And what that gave us was a level of certainty where we planned with gradually decreasing quotas that essentially scaled down the availability of the other refrigerants, and it allowed us what I would call is a soft landing. And so we see this as a very similar approach, one that we are very comfortable with.

Mr. MCNERNEY. Excellent. Thank you.

Mr. Doniger, does H.R. 5544, in your opinion, embrace the same legal framework that currently exists in Title VI?

Mr. DONIGER. Yes. It is modeled very closely on Title VI, the phase-down of production and consumption. And the other provisions are modeled on Title VI.

Mr. MCNERNEY. Well, can you speak to how the encouragement and certainty that H.R. 5544 provides will assist us in maintaining and extending American leadership?

Mr. DONIGER. Right now American companies have the lead in many areas of the technology in stuff they make here, as well as the know-how for stuff made elsewhere in the world. And other companies and other countries are trying hard to wrest that lead. They have clear guidance from their governments about the phase-down.

The lack of clarity here is risking the lead that the American companies have, as well as risking the environmental benefit that comes from phasing these chemicals down.

Mr. MCNERNEY. So what was involved in maintaining American leadership? Was it industrial investment in R&D? Or what would go into that?

Mr. DONIGER. In my perception, and of course I am not in the companies, but that the companies were motivated to put a lot of money and a lot of planning into the transition between the late Bush administration through the Obama administration because they saw this transition coming and coming into focus. And now we need to solidify it with Federal legislation that would give them the guidance they need.

Mr. MCNERNEY. Mr. Galyen, could you take a stab at that? What has been involved in establishing American leadership? And can we build on that leadership stance that we have now with this legislation?

Mr. GALYEN. Yes. Thank you for the question.

And for sure I think that is what the bill's intent is. I mean, Willis Carrier invented air conditioning in the United States way back when. We have since that time have got the good experience, the great engineers, the great designs that is recognized here and it is recognized around the world.

But as Mr. Doniger said, if we give way and let other countries or companies in those countries who are designing to their own national framework, they will get a lead to us and eventually get an advantage in the marketplace and make American companies less competitive. That is a risk.

Mr. MCNERNEY. OK. Thank you, Mr. Chairman. I yield back.

Mr. TONKO. The gentleman yields back.

The chair now recognizes Representative Rodgers for 5 minutes, please.

Mrs. RODGERS. Thank you, Mr. Chairman.

And to all the panelists, thank you for being here today.

Proponents of this legislation argue that it will create approximately 33,000 new manufacturing jobs in the United States America.

Mr. Lieberman, do you agree that the bill will directly lead to new jobs in the U.S.?

Mr. LIEBERMAN. It is probably not going to be 33,000 and they are probably not going to be American.

I saw that study on jobs, and one word that was missing from the study was outsourcing, which is interesting because this is an industry, the air conditioning and refrigeration industry, that has been very aggressively outsourcing in recent decades.

And in fact, some of the biggest supporters of this bill are some of the biggest outsourcers, and that includes the products that are being touted as the next big thing if this bill were to pass.

For example, the HFO refrigerants that we were talking about, of which Honeywell and Chemours hold patents, well, both Honeywell and Chemours built their first production of HFOs in China. So all of the jobs—or some of the jobs and all of the technology has been handed over to the Chinese.

And with regard to equipment makers, they buy compressors, motors, refrigerants, other components from all over the world and they do so because it is a cost-cutting measure. You want to get the cheapest products consistent with quality.

And so I find it very hard to believe that that cost-cutting incentive to outsource is going to come to an end if this bill were to pass.

The reality is this bill does nothing to encourage exports. The only thing this bill does is hamper the U.S. market by restricting the low-cost option for American consumers.

Mrs. RODGERS. I think that is a very important point as we think about American leadership, American competitiveness, and the importance of us leading and the rest of the world following our leadership.

Mr. LIEBERMAN. And if any company thinks that these new refrigerants and equipment really are the future, they are free to go ahead and move in that direction. They don't need the AIM Act to make this new stuff.

Mrs. RODGERS. OK.

I would like to yield the remainder of my time to the gentleman from Oklahoma, Mr. Mullin.

Mr. MULLIN. I know this hearing is winding down, and I want to make a point. I am not saying that anybody is purposely deceiving or misleading or is for sacrificing a life for a product. I am not saying that.

What I am saying is that we are disguising this and not being true to the consumer of understanding what their choice is.

What Ben just said is we don't have to have this bill for that. We can make the consumer, allow the consumer to choose, do I want a flammable or a nonflammable product in there?

The EPA already said that the 410A doesn't hurt the ozone. And in fact we were even told that—Mr. Doniger, I think you said in your testimony that in your lifetime the ozone is already being rebuilt for your children. Is that you that said that in your testimony?

Mr. DONIGER. Yes. But we have another problem to deal with.

Mr. MULLIN. I get that. But what I am saying is, is the consumers have been left out of this conversation.

Mr. DONIGER. Not at all.

Mr. MULLIN. The cost to install these new units is a real cost. And we need to make sure that the consumer is, one, aware of

what their choices are, and, two, understand what the cost is to them.

That is what I represent. I am not representing industry of any sort. I am just representing my customers, my constituents, my consumers, and all of our consumers.

And, Ben, when you were discussing the replacement and you were discussing the cost of the jobs that the consumers are going to have to bear, meaning in the installation of it, that is all I am talking about.

Mr. BEDARD. I understand the point, Congressman. I guess I would just point out that this transition is underway. It is happening. It is occurring. It is occurring in different States. And the only question is, how is it going to happen, under what terms, and are we going to accrue the benefits?

We are asking for your help to provide that Federal structure that will help us, that will help the entire supply chain, and will help the consumer. Absent that structure, many of the things that you are predicting likely would occur. But with that structure——

Mr. MULLIN. Preemption is very important. Preemption, as you said, is important. Then it should be part of this bill. And not to mention that I believe what needs also to be part of this bill is consumer choice.

I don't think we need a phase-down or phaseout where we are at today with the 410A considering we are just now phasing out the R–22 to the 410A, and we are already planning on already phasing it out.

That means the products aren't going to be on online. And that means the consumer today is going to be buying something that they already know is out of compliance because we are moving it forward. They have to be part of the conversation.

I appreciate every one of you guys here. And I appreciate your time.

I think I am out of time.

Mr. TONKO. You are out of time.

Mr. MULLIN. Yes, I am out of time.

Mr. TONKO. The gentleman yields back.

The House has called votes, and so we are going to recognize 5 more minutes from the Democratic side and then bring us to a close.

So I now recognize the Representative from California, Representative Matsui, for 5 minutes, please.

Ms. MATSUI. Thank you very much, Mr. Chairman.

I appreciate the witnesses for being here for so long.

I am pleased to see the Energy and Commerce Committee is considering legislation that will phase-down the production and consumption of HFCs from the American economy. This effort is the result of years of groundwork laid within the international community to take actions on a worldwide scale to reduce human use of substances that are harmful to our environment and public health.

It is clear that this is not just a question of chemicals that contribute to climate change. It is a matter of whether our country wants to protect public health and remain competitive within the international community.

Depletion of the ozone results in dangerous increase in levels of ultraviolet radiation, which lead to serious health concerns like skin cancer, immune disorders, and eye cataracts.

Moreover, with the rest of the world already on schedule to phase-out HFCs, industry is headed in a direction that will render HFC-using equipment obsolete. We want to lead in this effort and not fall behind.

We heard in Mr. Doniger's testimony the significance of the Montreal Protocol and the broad support it has received over the years, including from every U.S. President since Ronald Reagan. In fact, as I understand it, Mr. Bedard, this bill is based substantially on policies and regulatory design concepts developed by President Reagan and President George H.W. Bush which were applied with broad industry support to transition out of earlier generations of refrigerants.

Mr. Bedard, isn't this bill simply a continuation of regulatory principles that have proven to foster greater competition, lower prices, and more innovation over the past 30 years?

Mr. BEDARD. Yes, I would say that the structure is identical. And I would expect the outcome to be very similar. The industry has grown, the jobs have grown. And it gives us a framework from which to work.

Ms. MATSUI. OK. And, Mr. Bedard, with 91 countries acting to phase-down HFCs, what changes are we seeing within your industry at the international level? And what role have American companies played in this transition thus far?

Mr. BEDARD. Sure. So we are using some of the new refrigerants in Europe. As a matter of fact, we just had a job where we shipped one to Lebanon. So it is not just Europe that are using the new refrigerants.

The design work for those refrigerants is being done in Europe, but it was substantially assisted by work that we have done in the U.S. I think over time that if the U.S. would not be that center of excellence, then obviously those jobs would go somewhere and that growth would go somewhere else.

Ms. MATSUI. OK. Well, thank you very much.

And I would like to yield the remainder of my time to my colleague from New York, Ms. Clarke.

Ms. CLARKE. I thank the gentlelady. And I thank our chairman and ranking member for convening this important hearing on the necessary phase-down of climate warming hydrofluorocarbons.

As Chairman Rush said the other day, climate change represents only a tremendous threat to our future, but also a tremendous opportunity: an opportunity to create millions of new jobs, foster innovation in the new clean technologies, and increase the competitiveness of American businesses on the global stage.

The American Innovation and Manufacturing Leadership Act represents one of these important opportunities. Transitioning away from HFCs towards climate-friendly alternatives will not only benefit the environment, it will also benefit American consumers with better products, increase the global competitiveness of our manufacturing sector, and spur the generation of thousands of new domestic jobs in this field.

New York State is home to more than 2,600 direct jobs in the heating, ventilation, air conditioning, and refrigeration industry. And I anticipate that with this legislation we are poised to bring forth even more.

So I want to thank each of you for coming today, lending your expertise to this conversation, and looking at how we can drill down and make this a reality. As I stated, I believe that we have an enormous opportunity here to simultaneously reduce climate-warming emissions and bolster the American economy, and I look forward to supporting this legislation.

I did have questions for all of you gentlemen. I am going to submit them to our chairman so that you can respond at an appropriate time. I am down to the wire here. So thank you all very much.

And I yield back, Mr. Chairman.

Mr. TONKO. The gentlewoman yields back. That concludes the questioning of our panel.

I have before me a number of documents that have been mutually agreed to. I request unanimous consent to enter them into the record.

Mr. SHIMKUS. No objection.

Mr. TONKO. Without objection.

[The information appears at the conclusion of the hearing.]

Mr. TONKO. And I would like to thank again our witnesses for joining us at today's hearing.

I remind members that, pursuant to committee rules, they have 10 business days by which to submit additional questions for the record to be answered by our witnesses. I ask each of our witnesses to respond promptly to any such questions that you may receive.

And at this time, the subcommittee is adjourned.

[Whereupon, at 1:28 p.m., the subcommittee was adjourned.]

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HFC Phasedown Background

- With regulatory certainty, the technology transition to low-GWP next-generation technology is underway in all major developed countries and is gathering momentum in most major developing countries including India, China, Korea, and Indonesia.
- The transition path in the U.S. is uncertain with no federal action to date However, a dozen states have started a patchwork of legislation or regulation creating an unpredictable state-based HFC phasedown.
- Investment decisions are being made now on implementation of these next-generation technologies, but under the current circumstances the U.S. market will be fractured and less efficiently served, increasing consumer costs and diminishing U.S. global technology leadership.
- A predictable federal U.S. HFC phasedown positions industry to maintain global technology leadership, create additional manufacturing jobs, and cost-effectively produce these new technologies that benefit consumers.
- The Kigali Amendment to the Montreal Protocol has been ratified by 91 countries and went into effect on Jan 19. 2019, initiating a broad-based orderly phasedown of HFCs.

Economic Analysis

- Inforum and JMS Consulting previously:
  - Assessed fluorocarbon industry size
  - Conducted scenario analysis, focusing on HVACR, the largest segment
  - Examined consumer costs in residential/commercial air conditioning, the largest uses
- Scenarios compared ratification and implementation of global HFC phasedown requirements in the U.S. versus a "business as usual" case with no mandated U.S. phasedown. The "consistent with global HFC phasedown" case assumes U.S. action, with or without formal ratification by the Senate.
- Analysis incorporated public data, estimates from Inforum models, and industry interviews, using conservative assumptions.
- U.S. HFC phasedown implementation adds American jobs, increases exports, decreases imports, and supports American technology leadership.
- Delays in implementation or ongoing uncertainty due to state actions will inhibit or eliminate the opportunity to achieve the forecast gains
- Life-cycle cost analysis of air conditioning applications shows the transition during HFC phasedown is expected to further reduce consumer costs.

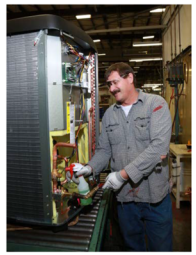
U.S. Industry Segments (Fluorocarbons)

- Fluorocarbon-using products impact how we live on a daily basis.
- Fluorocarbons are used in commercial HVAC, residential HVAC, commercial refrigeration, household appliances, and motor vehicle air conditioning
- Insulating foams, medical metered-dose inhalers, aerosols, and several other applications make up the remainder of the manufacturing sector

American-made products that preserve the health, safety and comfort of our daily lives

U.S. Industry Objective

- U.S. industry strongly supports domestic phasedown of HFCs consistent with the Montreal Protocol.
- Heating Ventilation Air Conditioning and Refrigeration (HVACR) and Fluorocarbon technologies are signature American technologies.
- The phasedown being implemented globally under the Montreal Protocol provides a platform for gradual introduction and commercialization of next generation technologies.
- An HFC phasedown in the U.S. opens the door for domestic production to serve the rapidly expanding global market without harming U.S. consumers.
- Implementation of the HFC phasedown is good for American jobs, the balance of trade, and continued American technology leadership.
- The transition during HFC phasedown is expected to reduce consumer costs in the air conditioning industry.



