



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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Testimony of
MARK B. GLICK, Chief Energy Officer

LATE

before the
**SENATE COMMITTEES ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
AND
WATER AND LAND**

Monday, April 1, 2024
1:15 PM
State Capitol, Conference Room 229 and Videoconference

Providing Comments on
SCR 89 / SR 75

**REQUESTING THAT THE HAWAII STATE ENERGY OFFICE AND OFFICE OF
PLANNING AND SUSTAINABLE DEVELOPMENT DEVELOP A PLAN TO
IMPLEMENT A WASTE-TO-ENERGY TECHNOLOGY SOLUTION.**

Chairs DeCoite and Inouye, Vice Chairs Wakai and Elefante, and members of the Committees, the Hawai'i State Energy Office (HSEO) offers comments supporting the intent of SCR 89 / SR 75 requesting that HSEO and the Office of Planning and Sustainable Development (OPSD) (1) develop a plan to implement a waste-to-energy technology solution that will (a) reduce the State's need for landfills on each island and (b) generate renewable energy that will help the State achieve its solid waste stream reduction and clean energy goals, and (2) submit a report of their findings and recommendations and a copy of the plan to the Legislature no later than twenty days prior to the convening of the Regular Session of 2026. Since no funding is allocated for the development of such a plan, HSEO's ability to support this effort will depend on maintaining the current level of general funds for HSEO.

HSEO supports efforts to reduce, reuse, recycle, and make use of materials in a way that reduces the quantity of waste that goes to Hawai'i's landfills.

HSEO respectfully suggests that these Resolutions may be informed by recent reports to the Legislature and the State and Counties' Integrated Solid Waste Management Plans. Relevant reports include the [Annual Report to the Legislature](#) by the Office of Solid Waste Management (OSWM) of the Hawaii State Department of Health, the [REPORT TO THE THIRTY-SECOND LEGISLATURE, STATE OF HAWAII, 2024, PURSUANT TO SENATE CONCURRENT RESOLUTION 64 SD1 \(2023\)](#), and plans by each of the counties, linked here ([Kaua'i](#), [Honolulu](#), [Maui](#), [Hawai'i](#)).

Consistent with past practice, HSEO looks forward to continuing to work with OPSD, the Department of Health, and the Counties as federal funding opportunities arise and technologies (especially those suitable to Hawai'i's types and quantities of available wastes) develop.

Thank you for the opportunity to testify.



**TESTIMONY BEFORE THE SENATE COMMITTEES ON
ENERGY, ECONOMIC DEVELOPMENT, & TOURISM
AND
WATER & LAND**

**SCR 89 / SR 75
REQUESTING THAT THE HAWAII STATE ENERGY OFFICE AND OFFICE OF
PLANNING AND SUSTAINABLE DEVELOPMENT DEVELOP A PLAN TO IMPLEMENT
A WASTE-TO-ENERGY TECHNOLOGY SOLUTION**

Monday, April 1, 2024
1:15 PM
State Capitol, Conference Room 229

Greg Shimokawa
Director, Renewable Acquisition
Hawaiian Electric

Dear Chair DeCoite, Chair Inouye, Vice Chair Wakai, Vice Chair Elefante, and
Members of the Committees,

My name is Greg Shimokawa and I am testifying on behalf of Hawaiian
Electric, commenting with concerns on SCR 89 / SR 75.

SCR 89 / SR 75 requires the Hawaii State Energy Office and Office of
Planning and Sustainable Development to develop a plan to implement a waste-to-
energy solution that will reduce the need for landfills on each island and help the
State achieve its solid waste stream reduction and renewable energy generation
goals. While Hawaiian Electric agrees that new renewable energy projects are
imperative to reach the goal of achieving 100% renewable energy by 2045, the
Company strongly urges the Hawaii State Energy Office and Office of Planning and
Sustainable Development to consider the current challenges of waste-to-energy
facilities in the development of their plan.

