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In reply, please refer to:  
File:

**Testimony in SUPPORT of HB0197 HD1  
RELATING TO CLIMATE CHANGE MITIGATION**

REPRESENTATIVE KYLE T. YAMASHITA, CHAIR  
HOUSE COMMITTEE ON FINANCE

Hearing Date: 2/27/2023

Room Number: 308

1 **Fiscal Implications:** This measure may impact the priorities identified in the Governor's  
2 Executive Budget Request for the Department of Health's (Department) appropriations and  
3 personnel priorities. This measure will increase demand on the Department's resources.  
4

5 **Department Testimony:** The Department supports this bill that proposes to establish a new  
6 Refrigerant Management Program within the Department to reduce Hydrofluorocarbon (HFC)  
7 emissions from refrigerants that impact climate change.

8 The U.S. Environmental Protection Agency (EPA) phased out the production and import  
9 of chlorofluorocarbons and most hydrochlorofluorocarbons, commonly used as refrigerants,  
10 because of their potential to deplete the upper ozone layer. HFCs became replacements for these  
11 ozone depleting substances (ODS). However, it was later found that some types of HFCs are  
12 potent greenhouse gases with very high global warming potentials (GWPs) contributing to  
13 climate change. On December 27, 2020, the American Innovation and Manufacturing Act was  
14 enacted by Congress directing EPA to phase out the use of HFCs by 85% over the next 15 years.  
15 EPA is currently developing rules to support the transition to less damaging HFCs or suitable  
16 alternatives.

17 As part of the transition to low-GWP alternatives, systems using these compounds must  
18 be carefully managed to minimize the impacts on our environment. This measure would help  
19 prevent the emissions of high-GWP HFCs by establishing a Hawaii Refrigerant Management  
20 Program to include registration, leak inspection, repair, and reporting from large capacity

1 refrigeration systems and service practices for the installation, servicing, and disposal of  
2 refrigeration and air conditioning systems that use high-GWP refrigerants. Legacy ozone  
3 depleting substances will also be subject to these requirements.

4       This bill aligns with many of Hawaii's climate change goals and priorities and would  
5 move Hawaii forward in an area that complements and enhances federal action.

6       Thank you for the opportunity to testify.

7 **Offered Amendments:** None.

**HB-197-HD-1**

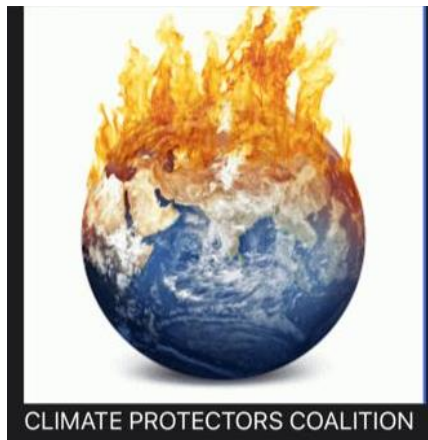
Submitted on: 2/24/2023 6:53:43 PM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
laurel brier	Kaua'i Climate Action Coalition	Support	Written Testimony Only

Comments:

Refrigerants are adding significantly to our greenhouse gas emissions and need to be curbed if we are serious about addressing the climate crisis. The majority of the gases used in refrigerants are hydrofluorocarbons (HFCs), which are hundreds to thousands of times more potent as greenhouse gases than carbon dioxide. HFC refrigerants leak. The EPA estimates that supermarkets in the U.S. leak an average of 25% of their refrigerants annually, for example. Leakproof systems can be built, and there are natural alternatives to HFCs for cooling. The emissions reduction program created by this bill will focus on equipment responsible for significant volumes of emissions, such as large commercial and industrial refrigeration and air conditioning systems. Let's address this problem now and not wait for federal mandates.