We urge Congress to implement a U.S. HFC phasedown.

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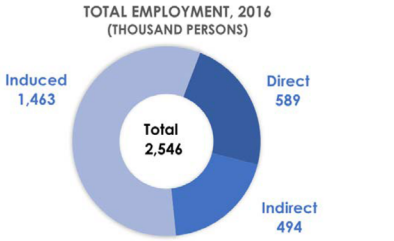
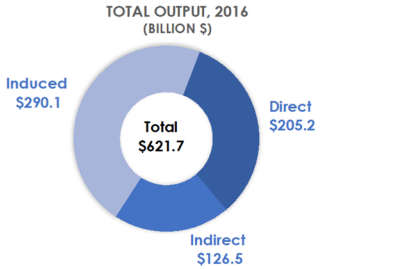
U.S. Manufacturing Impact
Fluorocarbons in the American Economy

- **Jobs**
  - **589K** direct employment
  - **$39B** in payroll
  - **$205B** in sales
  - **2.5M** total employment impact
- **Output**
  - **$621B** in economic output, including manufacturing, distribution, service & installation (includes supply chain and induced demand)
- **Manufacturing**
  - **$178B** contribution
  - **671K** jobs, dominated by HVACR equipment
  - Downstream contracting, wholesale, and service make up the rest



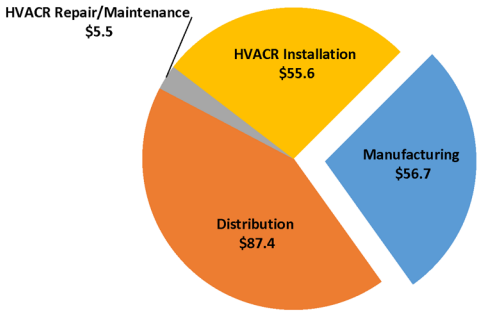


This industry is a significant contributor to American jobs, trade & economic output

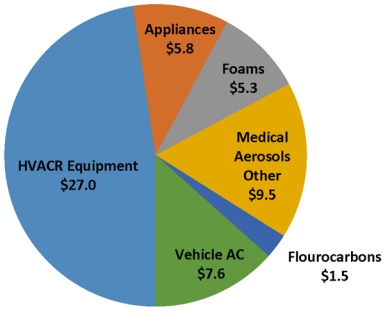
U.S. Industry Segments
Manufacturing and Downstream Output

- Current manufacturing output is $56.7B
- Downstream output in the wholesale, contracting, and repair and maintenance sectors is almost 3X that of manufacturing

Manufacturing + Downstream (Billions $)



Manufacturing Shipments (Billions $)

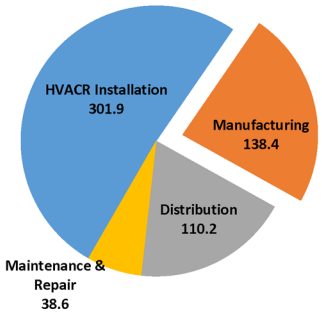


Downstream output is almost 3X the size of the manufacturing output

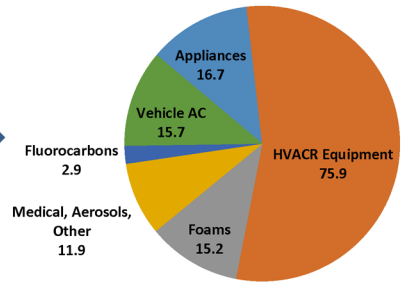
U.S. Industry Segments Employment

- Current manufacturing impact is 138.4K jobs

Direct Industry Employment - 2016 (Thousands)



Manufacturing Employment 2016 (Thousands)



Downstream employment is over 3X the size of the manufacturing employment

U.S. Industry Growth Prospects

- Over the next 10 years…
  - International HVACR market expected to more than double
  - The cumulative global market will be over $1 trillion
  - Developed countries are already transitioning to new technologies
  - Developing countries will transition away from ozone-depleting substances and this transition is at its apex between now and 2047
  - Foams, medical applications and aerosols also have large global growth opportunities
- American Innovation
  - Commercialization of next generation technology is essential at this point in the Montreal Protocol transition
  - The U.S. HVACR industry has traditionally led these transitions and it is vital they lead this transition
  - Typical design cycle for the industry is 5-10 years, decisions being made now

American industry must lead the transition to new technologies to be competitive

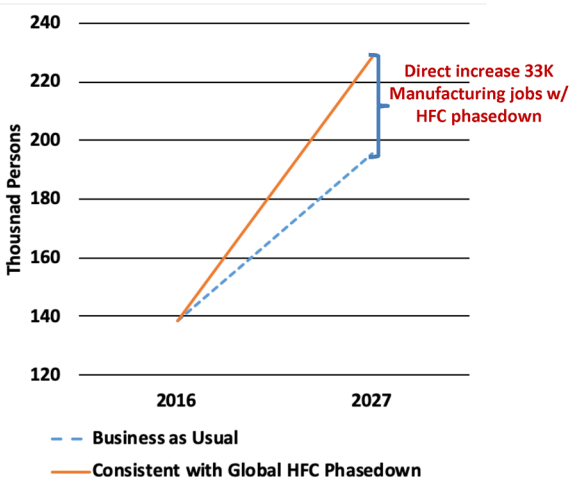
HFC Phasedown Impact 2027

Scenarios Compared:

"Consistent with Global HFC Phasedown" – U.S. implements HFC phasedown on Montreal Protocol schedule

"Business as Usual" – No U.S. phasedown

- **Manufacturing Jobs**
  - Current manufacturing impact is **138.4K** jobs
  - HFC phasedown increases direct manufacturing jobs by **33K**
  - Manufacturing growth translates into an incremental **150K** jobs economy-wide
- **Direct Economic Output**
  - HFC phasedown improves direct manufacturing output by **$12.5B**
  - Total increased output of **$38.8B** versus no-phasedown scenario
- **Trade Balance**
  - Positive impact on balance of trade
  - Manufacturing impacted directly



U.S. HFC phasedown essential to jobs growth, industry growth, trade balance

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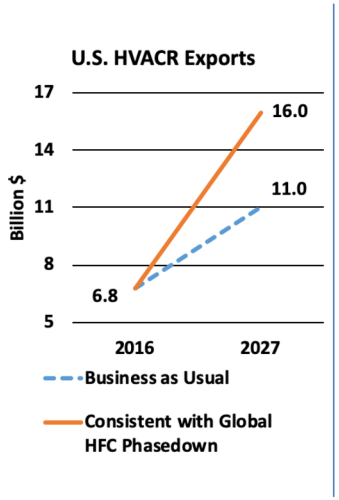
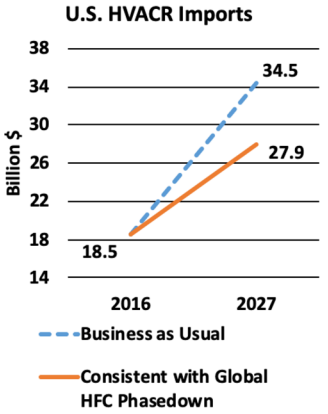
HFC Phasedown Impact
Global Trade

- **Global Trade Impacts**
  - U.S. HFC phasedown will increase U.S. supply to global HVACR markets by $5.0B
  - Phasedown will inhibit growth of old technology HVACR imports by $6.5B
  - Fluorocarbon manufacture adds $1 billion in net trade benefit

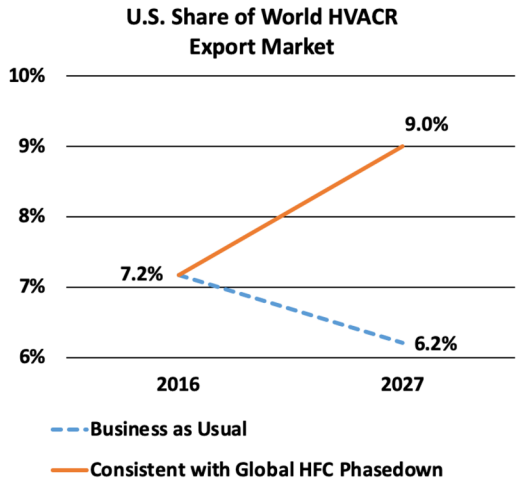




U.S. HFC Phasedown will grow U.S. exports and improve balance of trade

HFC Phasedown Impact
HVACR Global Export Market

- The HVACR global export market will grow by 6% per year to meet needs of China, India, Latin America, and Africa
- With HFC phasedown, U.S. exports will outperform, increasing U.S. share of global market from 7.2% to 9.0%
- Without HFC phasedown, exports will underperform



U.S. is a net importer, but gains share of global market with a U.S. HFC phasedown

HFC Phasedown Impact
Refrigerant Production & Reclaim

- Fluorocarbon manufacturing would benefit from increased exports if HFC phasedown is enacted and suffer from imports of older refrigerants if not
- $1B net benefit included in analysis
- Reclaimed HFCs with a U.S. HFC phasedown are estimated to increase reclaim sales by $0.8 billion and add almost 4,000 jobs. (not included in totals)

HVACR Technology & Investment

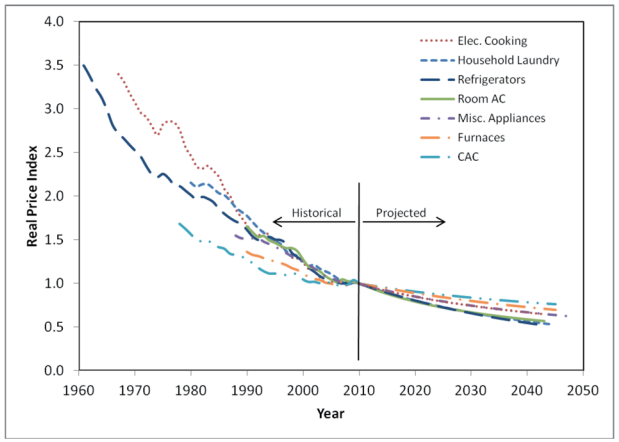
- The American HVACR industry led global innovation, which is driven by domestic demand
- Investments in next generation refrigerants and equipment technologies are already underway
  - In 2015, AHRI members representing 90% of U.S. HVACR manufacturing committed $5B through 2025 in R&D and capital investment to commercialize high efficiency equipment using next generation refrigerants
  - American investments in R&D and capacity for HFC phasedown-related growth will generate 1,400 additional jobs and $1B in capital investment if a U.S. HFC phasedown is implemented
  - Without U.S. HFC phasedown, manufacturing and R&D for new technologies will move to international markets to meet local demand for new technologies

U.S. HFC phasedown essential to maintain and expand American leadership

Key Consumer Costs Continue to Decline

- The 30-year history of the Montreal Protocol shows the industry has used innovations, new technologies, and more sustainable compounds to drive continued reduction of consumer costs.
- Industry innovation, gradual transition schedules, and avoiding impacts on existing equipment owners allowed the industry to accommodate major transition costs over time, minimizing impact on consumer prices.
- U.S. appliance prices have declined over time and are expected to continue to do so.
- Room air conditioners, refrigerators, and central air conditioners have all seen real price declines through two technology transitions under the Montreal Protocol.

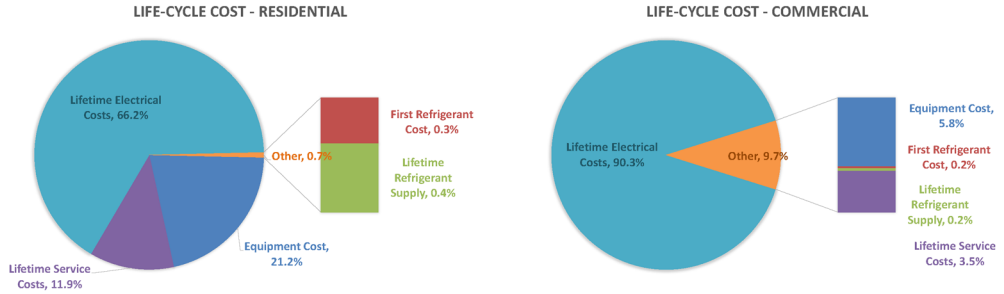
Historical & Projected Real Price Indices for U.S. Major Appliance Categories



See Desroches, et al. (2018). Historical trends based on the PPI published by the U.S. Bureau of Labor Statistics. Projected trends are experience curve fits to the historical data.

Innovation and planning minimized costs of conversion under the Montreal Protocol.

Life-Cycle Costs of Air Conditioning



- Electricity dominates lifetime costs for both residential and commercial air conditioning.
- Refrigerant Supply is less than 1% of lifetime costs.
- Cost projections of each element were made for a new equipment purchase in 2029, with and without U.S. HFC phasedown.

Energy cost dominates even equipment cost, and refrigerant is a minor contributor.

