



DAVID Y. IGE
GOVERNOR

JOSH GREEN
LT. GOVERNOR

**STATE OF HAWAII
OFFICE OF THE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS**

335 MERCHANT STREET, ROOM 310
P.O. BOX 541
HONOLULU, HAWAII 96809
Phone Number: 586-2850
Fax Number: 586-2856
cca.hawaii.gov

CATHERINE P. AWAKUNI COLÓN
DIRECTOR

JO ANN M. UCHIDA TAKEUCHI
DEPUTY DIRECTOR

Testimony of the Department of Commerce and Consumer Affairs

**Before the
House Committee on Energy & Environmental Protection
Tuesday, January 28, 2020
8:30 a.m.
State Capitol, Conference Room 325**

**On the following measure:
H.B. 1851, RELATING TO GRID-INTERACTIVE WATER HEATER SYSTEMS**

Chair Lowen and Members of the Committee:

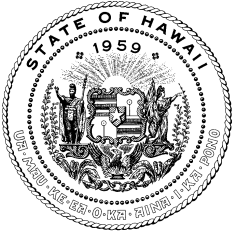
My name is Dean Nishina, and I am the Executive Director of the Department of Commerce and Consumer Affairs' (Department) Division of Consumer Advocacy. The Department appreciates the intent of and offers comments on this bill.

The purposes of this bill are: (1) to require grid-interactive water heater systems for new multi-unit dwelling construction, on or after January 1, 2022, unless a renewable energy technology system, as defined in Hawaii Revised Statutes (HRS) section 235-12.5, is substituted for use as the primary energy source for heating water; and (2) for the Public Utilities Commission (Commission) to establish standards for grid-interactive water heater systems that will include specifications for the performance, materials, components, durability, longevity, proper sizing, installation, and quality to promote the objectives of HRS section 269-124.

The Department supports the bill's intent to facilitate and increase the installation of grid-interactive water heater systems, which could provide grid services to electric

utilities and thereby help Hawaii's transition to a clean energy industry. The Department also appreciates the concern that requiring the Commission to establish standards for grid-interactive water heater systems, as this may address possible interoperability issues. At the same time, the technology for grid-interactive water heater systems is still developing and attempting to establish standards at this time will limit the flexibility and development of the grid-interactive water heater system technology.

Thank you for the opportunity to testify on this bill.



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

235 South Beretania Street, 5TH Floor, Honolulu, HI 96813 | energy.hawaii.gov

DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

(808) 587-3807

Testimony of **SCOTT J. GLENN, Chief Energy Officer**

before the
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
Tuesday, January 28, 2020
8:30 AM
State Capitol, Conference Room 325

In SUPPORT of **HB 1851** **RELATING TO GRID-INTERACTIVE WATER HEATER SYSTEMS.**

Chair Lowen, Vice Chair Wildberger and members of the Committee. The Hawaii State Energy Office (HSEO) supports the intent of HB 1851 that requires grid-interactive water heater systems for new multi-family dwellings beginning January 1, 2022.

According to a 2016 ACEEE (American Council for an Energy-Efficient Economy) Summer Study on Energy Efficiency in Buildings, the benefits of grid-interactive water heater systems (GIWH) include the addition of bi-directional control to electric resistance water heaters allowing the utility or third party aggregator to rapidly and repeatedly turn them on and off, or incrementally ramp their power up and down. This functionality turns a fleet of water heaters into a flexible energy-storage medium, capable of increasing and decreasing the load on the grid on a second-by-second basis. GIWHs are currently the least expensive form of energy storage available (Podorson 2014). Utilities can use fleets of grid-enabled water heaters for load shifting, demand response, arbitrage, ancillary services, or to respond to unexpected grid-stabilization events. Electric resistance water heaters with grid integrated controls are currently available to utility load control or demand response programs.

Grid-interactive water heater systems would also assist the State in achieving the energy efficiency portfolio standards of 4,300 gigawatt hours of electricity reduction by 2030, as mandated by HRS 269-96.

This will also assist HECO in its Integrated Grid Planning, which is part of its Grid Modernization Strategy. In light of such readily available, highly effective energy efficiency and resiliency technology, the HSEO supports this bill.

HSEO is willing to work with the PUC and other stakeholders to propose amendments to this legislation.

Thank you for the opportunity to testify.