Hawaiian Electric also requests that the Hawaii State Energy Office and Office of Planning and Sustainable Development specify how the energy generated by these facilities would be used in the development of its report. If the intent is to sell the energy to Hawaiian Electric, any such project would need to bid into Hawaiian Electric's request for proposals for renewable energy or qualify for a waiver subject to approval by the Public Utilities Commission ("PUC"), and would not be guaranteed a contract with the utility. Competitive bidding is required in accordance with the Competitive Bidding Framework set forth by the PUC and helps ensure that the projects selected to sell renewable energy to the utility will provide the best benefits to our customers.

Hawaiian Electric currently purchases power from the 69-megawatt H-POWER waste-to-energy plant owned by the City & County of Honolulu. The plant is capable of burning approximately 3,000 tons of garbage per day to produce steam that drives two steam turbine generators, which provides the electricity that is sold to Hawaiian Electric and distributed to customers. A shortage of trash has hampered the ability of H-POWER to meet its contractual obligations. As a result, the city was required to pay \$6.2 million from 2013 to 2016 to cover the penalties and liquidated damages.¹ Increased recycling and reuse efforts may further limit available trash. Hawaiian Electric requires future firm renewable energy projects to have a robust and reliable fuel supply plan, including on-island fuel reserves, to meet contractual power supply obligations and most importantly, to reliably serve our customers.

Hawaiian Electric urges the consideration of these significant concerns regarding the planning and operation of waste-to-energy facilities in the State.

Thank you for this opportunity to comment on SCR 89 / SR 75.

¹ <https://www.civilbeat.org/2022/04/a-bill-to-finance-a-new-waste-to-energy-plant-on-oahu-raises-questions/>



Environmental Caucus of The Democratic Party of Hawai'i

March 31, 2024

To: Senate Committee on Energy, Economic Development, and Tourism
Hon. Lynn DeCoite, Chair
Hon. Glenn Wakai, Vice Chair
and
Senate Committee on Water and Land
Hon. Lorraine R. Inouye, Chair
Hon. Brandon J.C. Elefante, Vice Chair

Re: SCR 89/SR 75 relating to Waste-to-Energy Power Production
Hearing: Monday, April 1, 2024, 1:15 p.m., Room 224 & videoconference
Position: **Strong opposition**

Aloha, Chairs DeCoite and Inouye, Vice Chairs Wakai and Elefante, and Members of the Committee on Energy, Economic Development and Tourism, and the Committee on Water and Land:

The Environmental Caucus of the Democratic Party of Hawai'i comprises some 7,500 politically active members of Hawai'i's majority political party. We respectfully, but **strongly oppose** these proposed resolutions. They request Hawai'i's power production industry in every county to increase the use of solid waste in incineration for power production. The proposed resolutions call this a means of reducing our rapid increases in landfill use.

No one can argue that we cannot continue loading up landfills indefinitely with materials that otherwise can be recycled and reused. If not now, WHEN will we, as a State, make changes in our practices regarding our landfills?

But solid waste is DIRTY waste that creates far more air pollutants per unit volume than coal. We must RETHINK, REPURPOSE, REUSE, and RECYCLE our solid waste a whole lot more than we are doing now. These resolutions would take us in the wrong direction.

On behalf of the Environmental Caucus, we thank you very much in advance for your right decisions to defer these misdirected resolutions. We must think differently on these issues. Thank you for the opportunity to testify on them.

Melodie Adyja legislativepriorities@gmail.com

Alan B. Burdick burdick808@gmail.com

Co-Chairs, Environmental Caucus



Aloha Committee Chair and Members,

I am testifying on behalf of Kauai Climate Action Coalition to urge you to oppose SR75. We are a group of over 150 Kauai residents who recognize the imminent and devastating effects of the climate crisis, and works through education, direct action, and supporting effective policy to mitigate this crisis and create a sustainable, thriving, and equitable future.

[Burning trash](#) (and landfilling toxic ash) is the most expensive and polluting way to manage waste or to make energy. It pollutes more than burning coal and is worse than simply landfilling trash without burning it first.