To: The Honorable Chair Kyle Yamashita, the Honorable Vice Chair Lisa Kitagawa, and Members of the Committee on Finance

From: Climate Protectors Hawai'i (by Ted Bohlen)

Re: **Hearing HB197 HD1 RELATING TO CLIMATE CHANGE MITIGATION**

Hearing: Monday February 27, 2023, 11:30 a.m., room 308

Aloha Chair Yamashita, Vice Chair Kitagawa, and Members of the Committee on Finance:

**Climate Protectors Hawai'i STRONGLY SUPPORT HB197 HD1.**

The Climate Protectors Hawai'i seek to educate and engage the local community in climate change action, to help Hawai'i show the world the way back to a safe and stable climate.

Hydrofluorocarbons (HFCs) are chemicals commonly used in air conditioning, refrigeration, and insulating foam and as propellants. HFCs were designed to replace ozone depleting substances that were harming the planet's protective ozone layer. However, HFCs are now acting as greenhouse gases that can have

very high global warming potentials that are **thousands of times more potent than carbon dioxide in contributing to climate change**. If HFCs continue to be used, it is estimated that they could account for up to twenty per cent of global greenhouse gas emissions by 2050.

California has implemented a successful refrigerant management program to monitor and reduce emissions of refrigerants with high global warming potential and ozone depleting substances. A similar state level refrigerant management program in Hawaii would support state greenhouse gas reduction goals and prevent leakage of these harmful chemicals into the atmosphere.

This bill addresses the most significant causes of refrigerants escaping into the atmosphere by establishing a DOH refrigerant management program that requires:

- Registration and regular leak inspections and reporting for commercial and industrial stationary refrigeration systems that are not equipped with automatic leak detection;
- Service practices for the installation, servicing, repair, and disposal of stationary refrigeration and air conditioning systems that use high global warming potential or ozone depleting substance refrigerants; and
- The State Building Code Council, when adopting, amending, or updating codes to establish codes and standards that are consistent with the goal of reducing greenhouse gas emissions from hydrofluorocarbons.

This bill will go a long way toward reducing emissions. Please pass this bill!

Mahalo for providing the opportunity to testify!

Climate Protectors Hawai'i (by Ted Bohlen)



To: The House Committee on Finance (FIN)  
From: Sherry Pollack, 350Hawaii.org  
Date: Monday, February 27, 2023, 11:30am

**In support of HB197 HD1**

Aloha Chair Yamashita, Vice Chair Kitagawa, and members of the FIN Committee,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org **supports HB197 HD1** that requires the department of health to establish a refrigerant management program to reduce emissions of high global warming potential refrigerants and any refrigerant that is an ozone depleting substance from operation of stationary, commercial, and industrial refrigeration equipment responsible and adopt rules for the regulation of the use of such refrigerants. In addition, this measure requires the state building code council to establish codes and standards consistent with the goal of reducing greenhouse gas emissions associated with hydrofluorocarbons when updating the state building code.

One of the biggest sources of emissions of refrigerants is from leakage, mishandling, and improper disposal. This measure would support state greenhouse gas reduction goals and prevent leakage of these harmful chemicals into the atmosphere.

Please support and pass this important measure.

Mahalo for the opportunity to testify.

Sherry Pollack  
Co-Founder, 350Hawaii.org



## Environmental Caucus of The Democratic Party of Hawai'i

To: The Honorable Kyle T. Yamashita, Chair  
The Honorable Lisa Kitagawa, Vice Chair  
Members of the Committee on Finance

Re: **HB 197, HD 1– RELATING TO CLIMATE CHANGE MITIGATION**  
Hearing: Monday, February 27, 2023, 8:30 a.m., Conference Room 308 and via videoconference  
Position: **Strong Support**

Aloha, Chair Yamashita, Vice Chair Kitagawa and Members of the Committee on Finance:

The Environmental Caucus of the Democratic Party of Hawai'i stands in strong support of HB 197, HD1. This measure would require: (1) the department of health to establish a refrigerant management program to reduce emissions of high global warming potential refrigerants and any refrigerant that is an ozone depleting substance from stationary, commercial, and industrial refrigeration systems and air conditioning systems and adopt rules for the regulation of the use of such refrigerants; (2) require the state building code council to establish codes and standards consistent with the goal of reducing greenhouse gas emissions associated with hydrofluorocarbons when updating the state building code; and (3) specify that no law, rule, ordinance, or code, including the state building code, shall prohibit or limit the use of a refrigerant deemed acceptable under federal law. This measure would also appropriate funds.