INFORUM | JMS Consulting | The Alliance | AHRI

U.S. Consumers Benefit from HFC Phasedown

- Total costs were estimated over 15-year lifetime for average 2.5 ton residential and 15 ton commercial U.S. air conditioning units.
- Equipment with HFC phasedown ("Consistent with HFC Global Phasedown") is conservatively assumed to be 10% more costly, but on average slightly more efficient, with lower leak rates and smaller charge sizes.
- The average price among all refrigerants is expected to equilibrate and continue to average ~$7/lb.
- Driven by energy, total costs decline slightly with HFC phasedown. There are no significant consumer cost impacts even if refrigerant prices were 5x higher.

Total Cost of Ownership for 2029 Purchase

RESIDENTIAL AIR CONDITIONING	Business as Usual	Consistent with Global HFC Phasedown
Equipment Cost	$4,000	$4,400
First Refrigerant Cost	$53	$49
Lifetime Refrigerant Supply	$79	$37
Lifetime Service Costs	$2,250	$1,950
Lifetime Electrical Costs	$11,585	$11,434
TOTAL OWNERSHIP COSTS	$17,966	$17,869
ANNUAL AVERAGE COSTS	$1,197.74	$1,191.29

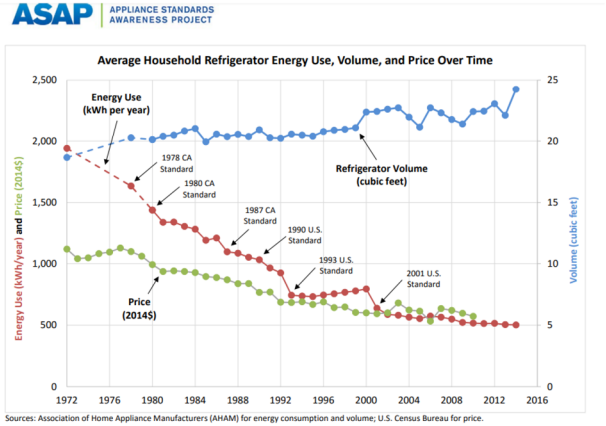
COMMERCIAL AIR CONDITIONING	Business as Usual	Consistent with Global HFC Phasedown
Equipment Cost	$25,000	$27,500
First Refrigerant Cost	$700	$653
Lifetime Refrigerant Supply	$1,050	$490
Lifetime Service Costs	$15,000	$13,000
Lifetime Electrical Costs	$351,285	$346,697
TOTAL OWNERSHIP COSTS	$393,035	$388,340
ANNUAL AVERAGE COSTS	$26,202.34	$25,889.34

HFC phasedown will not increase consumers' cost of air conditioning.

INFORUM | JMS Consulting | The Alliance for Responsible Atmospheric Policy | AHRI

Refrigerators Add Value at Lower Cost

- Refrigerators today are larger, lower-priced, and more energy-efficient than ever.
- The trend has been persistent despite 30 years of transitions under the Montreal Protocol.
- Similarly, other applications have already begun to transition to new compounds and can benefit further from the clarity of the HFC phasedown schedule.



No reason to expect consumer impacts of HFC phasedown to differ from earlier transitions.

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Summary of HFC Phasedown Impacts

- U.S. Industry needs certainty about transition timing to win globally
  - The global HVACR market will double in ten years
  - U.S. industry must be cost competitive to expand global market share
  - Phasedown timing certainty reduces transition costs
- U.S. Economic Benefits
  - Increase American manufacturing jobs
  - Grow U.S. share of the global market
  - Improve the U.S. balance of trade
  - Phasedown timing certainty delivers economic benefits
- American Consumer Impact
  - AC continues to be more efficient
  - AC continues to be more affordable for American consumers
  - Phasedown timing certainty reduces the cost to consumers

U.S. HFC phasedown benefits industry, the economy, and consumers

JOHN KENNEDY
LOUISIANA

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RUSSELL BUILDING
WASHINGTON, DC 20510
(202) 224-4623

United States Senate

COMMITTEES
APPROPRIATIONS
CHAIRMAN OF FINANCIAL SERVICES GENERAL GOVERNMENT
BANKING, HOUSING, AND URBAN AFFAIRS
BUDGET
JUDICIARY
SMALL BUSINESS AND ENTREPRENEURSHIP

January 14th, 2020

The Honorable Paul Tonko
Chairman
Subcommittee on Environment & Climate Change
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable John Shimkus
Ranking Member
Subcommittee on Environment & Climate Change
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

Dear Representative Tonko and Representative Shimkus:

We write in support of The American Innovation and Manufacturing Act (AIM) of 2019 and a transition to the next generation of refrigerant technologies. The AIM Act looks to support U.S. manufacturers in the heating, ventilation, air conditioning, and refrigeration sector by providing a clear path to an orderly transition to next generation refrigerant technologies, many of which are made only in the United States.

This will significantly benefit the U.S manufacturing sector and create thousands of jobs nationwide. Further, by fostering a smooth transition to commercially available next generation technologies developed by American industry, we can ensure certainty for businesses that will lead to substantial savings for both industry and consumers alike.

The American Innovation and Manufacturing Leadership Act of 2020, introduced in the House of Representatives by Rep. Paul Tonko and Rep. Pete Olson, is in many respects similar to the Senate AIM Act. Both bills reflect a strong bipartisan interest in finding ways to ensure American manufacturers and workers can produce new and innovative products and equipment for a fast growing and increasingly competitive global market.

A failure to find a path forward for this industry could transfer our American advantage to other countries, including China, which have been dumping outdated products into the global marketplace and our backyard. Thankfully, there is clear path forward to protect American interests.

The AIM Act will protect American workers, grow our economy, and improve our trade balance all while encouraging further innovation to strengthen America's leadership role. We have been heartened to see bipartisan support for this important issue in the Senate and we look forward to working with your committee to support American jobs and technology.

Sincerely,

John Kennedy
United States Senator

Bill Cassidy, M.D.
United States Senator

Susan M. Collins
United States Senator

Tom Cotton
United States Senator

Lindsey O. Graham
United States Senator

AHAM
ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

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t 202.872.5955 f 202.872.9354 www.aham.org

January 8, 2020

Representative Paul Tonko
Chairman
House Energy & Commerce
Environment & Climate Change Subcommittee
2125 Rayburn House Office Building
Washington, DC 20515

Representative John Shimkus
Ranking Member
House Energy & Commerce
Environment & Climate Change Subcommittee
2125 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Tonko, Ranking Member Shimkus and Members of the Subcommittee:

AHAM would like to provide the Subcommittee the views of home appliance manufacturers on H.R. 5544, the "American Innovation and Manufacturing Leadership Act of 2020." AHAM member companies manufacture residential refrigerators, freezers, room/window air conditioners, portable air conditioners and dehumidifiers. All of these products are impacted by H.R. 5544 and the manufacturers of these products have recommendations to improve the current version of the bill. We hope the Subcommittee will agree that the three suggested additions below are reasonable and reflect basic good government tenets.

1. SEC. 4. MONITORING AND REPORTING REQUIREMENTS – Reduce unnecessary and duplicative reporting requirements by ensuring EPA does not impose any more detailed or extensive information submissions than already are required under the existing Clean Air Act regime or to require the reporting of the same information year after year when there are no changes to that information.
2. SEC. 7. TECHNOLOGY TRANSITIONS – Ensure manufacturers have at least three years to redesign and retool its products, as is the case, for example, when a minimum energy standard is changed for home appliances. Changes in requirements under this legislation can have profound effects on product design, as with the energy standards, and require a reasonable lead in period.
3. SEC. 8. RULEMAKING AUTHORITY – Reduce cumulative regulatory burden by EPA coordinating its rulemakings with DOE to try to avoid EPA banning a refrigerant at a different time than an upcoming energy standard change so manufacturers do not have multiple redesigns and retooling changes that are unnecessary. Energy and refrigerant requirements and restrictions are fundamentally linked from an engineering viewpoint.

We look forward to working with the Subcommittee on these issues and appreciate your consideration of our views.

Sincerely,

Kevin Messner
Senior Vice President, Policy & Government Relations

THE ALLIANCE
for Responsible Atmospheric Policy

October 7, 2019

The Honorable John Barrasso
Chairman
Committee on Environment & Public Works
United States Senate
Washington, D.C. 20510

The Honorable Frank Pallone
Chairman
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable Thomas Carper
Ranking Member
Committee on Environment & Public Works
United States Senate
Washington, D.C. 20510

The Honorable Greg Walden
Ranking Member
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

Dear Chairman Barrasso, Chairman Pallone, Ranking Member Carper, and Ranking Member Walden:

We, the undersigned member manufacturers of the Alliance for Responsible Atmospheric Policy and the Air-Conditioning, Heating, and Refrigeration Institute, are writing to urge your support for proposed Federal legislation phasing down a class of industrial products known as hydrofluorocarbons (HFCs), commonly used as refrigerants and in other industrial applications. We believe legislative action will provide regulatory certainty for U.S. businesses, and secure a position of strength for American companies in a highly competitive global market for next generation fluorocarbon technologies by creating new U.S. manufacturing jobs and stimulating further investment in the U.S. economy.

U.S. companies that produce and use fluorocarbons have been preparing for a transition from HFCs for more than a decade, investing billions in R&D to be the first to bring to market next generation fluorocarbon products and equipment. American companies have led the world in fluorocarbon technology development for decades, but that leadership – and the advantages it confers to the U.S. economy – is jeopardized by the lack of a Federal policy for HFCs. In the wake of U.S. inaction, foreign competitors are poised to fill the technology void and displace American companies in a global fluorocarbon market expected to reach $1 trillion in size.

The blueprint for the global market transformation is contained in the Montreal Protocol, which was developed with significant U.S. industry and government leadership. The Protocol has also had continuous bipartisan support since its original signing during the Reagan Administration.

Federal legislation phasing down HFCs represents a chance to put America first, and to keep American workers at the forefront of this important global industry. A recent industry economic study showed that a new Federal standard for the phasedown of HFCs would create 33,000 new U.S. manufacturing jobs, add $12.5 billion per year to the U.S. economy, and expand U.S. exports in this sector by 25 percent. Failure to do so will cost U.S. businesses and jobs.

On behalf of the 1.3 million Americans currently employed in the overall heating, ventilation, air-conditioning, and refrigeration industry, we urge your support for action on proposed Federal legislation to phase down HFCs. It is our goal to protect U.S. global technology leadership, and create American jobs, a goal that we know you share. We look forward to working together to achieve this goal.

Sincerely,

Mike Armstrong
President
A-Gas in the Americas

William Lillis
President
AGC Chemicals America, Inc.

Richard Rowe
President & CEO
Arkema, Inc.

Kevin J. Wheeler
President & CEO
A.O. Smith

William P. Steel
William Steel
President, CEO
Bard Manufacturing Company, Inc.

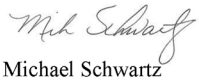
Vitor Gregorio
Regional President North America
TT/RP-NA, TT/SA5
Bosch Thermotechnology

R. Bruce Carnevale
President & CEO
Bradford White Corporation

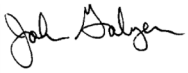
Robert McDonough
EVP & COO
Carrier

Mark Vergnano
President & CEO
The Chemours Company

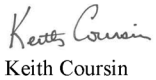
Mr. Yasuhiro Utsumi
President & CEO
Daikin America, Inc.



Michael Schwartz
CEO
Daikin Applied



John Galyen
President
Danfoss



Keith Coursin
President
Desert Aire LLC

Paul Sindoni
President
Dover Food Retail

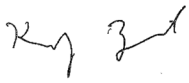
H. Brad Kivlan, IV
CEO
Dynatemp International, Inc.

Brent A. Schroeder
Group President – Heating & Air Conditioning
Emerson Commercial & Residential Solutions

Philip Lapin
President
Falcon Safety Products, Inc.

Satoru Akama
President & CEO
Goodman Global Group, Inc.

George Koutsaftes
President, Advanced Materials
Honeywell



Kevin J. Zugibe, P.E.

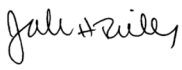
CEO
Hudson Technologies, Inc

Tim Figge
CEO
Hussmann Corporation

Jeff Williams
President, Global Products, Building Technologies & Solutions
Johnson Controls, Inc.

Todd M. Bluedorn
Chairman of the Board & CEO
Lennox International, Inc.

Megan Fellinger
President & CEO
Morrison Products



John Reilly
President
National Refrigerants, Inc.

Phillip Windham
President
Nortek Global HVAC

John Kunze
Group President – Climate Solutions
Regal Beloit

Chris Peel
President & CEO
Rheem

Michael A. Noelke
Vice President, Commercial Business-Americas
Sanhua International, Inc.

Donny Simmons
President, North America & EMEA
Trane Commercial HVAC

Aaron Gotham
President
Unison Comfort Technologies

January 13, 2020

The Honorable Frank Pallone
Chairman
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable Greg Walden
Ranking Member
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable Paul Tonko
Chairman
Subcommittee on Environment & Climate Change
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable John Shimkus
Ranking Member
Subcommittee on Environment & Climate Change
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

Dear Chairman Pallone, Ranking Member Walden, Chairman Tonko and Ranking Member Shimkus:

We, the undersigned associations of the heating, ventilation, air conditioning, and refrigeration (HVACR) industry, are writing to express support for the American Innovation and Manufacturing Leadership Act, H.R. 5544, to implement a national phase down of hydrofluorocarbons (HFCs), commonly used in refrigeration, air-conditioning, and other applications.