TESTIMONY OF
JAMES P. GRIFFIN, Ph.D.
CHAIR, PUBLIC UTILITIES COMMISSION
STATE OF HAWAII

TO THE
HOUSE COMMITTEE ON
ENERGY AND ENVIRONMENTAL PROTECTION

January 28, 2020
8:30 a.m.

Chair Lowen and Members of the Committee:

MEASURE: H.B. No. 1851

TITLE: RELATING TO GRID-INTERACTIVE WATER HEATER SYSTEMS.

DESCRIPTION: Commencing January 1, 2022, prohibits the issuance of building permits for new multi-unit dwellings that do not include grid interactive water heater systems. Requires the PUC to establish standards for the system.

POSITION:

The Public Utilities Commission offers the following comments for consideration.

COMMENTS:

The Commission supports the intent of this measure. Grid-interactive water heaters can enable electric utility customers to provide valuable services back to the grid, which can reduce costs and assist utilities in advancing renewable energy and other policy goals. The Commission also supports the language in this measure that ensures grid-interactive water heaters are eligible for participation in demand-side management programs offered by the Public Benefits Fee Administrator and Hawaiian Electric's demand response programs.

However, the Commission notes that this bill includes language resembling Section 269-44, Hawaii Revised Statutes, which required the Commission to develop standards for solar water heaters prior to July 1, 2009. HB 1851 would require the Commission to create a new set of standards, specific to grid-interactive water heater systems. This measure appears to assign this requirement to the Commission, but would insert language into Chapter 196, rather than Chapter 269.

H.B. No. 1851
Page 2

The Commission is willing to work with other stakeholders to propose amendments to this legislation.

Thank you for the opportunity to testify on this measure.



**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
State Capitol, Conference Room 325
415 South Beretania Street
8:30 AM**

January 28, 2020

RE: HOUSE BILL NO. 1851, RELATING TO GRID-INTERACTIVE WATER HEATER SYSTEMS

Chair Lowen, Vice Chair Wildberger, and members of the committee:

My name is Gladys Quinto Marrone, CEO of the Building Industry Association of Hawaii (BIA-Hawaii). Chartered in 1955, the Building Industry Association of Hawaii is a professional trade organization affiliated with the National Association of Home Builders, representing the building industry and its associates. BIA-Hawaii takes a leadership role in unifying and promoting the interests of the industry to enhance the quality of life for the people of Hawaii. Our members build the communities we all call home.

BIA-Hawaii is opposed to H.B. 1851, which would prohibit the issuance of building permits for new multi-unit dwellings that do not include grid-interactive water heater systems. The bill also would require the PUC to establish standards for the system.

BIA-Hawaii has consistently opposed any type of government mandate that would result in a higher cost of housing. The bill fails to provide any benefit to the consumer. The bill takes away consumer choice, and does not identify the cost to comply with the mandate.

Mandates usually have unintended consequences, while incentives are usually more effective. For example, the solar water heater tax credit allowed all homeowners the opportunity to install a solar water heater at a subsidized cost. When the legislature mandated the installation of solar water heaters in all new single family residential units, it took away the incentive for existing homeowners to convert to solar. There are over 500,000 existing homes on Oahu and only a few thousand new single-family residences built each year. Incentivizing existing homeowners would have a far greater impact than mandating compliance on new home construction.

We are opposed to H.B. 1851, and appreciate the opportunity to express our views on this matter.

HB-1851

Submitted on: 1/27/2020 8:41:30 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Devyn	350 Hawaii	Support	No

Comments:

To: The House Committee on Energy & Environmental Protection

From: Devyn

Date: Tuesday, January 28, 2020, 8:30 am

In strong support of HB 1851



Dear Chair Lowen, Vice Chair Wildberger, and members:

I strongly support HB 1851.

As Hawaii strives for zero greenhouse gas emissions, we need to capitalize on every reasonable innovation that will reduce our energy use.

Among other benefits, a smarter energy grid will reduce our energy use by sharing information and redistributing energy where and when it's needed from where and when it's not.

Grid-interactive water heaters can communicate with electric utilities to spread electrical loads efficiently and participate in demand response programs, i.e., changes in a customer's power use to better match the demand for power with the supply. In this case, water heaters can automatically turn off during times of peak energy use, if they are grid-interactive. They turn on again when the grid doesn't need as much power. This avoids firing up additional equipment at power plants during peak demand times.

Better yet, the excess thermal energy stored in GIWHs can be sent back to the grid to be used when and where it's most needed.

GIWHs are a simple way for our connected communities to save energy. The more appliances that share information this way, the more efficient the grid can be. Every home should have one.