As provided in the Democratic Party of Hawai'i Platform adopted at the DPH State Convention on May 28, 2022, our policy is to “protect and preserve Hawai'i's environment and achieve energy sustainability, advance measures to re-establish a healthy climate and environment for humans and fellow species, including actions to urgently address climate change, and work towards 100% renewable energy goals.

We believe that all people have the right to live in a clean, healthy and safe environment. We believe that the preservation of our natural environment and its ecological well-being is essential to ensuring a safe, healthy, bountiful life for future generations in Hawai'i. We support policies that create a more sustainable society. We support the restoration, preservation, and protection of native ecosystems.

We believe in the resource management principles outlined in the Public Trust doctrine of [Article XI, Section 1 of the] Hawai'i State Constitution.”

Requiring the department of health to establish a refrigerant management program to reduce emissions of high global warming potential refrigerants and any refrigerant that is an ozone depleting substance from stationary, commercial, and industrial refrigeration systems and air conditioning systems and adopt rules for the regulation of the use of such refrigerants; (2) requiring the state building code council to establish codes and standards consistent with the goal of reducing greenhouse gas emissions associated with hydrofluorocarbons when updating the state building code; and (3) specifying that no law, rule, ordinance, or code, including the state building code, shall prohibit or limit the use of a refrigerant deemed acceptable under federal law, are consistent with the Public Trust Doctrine and the policies of the Democratic Party of Hawaii as a refrigerant management program and updating the state building code to reduce GHG emissions associated with hydrofluorocarbons are sorely required to reduce GHG emissions.

/s/ Melodie Aduja and Alan Burdick, Co-Chairs, DPH Environmental Caucus





Aloha Committee Members,

My name is Arwen Revere and I am a high school student from Kailua. Today, I am representing the environmental organization Wild Kids. We are testifying in strong support of HB197 which would support state greenhouse gas reduction goals and prevent the leakage of these harmful chemicals into the atmosphere. Hydrofluorocarbons (HFCs) are chemicals commonly used in air conditioning and refrigeration, insulating foam, and propellants. HFCs were designed to replace ozone-depleting substances that were harming the planet's protective ozone layer.

However, HFCs are now quickly building up in the atmosphere, where they act as greenhouse gases that can have very high global warming potentials that are thousands of times more potent than carbon dioxide in contributing to climate change. If HFCs continue to be used, it is estimated that they could account for up to 20% of global greenhouse gas emissions by 2050.

To act in concert with the federal American Innovation and Manufacturing Act, which limits HFC production and phases out the use of HFCs by 85% over the next 15 years, Hawai'i should create a refrigerant management program requiring registration, leak inspection, and leak repair for non-residential stationary appliances, including static refrigeration systems and air conditioning systems.

Please pass this vital legislation and help protect our planet for future generations.

Thank you for hearing our testimony,  
Arwen Revere on behalf of Wild Kids



TESTIMONY OF MIKE NEROZZI  
DIRECTOR OF GOVERNMENT AFFAIRS

ON BEHALF OF  
THE AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE

BEFORE THE HAWAII STATE HOUSE  
COMMITTEE ON FINANCE

HEARING ON HOUSE BILL 197

FEBRUARY 27, 2023

Good morning, Chair Yamashita, Vice Chair Kitigawa, and members of House Committee on Finance. My name is Mike Nerozzi and I am the Director of Government Affairs for the Air-Conditioning, Heating, and Refrigeration Institute (AHRI). Thank you for allowing me to speak with you today and convey AHRI's strong support for House Bill 197, sponsored by Representative Lowen, which includes language that will provide the HVACR industry with the certainty needed to comply with forthcoming federal regulations phasing down the use of hydrofluorocarbons (HFCs) in refrigerants.