The organizations listed represent thousands of businesses and millions of employees in the manufacturing, distribution, contracting sectors of our industry. The HVACR industry provides comfortable, safe, and productive indoor environments, keeps food fresh, makes modern medicine possible, and ensures vital information technology systems remain operational. The industry shipped about $50 billion worth of products and equipment to consumers in the U.S. and accounted for over $10 billion of manufacturing labor compensation. In addition,

installation, construction, maintenance and distribution sectors increase total economic activity for the HVACR industry to 2.5 million jobs and $621 billion in annual output.

A national HFC phase down, by federal legislation, would create new manufacturing jobs in the United States, spur further investment in the U.S. economy by the HVACR industry, ensure the continued safety and training of licensed HVACR professionals, and strengthen economic competitiveness.

More than a decade ago, U.S. companies began preparing for a transition from HFCs and into next generation refrigerant technologies, investing billions of dollars in the research and development of new products and equipment. A national HFC phase down would align U.S. regulatory standards with an ongoing global shift away from HFCs.

A legislative solution to phasing down HFCs would allow U.S. companies to remain competitive in a rapidly growing HVACR market, which is expected to double in the coming decade. In addition, federal legislation would provide regulatory certainty, reduce barriers to trade, and prevent a patchwork of state legislation.

Further, we believe federal legislation would ensure that heating, ventilation, air conditioning, and refrigeration practitioners are positioned to comply with safe servicing, repair, disposal, and installation procedures associated with the transition to new cleaner cooling technologies. Federal legislation with a clear focus on safety will ensure that this industry is fully prepared to adopt the next generation of refrigerants.

We therefore respectfully request your careful consideration of the American Innovation and Manufacturing Leadership Act, H.R. 5544, to phase down HFCs and unlock significant economic benefits associated with innovation and investment in these next generation refrigerant technologies. We also offer any technical assistance, as consideration of the legislation moves forward, that you may require.

Thank you for your consideration of this important matter.

Sincerely,

Bart James
President & CEO
ACCA – Air Conditioning Contractors of America

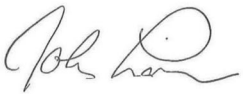
Mark Stevens
Executive Director
AMCA – Air Movement & Control Association

Vincent Sandusky
Chief Executive Officer
SMACNA – Sheet Metal & Air Conditioning Contractors National Association

Stephen R. Yurek
President and CEO
AHRI – Air-Conditioning, Heating, and Refrigeration Institute

Jonathan Moyer
President
PHCC – Plumbing, Heating & Cooling Contractors – National Association

Talbot Gee
Chief Executive Officer
HARDI – Heating, Air- Conditioning & Refrigeration Distributors International



John Lanier
Chief Operating Officer
NATE – North American Technician Excellence

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January 8, 2020

The Honorable Frank Pallone
Chairman
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable Greg Walden
Ranking Member
Committee on Energy & Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable Paul Tonko
Chairman
Environment and Climate Change Subcommittee
United States House of Representatives
Washington, D.C. 20515

The Honorable John Shimkus
Ranking Member
Environment and Climate Change Subcommittee
United States House of Representatives
Washington, D.C. 20515

Dear Chairman Pallone, Ranking Member Walden, Chairman Tonko, and Ranking Member Shimkus:

On behalf of ASHRAE, I am writing to express ASHRAE's support for the goals of H.R. 5544, *The American Innovation and Manufacturing Leadership Act of 2020.*

ASHRAE, founded in 1894 and headquartered in Atlanta, Georgia, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its more than 57,000 members worldwide focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today

ASHRAE believes *The American Innovation and Manufacturing Leadership Act of 2020* provides necessary support for the HVACR sector, which employs 1.3 million people in the U.S., in the transition out of high-polluting hydrofluorocarbons (HFCs) and into next generation refrigerant technologies. This transition is still in its early stages, and if enacted and implemented in the coming year, *The American Innovation and Manufacturing Leadership Act of 2020* will provide the kind of regulatory certainty and market stability needed to ensure an orderly transition from certain high-polluting HFCs.

Billions of dollars have been invested in research and development to create and safely handle new and innovative refrigeration products and equipment. The international market for refrigeration and air conditioning is growing rapidly, and an orderly transition out of high-polluting HFCs is essential to ensuring that next generation products and equipment can be brought to market.

The American Innovation and Manufacturing Leadership Act of 2020 is based on the same kind of federal regulatory structure that guided earlier transitions out of older classes of fluorocarbon compounds, such as chlorofluorocarbons (CFCs), in the 1990s. That federal framework prioritized innovation and insulated consumers from the kind of market turbulence that could accompany a chaotic and otherwise disorderly transition. We anticipate that similarly *The American Innovation and Manufacturing Leadership Act of 2020* will provide the federal regulatory structure necessary to make an orderly transition from high-polluting HFCs.

ASHRAE respectfully urges thoughtful consideration of *The American Innovation and Manufacturing Leadership Act of 2020.* ASHRAE would also be pleased to provide any technical assistance on this legislation or other aspects of refrigerants and HVACR technology and systems. If you have any questions or need additional information, please do not hesitate to contact me or have your staff contact ASHRAE at *GovAffairs@ashrae.org*. Thank you for your consideration.

Sincerely,

Darryl Boyce, P. Eng., FASHRAE
ASHRAE President, SY2019-20

Ceres
Sustainability is the bottom line.

BICEP Members:
Adobe Systems Inc.
Annie's, Inc.
Aspen Skiing Company
Autodesk, Inc.
Aveda
Ben & Jerry's
Burton Snowboards
Clif Bar & Company
CommonSpirit
eBay Inc.
EILEEN FISHER
Etsy
Fetzer Vineyards
Gap, Inc.
General Mills, Inc.
Hackensack Meridian Health
Happy Family Brands
IKEA USA
Impossible Foods
Indigo Agriculture
JLL
Kaiser Permanente
KB Home
Kellogg Company
L'Oréal
L Brands Inc.
Levi Strauss & Co.
LinkedIn Corporation
Lyft
Mars Incorporated
Microsoft Corporation
Nature's Path Foods
Nestlé
New Belgium Brewing
Nike Inc.
Outdoor Industry Association
Owens Corning
Patagonia Inc
Portland Trail Blazers
Recreational Equipment, Inc.
Salesforce.com
San Francisco International Airport
Schneider Electric
Seventh Generation
Sierra Nevada Brewing Co.
Squaw Valley
Starbucks Corporation
Stonyfield Farm
Symantec Corporation
The North Face
Timberland
Unilever
V.F. Corporation
Vail Resorts Management Company
Vulcan, Inc.
Worthen Industries

January 14, 2020

Chairman Frank Pallone
House Energy & Commerce Committee
2107 Rayburn HOB
Washington, DC 20515

Ranking Member Greg Walden
House Energy & Commerce Committee
2185 Rayburn HOB
Washington, DC 20515

Chairman Paul Tonko
Environment & Climate Change Subcommittee
2369 Rayburn HOB
Washington, DC 20515

Ranking Member John Shimkus
Environment & Climate Change Subcommittee
2217 Rayburn HOB
Washington, DC 20515

Re: American Innovation and Manufacturing Leadership Act of 2020

Dear Chairman Pallone, Ranking Member Walden, Chairman Tonko, and Ranking Member Shimkus,

As a network of 56 leading U.S. businesses and business groups, Business for Innovative Climate and Energy Policy (BICEP), supports the passage of the American Innovation and Manufacturing Leadership Act of 2020. By phasing down the production and consumption of hydrofluorocarbons (HFCs), the bill will have major positive implications for economic growth, job creation, and climate mitigation.

HFCs are a class of chemicals with applications including refrigeration, cooling, fire suppressants, foam insulation, solvents, and aerosols and were developed to replace ozone-depleting chlorofluorocarbons (CFCs). While not ozone-depleting, HFCs are super-polluting greenhouse gases that can range between a thousand to tens of thousands of times as damaging in their global warming potential as carbon dioxide. Alternatives to HFCs that do not contribute to global warming are already available, and many are designed and produced in the United States.

The international community is committed to phasing down HFCs, and U.S. industry is poised to lead in the manufacturing of replacement chemicals and systems for HFCs. Phasedown of HFCs in the United States is expected to deliver billions of dollars of economic benefit and tens of thousands of new jobs. Analysis of the AIM Act (S.2754), the Senate companion legislation to the American Innovation and Manufacturing Leadership Act of 2020, estimates that the bill will create an additional 150,000 direct and indirect U.S. jobs as well as generate $38.8 billion in economic benefits annually by 2027.

Many companies in BICEP use HFCs in production processes, products, direct operations, and supply chains, and see significant advantages to an orderly phasedown of HFCs and their replacement with next-generation chemicals - replacement products that have been developed by American companies and whose production will benefit the U.S. economy.

The BICEP Network thanks you for your leadership in introducing and holding a hearing on the American Innovation and Manufacturing Leadership Act of 2020. We urge the committee to advance it without delay and work with House and Senate leadership to move it forward. Thank you for your consideration and please let us know if you have any follow up questions.

Sincerely,

Anne L. Kelly
Vice President of Government Relations, Ceres
99 Chauncy Street, 6th Floor
Boston, MA 02111
kelly@ceres.org
www.ceres.org/bicep

The Ceres BICEP Network comprises influential companies advocating for stronger climate and clean energy policies at the state and federal level in the U.S. As powerful champions of the accelerated transition to a low-carbon economy, Ceres BICEP Network members have weighed in when it has mattered most. For more information on the Ceres BICEP Network, visit www.ceres.org/BICEP.

January 10, 2020

The Honorable Frank Pallone, Jr.
Chairman
House Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Greg Walden
Ranking Member
House Committee Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Pallone and Ranking Member Walden,

The Environmental Investigation Agency (EIA) is an independent environmental campaigning organization based in Washington, DC, working worldwide to protect the global climate, forests and threatened species with intelligence, for the benefit of people and wildlife. We have undertaken groundbreaking investigations into the illegal trade in fluorinated chemicals/refrigerants since the mid-1990s, and have been closely involved in the international ozone and climate negotiations for more than two decades. [1] In 2018, EIA investigations exposed widespread illegal production and use of a globally banned fluorinated chemical, CFC-11, in China in production of blowing agent and frequently traded polyols used to make polyurethane foams.[2]

EIA submits this letter in support of the American Innovation and Manufacturing Leadership Act of 2020 (H.R. 5544). In addition to supporting American business and innovation, benefitting the environment and global climate, and creating jobs in the United States, H.R. 5544 will improve the U.S. trade balance in chemicals and equipment. By creating an allowance system for production and imports of HFCs that are reduced over time through a reduction schedule consistent with other countries in the global market, H.R. 5544 will provide for an orderly phase-down of HFCs, reduce demand for these substances through end-use bans, and create reporting requirements capable of tracking HFCs and other chemicals entering and circulating the U.S. market. It will also preemptively build a foundational framework that not only limits total imports but enables tracking of any dumping and detecting illegal imports.

U.S. industry estimates that phasing down HFCs will improve the U.S. trade balance in equipment and chemicals by $12.5 billion USD.[3] HFC imports from China have been the subject of multiple trade disputes and imposition of anti-dumping duties by the Department of Commerce in 2016.[4] Each year, approximately

[1] See EIA, Preventing Illegal Trade, https://eia-global.org/initiatives/preventing-illegal-trade; See also: NYTimes (June 2018), In a High-Stakes Environmental Whodunit, Many Clues Point to China, https://www.nytimes.com/2018/06/24/world/asia/china-ozone-cfc.html

[2] See EIA, Blowing it: Illegal Production and Use of Banned CFC-11 in China's Foam Blowing Industry. Available at: https://eia-global.org/reports/20180709-blowing-it-illegal-production-and-use-of-banned-cfc-11-in-chinas-foam-blowing-industry

[3] Air Conditioning Heating and Refrigeration Institute (AHRI) Fact Sheet on S. 2754. Available at: http://ahrinet.org/App_Content/ahri/files/Resources/AHRI_AIM_Act-one_pager.pdf

[4] U.S. Department of Commerce Fact Sheet (2016), Commerce Finds Dumping of Imports of Hydrofluorocarbon Blends and Components Thereof from the People's Republic of China. Available at:

$130–$170 million USD worth of HFCs are imported into the United States, mainly from China.[5] Far more enter the country contained in pre-filled refrigeration and air conditioning equipment. Cheaply manufactured HFC imports from China have continued to grow and undermine U.S. business interests and are fueling an oversupply of cheap refrigerants that undermines the market transition to more environmentally friendly alternatives supported by U.S. businesses.

Decades of EIA experience in this field and accompanying research illustrate that it is imperative to set limits and create requisite reporting requirements for a successful HFC phase-down. Lessons learned from illegal trade in ODS, and currently these very substances in Europe, justify the inclusion of reporting mechanisms in order to ensure strong enforcement and traceability in the future.[6] The HFC trade is closely linked to illegal trade and smuggling in their predecessors – ozone depleting substances (ODS), including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) – which are still in the final stages of being phased out in the U.S. and globally.

A rulemaking recently finalized by the U.S. Environmental Protection Agency (EPA) recognized the increasing incentive to illegally import certain ODS into the U.S. The same rulemaking further acknowledged that, "additional tools are needed to address the potential for domestic distribution of illegally imported material…"[7] A critical first step is putting a legal limit on the total imports and creating a licensing system, effectively, by limiting import allowances. This will help prevent and reduce dumping of ODS and HFCs into the United States, legally or illegally. Low risk of punitive measures, absence of close tracking, lack of enforcement capacity to identify illegality, and potential for quick profits will continue to be a threat in the absence of the reporting and allowance mechanisms envisioned in this bill.

