A BILL FOR AN ACT

RELATING TO ENERGY.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that the human-induced
global climate crisis requires thoughtful but bold response on
many fronts to make Hawaii communities resilient to the impacts
of climate change that threaten the very survivability of these
fragile islands. Lest Hawaii lose its leadership position in
meeting the future of labor, justice and equity, the legislature
embraces Aloha 'Aina as a green new deal to decarbonize Hawaii's
systems of food, energy, and transportation, and to sequester
carbon through systems of agriculture, waste management, and
ecosystem restoration. This solid foundation finds synergies
with expanded access to health, housing, and education,
multiplying good jobs and ensuring justice and equity for
Hawaii's citizens. This measure represents a forward step in
mitigating and adapting Hawaii to inevitable change.

The legislature, as declared in the Hawaii commitments
presented to the World Conservation Congress in 2016, that "[w]e
must undertake profound transformations in how human societies
live on Earth, with particular attention to making our patterns
of production and consumption more sustainable. We must
recognize that human health and wellbeing depend on healthy
ecosystems. We must recognize that every form of life has
value - regardless of its worth to humans." Hawaii has been a
leader in conservation efforts for decades, through its
commitment to environmental, and sustainability policies. In
1974, the State enacted the state environmental policy,
chapter 344, Hawaii Revised Statutes, as a mechanism to set
environmental goals. In addition, the laws enacted in Hawaii in
recent decades have served as a starlight for other
jurisdictions and set a global example on how to adopt policies
on sustainability. More recently, several approaches to
sustainability have emerged in Hawaii, including the Aloha+
challenge, the governor's sustainable Hawaii initiative, and
other initiatives inspired by the Malama Honua Worldwide Voyage
and Malama Hawaii.

In July 2014, the State launched the Aloha+ challenge: He
Nohona 'Ae'oeia, A Culture of Sustainability, a statewide
commitment to sustainability, with the leadership of the
governor, four county mayors, office of Hawaiian affairs,
legislature, and Hawaii green growth public-private partners across the State. The Aloha+ challenge builds on Hawaii's history of systems thinking, Hawaiian culture and values, and successful track record on sustainability to outline six ambitious goals to be achieved by 2030. Among the six goals, two involved:

(1) Clean energy: Achieve seventy per cent clean energy with forty per cent from renewables and thirty per cent from efficiency; and

(2) Waste reduction: Reduce the solid waste stream prior to disposal by seventy per cent though source reduction, recycling, bioconversion, and landfill diversion methods.

To increase the efforts of the Aloha+ challenge, the governor launched the sustainable Hawaii initiative in 2016, which encompassed five major goals, the most existential goal was to achieve one hundred per cent renewable energy in electricity by 2045.

At the global level, the United Nations sustainable development goals, the Hawaii commitments presented to the World Conservation Congress in 2016, and the Paris Climate Agreement...
have been adopted to guide global efforts. The sustainable development goals, otherwise known as the 2030 Agenda for Sustainable Development, were born at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012, which came into effect in 2015, are a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. Dealing with the threat of climate change impacts how people manage the world's fragile natural resources.

During September 2016, more than ten thousand leaders from government, civil society indigenous communities, faith and spiritual traditions, private sector, and academia gathered in Hawaii for a meeting of the International Union for Conservation of Nature World Conservation Congress. Delegates to the congress adopted the Hawaii commitments to achieve the transformation required to promote a "Culture of Conservation". The Hawaii Commitments consist of seven identified challenges and proposed solutions, among them included:

1. Linking spirituality, religion, culture, and conservation; and

2. The challenge of climate change.
The Hawaii commitments build on the Paris Climate Agreement and sustainable development goals to allow different global voices to come together and find common ground in the spirit of partnership, collaboration, and sustainability.

In 2018, Governor David Ige issued Executive Order No. 18-06, which directed all state agencies to implement practices to assist the State in achieving the United Nations sustainable development goals. Additionally, four counties have expressed support for the sustainable development goals. In particular, the county of Maui adopted Resolution No. 18-18, supporting "the Hawaii State Senate's efforts to enact legislation to attain the United Nations Sustainable Development Goals."