AHRI represents more than 300 manufacturers of air conditioning, heating, commercial refrigeration, and water heating equipment. Our member companies, some of which operate factories or are headquartered here in Hawaii, produce more than 90 percent of the residential and commercial air conditioning, heating, and commercial refrigeration equipment made in North America. We are also pleased to share with you that the HVACR industry supports more than 2,000 jobs in Hawaii and more than 883,000 jobs nationwide.

As members of the Committee may be aware, the federal American Innovation and Manufacturing Act (AIM Act) is phasing down the production and import of a class of chemicals known as hydrofluorocarbons (HFC), which are primarily used as refrigerants in air conditioners and refrigerators, along with other applications, such as foams, solvents, and fire suppressants.

The U.S. Environmental Protection Agency (EPA) is in the process of implementing the AIM Act in a way that will guide an orderly, market-, consumer-, and environmentally-friendly transition to a range of new substitute refrigerants. Hundreds of substitutes exist and are commercially available for all major uses of HFCs. U.S. manufacturers already are planning the transition to these new refrigerants, which are creating jobs, stimulating new investment, and positioning the U.S. to sustain its technological leadership in the heating, ventilation, air conditioning, and refrigeration industry across the world.

The challenge our industry and U.S. consumers are facing is that many state building codes do not currently allow the use of certain substitute refrigerants, including in Hawaii. AHRI and its member companies are working diligently to amend state building codes to allow these substitute refrigerants and avoid any marketplace disruptions as the EPA transition begins.

To date, more than 20 states have adopted changes to state building codes substantially similar to the language included in HB 197, including California, Oregon, and Washington. Most other states are in the process of doing so either through legislation or regulatory action. By the end of 2023, if not sooner, AHRI is expecting all state building code changes will be complete.

The most important issue right now is time. New regulations proposed by EPA will significantly restrict the upstream supply of HFCs beginning in 2024 and, separately, prohibit the use of certain HFCs in most new air conditioning and refrigeration product categories in 2025.

As manufacturers start to transition product lines to HFC substitutes, they need to know that they can sell products with these HFC substitutes in U.S. markets, including Hawaii. The most significant barrier these manufacturers face to doing so is the state's building code.

What HB 197 does is amend the state's building code this year to allow any HFC substitute that has already been approved by EPA to be used in air conditioning and refrigeration equipment. If this change is not made this year, manufacturers will face significant risk of being unable to sell new air conditioning and refrigeration equipment into the state once new EPA regulations take effect. HB 197 does not make any other change to state law; it simply removes a barrier to ensure Hawaii consumers and businesses enjoy uninterrupted access to HVACR equipment with the latest, most advanced, and most climate-friendly technologies available.

The climate benefits of AIM Act implementation are considerable. Because many HFCs are thousands of times more powerful than carbon dioxide at warming the planet, the transition from HFCs will reduce U.S. greenhouse gas (GHG) emissions by approximately 2.4 billion tons of carbon dioxide-equivalent by 2036. Globally, the federal AIM Act assures U.S. compliance with the Kigali Amendment to the Montreal Protocol, which phases down HFCs worldwide and avoids up to 0.5 C of projected warming by 2100.

Thank you again for the opportunity to present testimony at this hearing. AHRI looks forward to continuing to work with the Hawaii legislature to achieve both the economic and environmental benefits of the phase down of HFCs.

**HB-197-HD-1**

Submitted on: 2/24/2023 7:20:13 PM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Douglas Perrine	Individual	Support	Written Testimony Only

Comments:

HB197 is a common sense measure to protect our atmosphere upon which we all depend. I support HB197.