EIA supports H.R. 5544, which warrants continued strong bipartisan support and rapid adoption into law in the interest of strengthening enforcement and protecting U.S. economic and environmental benefits.

Thank you for your consideration of our comments.

Sincerely,

Alexander von Bismarck
Executive Director
Environmental Investigation Agency (EIA),
Washington D.C.

www.eia-global.org

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https://enforcement.trade.gov/download/factsheets/factsheet-prc-hydrofluorocarbon-blends-single-hydrofluorocarbon-components-ad-final-062216.pdf.

[5] Id.

[6] See EIA, Doors Wide Open: Europe's flourishing illegal trade in hydrofluorocarbons (2019), Available at: https://eia-international.org/wp-content/uploads/EIA-report-Doors-wide-open.pdf

[7] EPA Proposed Rulemaking, Protection of the Stratospheric Ozone: Adjustments to the Allowance System for Controlling HCFC Production and Import, 2020-2029; and Other Updates (EPA–HQ–OAR–2016–0271; FRL–9997–57– OAR)

Environmental Defense Fund * Environmental Investigation Agency
Institute for Governance & Sustainable Development * League of Conservation Voters
Natural Resources Defense Council * Sierra Club

January 13, 2020

Dear Representative,

On behalf of our millions of members and supporters across the country, we urge you to support H.R. 5544, the American Innovation and Manufacturing Leadership Act, bipartisan legislation to phase down harmful hydrofluorocarbons (HFCs) and simultaneously help U.S. companies lead the world in replacing them with innovative, climate-friendlier alternatives.

Under the 1987 Montreal Protocol and the 1990 Clean Air Act, we successfully phased out chlorofluorocarbons (CFCs) and other chemicals that were depleting the ozone layer that protects life on earth from dangerous ultraviolet radiation. U.S. leadership from presidents of both parties, acting with bipartisan Congressional support, was crucial to preventing hundreds of millions of cases skin cancer and untold agricultural losses. CFCs were also long-lived and powerful greenhouse gases.

HFCs were useful as one of the replacements for CFCs, as they don't harm the ozone layer and have lower heat-trapping power, but as worldwide HFC use grows we could be facing another 0.5 degree centigrade of global warming from HFCs alone. In a world now on track for at least a 3°C temperature rise and searching for ways to hold warming to 1.5 or even 2 degrees, we cannot afford to add another half degree of warming on top of everything else.

Fortunately, this is an area of consensus and cooperation between the industries that make and use these chemicals and the environmental community. Industry leaders have pioneered a wide range of alternatives that can do the jobs HFCs do effectively, safely, and economically with much less – and in many cases, nearly zero – impact on the climate. The transition to these alternatives has already begun, but – like the transition away from CFCs – we need the framework of an orderly phase-down under federal law.

H.R. 5544, along with its Senate companion S. 2754, is a bipartisan plan supported by both industry and environmentalists to phase down HFCs in the same orderly manner used to transition from CFCs under the Clean Air Act of 1990. This legislation provides all the legal tools needed to meet our obligations, exercise leadership, and reap commercial rewards, and all under provisions modeled on and integrated with current Clean Air Act requirements applicable to this industry.

But it is critical that we do not wait. Other countries are acting, and other countries' industries are making investments to try to capture the current leadership position of U.S. industry. All of us – 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.

Sincerely,

Environmental Defense Fund
Environmental Investigation Agency
Institute for Governance & Sustainable Development
League of Conservation Voters
Natural Resources Defense Council
Sierra Club

January 13, 2020

The Honorable Paul Tonko
Chairman
Subcommittee on the Environment
& Climate Change
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Tonko:

We are pleased that you and your colleagues introduced H.R. 5544, the American Innovation and Manufacturing Leadership Act of 2020, to phase down hydrofluorocarbons (HFCs). There is broad support for such a measure across the business and environmental communities and bipartisan support in Congress.

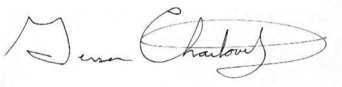
Affordable replacements for HFCs already exist or are close to market. The approach outlined in H.R. 5544 would ensure that U.S. manufacturers remain global leaders and that our foreign competitors would be subject to the same rules as we transition out of HFCs.

Phasing out HFCs would directly add 33,000 U.S. manufacturing jobs over the next decade, as well as indirectly add 117,000 jobs on top of an already projected 47% baseline increase over that same period. Total industry output is projected to grow over 70% by 2027. This legislation would increase the U.S. share of the world market for heating, air-conditioning, and refrigeration equipment 25% over its current share.

Thank you for your leadership in addressing next generation refrigerant technologies. The National Association of Manufacturers ("NAM") and the U.S. Chamber of Commerce stand ready to help move this important bipartisan legislation through Congress and to the President's desk.

Chuck Chaitovitz, the Chamber's vice president for environmental affairs and sustainability, and Ross Eisenberg, NAM's vice president of energy and resources policy, will follow up with your staff to answer any questions you may have.

Sincerely,



Ross Eisenberg
Vice President of Energy
and Resources Policy
National Association of Manufacturers

Chuck Chaitovitz
Vice President for Environmental Affairs
and Sustainability
U.S. Chamber of Commerce

cc: Members of the House Committee on Energy and Commerce

NMMA National Marine Manufacturers Association

January 13, 2020

The Honorable Paul Tonko
Chairman, House Energy and Commerce Subcommittee on Environment and Climate Change
U.S. House of Representatives
2322 Rayburn House Office Building
Washington, DC 20515

The Honorable John Shimkus
Ranking Member, House Energy and Commerce Subcommittee on Environment and Climate Change
U.S. House of Representatives
2322 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Tonko and Ranking Member Shimkus:

The National Marine Manufacturers Association (NMMA) welcomes the opportunity to express our support for the American Innovation and Manufacturing Leadership Act of 2020 (H.R. 5544) – including provisions that require gradually phasing down the use of hydrofluorocarbons (HFCs) – and offer suggestions on how to strengthen the legislation.

NMMA is the trade association for the U.S. recreational boating industry, representing nearly 1,300 marine business including recreational, boat, engine and accessory manufacturers, many of which are small businesses. NMMA members manufacture more than 80 percent of the marine products in the U.S.

We appreciate that both the House and Senate bills include a gradual phasedown period over the course of 15 years. To date, the recreational boating industry has completely phased out vessel flotation foams and foam used for sound and vibration reduction that contain HFCs, resulting in an 80 to 90 percent reduction in our industry's HFCs use. For the small portion of the industry that currently uses structural composite foams with HFCs – an essential manufacturing material used to frame the skeleton of a vessel's hull – there is not a viable substitute at this time. While we support phasing down the use of HFCs, it is important to note that structural composite foams greatly reduce the weight of a vessel, which equates to significant reductions in fuel use and emissions.

NMMA members are working diligently with partners to develop HFC-free alternatives to structural composite foams and we are hopeful that suitable replacements will be available in the near future. As we continue to work with industry partners to identify and install a replacement material for boats that require structural foam, we applaud the House and Senate for including a provision that would allow manufacturers to notify the U.S. Environmental Protection Agency if there is no HFC substitute or alternative technology available after the initial phasedown.

Additionally, given the economic and environmental impact of this legislation, the recreational boating industry is concerned that the legislation does not pre-empt states from setting their own

NMMA National Marine Manufacturers Association

HFC restrictions, and thus, leading to conflicting standards. NMMA believes that states should not be able to set HFC requirements that differ from the federal government as this will continue to cause confusion.

For our industry to continue to grow, we must continue innovating to make the boating experience and manufacturing process more environmentally friendly. Again, NMMA appreciates your consideration of our comments on this legislation and looks forward to working with the committee to address this important environmental issue.

Sincerely,

T. Nicole Vasilaros, Esq.
Senior Vice President, Government and Legal Affairs
National Marine Manufacturers Association

June 20 2018

The Honorable Donald J. Trump
President of the United States
1600 Pennsylvania Avenue
Washington, D.C. 20500

Dear President Trump:

On behalf of the undersigned organizations, we commend the many steps your administration has taken to making America a more competitive place to do business. **The administration can build on this success and ensure the creation of new American jobs by backing the Kigali amendment to the Montreal Protocol and then supporting its Senate ratification.**

Through a combination of deregulation and pro-growth tax reform, the economy is roaring again. The economy has grown at 2.9 percent in the past year, far outpacing the 2 percent growth avernaged under the Obama years.

Today, the unemployment rate is at 3.9 percent, a 17 year low. Job openings have hit a record high of 6.6 million, and real disposable income grew at 3.4 percent in Q1 of 2018. In the past year, optimism among small businesses, manufacturers, and middle market businesses has hit record high levels.

Your administration should now look to advance policies that further advance American competitiveness. The Kigali amendment will do this by allowing U.S. manufacturers to access foreign markets.

The Kigali amendment is an agreement guiding the phasedown of hydrofluorocarbons (HFCs) used in refrigeration, heating and air-conditioning equipment in favor of newer technologies such as hydrofluroolefins (HFOs).

Because of the technological prowess of American manufacturers, U.S. businesses stand to gain from this deal – ratification will open new markets at a time when demand for refrigeration, heating, and air-condition equipment is projected to grow.

According to a study conducted by JMS Consulting and Inforum, ratifying the Kigali amendment will grow the U.S. share for these products by 25 percent. Failing to ratify the Kigali amendment will see American market share decline by 14 percent.

Ratifying the Kigali amendment will increase economic output by $12.5 billion, leading to 33,000 more manufacturing jobs over the next decade and 117,000 indirect jobs in manufacturing dependent industries. The amendment also has broad support in the U.S. business and manufacturing community.

The agreement currently has enough support amongst other nations to go into effect on January 1, 2019. However, if the U.S. fails to ratify the agreement, American manufacturers will be restricted in their ability to sell into foreign markets at the cost of jobs and wealth.

Senate ratification of the Kigali amendment will build on the success of deregulation and tax reform and help ensure the economy continues to grow at strong levels. This agreement has our support because it will ensure that U.S. manufacturers are able to thrive in the global economy and create more wealth and jobs in America.

Sincerely,

Alex Hendrie
Director of Tax Policy, Americans for Tax Reform

George David Banks
Executive Vice President, American Council for Capital Formation

Patrick Hedger
Director of Policy, FreedomWorks

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Economic Impact of Kigali Amendment Ratification

David T. Stevenson
Caesar Rodney Institute

7/23/2018

DavidStevenson@CaesarRodney.org

Table of Content

Executive Summary

A debate is under way as to whether U.S Senate ratification of the Kigali Amendment to the Montreal Protocol will be good for the U.S. economy. At its heart the treaty aims to replace hydrofluorocarbons (HFC) refrigerants with a new class of lower global warming potential hydrofluoroolefins (HFO) refrigerants with developed countries sending money to the United Nations to assist developing countries with the cost of conversion. The Obama Administration approved U.S. participation, but never sent it to the Senate for ratification. The refrigeration industry is now asking President Trump to refer the treaty to the Senate for ratification.

We find ratification will not improve our balance of trade deficit as claimed by the refrigeration industry, and will cost US consumers up to a peak cost of $8 billion a year in refrigerant premiums, and up to $2 billion in investments for refrigerant recycling equipment. In addition the US will send the United Nations Multilateral Fund $1.3 billion to assist developing countries switch to HFO refrigerants with much of that investment wasted or spent on administrative costs. All for a reduction in global warming that is too small to measure.

An industry financed study, "Economic Impacts of U.S. Ratification of the Kigali Amendment" by JMS Consulting, makes the claim ratification of the Kigali Amendment will improve the US balance of trade $12.5 billion a year, adding 33 thousand jobs. This is based on a single assumption that ratification will provide regulatory certainty to encourage industry R&D investment to create uniquely advanced products with a new refrigerant that will create a competitive advantage in foreign markets. However, over the last two decades US air conditioning and refrigeration equipment manufacturers led the world in improving equipment energy efficiency by 40 to 750 percent! During that same period export share of the US market barely grew while imports increased five-fold.

A big reason for the increase in imports is equipment manufacturers themselves moved production to other countries. Almost half our imports are now coming from NAFTA allies Mexico and Canada, with China and South Korea supplying another 37 percent. Clearly, our competitive advantage did not save American jobs in the past, and is unlikely to do so in the future. Not ratifying Kigali will establish regulatory certainty just as surely as ratification.

The industry financed study also claims Kigali follows the successful United Nations Montreal Protocol example of switching refrigerants to lower ozone depletion. In reality there is doubt stratospheric ozone changed much after 1997. Money contributed to the Multilateral Fund over the next two decades had little impact, and we are committed to continue paying into the fund until 2030. Continued payments have had the perverse effect of rewarding countries that are slow to switch refrigerants. The US could have walked away from the treaty twenty years ago with little environmental impact. Kigali extends US participation in the Montreal Protocol requiring almost $1.3 billion in contributions between 2019 and 2050.

Notice there is no explanation of how ratification works to provide this regulatory certainty. Section 115 of the Clean Air Act requires the EPA to write regulations to support treaties. The NRDC wants to test Section 115 in court to allow international treaties to override

US sovereignty to force the EPA to regulate in favor of the new refrigerants without involving Congress. Carbon dioxide regulation would be next.