Burning trash does not replace fossil fuels. It IS fossil fuels because much of the energy comes from burning plastics, which are made from oil and gas (fossil fuels) and are very toxic to burn. Incineration conflicts with the state's climate change goals and the peoples' constitutional right to a clean and healthful environment under Article XI, Section 9 of the Hawai'i Constitution.

Kaua'i is exploring "waste-to-energy" options for a second time. Last time, it was apparent that no one would build such a facility so small as the island needs, because it's uneconomical. At the current rate, Kekaha Landfill will be full by 2030 even with a vertical expansion, and the new landfill won't be ready until about 2033. No "waste-to-energy" solution can happen soon enough to avoid the need to cut waste in half with Zero Waste strategies to close this gap and avoid a crisis.

Please oppose SR75.

Helen A Cox, Chair

Kaua`i Climate Action Coalition

SR-75

Submitted on: 3/31/2024 7:55:07 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Susan B Roberts Emery	Testifying for Green Party of Hawai'i	Oppose	Written Testimony Only

Comments:

Aloha Chairs, Vice Chairs , and Honorable Members of Committees,

I write today to remind you that Green Party of Hawai'i stands in Strong opposition to SR75. We are watching the legislature closely and this is sheer madness to think burning our trash is a good idea. The damage to our air, our bodies, and our Islands outweighs Any benefit from SR75.

Stand with our communities and vote no on SR75,

Mahalo,

Susan RobertsEmery

Co chair GPH

Comments before
April 1, 2024 Senate Committee on Energy,
Economic Development, and Tourism and Senate
Committee on Water and Land

OPPOSING
Senate Concurrent Resolution 89 /
Senate Resolution 75
Relating to Burning Trash on Every Island

Mike Ewall, Esq.
Founder & Director
Energy Justice Network
215-436-9511
mike@energyjustice.net
www.EnergyJustice.net

Aloha Honorable Committee members. Energy Justice Network is a national organization supporting grassroots groups working to transition their communities from polluting and harmful energy and waste management practices to clean energy and zero waste solutions. In Hawai'i, we've been working with residents who first sought our support in 2015. Since mid-2022, we have supported residents in forming the Hawai'i Clean Power Task Force and Kokua na Aina to address numerous energy and waste issues in the state.

We urge that you oppose SCR 89 and SR 75.

We understand the appeal of thinking that there's a magic technology that makes waste go "away," turning it into useful things like energy. Sorry to shatter your illusions, but that technology does not exist and will not exist.

There is no such thing as "waste-to-energy." When burned, every 100 tons of trash is turned into about 30 tons of toxic ash. The rest goes up the smokestack, resulting in large amounts of air pollution. There is no "waste-to-energy" technology that violates the laws of physics by turning matter (waste) into energy. Yes, modest amounts of energy can be extracted while burning trash, but recycling and composting the same materials in the waste stream actually *saves* 3 to 5 times more energy than an incinerator can "create" by destroying these materials. For this reason, some of us call incinerators waste-OF-energy facilities.

So-called "waste-to-energy" (WTE) includes conventional trash incineration, but could also mean experimental technologies like gasification, pyrolysis, and plasma arc, or various versions of "waste-to-fuels" (WTF) technologies. The multiple-stage types like gasification, pyrolysis, and WTF technologies are demonstrated many times over to be failed technologies that cannot operate continuously, cannot operate at commercial scale, cannot handle heterogeneous waste streams like municipal solid waste, and invariably end up failing technically, economically, or both. Even one of the more "successful" pyrolysis operations, Agilyx in Tigard, Oregon, operating just on specific plastics, is closing this month without explanation after just five years of operation.

All of these technologies destroy materials, create air pollution, increase toxicity by creating new toxic chemicals like dioxins/furans and polycyclic aromatic hydrocarbons, and spread around existing toxic chemicals like PFAS/PFOA and toxic metals (mercury, lead, arsenic, cadmium, chromium, etc.). Every one of them creates greenhouse gas pollution because there is combustion at some stage of the process if energy is being produced. This is unavoidable, as there are no economically viable methods to capture and sequester the carbon dioxide (CO₂). Even after the best pollution controls are used for other pollutants, the emissions of most pollutants are greater than if coal were being burned.