Devyn



Chamber of Commerce HAWAII

The Voice of Business

Testimony to the House Committee on Energy & Environmental Protection

Tuesday, January 28, 2020 at 8:30 A.M.

Conference Room 325, State Capitol

LATE

RE: HB 1851, RELATING TO GRID-INTERACTIVE WATER HEATER SYSTEMS

Chair Lowen, Vice Chair Wildberger, and Members of the Committee:

The Chamber of Commerce Hawaii ("The Chamber") **is opposed to** HB 1851, which commencing on January 1, 2022, would prohibit the issuance of building permits for new multi-unit dwellings that do not include grid-interactive water heater systems. This bill would also require the PUC to establish standards for the system.

The Chamber is Hawaii's leading statewide business advocacy organization, representing 2,000+ businesses. Approximately 80% of our members are small businesses with less than 20 employees. As the "Voice of Business" in Hawaii, the organization works on behalf of members and the entire business community to improve the state's economic climate and to foster positive action on issues of common concern.

The Chamber has consistently been opposed to government mandates. This bill takes away consumers choice and does not identify the costs to comply with this new mandate, creating concerns of unintended consequences should this be implemented.

Rather than imposing mandates, we would prefer to see the Legislature provide consumers with incentives to move in a certain direction. When the Legislature mandated the installation of solar water heaters in all new single-family residential units, it removed the incentive for existing homeowners to convert to solar. With over 500,000 existing homes on Oahu, and only a few thousand new single-family residences permitted each year, incentivizing existing homeowners would have a much greater impact than mandating compliance on new home construction.

Thank you for this opportunity to share our concerns about HB 1851.

HB-1851

Submitted on: 1/28/2020 4:32:47 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Brodie Lockard	350Hawaii.org	Support	No

Comments:

LATE

HB-1851

Submitted on: 1/27/2020 11:26:41 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Javier Mendez-Alvarez	350Hawaii.org	Support	No

Comments:

LATE

COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

January 28, 2020

Shifted Energy Strongly Supports HB 1851, Relating to Grid-Interactive Water Heater Systems

Aloha Chair Lowen, Vice Chair Wildberger, and members of the Committee:

Thank you for the opportunity to submit testimony in **strong support** of HB 1851. Including grid-interactive water heater requirements in statute will provide Hawai'i with another important tool to enable us to meet our 100% renewable energy goals while ensuring that all residents can benefit from that transition.

Shifted Energy was founded in Hawai'i in 2014 from the energy efficiency and energy justice activities of non-profit Kanu Hawai'i. During our community engagement and outreach activities, we identified two key lessons that caused us to realize the value of water heaters as distributed energy resources:

- 1) Low-and-moderate income families, multi-family dwelling residents, and renters are often not able to take advantage of emerging technologies, such as rooftop solar and home battery systems, that would reduce their electric bills and allow them to support renewable energy deployment; and
- 2) Electric water heating is the predominant form of water heating and makes up a disproportionately large percentage of many Hawai'i residents' electric bills.

Shifted Energy was thus founded with the goals of engaging hard-to-reach communities in the renewable energy transformation through utilization of their electric water heaters. We currently employ 8 people on Oahu, have just hired a new engineering graduate who we connected with through HTDC, and look forward to continue building our company in Hawai'i in support of local clean energy innovation and job creation.

To understand the concept and benefit of 'grid-interactive water heating', it is important to realize that Hawaii's 100% renewable energy goal requires Hawaiian Electric to cost-effectively and reliably integrate increasing amounts of *intermittent* renewable energy. The intermittent nature of renewable energy generation means that 1) electricity production is not always aligned with customer demand, and 2) there are often rapid fluctuations in generation as clouds pass overhead. So as Hawaiian Electric adds more renewable generation to Oahu's electricity system, they must also:

- 1) Add ways to store solar energy for delivery later in the day;
- 2) 'Smooth' the rapid fluctuations to maintain the stability of the power grid; and
- 3) Reduce total electricity demand during periods when renewable generation is not high (e.g., during the night) through energy efficiency or demand *shifting*.

Grid-scale and customer-sited energy storage, almost universally lithium-ion batteries, are one technology that can provide all of the above services. Hawaiian Electric is actively procuring large energy storage and solar projects, and homeowners with batteries are aggregating their systems to provide the utility with "virtual power plants". Unfortunately, siting constraints and high costs make such batteries mostly unavailable to condo and apartment residents, so they cannot participate in the economic benefits of providing grid services to Hawaiian Electric.