**HB-197-HD-1**

Submitted on: 2/24/2023 8:24:34 PM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Noel Morin	Individual	Support	Written Testimony Only

Comments:

Dear Chair Yamashita, Vice Chair Kitagawa, and Committee members,

I SUPPORT HB197 HD1.

Sincerely,  
Noel Morin  
Climate, Sustainability, and Resilience Advocate  
Hilo

**HB-197-HD-1**

Submitted on: 2/25/2023 7:11:08 AM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Ruta Jordans	Individual	Support	Written Testimony Only

Comments:

**Please support HB 197 Refrigerants**

- This bill creates a program that would reduce emissions from refrigerants with high global warming potential.
- The majority of the gases used in refrigerants are hydrofluorocarbons (HFCs), which are hundreds to thousands of times more potent as greenhouse gases than carbon dioxide.
- If HFCs were well-contained and disposed of properly at the end of their useful life, there would be no concern. However, HFC refrigerants leak. For example, the Environmental Protection Agency estimates that supermarkets in the U.S. leak an average of 25% of their refrigerants annually.
- Leakproof systems can be built, and there are natural alternatives to HFCs for cooling.
- The emissions reduction program created by this bill will focus on equipment responsible for significant volumes of emissions, such as large commercial and industrial refrigeration and air conditioning systems.

Please support to decrease refrigerant GHG emissions!

**HB-197-HD-1**

Submitted on: 2/25/2023 9:03:32 AM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Caroline Azelski	Individual	Support	Written Testimony Only

Comments:

In support of HD1. Thank you.



HOUSE COMMITTEE ON FINANCE  
Hearing on Feb. 27, 2023 at 11:30 am

SUPPORTING HB 197 HD1

My name is John Kawamoto, and I support HB 197 HD1.

Although hydrofluorocarbons (HFCs) currently represent only about 1% of total greenhouse gases, their impact on global warming can be hundreds to thousands of times greater than that of carbon dioxide per unit of mass. Additionally, they are among the fastest growing greenhouse gases, largely as a result of increasing demand for refrigeration and air-conditioning

Avoiding the use of high global warming potential HFCs by using technologically feasible low-GWP substitutes to meet the increasing global demand can avoid as much as another 0.5 °C warming by the end of the century.

This bill is a necessary part of a package of policies needed to achieve Hawaii's goal of net-negative emissions by 2045.

**HB-197-HD-1**

Submitted on: 2/25/2023 2:15:48 PM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Virginia Tincher	Individual	Support	Written Testimony Only

Comments:

FIN Committee members,

Mahalo Rep. Cochran, Kila and others for introducing this important bill and moving it forward.

Every action helps and requiring the department of health to establish a refrigerant management program to reduce emissions of high global warming potential and ozone depleting refrigerants is an important one.

This guidance based on science will give businesses the direction they need to make changes.

As a consumer I will support these changes when I chose where to shop and the products I purchase.

You have my strong support for HB197 HD1.

Please pass HB197 HD1.

Virginia Tincher

Aina Haina, Oahu

**HB-197-HD-1**

Submitted on: 2/25/2023 4:26:48 PM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Will Caron	Individual	Support	Written Testimony Only

Comments:

Hydrofluorocarbons (HFCs) are chemicals commonly used in air conditioning and refrigeration, in insulating foam, and as propellants. HFCs were designed to replace ozone depleting substances that were harming the planet's protective ozone layer.

However, HFCs are now quickly building up in Earth's atmosphere, where they act as greenhouse gases that can have very high global warming potentials that are thousands of times more potent than carbon dioxide in contributing to climate change. If HFCs continue to be used, it is estimated that they could account for up to 20% of global greenhouse gas emissions by 2050.

To act in concert with the federal American Innovation and Manufacturing Act, which limits HFC production and phases-out the use of HFCs by 85% over the next 15 years, Hawai'i should create a refrigerant management program requiring registration, leak inspection, and leak repair for non-residential stationary appliances, including stationary refrigeration systems and air conditioning systems.