No one has built a commercial-scale trash gasification or pyrolysis facility in the U.S., and despite hundreds of attempts, no trash incinerator has been built at a new site since 1995 due to high costs and community

opposition. There is no way any community in the state would accept one.

[Burning trash](#) (and landfilling toxic ash) is the most expensive and polluting way to manage waste or to make energy. As demonstrated with the data reported by states and facilities to U.S. EPA databases, [trash incineration pollutes more than burning coal](#), and is [worse than simply landfilling trash](#) without burning it first. A 2021 [life cycle analysis](#) conducted for the County of Hawai'i found that incineration of paper and plastics at the H-POWER incinerator on O'ahu is the most harmful option for health and environment, that landfilling is far less damaging, and that recycling those materials (even after barging them thousands of miles to market) is a huge health and environmental benefit.

Contrary to the misinformation in these resolutions, burning trash in Hawai'i does not replace fossil fuels. It *is* fossil fuels because much of the energy comes from burning plastics, which are made from oil and gas (fossil fuels), and is very toxic to burn. Because trash incineration counts as [renewable energy](#) under state law, it does not replace oil burning, but replaces solar and geothermal by competing within this state renewable energy mandate. After all, it's solar (with storage to make it "firm" energy) and geothermal that are being developed by HECO and KIUC to comply with the state's Renewable Portfolio Standard law as their [annual reports](#) demonstrate.

The state's only trash burner, the H-POWER incinerator in Kapolei on O'ahu, is a [huge air polluter](#), among the largest in the state. See the attached factsheet with their emissions data as reported to HI DOH and U.S. EPA.

Incineration conflicts with the state's climate change goals and the peoples' constitutional right to a clean and healthful environment under Article XI, Section 9 of the Hawai'i Constitution.

Incineration and other so-called "waste-to-energy" technologies are considered unacceptable in a [Zero Waste](#) system, which is the better way to manage materials to preserve landfill space. Zero waste strategies – a variety of local and state policies, programs, and related infrastructure – produce many times more jobs than burning or burying trash or ash.

There is one technology that can appropriately fit under the "waste-to-energy" umbrella that is acceptable in a Zero Waste system, and that is anaerobic digestion (AD). AD is basically like composting within a vessel, so that methane is formed in the absence of oxygen, breaking the waste down and reducing the weight and volume. Methane gas can then be used for energy without having to burn the waste itself. However, it is only appropriate where dirty feedstocks like sewage sludge or the organic fraction of mixed municipal waste is digested to stabilize it before landfilling the digested material ("digestate"), in order to prevent the formation of gases in the landfill itself. For relatively clean organic materials like food scraps, yard waste, and animal wastes, Zero Waste experts recommend using aerobic composting to return that material to the land without the greater cost of AD, which requires an aerobic composting step to "finish" the digestate, anyway, so that it can be used as soil amendment.

Each county faces its own specific situation:

[Kaua'i](#) is already exploring "waste-to-energy" options for a second time. Last time, it was apparent that no one would build such a facility so small as the island needs, because it's uneconomical. At the current rate, Kekaha Landfill will be full by 2030 even with a vertical expansion, and the new landfill won't be ready until about 2033. No "waste-to-energy" solution can happen soon enough to avoid the need to cut waste in half with Zero Waste strategies to close this gap and avoid a crisis.

[O'ahu](#) is already home to one of the nation's largest incinerators, H-POWER, and does not have enough waste

to feed it. It is operating at only about 2/3rds capacity, and the county pays a penalty fee for not feeding it enough to burn, which is a disincentive to reduce, reuse, recycle or compost.

Maui does not produce enough waste to support a new incinerator. Central Maui Landfill has room until 2039 and adjacent land for expansion. The county is already working on plans to acquire the land for this purpose.