Enter Grid-Interactive Water Heating.

Water heater tanks are essentially large cylinders that store *thermal* energy, and there are hundreds of thousands of them across Oahu. Shifted Energy has developed an inexpensive, non-intrusive, rapidly-installable controller, similar to a smart thermostat, that can be attached to any electric water heater to convert it into a thermal battery. When deployed for apartment or condominium renters and owners, Shifted's controllers essentially transform the entire building into a giant battery simply by upgrading existing electric water heater assets. These batteries can then be enrolled into Hawaiian Electric demand response and grid service programs, and Shifted Energy's software ensures they provide grid reliability and enhance renewable integration. Hawaiian Electric then financially compensates renters and owners for the grid services that their water heaters provided. All the while, Shifted's intelligent software ensures that families always have hot water when they need it.

Because so many families already have electric water heaters and the cost of the controller is low, requiring grid-interactive water heating across Hawai'i ensures that everyone, including underserved and hard-to-reach families, can finally participate in and benefit from the clean energy revolution. In fact, Shifted Energy is currently deploying 2.5 Megawatts of grid-interactive water heater capacity across Oahu and Maui, engaging more than 2,500 residents in Hawaiian Electric's Grid Services Purchase Agreement program. Participating residents will receive between \$180-\$300 over the next 5 years, but, more importantly, they will be engaged, active participants in Hawaii's renewable energy future.

For the foregoing reasons, Shifted Energy **strongly supports** this measure, and we look forward to working with the Legislature to increase opportunities for rapidly scalable, cost-effective clean energy technologies like grid-interactive water heating.

Mahalo,

Randy Fish
Director, Business Development and Policy
randy@shiftedenergy.com

HB-1851

Submitted on: 1/27/2020 9:01:28 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Peg Sullivan-Miller	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/27/2020 8:10:57 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Noel Morin	Individual	Support	No

Comments:

Aloha,

Please support HB1851.

This bill will allow us to better transition to a renewable energy future. The outfitting of large electrical devices with technology that allows for systemic demand management will enable a more efficient and effective utilization of electric energy and, therefore, maximize the energy that we produce. This systemic management of energy demand can lessen the need for energy storage infrastructure. This is a win-win for Hawaii residents and allows us to better meet our renewable energy goals.

Thank you,

Noel Morin

Hilo

808 987 7428

HB-1851

Submitted on: 1/27/2020 4:31:05 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Nanea Lo	Individual	Support	No

Comments:

Hello,

My name is Nanea Lo and I am a lifelong resident and kanaka maoli (Native Hawaiian) of this land. I am writing to say I fully support this bill and I'm asking for you all to do the same.

Me ke aloha 'Ä• ina,

Nanea Lo

HB-1851

Submitted on: 1/27/2020 12:34:20 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Louis Herman	Individual	Support	No

Comments:

Urge support for this important measure.

HB-1851

Submitted on: 1/26/2020 10:54:54 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Joy Silver	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/27/2020 9:36:21 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Tanya Aynessazian	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/26/2020 10:14:54 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Zoe Malia Ozoa Loos	Individual	Support	No

Comments:

Anything and everything needs to be done in order to take protect our aina, our keiki, our community during the climate crisis. We must do what it takes, we must lead the way as an island nation that will deal with more problems than the mainland. Problems that only an island nation will have to deal with. There should be no reason for me or anyone to convince legislators to enact laws that will fight to protect the land and do what needs to be done in order to help alleviate and reverse what is happening in our Aloha State.

Mahalo for all the work you have been doing and will be doing, I full-heartedly support all legislation that will work towards climate justice.

HB-1851

Submitted on: 1/26/2020 10:14:37 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
John Nix	Individual	Support	No

Comments:

A;oha all,

Please support HB1851 and lead us into the future.Support increasing good paying jobs and let us all benefit from doing the right thing,

Mahalo,

Dr. John and Debra Nix

Kihei

HB-1851

Submitted on: 1/26/2020 10:13:20 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Judith A Mick	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/27/2020 11:16:08 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
janice palma-glennie	Individual	Support	No

Comments:

aloha,

please support this measure which backs wise efforts to prevent the looming Climate Crisis.

mahalo and sincerely,

janice palma-glennie

kailua-kona

HB-1851

Submitted on: 1/27/2020 1:18:49 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Jesse Brown-Clay	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/27/2020 1:37:07 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Elizabeth Winternitz	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/27/2020 1:45:39 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Jonathan Boyne	Individual	Support	No

Comments:

I support HB1851.