In order for Hawaii to continue to serve as a starlight for the rest of the world in setting policies on sustainability and to serve as global leader on issues of conservation and sustainability, it is essential that the State demonstrate its full commitment to its own polices and goals as well as the goals set on the international stage at United Nations conferences and summits on sustainability. In particular, the legislature has identified seven of the seventeen United Nations
sustainable development goals that are most immediately vital to
the State including:

(1) Sustainable cities and communities;
(2) Responsible consumption and production; and
(3) The formation of partnerships for the sustainable
development goals.

The legislature further finds and acknowledges that
municipal solid waste, particularly non-recyclable plastics, has
become a significant threat to Hawaii's environment, ecosystems,
and beaches, on which the State's economy, culture, and native
species rely.

Plastic waste and debris can be increasingly found on every
island and in every watershed and protected area in the Hawaiian
archipelago. Hawaii's forests, streams, and beaches are strewn
with plastic debris, including micro plastic debris smaller than
grains of sand which are consumed by a spectrum of animals from
the smallest of endangered birds to the largest of humpback
whales.

The Washington Post reported that an estimated five million
to thirteen million tons of plastic debris enter the ocean every
year, which has contributed to creating the Pacific garbage
patch, a mass of plastic debris larger than the state of Texas floating north of Hawaii. If nothing changes, it is estimated that by 2050, there will be more plastic in the Pacific Ocean, by weight, than fish.

The legislature additionally finds that there is opportunity to create clean energy, reduce waste management costs to taxpayers, and protect Hawaii's environment from greenhouse gas emissions from municipal solid waste, including plastic waste, through landfill diversion, using recycling, reusing, composting, and conversion technologies. Hawaii residents generate 2.8 tons of waste per person per year, more waste per capita than residents of any other state. More than eighty per cent of plastic waste entering the Pacific Ocean come from preventable land-based waste and pollution.

The legislature also finds that as a result of pursuing its goal to reach one hundred per cent renewable energy by 2045, Hawaii now leads other states in nearly every category of renewable energy. Approximately twenty-six per cent of electricity in the State is generated from renewable energy, and there are sixty utility-scale renewable energy projects feeding into the State's power grids. Notwithstanding such progress,
the State continues to depend heavily upon imported petroleum for its energy needs and falling short of its ambitious renewable energy goals.

The legislature additionally finds that the State must continue to support established renewable energy sources that do not create significant greenhouse gas emissions and those emerging from new technological innovations to meet the State's expansive renewable energy goals, such as clean conversion technologies that do not release greenhouse gases into the environment.

The legislature further finds that landfills are a major producer of greenhouse gas emissions. Landfilled waste is the largest source of human-generated methane. In addition, if not properly built and maintained, harmful leachate contaminates can seep out of landfills and seep into local streams, soil, and groundwater. Landfills are an unsustainable approach to waste management as they impact native species, cause the release of methane and carbon dioxide greenhouse gases effecting climate change, and pollute the State's environment. The need for landfills can be significantly reduced, if not eliminated,
through recycling, reusing, composting, and clean conversion technologies.

Municipal solid waste can be converted into clean energy, including clean electricity, diesel, hydrogen, and ammonia without burning. Recent state-of-the-art technologies allow gasification with zero greenhouse gas emissions. This includes closed loop systems that convert waste into syngas which is processed into clean energy.

This Act authorizes the natural energy laboratory of Hawaii authority to establish a microgrid demonstration project and requires the public utilities commission to consider findings and data from public agency microgrid evaluations and pilots into its current or future proceedings, such as the microgrid services tariff docket, to evaluate ways to incentivize the installation of renewable energy systems in public facilities that can provide backup power in the event the broader electric grid cannot provide power.

The legislature finds that production of clean electricity may be encouraged if government agencies, as sellers of clean electricity, are allowed to engage in intra-governmental wheeling, in which electric power is transmitted from one
agency's power of generation to the facilities of other governmental agencies over the existing transmission lines of a third-Party electric public utility. The State and other government entities such as the counties could acquire clean electricity by purchasing it from a clean electricity project developer and then transmit it, across utility lines owned and maintained by an existing electric utility, to the government agency or another government agency. This Act would allow wheeling from the microgrid natural energy laboratory of Hawaii demonstration project.