Hawai'i Island does not produce enough waste to support a new incinerator. Multiple incinerator proposals have been rejected in the past. Last year's waste solicitation for sustainable infrastructure requests ([RFI #4444](#)) specifically rejected waste combustion proposals. West Hawaii Sanitary Landfill has room until 2050, is in an area not bothering local residents, and there is plenty of space to expand it.

While there has been talk about barging trash and ash between islands, this would be prohibitively expensive. However, it's clear that only O'ahu generates enough trash to even support an incinerator, but not enough to justify additional capacity when the county cannot meet the capacity of H-POWER as it stands. On all other islands, waste generation is too small to support a new incinerator of any sort. Especially with new incinerator regulations coming into effect soon that will require more expensive pollution control systems, no company would build a facility small enough to be sized for any other island in the state. In fact, Covanta, the operator of H-POWER and the largest incinerator company in the U.S., has sold off or closed its three smallest incinerators in 2019, and backed out of the operating contract at another one of their smaller incinerators in 2023. Any company with a real track record in this industry is not interested in building something so small.

We invite you to do your diligence about "waste-to-energy" technologies. We are available to address any questions you have about incineration, other "waste-to-energy" technologies, landfills, and Zero Waste solutions.

When it comes to understanding how incinerators compare to landfills, in addition to reviewing the study cited above, commissioned by the County of Hawai'i, we encourage you to review similar studies looking beyond just paper and plastics, but at the full municipal solid waste stream. See: <https://www.energyjustice.net/files/incineration/DelcoLCA.pdf> for a summary of one of the latest, and links to sources.

Also, please review the materials at <https://www.energyjustice.net/incineration> to get a more complete picture of the industry.

Mahalo for your consideration.

How polluting is the H-POWER trash incinerator?

H-POWER is a city/county-owned trash incinerator operated by Covanta, the nation’s largest trash incineration corporation. They’re the #1 source of mercury and hydrochloric acid pollution on O’ahu, accounting for 24% and 95% of the total air emissions from industrial sources on the island, respectively.

H-POWER emissions data reported to the state and the U.S. EPA shows that the H-POWER trash incinerator released:

Pollutant (in pounds except CO2e)	2021	2020	Health Effects
Global Warming Pollution (in tons of CO ₂ equivalents)	722,335	756,872	Extreme weather, disease, crop damage, species extinction
Nitrogen Oxides	1,676,012	1,987,447	triggers asthma attacks, chronic respiratory disease and stroke
Particulate Matter	248,126	234,798	heart attacks, stroke, irregular heartbeat, aggravated asthma, decreased lung function, difficulty breathing
Fine Particulate Matter	220,684	203,668	same as above, but worse, get deep into lungs and into blood stream
Hydrochloric Acid	32,800	25,600	irritates eyes, skin, and nose, damages lungs
Hydrofluoric Acid	405	421	lung, liver, and kidney damage, skeletal fluorosis (brittle bones)
Sulfur Dioxide	36,106	3,542	asthma attacks; chronic respiratory and heart diseases; stroke
Carbon Monoxide	289,800	161,402	headaches and dizziness; increases lifetime risk of heart disease
Volatile Organic Compounds	11,886	1,952	Cancer; eye, nose and throat irritation, headaches, loss of coordination and nausea, liver, kidney & nervous system damage
Ammonia	14,005	10,364	nose and throat irritation
Formaldehyde		36.5	eyes, skin, and nose irritation; increases lifetime risk of cancer
Lead	9.1	15.3	damages nervous system and kidneys, lowers IQ, increases likelihood of antisocial behavior
Mercury	10.82	11.91	damage to nervous, digestive, and immune systems, lowers IQ
Cadmium	29.3	5.26	kidney disease; lung cancer
Arsenic		1.64	lung, skin, bladder, and liver cancers; irritation of the skin and mucous membranes and effects in the brain and nervous system
Dioxins	0.02		Birth defects, sexual reproductive disorders, endometriosis, cancers, immune system damage, learning disabilities, infertility...

