



STATE OF HAWAII
HAWAII CLIMATE CHANGE MITIGATION & ADAPTATION
COMMISSION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Co-Chairs:
Chair, DLNR
Director, OPSD

Commissioners:
Chair, Senate AEN
Chair, Senate WTL
Chair, House EEP
Chair, House WAL
Chairperson, HTA
Chairperson, DOA
CEO, OHA
Chairperson, DHHL
Director, DBEDT
Director, DOT
Director, DOH
Chairperson, DOE
Director, C+C DPP
Director, Maui DP
Director, Hawai'i DP
Director, Kaua'i DP
The Adjutant General
Manager, CZM

**Testimony of
Leah Laramée
Coordinator, Hawai'i Climate Change Mitigation and Adaptation Commission**

**Before the Senate Committees on
COMMERCE AND CONSUMER PROTECTION
&
COMMITTEE ON WAYS AND MEANS**

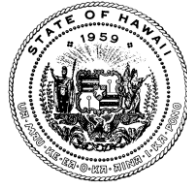
**Tuesday, April 4, 2023
9:45 AM
State Capitol, Via Videoconference, Conference Room 211**

**In support of
House Bill 197 House Draft 1
RELATING TO CLIMATE CHANGE MITIGATION**

House Bill 197 HD1 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. 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. Specifies 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 and appropriates funds. **The Hawai'i Climate Change Mitigation and Adaptation Commission (Commission) supports this measure.**

The Environmental Protection Agency identifies that Hydrofluorocarbons (HFCs) are greenhouse gases (GHGs) have high global warming potential, raising concern about their impacts as they become increasingly used as replacements for ozone-depleting substances. Climate-friendly alternatives are available to replace HFCs while prohibiting certain uses of the most harmful chemical alternatives which are identified in their Significant New Alternatives Policy (SNAP) Program. A Hawai'i refrigerant management program will position the state in a leadership role in phasing out these harmful substances. The Commission supports the measure as an important piece of mitigating global and local climate change.

Mahalo for the opportunity to testify in support of this measure.



WRITTEN
TESTIMONY
ONLY

In reply, please refer to:
File:

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378
doh.testimony@doh.hawaii.gov

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

SENATOR JARRETT KEOHOKALO, CHAIR
SENATE COMMITTEE ON COMMERCE AND CONSUMER PROTECTION

SENATOR DONOVAN M. DELA CRUZ, CHAIR
SENATE COMMITTEE ON WAYS AND MEANS

Hearing Date: 4/4/2023

Room Number: 211

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

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

16 As part of the transition to low-GWP alternatives, systems using these compounds must
17 be carefully managed to minimize the impacts on our environment. This measure would help
18 prevent the emissions of high-GWP HFCs by establishing a Hawaii Refrigerant Management

1 Program to include registration, leak inspection, repair, and reporting from large capacity
2 refrigeration systems and service practices for the installation, servicing, and disposal of
3 refrigeration and air conditioning systems that use high-GWP refrigerants. Legacy ozone
4 depleting substances will also be subject to these requirements.

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

7 Thank you for the opportunity to testify.

8 **Offered Amendments:** None.



Hawaii Environmental Change Agents' Decarbonization of Buildings Task Force

April 1, 2023

Position: **Support** of HB197 HD1

Aloha Chair Keohokalole, Chair Dela Cruz, and Members of the CPN and WAM Committees:

On behalf of the Hawai'i Environmental Change Agents' (HECA) Decarbonization of Buildings Task Force, I am submitting testimony in strong support of HB197 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 HD1 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: 4/1/2023 5:05:20 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
laurel brier	Testifying for Kauai Climate Action Coalition	Support	Written Testimony Only

Comments:

- We need a plan to reduce emissions from refrigerants that have a very high global warming impact.
- 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.
- The EPA 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 that we can & must employ.
- 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.
- An important step in address the climate crisis and setting an example for national action

**Citizens' Climate Lobby
Hawaii**
cclhawaii.org



April 2, 2023

SUPPORT FOR HB197 HD1 – RELATING TO CLIMATE CHANGE MITIGATION

Dear Chairs Keohokalole and Dela Cruz, Vice Chairs Fukunaga and Keith-Agaran, and Committee Members,

On behalf of the Citizens' Climate Lobby (CCL) Hawaii, I'm testifying in SUPPORT of HB197 HD1, which "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 stationary, commercial, and industrial refrigeration systems and air conditioning systems and adopt rules for the regulation of the use of such refrigerants. 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. Specifies 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."