The purpose of this Act is to:

(1) Establish a zero net energy and zero net waste initiative program with the mission of achieving the one hundred per cent renewable energy goal;

(2) Establish a zero net energy and zero net waste advisory council;

(3) Designate property controlled by the natural energy laboratory of Hawaii authority as a microgrid demonstration project, which prohibits the use of fossil fuels as an energy source in the project;
(4) Authorize the transmission of electric power from one governmental agency's point of generation to the facility of another governmental agency's existing transmission lines within the boundaries of the Hawaii ocean science and technology park; and

(5) Appropriate funds for the zero net energy and zero net waste initiative program.

SECTION 2. The Hawaii Revised Statutes is amended by adding a new chapter to be appropriately designated and to read as follows:

"CHAPTER
ZERO NET ENERGY AND ZERO NET WASTE INITIATIVE

§ -1 Definitions. As used in this chapter:

"Clean electricity" means electricity not generated from fossil fuel and not produced by a combustion method that releases greenhouse gases into the environment.

"Clean energy" means energy not generated from fossil fuel and not produced by a combustion method that releases greenhouse gases into the environment.
"Combustion" means a high-temperature chemical reaction between a fuel and an oxidant, usually, atmospheric oxygen, that produces light, heat, smoke, and can produce electricity.

"Commission" means the public utilities commission.

"Dirty electricity" means electricity generated from fossil fuel or produced by a combustion method that releases greenhouse gases into the environment.

"Fossil fuel" means coal, natural gas, petroleum and non-compostable plastic.

"Microgrid" means an interconnected system of loads and energy resources, including, but not limited to, distributed energy resources, energy storage, demand response tools, or other management, forecasting, and analytical tools, appropriately sized to meet customer needs, within a clearly defined electrical boundary that can act as a single, controllable entity, and can connect to, disconnect from, or run in parallel with, larger portions of the electrical grid, or can be managed and isolated to withstand larger disturbances and maintain electrical supply to connected critical infrastructure.

"Program" means a zero-net energy and zero net waste and initiative, including a microgrid natural energy laboratory of
Hawaii demonstration project that allows wheeling between the boundaries of Hawaii ocean science and technology park.

"Wheeling" means transmitting electric power from one governmental agency's point of generation to the facilities of other governmental agencies over the existing transmission lines of a third-party electric public utility.

"Zero net energy building" means an energy-efficient building where, on a source energy basis, the actual annual consumed energy is less than or equal to the on-site renewable generated energy.

"Zero net energy campus" means an energy-efficient campus where, on a source energy basis, the actual annual consumed energy is less than or equal to the on-site renewable generated energy.

"Zero net energy community" means an energy-efficient community where, on a source energy basis, the actual annual consumed energy is less than or equal to the on-site renewable generated energy.

"Zero net energy portfolio" means an energy-efficient portfolio in which, on a source energy basis, the actual annual
consumed energy is less than or equal to the on-site renewable generated energy.

"Zero net waste" means no by-products of manufacturing are sent to landfills and all materials generated in the manufacturing process are either reused, recycled, composted, or converted into clean energy.

§ -2 Zero net energy and zero net waste initiative program; established. There is established within the commission a zero net energy and zero net waste initiative program with the mission of achieving the one hundred per cent renewable energy mandate using a combination, as applicable and environmentally feasible, of the following resources:

(1) Wind;

(2) Sun;

(3) Falling water;

(4) Biogas, including landfill and sewage-based digester gas;

(5) Geothermal;

(6) Ocean water, currents, and waves, including ocean thermal energy conversion;
(7) Biomass, including biomass crops, agricultural and animal residues and wastes, but not including mono-cultured wood crops;

(8) Biofuels;

(9) Hydrogen produced from renewable energy sources; and

(10) Other self-replenishing non-fossil fuel, non-nuclear resources and conversion to clean energy technologies to achieve zero net energy for zero net energy buildings, zero net energy campuses, zero net energy communities, zero net energy portfolios, and zero net waste by recycling, reusing, composting, and conversion technologies.