To put the smaller numbers in perspective, dioxins are the most toxic chemicals known to science, 140,000 times more toxic than mercury, for which there is also no known safe level of exposure. The incinerator reported releasing 11-12 lbs of mercury into the air per year, not counting that which gets into the air and water via the ash. A highly cited Minnesota study found that if approximately one gram of mercury (the amount in a single fever thermometer) is deposited to a 20-acre lake each year from the atmosphere, this small amount, over time, can contaminate the fish in that lake to the point where they should not be eaten.¹ 11.5 pounds of mercury equals 5,216 grams. That means the incinerator, in a typical year, is releasing enough mercury sufficient to keep over 5,000 20-acre lakes so contaminated that the fish are not safe to eat. Of course the ocean is much, much larger, yet the Hawai’i Department of Health still [cautions](#) pregnant women, nursing mothers, and young children to limit their fish consumption because of mercury.

But what about buildings and mobile sources? Aren’t they a bigger source of pollution to worry about?

Yes, for some pollutants, the fossil fuels burned to heat buildings or move vehicles are the largest share of pollution compared to industry. However, the incinerator is a largest polluter among industrial sources, and is a big share of the total even when compared to everything (vehicles, buildings, etc.). While mobile sources and buildings are typically a larger share of emissions attributable to oil and gas burning (nitrogen oxides, particulate matter, carbon dioxide, carbon monoxide, and VOCs), incineration accounts for the lion’s share of acid gases and toxic emissions of heavy metals, dioxins and other toxic chemicals.

¹ “One Gram of Mercury Can Contaminate a Twenty Acre Lake: An Clarification of This Commonly Cited Statistic,” Summary Prepared by Interstate Mercury Education and Reduction Clearinghouse, 2004. www.newmoa.org/prevention/mercury/mercurylake.pdf



To: The Senate Committee on Energy and Economic Development, and Tourism (EET)
and
The Senate Committee on Water and Land (WTL)
From: Sherry Pollack, 350Hawaii.org
Date: Monday, April 1, 2024, 1:15pm

In strong opposition to SCR89/SR75

Aloha Chairs DeCoite and Inouye, Vice Chairs Wakai and Elefante, and members of the EET and WTL committees,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org **strongly opposes SCR89/SR75** that requests the Hawaii State Energy Office and Office of Planning and Sustainable Development to develop a plan to implement a waste-to-energy technology solution.

Waste-to-energy is a greenwashing term used by the industry for waste/trash incineration. Despite claims, there is nothing “clean,” “renewable,” or “sustainable” about it. Trash incineration is one of the most expensive and polluting ways to make energy or manage waste. It's more polluting than coal (especially for the climate) and produces 10 times fewer jobs than reuse, recycling and composting.¹

Regardless of what is being burned (mixed municipal solid waste, plastic, etc.), waste incineration creates and/or releases harmful chemicals and pollutants into the air. Incinerators are really “trash-to-toxic ash-and-toxic-air-pollution” facilities. Studies have found in communities around incinerators an increase in pre-term babies and babies born with spina bifida or heart defects, as well as cancers, including childhood cancers.² Moreover, incinerators do not avoid landfills. For every 100 tons of trash burned, 30 tons become toxic ash that goes to landfills.³ The other 70 tons become air pollution.

We don't need technologies that threaten public health, the environment, and contribute to climate breakdown. Incineration is a false solution that the legislature should firmly reject. Communities on Oahu are already exposed to H-POWER's toxic emissions. We need to move away from these harmful technologies, not towards them. Our money is better spent on true

¹ <https://tellus.org/tellus/publication/more-jobs-less-pollution-growing-the-recycling-economy-in-the-u-s/>

² <http://www.energyjustice.net/incineration/healthstudies.pdf>

³ <http://www.energyjustice.net/incineration/ash>

clean power technology with new battery storage. Real solutions must focus on producing less waste, manufacturing less plastic, and using effective and proven methods of recycling—not finding new ways to incinerate these materials.