HB197 HD1 will allow Hawaii to address the issue of leakage of HCFs (potent greenhouse gases with warming potential thousands of times greater than CO₂) into the atmosphere and encourage the development and adoption of environmentally-friendly substitutes for refrigerants and refrigeration. Addressing leakage issues will help us reduce our HCF emissions and operating costs¹.

Importantly, **HB197 HD1** will enable Hawaii to proactively respond to the EPA's efforts to phase down the use of HFCs, consistent with the [American Innovation and Manufacturing Act of 2020](#).

Please support HB197 HD1.

Respectfully,

A handwritten signature in black ink, appearing to read 'Noel Morin', with a long horizontal stroke extending to the right.

Noel Morin
Citizens' Climate Lobby Regional Coordinator

Citizens' Climate Lobby (CCL) is a nonprofit, nonpartisan, grassroots advocacy organization focused on national policies to address climate change solutions. CCL Hawaii's 900+ members are part of a 180,000+ global organization. For more information, visit citizensclimatelobby.org.

¹ A typical US supermarket's commercial refrigerant leak rate is 25% annually, per the EPA.
https://www.epa.gov/sites/default/files/documents/gc_averagestoreprofile_final_june_2011_revised_1.pdf



To: The Honorable Chairs Jarrett Keohokalole and Donovan Dela Cruz, the Honorable Vice Chairs Carol Fukunaga and Gilbert Keith-Agaran, and Members of the Committees on Commerce and Consumer Protection and Ways and Means

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

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

Hearing: Tuesday April 4, 2023, 9:45 a.m., room 211

Aloha Chairs Keohokalole and Dela Cruz, Vice Chairs Fukunaga and Keith-Agaran, and Members of the Committees on Commerce and Consumer Protection and Ways and Means :

The 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 up to a **thousand 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 important bill will go a long way toward reducing climate warming HRC emissions. Please pass this bill!

Mahalo for providing the opportunity to testify!

Climate Protectors Hawai'i (by Ted Bohlen)



To: The Senate Committee on Commerce and Consumer Protection (CPN)
and
The Senate Committee on Ways and Means (WAM)
From: Sherry Pollack, 350Hawaii.org
Date: Tuesday, April 4, 2023, 9:45am

In support of HB197 HD1

Aloha Chairs Keohokalole and Dela Cruz, Vice Chairs Fukunaga and Keith-Agaran, and members of the CPN and WAM committees,

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

HB-197-HD-1

Submitted on: 3/31/2023 6:12:01 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Noel Morin	Individual	Support	Written Testimony Only

Comments:

Dear Chairs Keohokalole and Dela Cruz, Vice Chairs Fukunaga and Keith-Agaran, and Committee members,

I'm in STRONG SUPPORT of HB197 HD1.

Sincerely,

Noel Morin

Climate, Sustainability, and Resilience Advocate

Hilo

HB-197-HD-1

Submitted on: 3/31/2023 6:22:01 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Douglas Perrine	Individual	Support	Written Testimony Only

Comments:

HB197 is a common sense measure to manage polluting climate-altering chemicals that may be released into the atmosphere, harming all of us. Please pass HB197 with appropriate funding to enable the DOH to adequately perform this important function.

HB-197-HD-1

Submitted on: 4/2/2023 7:37:37 AM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Virginia Tincher	Individual	Support	Written Testimony Only

Comments:

Members of the Commerce and Consumer Protection Committee and the Ways and Means Committee,

I am a strong supporter of HB197 HD1 for the following reasons

- 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.

Mahalo for this opportunity to testify.

Virginia Tincher, Oahu

HB-197-HD-1

Submitted on: 4/2/2023 8:36:27 AM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Melissa Barker	Individual	Support	Written Testimony Only

Comments:

Honorable Members,

I respectfully ask that you support HB197-HD1 which would create a program to reduce emissions from refrigerants.

Thank you for your attention and courtesy.

Melissa Barker

Kapaa, HI

HB-197-HD-1

Submitted on: 4/2/2023 12:23:52 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Barbara Best	Individual	Support	Written Testimony Only

Comments:

We must reduce emissions to reach our goals; our state has declared a climate emergency and this is a bill that will help.