§ 3 Zero net energy and zero net waste advisory council; duties; established. (a) There is established the zero net energy and zero waste advisory council, which shall consist of the following members:

(1) The chairperson of the commission or the chairperson's designee, who shall serve as the chair of the council;

(2) The chief energy officer of the Hawaii state energy office or the chief energy officer's designee;
(3) The chairperson of the board of land and natural resources or the chairperson's designee;

(4) The executive director of the board of directors of the natural energy laboratory of Hawaii authority or the executive director's designee;

(5) The chairs of the standing committees of the legislature with subject matter jurisdiction over the environment;

(6) A representative from the city and county of Honolulu department of environmental services;

(7) A representative from the county of Maui department of environmental management, County of Maui;

(8) A representative from the county of Kauai department of public works;

(9) A representative from the county of Hawaii department of environmental management;

(10) One representative each from four community organizations that focus on recycling, composting, and conversion technologies for clean energy, to be selected by the chair of the council;
(11) An engineering expert in sustainability, renewable clean energy, and advanced energy solutions;
(12) An expert in governmental agencies, including state government, counties and cities with sustainability clean energy goals to achieve full zero net energy and zero net waste status; and
(13) A representative from the Hawaiian Electric Company.

(b) The zero net energy and zero net waste advisory council shall:

(1) Be subject to section 26-34;
(2) Serve without compensation but shall be reimbursed for expenses, including travel expenses, necessary for the performance of their duties;
(3) Perform any relevant analysis and develop appropriate plans or recommendations for the legislature, counties, and other stakeholders;
(4) Obtain from state and county agencies all relevant data on recycling, composting, landfills, conversions technologies, any associated waste management costs, and microgrids and wheeling, as they relate to the mission of the program;
(5) Obtain from state and county agencies all relevant data on energy, electricity, hydrogen, and diesel fuel generation and any associated costs and benefits as they relate to the mission of the program;

(6) Assist with coordination between the state agencies and other government agencies with the general public on the mission of the program; and

(7) Submit a report of its progress and any findings and recommendations, including any proposed legislation, to achieve zero net energy and zero net waste by 2030 based on the microgrid natural energy laboratory of Hawaii demonstration project and wheeling within the boundaries of the Hawaii ocean sciences and technology park to the legislature no later than twenty days prior to the convening of each regular session.

§ -4 Microgrid demonstration project; natural energy laboratory of Hawaii authority. Property controlled by the natural energy laboratory of Hawaii authority, established pursuant to chapter 227D, is designated as a microgrid demonstration project. The natural energy laboratory of Hawaii authority shall plan, design, and implement a microgrid, with
the support of the zero net energy and zero net waste advisory
council, and public and private sector partners, if necessary,
on property controlled by the natural energy laboratory of
Hawaii authority. No dirty electricity shall be generated or
allowed within the microgrid natural energy laboratory of Hawaii
demonstration project. No fossil fuels shall be used as an
energy source within the microgrid natural energy laboratory of
Hawaii demonstration project.

§ -5 Wheeling; renewable energy; government agencies;
rules. (a) The commission may allow government agencies to
engage in wheeling of electricity produced at its own facilities
from renewable energy resources within the boundaries of the
Hawaii ocean science and technology park.

(b) The commission may disallow a wheeling project if the
commission determines that the project is either:

(1) Detrimental to an electric utility company; or
(2) Not in the public interest.
(c) The commission shall adopt rules pursuant to
chapter 91 to implement this chapter."

SECTION 3. There is appropriated out of the general
revenues of the State of Hawaii the sum of $ or so
much thereof as may be necessary for fiscal year 2020-2021 for the:

(1) Establishment of the zero net energy and zero net waste initiative program;

(2) Establishment of the zero net energy and zero net waste advisory council;

(3) Planning and designing of a microgrid on the natural energy laboratory of Hawaii property for a renewable clean energy system capable of providing backup electrical power in the event the electric grid cannot provide power; and

(4) Report on the planning, design, and implementation of the microgrid natural energy laboratory of Hawaii demonstration project and wheeling within the boundaries of the Hawaii ocean science and technology.

The sum appropriated shall be expended by the public utilities commission for the purposes of this Act.

SECTION 4. This Act shall take effect on July 1, 2020.
Report Title:
Zero Net Energy; Zero Net Waste; Initiative Program; Advisory Council; Public Utilities Commission; Wheeling; Appropriation

Description:
Establishes a zero net energy and zero net waste initiative program in the public utilities commission. Establishes a zero net energy and zero net waste advisory council. Designates property controlled by the natural energy laboratory of Hawaii authority as a microgrid demonstration project. Authorizes the transmission of electric power from one governmental agency's point of generation to another governmental agency's existing transmission lines within the boundaries of the Hawaii ocean science and technology park. Appropriates funds for the zero net energy and zero net waste initiative program.

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