HB-1851

Submitted on: 1/27/2020 2:49:29 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Charles K. Burrows	Individual	Support	No

Comments:

HB-1851

Submitted on: 1/27/2020 6:24:28 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Caroline Kunitake	Individual	Support	No

Comments:

Please support HB1851.

LATE

Mahalo,

Caroline Kunitake

HB-1851

Submitted on: 1/27/2020 7:09:16 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Matthew Geyer	Individual	Support	Yes

Comments:

These small incremental changes are important, but we need to do so much more to fight climate change in order to leave a decent world for our children to thrive in.

LATE

HB-1851

Submitted on: 1/27/2020 7:20:26 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Koohan Paik	Individual	Support	No

Comments:

LATE

HB-1851

Submitted on: 1/27/2020 8:24:02 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Carolynn Bell-Tuttle	Individual	Support	No

Comments:

LATE

LATE

HB-1851

Submitted on: 1/27/2020 8:29:13 PM
Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Bradford Baang	Individual	Support	No

Comments:

Dear Chair Lowen, Vice Chair Wildberger, and members:

HB 1851 is necessary for our keiki' future, good for Hawaii and the planet. I strongly support it.

As Hawaii strives for zero greenhouse gas emissions, we need to capitalize on every reasonable innovation that will reduce our energy use.

Among other benefits, a smarter energy grid will reduce our energy use by sharing information and redistributing energy where and when it's needed from where and when it's not.

Grid-interactive water heaters can communicate with electric utilities to spread electrical loads efficiently and participate in demand response programs, i.e., changes in a customer's power use to better match the demand for power with the supply. In this case, water heaters can automatically turn off during times of peak energy use, if they are grid-interactive. They turn on again when the grid doesn't need as much power. This avoids firing up additional equipment at power plants during peak demand times.

Better yet, the excess thermal energy stored in GIWHs can be sent back to the grid to be used when and where it's most needed.

GIWHs are a simple way for our connected communities to save energy. The more appliances that share information this way, the more efficient the grid can be. Every home should have one.

Mahalo for your consideration and commitment to Hawaii's future.

Brad Baang, Waianae, HI 96792

Pearl Johnson
45-090 Namoku St, apt 1304
Kaneohe HI 96744

To: The House Committee on Energy & Environmental Protection
From: Pearl Johnson
Date: Tuesday, January 28, 2020, 8:30 am

In **strong support** of HB 1851



Dear Chair Lowen, Vice Chair Wildberger, and members:

I strongly support HB 1851.

It is a simple, cost-effective way to use energy more efficiently.

A smarter energy grid will reduce our energy use by sharing information and redistributing energy where and when it's needed from where and when it's not.

Grid-interactive water heaters can communicate with electric utilities to spread electrical loads efficiently and participate in demand response programs, i.e., changes in a customer's power use to better match the demand for power with the supply. In this case, water heaters can automatically turn off during times of peak energy use, if they are grid-interactive. They turn on again when the grid doesn't need as much power. This avoids firing up additional equipment at power plants during peak demand times.

Better yet, the excess thermal energy stored in GIWHs can be sent back to the grid to be used when and where it's most needed.

GIWHs are a simple way for our connected communities to save energy. The more appliances that share information this way, the more efficient the grid can be. Every home should have one.

Pearl Johnson

HB-1851

Submitted on: 1/27/2020 8:40:04 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
John NAYLOR	Individual	Support	No

Comments:

LATE

HB-1851

Submitted on: 1/27/2020 9:07:30 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
John Grandinetti	Individual	Support	No

Comments:

LATE

HB-1851

Submitted on: 1/28/2020 11:35:43 AM

Testimony for EEP on 1/28/2020 8:30:00 AM

LATE

Submitted By	Organization	Testifier Position	Present at Hearing
Barbara Hershey	Individual	Support	No

Comments:

LATE

LATE

HB-1851

Submitted on: 1/28/2020 3:34:18 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Phaethon Keeney	Individual	Support	No

Comments:

LATE

LATE

HB-1851

Submitted on: 1/28/2020 6:11:24 PM

Testimony for EEP on 1/28/2020 8:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Mark A. Koppel	Individual	Support	No

Comments:

THIS IS CRUCIAL. PLEASE SUPPORT.

LATE