This would support state greenhouse gas reduction goals and prevent leakage of these harmful chemicals into the atmosphere. Amending the state building code with a hydrofluorocarbons update to reduce future greenhouse gas emissions is a welcome addition. Please pass HB197 HD1.

**HB-197-HD-1**

Submitted on: 2/26/2023 8:28:18 AM

Testimony for FIN on 2/27/2023 11:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Paul Bernstein	Individual	Support	Remotely Via Zoom

Comments:

Aloha Chair Yamashita, Vice Chair Kitigawa, and Members of the Finance Committee:

On behalf of the Hawai'i Environmental Change Agents' (HECA) Decarbonization of Buildings Task Force, I am submitting testimony in strong support of HB 197 HD1. If we are to truly address our greenhouse gas emissions (GHGs), we must address all GHGs: carbon dioxide, methane, nitrous oxide, and high global warming (GWP) gases such as chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs), which are more than a thousand times more potent than carbon dioxide when it comes to global warming. As we reduce our emissions of CO2, emissions of high GWP gases will represent a greater and greater share of our GHG emissions. This bill is a necessary part of a package of policies to address our GHG emissions and complements existing acts to reduce other GHGs. This bill addresses the greatest causes of emissions of these gases and paves the way toward a transition of using far less damaging refrigerants

Much scientific analysis has been done on the benefits of reducing global emissions of CFCs and HFCs:

- “Halogenated organic compounds (i.e., CFCs and HFCs) trap much more heat in the atmosphere than most other known compounds. Scientists calculated that one third of global warming during the second half of the 20th century was due to heat trapped by halogenated compounds. (Source: <https://edu.rsc.org/download?ac=503998>)
- “Increasing atmospheric concentrations of CFCs have accounted for about 24% of the direct increase in radiative forcing from greenhouse gases over the last decade.” (Source <https://experts.illinois.edu/en/publications/the-role-of-refrigerants-in-climate-change> )
- “Avoiding production and use of high-GWP (global warming potential) HFCs by using technologically feasible low-GWP substitutes to meet the increasing global demand can avoid as much as another 0.5 °C warming by the end of the century.” (Source: <https://acp.copernicus.org/articles/13/6083/2013/acp-13-6083-2013.pdf>)

In response to the deleterious effects of HFCs, the international community put forward the Kigali Amendment to the Montreal Protocol. This amendment calls on all countries to reduce their use of HFCs and could avoid up to half a degree Celsius of global warming by the end of the century. The US has ratified this amendment.

In response to the Kigali Amendment and the long standing need to take action against HFCs, the US Federal government included in the American Innovation and Manufacturing (AIM) Act provisions to address HFCs. HB197 HD1 is consistent with the goals of this Act and will push Hawaii do its part in helping the US meet its obligations under the Kigali Amendment.

HB197 would prepare the State to address significant causes of high greenhouse gas refrigerants escaping into the atmosphere. Please pass this bill.

Respectfully,

Paul Bernstein

Chair of HECA's Decarbonization of Buildings Task Force

**HB-197-HD-1**

Submitted on: 2/26/2023 8:41:01 AM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Matthew Geyer	Individual	Support	In Person

Comments:

Thank you for hearing HB197, which establishes a program that reduces global warming emissions from air conditioning and refrigeration.

Please support this measure as we need to do everything we can to reduce these toxic emissions.

Matthew Geyer

**HB-197-HD-1**

Submitted on: 2/26/2023 4:38:01 PM

Testimony for FIN on 2/27/2023 11:30:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Gerard Silva	Individual	Oppose	Written Testimony Only

Comments:

No Sutch thing as Climate Change. This has already bin Proven by the Experts. Climate Change is Just a Scam to Make some Elits Very Rich. Wake UP HAWAII!!!!