False Industry Assumptions

Most of the growth in the refrigeration industry is coming from increased air conditioning and refrigeration use in China, India, Latin America, and Africa. The International Energy Agency released a report in May, The Future of Cooling[1], that projected that, "The global stock of air conditioners in buildings will grow to $5.6 billion by 2050, up from $1.6 billion today."

The JMS Consulting study, "Economic Impacts of U.S. Ratification of the Kigali Amendment"[2], indicates the Heating, Ventilating, Air Conditioning, and Refrigeration (HVACR) industry will reverse a growing trade imbalance by becoming more competitive. The claim is the industry will invest $1 billion over a decade in research and development if the Kigali Amendment is ratified. This would lead to superior products developing countries will be "eager" to buy. Imports will decrease and exports will increase. The new refrigerant itself will not offer efficiency improvements, and may be less efficient in some applications.

JMS Consulting in Figures E5 and E6 on page 6 makes the claim ratification of the Kigali Amendment will improve the US balance of trade $12.5 billion a year, adding 33 thousand jobs, and will have additional indirect and induced impacts. JMS estimates U.S. domestic demand will be the same with or without Kigali.

We find this argument unpersuasive. Equipment efficiency has been increasing for years while the trade imbalance grew. Table 1 below shows imports of equipment have grown steadily from 12 percent in 1997 to 35.5 percent, or $18.5 billion in 2016. This is more than a five-fold increase from 1997. Exports only grew from a 14.8% market share in 2000 to 16.3% in 2016.

Table 1: HVACR Historic Trade Balance – 2016$

Year	Domestic Demand $ millions	Imports $ millions	Imports %	Approximate Trade Balance $ millions	Approximate Exports $ millions	Exports %
1997	28,300	3,388	12.0 %	-	-	-
2000	34,232	5,071	14.8 %	0	5,000	14.8%
2010	39,269	11,775	30.0%	5,000	6,800	17.3%
2016	52,137	18,523	35.5%	10,000	8,500	16.3%

Source: First 4 columns "Economic Impacts of U.S. Ratification of the Kigali Amendment", Table 4.1, page 29, fifth column Appendix A-4 question 1 from "Questionnaire for Industry Experts", columns 6-7 author calculation

Two decades ago the Seasonal Energy Efficiency Ratio (SEER) of air conditioning systems averaged 10 BTUs/watt-hour. The US Department of Energy[3] increased the minimum SEER to 13 in 2006, 14 in 2015, and now is set at 15. Standard heat pump systems with up to 20 SEER are available. Newer split systems average about 30 SEER, and geothermal systems are rated up to 75 SEER. The industry $1 billion R&D investment amounts to only $100 million a year, or

0.2 percent of the $57 billion annual revenue of the HVACR business in the US. Given the incredible increase in efficiency over the last two decades, it is unlikely the incremental new R&D investment will lead to significant efficiency improvements to attract foreign buyers to US equipment.

Table 2 shows the trade imbalance grew most likely because of offshore cost advantages, and NAFTA. We see Mexico and Canada, accounting for 48 percent of imports, China 27 percent, and South Korea 10 percent. This tracks changes in other US manufacturing industries as a result of out-sourcing production for lower cost. The HVACR industry could decrease US imports dramatically by simply bringing production back to the US!

Table 2: 2016 HVACR Imports by Country

Country	Imports $ millions	Percent
Mexico	8,002	44 %
China	4,837	27 %
South Korea	1,857	10 %
Canada	686	4%
Japan	671	4 %
Total	18,134	

Source: "Economic Impacts of U.S. Ratification of the Kigali Amendment", Table 3.2, page 23

The new refrigerant has been under development for over a decade, and the EPA delisted HFC refrigerants for new mobile air conditioning uses in 2011. Auto makers have already designed over a dozen car models using HFO. With the rest of the world planning to switch to HFO regardless of what the U.S. does, the industry will have to react and build compatible equipment for the export market with or without Kigali, and is likely already far along in the design process. It is likely imports will continue to grow, and exports will not grow significantly with or without Kigali.

Manufacturing jobs will most likely be switched away from HFC based products to HFO based products. HFC compatible equipment will phase out, and HFO compatible equipment will ramp up. American manufacturers have no restrictions from exporting HFOs, and HFO compatible equipment to other countries with or without Kigali. As a matter of fact, American manufacturers built their first HFO factory in 2010 in China, while they only began producing HFOs in this country in 2017. Kigali only serves to force this costlier choice on the US public whether they like it or not.

Cost Impacts to US Consumers

The industry financed economic impact report ignored the costs of ratifying Kigali. HFC refrigerants currently cost $4 to $6/pound on Amazon compared to $40 to $60/pound for HFO according to the proprietary information in the EPA's 2016 Regulatory Impact Analysis[4] in its Significant New Alternatives Policy for stationary air conditioner, and refrigeration sources.

While HFO costs will likely come down with time, HFC costs will go up considerably for the repair of existing equipment.

HFO is flammable where HFC is not, therefore, HFO refrigerant can't simply be used as a replacement in older equipment which may last 10 to 20 years. The older generation of refrigerant, CFC with high ozone depletion potential, now sells for $35 to $175/pound on Amazon when you can find it. Grand View Research[5] estimated US fluorocarbon refrigerant use at 116,000 tons in 2016. A realistic $35/pound refrigerant cost differential between HFC and HFO yields $8 billion a year in added cost to US households, motorists, and businesses that rely on air conditioning and refrigeration. For example, higher refrigerant cost will add about $100 per new car and for new air conditioning equipment, or repair.

According to the US Bureau of Labor Statistics[6] there were 332.900 air conditioning and refrigeration mechanics and installers in 2016, and they are required to recycle refrigerant. Car dealers I have talked to are reporting recycling equipment cost is ranging from $5,000 to $9,000 each. So, otherwise un-needed recycling equipment cost may place a one-time $2.3 billion burden on the economy.

In addition, Treaty ratification comes with US commitments to send about $40 million a year to the United Nations as part of the UN Multilateral Fund[7] out to 2050, for a total transfer of $1.3 billion. The Multilateral Fund provides money to developing countries to offset the cost of switching refrigerants. The expanded availability of food refrigeration offers incredible potential to reduce food waste, and food borne illness, and to improve the lives of the poorest people in developing countries. Because of the added expense of the new products, the access to refrigeration will slow, meaning more unnecessary deaths from food borne illnesses.

We note on page 76 of the 2016 SNAP Final Regulation[1], Underwriters Laboratory commented, "Clause 7.5.1.2 of ANSI/ASHRAE 15-2013 does not permit refrigerated products using refrigerants other than those having a flammability classification A1 or B1 (i.e., non-flammable refrigerants) to be installed in public corridors and lobbies." Ice machines and water coolers are often installed in lobbies and corridors, but will not be allowed with HFO refrigerant.

The Impact on US sovereignty

Notice there is no explanation of how ratification works to provide regulatory certainty for the refrigeration equipment industry. Section 115[8] of the Clean Air Act requires the EPA to write regulations to support treaties. This has never been tested in court. The EPA actually did regulate in favor of a new refrigerant in 2016, but a legal challenge overturned the regulation with the DC Appeals court stating the EPA could not use ozone regulating authority to regulate for global warming in case 15-1328 (Mexichem Fluor v. Environmental Protection Agency). The DC Appeals Court rejected a plea for an en banc hearing, from the National Resource Defense Council and two refrigerant companies who hold patents on the new refrigerant, for reconsideration stating the intervenors were "rent-seekers trying to use the government to foreclose their competitors' products", and "arguments mask their true interest in this case, which is to have government choose market winners and losers". The NRDC wants to test Section 115 in court to allow international treaties to override US sovereignty to force the EPA

to regulate in favor of the new refrigerants without involving Congress. Carbon dioxide regulation would be next.

Environmental Impact

The EPA claimed the switch to HFO's in the 2016 SNAP regulation would only lower GWP by 14 million metric tons of CO_2 equivalent. The earlier automotive regulation was expected to save 32 million metric tons. Using the Carbon Tax Temperature Savings Calculator paid for by the EPA, the reduction will impact global temperatures by 0.001 °C by 2100[9].

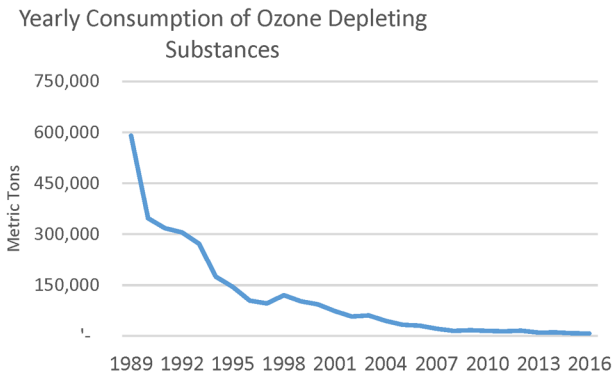
The Myth of the Success of Montreal Protocol

The Montreal Protocol is often called the United Nations most successful program. In reality there is doubt upper atmosphere ozone changed much after 1997. Money contributed over the next two decades had little impact, and we are committed to continue paying into the Multilateral Fund until 2030. Continued payments have had the perverse effect of rewarding countries that are slow to switch refrigerants. The US could have walked away from the treaty twenty years ago with little environmental impact.

A Noble prize winning paper published by Mario Molina and F. Sherwood Rowland in 1974 theorized manmade chlorine and bromine were shrinking the amount of stratospheric ozone that protects people from cancer causing high intensity ultraviolet light (UVB). The 1987 Montreal Protocol to reduce ozone depleting chemicals is a treaty designed to replace stratospheric ozone depleting chemicals, primarily chlorofluorocarbon (CFC) based refrigerants with hydrofluorocarbons (HFC).

The Multilateral Fund was created to transfer money and technology from developed countries to developing countries, so-called "Article 5" countries consuming less than 0.3 kilograms of CFC per person per year. Since then, 144 countries have received $3.7 billion in grants for over 6,300 projects according to the UN Multilateral Fund website. Chart 1 below shows by 1997, consumption of ozone depleting chemicals fell 85 percent globally, decreasing by 95 percent by 2006 and 99 percent by 2016 (Chart 1). The final phase out for developing countries is targeted for 2030. The United States contributed $867 million, or 23 percent of the fund.

Chart 1



Source United Nations Environment Program with weighting by ozone depletion potential

The budget from 1991 to 2017 is shown below in Table 3 below. The Multilateral Fund Secretariat[10] reported spending through 2010 was $2 billion for ozone depleting refrigerant consumption reduction and technical assistance, $0.3 billion for direct production sector investment, and $0.3 billion for administrative expense.

Table 3: Multilateral Fund Spending by UN Agency 1991 to 2017

Agency	**US $**
Multilateral Fund Secretariat	338,408,164
UN Development Program	856,140,534
UN Environment Program	308,058,127
UN Industrial Development Organization	885,511,632
UN World Bank	1,248,028,876
Cash	82,372,420
Total	3,718,519,425

Source: UN Multilateral Secretariat website[11]

Refrigerant **c**onsumption reduction and technical assistance is basically education and planning that includes the set-up of UN offices around the world. The UN loosely defines "administration expense". The portion of spending with the maximum impact is the assistance to manufacturers to change over to low ozone depletion substances which only received 13% of the money spent. No doubt some degree of spending on planning and education is required, but the

relative spending seems off. The UN itself only used $1.2 billion out of $2.6 billion spent to calculate the per ton cost of the program in the 2010 report. The UN Development Program provides more detail on their spending on six broad areas shown in Table 4.

Table 4: Spending by Category by UN Development Program 2018 Plan

Category	**US $ millions**
Administration	43.4
Inclusive & Sustainable Growth	14.1
Climate Change & Disaster Resilience	2.0
Democratic Governance	1.5
Responsive Institutions	1.5
Development Impact & Effectiveness	1.5
Gender Equality	1.5
Total	65.4

Source: UN Development Program Transparency website[12]

The list of projects does not inspire confidence the money is being spent on actual reduction of ozone depleting substances. Other agencies provide very little transparency, and none provide details of the individual consumption reduction projects. Spending beyond 2006 has certainly had diminishing returns. Total spending on ozone depleting substances from 1991 to 2006 equaled $4,649/ton of reduction, the 2007 to 2016 equaled $47,598/ton, and if forecasted spending from 2017 to 2020 eliminates all remaining consumption will rise to $90,501/ton. If it takes until 2030 for full elimination it will likely cost as much for the last 1% reduction as for the first 95%; $2.6 billion.

A recent study[13], found, for unknown reasons, total upper atmosphere ozone hasn't changed since 1997 but the upper stratosphere, and upper troposphere have seen ozone increases while lower stratospheric ozone has declined. By 1997, 85 percent of CFC production had ceased, and further reductions had no impact on total ozone levels. The US could have walked away from the treaty at that point, saved a lot of money, with no negative environmental impact.

Options for Withdrawal from the Kigali Amendment

Option 1 – We can withdrawal from the Montreal Protocol in its entirety with one year notice. This option saves $1.3 billion in future US contributions to the United Nations, avoids distracting the US Senate from other priorities to debate ratification, and closes the door for future adoption of the Kigali Amendment. See Appendix A for a draft of a withdraw letter.

Option 2 – Do nothing. This avoids distracting the US Senate from other priorities to debate ratification, but leaves the door open for future administrations to ratify the Kigali Amendment, and to send funds to the United Nations.

Option 3 – Send the Kigali Amendment to the Senate with a recommended "no" vote. This settles the issue in the firmest way. However, lobbying by industry and environmental groups has caused a number of Republican Senators to commit to voting for ratification. These Senators would need to be convinced to change their intended vote.