HB-197-HD-1

Submitted on: 4/2/2023 12:44:33 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Shannon Rudolph	Individual	Support	Written Testimony Only

Comments:

Support

HB-197-HD-1

Submitted on: 4/2/2023 1:34:32 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
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: 4/2/2023 9:07:01 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Ruta Jordans	Individual	Support	Written Testimony Only

Comments:

Please understand the importance of prohibiting ozone depleting substances from situations where they can escape and enter the atmosphere. Support this bill to keep the ozone layer in the atmosphere intact!

Dear Chairs Keohokalole and Dela Cruz, Vice Chairs Fukunaga and Keith-Agaran, and honorable committee members,

My name is Sabrina Cohan. I am a seventeen-year-old student from Oahu, and I am writing to you today to express my strong support for HB197.

Refrigerants such as HFCs have been an enormous environmental problem for decades. Thankfully, bans on the most harmful chemicals have gone a long way towards repairing the damage done, but the refrigerants that remain in use continue to be detrimental. The environmental effects of ozone-depleting substances and high global warming-potential chemicals should not be overlooked, and as a young person inhabiting Hawaii I support stronger regulation of these chemicals.

The ozone layer is a vitally important component of our atmosphere that must be protected, and global warming poses an even greater danger. By passing HB197 and regulating substances that cause harm to our environment and human health, this legislature has the power to make a positive change that will benefit our lives and the lives of all those who come after us.

Thank you for your time and consideration, and I hope that the committees on CPN and WAM will pass HB197.

Sincerely,
Sabrina Cohan

HB-197-HD-1

Submitted on: 4/2/2023 10:31:08 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Cory Harden	Individual	Support	Written Testimony Only

Comments:

Aloha legislators,

Hawai'i needs to do its part to reduce hydroflourocarbons that exacerbate climate change. Please support this bill!

mahalo,

Cory Harden

HB-197-HD-1

Submitted on: 4/3/2023 7:14:48 AM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Helen Cox	Individual	Support	Written Testimony Only

Comments:

Aloha Chair and Committee Members,

Please pass HB197 HD1 which 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 stationary, commercial, and industrial refrigeration systems and air conditioning systems and adopt rules for the regulation of the use of such refrigerants. The state building code council must establish codes and standards consistent with the goal of reducing greenhouse gas emissions and funding is appropriated.

Mahalo,

Helen Cox, Kalaheo, Kauai

HB-197-HD-1

Submitted on: 4/3/2023 9:05:46 AM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Ronald "Ron" Reilly	Individual	Support	Written Testimony Only

Comments:

Aloha Chair Keohokalole, Chair Dela Cruz, and members of the CPN and WAM Committees,
re. Strong support for HB197

The North American Sustainable Refrigeration Council (NASRC) states that supermarket refrigeration leakage is one of the leading sources of super-polluting hydrofluorocarbon refrigerant (HFC) emissions. The NASRC estimates the annual climate impact from supermarket and grocery store refrigerant leaks to be 55 million metric tons of carbon dioxide equivalent (MTCO₂e).

A Hawai'i refrigerant management program will position the state in a leadership role in managing and phasing out these harmful substances.

Thank you for your consideration, Ron Reilly, Volcano Village

HB-197-HD-1

Submitted on: 3/31/2023 10:20:38 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Gerard Silva	Individual	Oppose	Written Testimony Only

Comments:

Climet Change is all alot of Made Up Bull Shit. I Looked it up and they say it very clearly
Climet Change was Made up to Make Certin People Very RICH. STOP MAKEING THE
COMMUNIST RICH!!!!!!!!!!!!!!

HB-197-HD-1

Submitted on: 4/3/2023 10:17:55 AM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
Maki Morinoue	Individual	Support	Written Testimony Only

Comments:

Aloha members of this committee,

Please support this bill.

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

This would support state greenhouse gas reduction goals and prevent the 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.

Mahalo
Maki Morinoue
96725

LATE

HB-197-HD-1

Submitted on: 4/3/2023 9:50:23 PM

Testimony for CPN on 4/4/2023 9:45:00 AM

Submitted By	Organization	Testifier Position	Testify
jeanne wheeler	Individual	Support	Written Testimony Only

Comments:

Please pass this important bill - Mahalo, JW