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7) United Nations Multilateral Fund, http://www.multilateralfund.org/default.aspx
8) Clean Air Act Section 115 in Federal Code, https://www.gpo.gov/fdsys/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7415.htm
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Appendix A, Draft Letter to Withdrawal from the Montreal Protocol

Ozone Secretariat United Nations Environment Programme (Date)
P. O. Box 30552
Nairobi, Kenya
Email: Ozoneinfo@unep.org

RE: Montreal Protocol

Mr. Secretary,

We are pleased the original goal of the Montreal Protocol on Substances that Deplete the Ozone Layer has essentially been met with a drop in consumption of ozone depleting chemicals of 99 percent as of 2016, as reported by your organization. The United States has contributed almost one billion dollars, or 23 percent of all funds, to the United Nations Multilateral Fund to aide 144 developing "Article 5" countries to transition to non-ozone depleting chemicals.

We have grave concerns about the re-direction by the Kigali Amendment away from reducing ozone depletion to reducing the use of chemicals, particularly refrigerants, with higher global warming potential. HFC is an efficient, non-ozone depleting, non-flammable, inert, and low cost refrigerant. HFO is potentially less efficient, and flammable with a current cost ten or more times higher than HFC.

About one billion people live below subsistence levels with little food security, and a high incidence of food-borne illnesses. For many countries a key goal should be to establish a "cold chain" from farm to market to avoid food waste, and potential illness. Switching refrigerants will add cost, and could be a distraction to this effort for a global warming reduction that cannot even be measured on a global scale. The expected over one billion dollars of new contributions to the Multilateral Fund by the United States would be more than offset by higher refrigerant prices and the need to replace refrigerant recycling equipment because of flammability concerns.

Therefore, please be advised, in compliance with Article 19, the United States will withdrawal from the Montreal Protocol effective one year from today.

Ben Lieberman, Senior Fellow
Competitive Enterprise Institute

Subcommittee on Environment and Climate Change
Hearing on
"Promoting American Innovation and Jobs:
Legislation to Phase Down the Use of Hydrofluorocarbons"
January 14, 2020

Ben Lieberman
Senior Fellow
Competitive Enterprise Institute

The Honorable John Shimkus (R-IL)

1. Is it true that the replacements for HFCs are more expensive than their counterparts? If so, what impact will this have on the consumer?

   RESPONSE:

Yes, a number of substitutes for HFCs are priced significantly higher than the HFCs they would replace. For example, HFC-134a, widely used in automotive air conditioners and residential refrigerators, is currently available from online refrigerant suppliers for about $6.00 per pound wholesale, while its chief replacement, HFO-1234yf, sells for about $50 per pound. HFO-1234yf is one of the new patented refrigerants developed in anticipation of restrictions on HFCs. Only two companies, Chemours and Honeywell, own the rights to produce it.

Note that this is the price without federal legislation restricting HFCs. If HR 5544 becomes law, it would strengthen the market position for HFO-1234yf and other patented replacements and likely spark a further jump in prices.

It should be noted that there are some substitute refrigerants that are not priced higher than HFCs, but they suffer from extreme flammability or other safety and performance drawbacks.

For consumers, higher refrigerant prices translate into an increase in the purchase price of new equipment as well as costlier repairs.

2. During the hearing, I quoted from a 2018 report from the Cesar Rodney Institute about the economic impact of ratifying the Kigali Amendment. Unfortunately, because my time was short, I was unable to focus very much on the points it made. Please provide your views on this report and highlight the most salient points the report makes and the Committee needs to know about domestic job creation, U.S. consumer price impacts, and other relevant issues regarding assumptions that are made.

   RESPONSE:

Among other things, the Caesar Rodney Institute report, "The Economic Impact of Kigali Amendment Ratification," provides insights into the opportunism behind the push to restrict

HFCs. The author of this report, David Stevenson, is a retired DuPont executive, and DuPont's spinoff Chemours is one of the two companies that have patented a number of HFC substitutes (the other being Honeywell). These companies, both directly and through their participation in several trade associations, have aggressively lobbied for HFC restrictions. Mr. Stevenson explains that such restrictions would create something close to a captive market for these patented substitutes, which already cost more than HFCs and would likely spike even higher should nationwide HFC restrictions become law. Indeed, both companies have repeatedly told investors that these patented HFC substitutes are a potential source of many billions of dollars in additional revenue. The paper also makes the point that these higher revenues would come at the expense of consumers and businesses, which it estimates at $8 billion dollars per year.

The report also takes on the claims of increased domestic manufacturing jobs and exports resulting from HFC restrictions. These claims are greatly undercut by the reality that Chemours, Honeywell, and other corporations lobbying for these measures have been aggressively outsourcing these very same jobs and importing a growing amount of their products into the U.S. There is no rational reason to think the flow of goods will be transformed by this bill.

Mr. Stevenson also makes the key point that manufacturers of the new refrigerants and equipment are free to make and sell these products with or without enactment of the Kigali Amendment. Thus, even if there was merit to the claims that the new products will be in high demand and create American jobs, they would not justify government limits on the competing HFC technologies.

It should be noted that, although the paper focused on the Kigali Amendment to the Montreal Protocol, HR 5544 is essentially the legislative equivalent of the Kigali Amendment and would have very similar economic impacts.

3. What is the consumer impact of a national HFC phasedown on HFC-using equipment?

RESPONSE:

There are literally hundreds of millions of pieces of air conditioning and refrigeration equipment in the U.S. that are designed to use HFCs - nearly every vehicle air conditioner, most home air conditioners and refrigerators, and much of the refrigeration equipment in businesses like restaurants and convenience stores as well as most air conditioned commercial space. This equipment was designed to use HFCs as the refrigerant and cannot easily be retrofit to use something else. HR 5544 restricts future production of HFCs, which would drive up their price and lead to higher repair costs for this equipment. Beyond raising the price of HFCs, this bill also allows EPA to impose new procedures regarding the handling of HFCs in the repair process that may also add to costs.

For those purchasing new equipment, an HFC phasedown would hand the market over to costlier replacement refrigerants and equipment. Thus, HR 5544 would raise both the cost of repairing existing equipment and the purchase price of new equipment.

4. The United States Chamber of Commerce, in a report entitled: "Made in China 2025," stated that China is calling "for [its] brands to control over 80 percent of [China's] market for several consumer goods, including air conditioners."

    a. How does this claim square with the claims being made by the supporters of the bill that U.S. Heating and Air Conditioning manufacturers will be robustly exporting under this bill?

    RESPONSE:

Claims made by industry proponents of HR 5544 that this bill would lead to increased exports of American-made products to China are faulty for a number of reasons. One reason is the fact that the Chinese government has been clear about its goal of serving the Chinese market with indigenous air conditioners and refrigerators, as is discussed in the Chamber of Commerce report.

Beyond China, the idea that passage of a bill restricting HFCs in the U.S. would increase exports to *any* nation defies logic. The opposite is more likely, given that the bill would raise the price of American-made air conditioning and refrigeration equipment and thus make these products less competitive globally. In addition, under the Kigali Amendment, developing nations (which includes China) demanded and received generous extensions of time to continue using HFCs beyond the deadlines for developed nations, thus a mandated switch to costlier non-HFC refrigerants by American manufacturers is especially unlikely to boost exports to these nations.

In truth, talk of increased exports by companies supporting this bill is simply an effort to divert attention away from the real aim to create a captive market in the U.S. for more expensive products.

It is also worth noting that "Made in China 2025" contradicts the rationale for the Chamber's stated support for HFC restrictions, which is based in part on claims of increased exports that are at odds with the findings in its report.

5. What sectors that utilize HFCs do you consider important stakeholders that should not be overlooked in the drafting of this bill?

    RESPONSE:

The companies making costlier refrigerants and equipment that stand to gain from HFC restrictions had been working with the Obama administration and lobbying Congress beginning in the years leading up to the 2016 Kigali Amendment. In contrast, the consumers and small business users of HFC-dependent equipment – especially vehicle and home air conditioner

owners as well as small business owners that rely on refrigeration – are either unaware of the issue are just beginning to take notice of it. This includes the million or more restaurants and other small businesses in the food sector. Even those small business-dominated sectors that are aware don't necessarily have the resources to match the multimillion dollar lobbying efforts on the part of proponents, which are led by some of the largest corporations in this sector.

Nonetheless, it would be wise for members to seek input from equipment users as well as equipment makers. Of course, this can be difficult in the case of homeowners and car owners since no lobbyist represents consumers directly, but there are entities that can provide relevant information. For example, the National Automobile Dealers Association (NADA) performs many vehicle air conditioner repairs and can provide information on the impact of HFC restrictions on repair costs.

6. Do you think certain uses of HFCs should be provided with an exemption from the phasedown schedule established in this bill? If yes, which ones?

   RESPONSE:

Yes. At the very least, medical uses for HFCs should be exempted, specifically their use as propellants in metered dose inhalers relied upon by millions of asthmatic patients. Beyond specific exemptions at the outset, there should be a process for requesting exemptions if problems arise in moving away from HFCs. HFCs have a wide range of uses and have amassed a decades-long track record. In contrast, many replacements are relatively new and untested, and problems are bound to arise for at least some applications. Replacements may not perform as well as HFCs, may reduce energy efficiency, and may pose flammability risks that cannot be eliminated. HR 5544 would be greatly improved with provisions allowing continued use of HFCs in specific product categories where any problems arise. As it is, HR 5544 contains extremely limited exemption provisions that cannot be invoked before 2034.

At least as important as exemptions is eliminating the provision allowing the original deadlines in the bill to be accelerated, since an abrupt transition away from HFCs will impose far more costs and equipment problems than a gradual one.

7. Section 2 cites an opportunity to promote the furtherance of fluorocarbons and fluorinated products, even though public policy has cited the threat to global warming of such compounds.

   a. How can the overarching purpose of this bill -- to empower the EPA to mandate HFC reduction -- be reconciled with Section 2, which promotes the lone manufacturer of HFC fluorinated alternatives that is seeking to grow its market share in the US and

beyond?

RESPONSE:

Supporters of HR 5544 have made claims of job creation and economic benefits that are entirely one-sided. For example, any projections of manufacturing job increases associated with HFC replacement equipment must be reduced by job losses resulting from HFC equipment being pushed out of the market by this bill.

Further, the increased cost of air conditioning and refrigeration will have a negative impact on consumers and small businesses, and this should also be taken into account when calculating the economic impacts of this bill. Environmental laws like HR 5544 that drive up product costs will no doubt be windfall for certain manufacturers, but they are absolutely not a "win-win" for everyone, as some proponents of this bill seem to suggest.

b. In your view, what is the actual environmental impact of this legislation from a global perspective?

RESPONSE:

The environmental impact will be minor, especially in relation to the costs. Proponents of the bill cite an estimate from one published paper that worldwide restrictions on HFCs would reduce the earth's future temperature by up to 0.5 degrees C by the year 2100, but that conclusion is considered an outlier within the climate change research community. More relevantly, EPA's estimates of the emissions avoided via its rules restricting the use of HFCs (since vacated) provide a useful guide and suggest an impact on future temperatures from HR 5544 that is much lower.

It is also important to note that the largest greenhouse gas contribution from air conditioning and refrigeration equipment is the indirect carbon dioxide associated with the electricity needed to run the equipment and not the very small amount of refrigerants that leak out (though they are much more potent than carbon dioxide on a per molecule basis). Thus any diminution in equipment efficiency from restricting HFCs in favor of compounds that prove less efficient would be environmentally counterproductive.

An important policy takeaway in balancing the environmental and economic considerations is that there is very little to be gained environmentally by rushing the transition away from HFCs, while doing so greatly multiplies the costs.

8. I understand there are numerous supporters of restrictions on HFCs. But you suggest that there may be opposition out there. How is that?

RESPONSE:

There is a silent majority of Americans - homeowners, vehicle owners, and small business owners – that use HFC-dependent air conditioners and refrigerators. They would very likely object to the costs imposed on them by HR 5544 if they were aware of them. Their concerns should be taken into account and in fact should outweigh the self-interest of the manufacturers who want a captive market for pricier products.

9. How can witnesses say there is "widespread" industry support for this bill when a large sector of industry, commercial foodservice equipment manufacturers, not only have taken no position on the legislation, but since 2015, have proactively undertaken transitioning away from HFCs to meet customer demands – even after the EPA's Rule 20 governing their equipment, was overturned by the courts?

RESPONSE:

This issue is a classic case of concentrated benefits and dispersed costs. Honeywell and Chemours stand to gain billions of dollars from HR 5544 and have undertaken very extensive lobbying efforts. Beyond their direct lobbying, these companies have also pressured trade associations to support the bill, even though doing so is far from a unanimous position among manufacturers. In particular, there are members of the commercial refrigeration sector that continue to have concerns with HR 5544, especially in its current form.

The ultimate costs of HFC restrictions are dispersed among many millions of homeowners, vehicle owners, and small business owners, most of whom are not even aware of this bill.

10. If the phasedown schedule accelerates past the establishment of sufficient codes and standards, how would this impact liability concerns for manufacturers and contractors?

RESPONSE:

Perhaps the most problematic provision in HR 5544 is the one allowing the initial targets and timetables for restricting HFCs to be accelerated. This provision can be invoked by EPA or by any party filing a lawsuit. This provision destroys any certainly and could lead to much greater compliance costs. For example, HR 5544 necessitates the use of flammable refrigerants, which raises a number of state and local building code issues that have yet to be resolved, and an accelerated phaseout of HFCs may not allow enough time to do so.

Overall, the more gradual the restrictions on HFCs, the less costly the transition.

11. Chemical recyclers have in the past paid a premium to recycle the chemicals that preceded HFCs, but increasingly that process has become cost inefficient. Can you explain why this could be important for the environmental impact of this bill if a similar situation were to occur with HFCs?

RESPONSE:

Refrigerant reclamation has been a major disappointment over the decades-long history of refrigerant restrictions under the 1987 Montreal Protocol and 1990 Clean Act Amendments. Only a small percentage of refrigerants produced are reclaimed. There is little reason to believe reclamation will fare any better if HR 5544 is passed. Among the challenges is the fact that HFC restrictions are contributing to the proliferation of different refrigerants in use, and accidental commingling of refrigerants has proven very damaging to reclamation efforts. It is also worth noting that reclamation is energy intensive and thus may undercut the climate change rationale behind this bill.

12. Is private industry already making the transition away from HFCs without federal direction?

RESPONSE:

It is important to note that many manufacturers have moved away from HFCs for at least some of their products. Most notably, the auto industry is well on its way towards the use of substitutes in new vehicle air conditioners. However, even companies making the transition do not necessarily support across-the-board HFC restrictions that harm the owners of existing equipment by raising repair costs. Many also acknowledge that the switch away from HFCs is more difficult for some equipment categories than for others.

These moves away from HFCs ahead of any federal restrictions like HR 5544 are often held up as evidence that compliance will be easy, but in truth they really call into question the need for federal measures in the first place.

13. The witnesses representing the Heating, Venting, Air Conditioning, and Refrigeration (HVACR) sector – whether equipment or refrigerant makers – argue this bill is necessary to assure continued investment in and competitiveness of U.S. companies and their workers.

    a. If this bill, or something like it, does not become law; what will it mean for the domestic HVACR sector? Why?

RESPONSE:

There is no downside to not passing this bill. Suggestions by supporters of HR 5544 to the contrary, manufacturers who wish to invest in the new refrigerants and equipment designed to run on them are free to do so with or without a bill. The only thing HR 5544 does is restrict competition with cheaper HFC technologies and thereby create a seller's market for the replacements.

Similarly, even without a bill, consumers who want to buy the supposedly environmentally-friendlier new air conditioners and refrigerators can do so. But with a bill, they will have no choice and will face higher prices as a result of the reduced competition with cheaper HFCs.

b. Do you agree with the notion that each moment of delay adversely impacts domestic investment decisions by these companies?

RESPONSE:

Supporters of the bill talk a lot about the urgent need for "investment certainty," but that is really just a euphemism for securing a captive U.S. market in which consumers have no choice but to spend more on air conditioning and refrigeration. Companies have every right to invest all they want in replacements, and many are already doing so, but they don't have a right to a Congressionally-created captive market from which to gouge American consumers.

c. If not, would ratification of the Kigali Amendment be a better first step and then implementing legislation thereafter to know what areas of domestic law should be covered to make sure our nation can fully comply?

RESPONSE:

The Kigali Amendment would impose the same costs as its legislative equivalent, so it is difficult to say that it is preferable to HR 5544. However, given President Trump's decision not to submit the Kigali Amendment to the Senate, the Constitutionally-proper response by Congress would be to accept this verdict and not to try to do an end-run around the Constitution via legislation.

14. This legislation would put the Administrator of the Environmental Protection Agency in charge of managing international cooperation on the issue.

    a. Is this the typical way the United States engages in international agreements?

    RESPONSE:

No. The Environmental Protection Agency would be undertaking duties clearly within the jurisdiction of the State Department. That is why this attempt to enact a treaty measure in the form of a bill poses several concerns, especially given that HR 5544 not only mirrors the Kigali

Amendment's substantive provisions but also tries to link up with it procedurally.

b. Do you believe the legislation inserts the Environmental Protection Agency into an appropriate role?

RESPONSE:

No. The State Department, not EPA, has the lead role in implementing treaties, including environmental treaty provisions like the Kigali Amendment.

Mr. Gary Bedard, President & Chief Operating Officer
Lennox International, Inc.

Subcommittee on Environment and Climate Change
Hearing on
"Promoting American Innovation and Jobs:
Legislation to Phase Down the Use of Hydrofluorocarbons"
January 14, 2020

Mr. Gary Bedard
President & Chief Operating Officer
Lennox International, Inc.

The Honorable Frank Pallone, Jr. (D-NJ)

1. How do the prices of replacements for HFCs compare to the prices of HFCs? How will any price differences affect consumers?

   RESPONSE:

   - *Today our business uses several different HFC refrigerants for use in the air conditioning and commercial refrigeration equipment we manufacture.*
   - *Some replacements are currently less expensive, while some replacements are more expensive.*
   - *There are numerous replacement refrigerant options currently being evaluated by Lennox for the various types of equipment we manufacture.*
   - *In our evaluation of suitable refrigerants, we consider the safety, cost, environmental impact, reliability, availability, compatibility and efficiency of reach replacement refrigerant option.*
   - *Some of the replacement refrigerants are currently more expensive than the incumbent refrigerants (R410A and R404A) and some of the replacement refrigerants are currently **LESS** expensive than the incumbent refrigerant (R410A and R404A).*
   - *In addition to being less expensive, some refrigerants improve the efficiency of the system and require a smaller charge size (less refrigerant per unit).*
   - *We expect the price of replacement refrigerants to decrease when they are broadly commercialized due to the economies of scale when these chemicals are produced in much larger quantities and we expect competitive pressures to significantly reduce the cost of alternate refrigerants as we have seen in previous refrigerant transitions (CFCs to HCFCs and HCFCs to HFCs).*
   - *Further, it is our understanding the preliminary EPA estimates projected billions of dollars of compliance and consumer cost savings over the fifteen-year implementation period."*

2. What are the effects on consumers of a national HFC phasedown on HFC-using equipment?

   RESPONSE:

- *Consumers will benefit from a national HFC phasedown. As stated above, some of the new replacement refrigerants require a smaller charge (less refrigerant), is more efficient (reducing the cost to the consumer) and more environmentally friendly.*
- *A national phasedown of HFC refrigerants ensures a safe, rational, efficient and cost-effective transition to alternate refrigerants.*
- *Consumers with a system that uses HFC refrigerants may continue to own and operate their equipment well into the future. There is no need to install a new system if the system needs a "recharge" of HFC refrigerant.*
- *Once a current system has run its useful life, the consumer will purchase a new system containing the new refrigerant. If a consumer has a leak in their existing system, there will be a plentiful supply of 410A to service equipment.*
- *HFC refrigerants are being phased-down, not phased-out, meaning there will be a plentiful supply of replacement HFC refrigerants for decades. In fact, CFC-11 is still readily available to service equipment produced in the 1980s.*
- *The INFORUM analysis found that in both residential and commercial air conditioning, the refrigerant cost is less than 1% of the overall ownership cost of owning and operating the equipment. Further, history has shown that given the stable long-term lead times of the phasedown schedules, industry has successfully been able to design and commercialize products that cost less, are more efficient, and have lower leak rates. In most instances, government studies found previous transitions generated significant consumer cost savings. Similar results are expected from the phasedown approach provided in H.R. 5544.*
- *Consumer cost will decrease slightly as a result of a rational federal transition. The biggest cost impact to consumers is a slower state-by-state "patchwork" transition from HFC refrigerants to alternate refrigerants. In a state-by-state transition, manufacturers lose the economies of scale required to conduct a transition in rational, efficient and cost-effective manner. The real issue is not the cost of an efficient federal transition, but rather the high cost of a state-by-state "patchwork" transition, which will ultimately be borne by the end-consumer.*
- *Additionally, a rational federal transition ensures much greater environmental benefits to the nation, than the current (most likely scenario) where some states transition to new refrigerants, while other states do not.*

3. The United States Chamber of Commerce, in a report entitled: "Made in China 2025," stated that China is calling "for [its] brands to control over 80 percent of [China's] market for several consumer goods, including air conditioners." How does this claim square with the claims being made by the supporters of the bill that U.S. Heating and Air Conditioning manufacturers will be robustly exporting under this bill?

   RESPONSE:

- *Lennox International Inc. (LII) is American based (Richardson, TX) and manufactures predominantly in the United States and currently exports almost 15% of the products we manufacture in the United States to global markets. Lennox envisions growing that share only if the United States continues to innovate and lead the development of products for the global market. This leadership will be critical to reduce the cooling technology trade deficit.*
- *If the AIM Act is not passed into legislation, the lack of federal program will ensure the Chinese market (and the EU, Canada and Japan) transitions to new refrigerants and new equipment technology before the United States. Additionally, every other developed country around the globe is either already transitioning to new refrigerants or has a plan to transition in the near future. The lack of a domestic federal transition will ensure the United States continues to manufacture old HFC technology and becomes a laggard in the global HVACR market. Regardless of the "Made in China 2025 initiative," American HVACR manufacturing will lag the global market and lose share if the United States does not transition in an efficient and cost-effective manner.*

4. How many alternatives are available as replacements for HFCs? Please include information about available fluorinated alternatives. Are fluorinated and other alternatives manufactured by a broad range of companies?

RESPONSE:

- *Replacement Alternatives:*
  - *Different HVACR applications require different refrigerant properties and therefore, no single refrigerant addresses all applications. For example, the refrigerants used in refrigerators, commercial freezers, automobile air conditioners, and home air conditioners are likely different.*
  - *The same is true within the product portfolio of Lennox products. Different refrigerants are used in our residential products, commercial HVAC products and our commercial refrigeration products. Within a supermarket or a foodservice restaurant, one is likely to find various types of equipment that use various types of refrigerants depending on the type of application. One size does not fit all.*
  - *There are more than a dozen potential replacements for air conditioning alone, both fluorinated and non-fluorinated, which could be manufactured by a variety of companies. The assertion that one company has a "monopoly" on alternate refrigerants is uninformed, unfounded and patently false. The challenge the industry faces is selecting the best replacement from the myriad of choices.*
  - *Historically, downstream partners in the supply chain narrow the choices over time, because a best-fit alternative is identified. As choices narrow, several major suppliers have introduced product to supply market demand and competitive prices.*
  - *To further make the point, manufacturers of residential HVAC systems have multiple refrigerant choices. These refrigerant choices are produced by many different*

chemical companies and in many instances, some of the same refrigerants are manufactured by more than one suppler.

- *Consumer Choice*
  - *Refrigerant selection is not a "consumer feature". The assertion that consumers will "no longer have a choice of refrigerant" lacks a basic understanding of the HVACR market.*
  - *Today, when purchasing an air conditioning system, consumers have the choice of efficiency levels, communicating controls, air filtration selections, smartphone controls, variable speed operation, tonnage and zoning systems amongst other options, which determine the comfort, cost and efficiency of a system.*
  - *Consumers are not offered a choice of refrigerant, because the type of refrigerant is not a product feature. Consumers don't ask for a choice of refrigerant in their automobile AC, nor do they ask for a choice of refrigerant in their home refrigerator, wine cooler or freezer, nor do they ask for a choice of refrigerant in their home air conditioner.*
  - *The claim that a consumer is somehow losing choice is akin to the argument that a consumer should have the choice between aluminum, copper or steel when selecting a tailpipe when purchasing an automobile. Consumers don't choose the brand or type of car battery, air filter, engine oil or type of rubber hoses when purchasing an automobile. Likewise, the refrigerant is a component of an HVAC system and is not a product feature of an air conditioning system. Consumers care about comfort, efficiency and cost. Consumers simply don't care about refrigerant choice as long as the product provides comfort, is easy to operate, is reliable and safe.*

5. Is there reason to be concerned about the possibility of the phasedown schedule accelerating past the establishment of sufficient codes and standards, and if that were to happen despite the prohibition in on the bill on accelerating the schedule prior to 2024, how would this affect liability concerns for manufacturers and contractors?

   RESPONSE:

- *The AIM Act provides the needed market signal to focus the industry on the continued development of safety codes and standards.*
- *Approval of codes and standards are an important part of the transition process. The standards process typically runs on a three-year cycle, which is one reason why the limitation is contained in the bill to <u>not</u> adjust the phasedown schedule prior to 2024. That said, the transition schedule for equipment will primarily take place between 2024 and 2029.*
- *Industry looks forward to having that clear signal and has found that it is necessary to incentivize localities to adopt the most relevant safety standards as needed to meet the schedule.*

6. Chemical recyclers have in the past paid a premium to recycle the chemicals that preceded HFCs, but some argue that process has become cost inefficient. Can you explain why this could be important for the environmental effect of this bill if a similar situation were to occur with HFCs?

RESPONSE:

- *Lennox is not a chemical recycler and has limited experience in this area.*
- *However, in examining the market history, there is a small cost to the recovery and purification of used refrigerant, and there has been no incentive for refrigerant – users to purchase reclaimed refrigerant at the additional cost.*
- *Compliance with refrigerant management programs improves when there is a financial incentive to collect the used refrigerant for re-use.*
- *"The domestic industry has significant under-utilized reclaim capacity. A properly administered refrigerant management program would provide additional supply for after-market service, thereby reducing the environmental impacts of additional virgin material. After-market service, loss and disposal are still the single largest source of HFC emissions."*