Thank you for the opportunity to testify.

Sherry Pollack
Co-Founder, 350Hawaii.org

SR-75

Submitted on: 3/31/2024 11:16:58 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Jackie Keefe	Individual	Comments	Remotely Via Zoom

Comments:

Aloha Chairs DeCoite and Inouye, Vice Chairs Wakai and Elefante, and Members of the Committees on Energy, Economic Development, & Tourism and Water & Land,

My name is Jackie Keefe and I am a resident of Lahaina.

I am providing comments only on this resolution because I both support the overall idea and have reservations about what is *not* said.

I *do* believe that waste-to-energy systems are the way forward, especially in Hawai'i! We need to take huge steps towards a circular economy, and the kaiaulu is and has been ready for that.

My concern is the use of the example of H-Power in the resolution. H-Power relies on incineration to generate that energy, and there are multiple "up-and-coming, progressive waste-to-energy technologies that show greater promise with fewer caveats, such as the concerns about the toxic gasses that come from trash incinerators." Incineration facilities are also costly to operate.

I think that is important to note that community members who live aloha 'aina acknowledge that H-Power should not be a permanent solution, but works for us right now since it's the only waste-to-energy method that we have. As noted in the resolution, H-Power began operations in the 1990s. We should be thinking forward, not asking for the expansion of a technology from over 3 decades ago!

Maui County also has terrible recycling infrastructure, and everyone will tell you that (like with most things) "it's because of cost." Most of our recyclables are shipped off island, including cardboard. Circular economy thinking would mean things like:

- partnering with local farmers and composters to utilize cardboard rather than ship it to China (unsure if this is still the case; information I found was from early 2023)
- incentivizing business start-ups whose primary goal is reusing recyclables
- ensuring the hotels participate in food waste collection and properly sort recycling

I would like to request the addition of a (3) to the resolution:

"Use modern solutions that will not contribute to air pollution in the State."

While I would hope that this does not need to be said, we can never be too sure.

I will also send a direct email with the links to some articles that I have referenced here.

Thank you for your consideration.

Jackie Keefe

State Senate Candidate

Hawai'i District 6

Jack

Hö

jackieforhawaii.org

SR-75

Submitted on: 3/31/2024 11:34:23 AM

Testimony for EET on 4/1/2024 1:15:00 PM

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

Comments:

Dear Chairs DeCoite and Inouye, Vice Chairs Wakai and Elefante, and Committee members,

I support the intention of SR75, "REQUESTING THAT THE HAWAII STATE ENERGY OFFICE AND OFFICE OF PLANNING AND SUSTAINABLE DEVELOPMENT DEVELOP A PLAN TO IMPLEMENT A WASTE-TO-ENERGY TECHNOLOGY SOLUTION." and have recommendations to ensure that future waste-to-energy (W2E) solutions that we invest in contribute effectively to our sustainability goals.

While H-Power's W2E operation has several undesirable consequences, new W2E technology mitigates these concerns. Many nations have deployed effective W2E solutions. [Sweden](#), for instance, leverages aggressive recycling and W2E to reduce landfill input by nearly 100%.

New W2E technology allows us to transform our waste management and energy systems. Converting unavoidable solid waste to energy using the latest gasification solutions allows for emission-free energy generation while dramatically reducing landfill input. If done right, W2E can transform waste into valuable resources, reduce our dependence on landfills, and avoid the undesirable impacts of landfilling.

Of course, this requires that we do the following. (I recommend the essence of these be incorporated into the resolution.)

- **Continue efforts to reduce waste, recycle, and upcycle.** A focus on creating a more circular mindset vs one that ignores the entire 'cradle to cradle' lifecycle of our solutions can do much to reduce solid waste.
- **Avoid efforts to create new waste streams for energy generation.** Our W2E solutions must not create perverse incentives, e.g., shipping in waste, avoiding recycling, or growing biomass for energy.
- **Ensure that the W2E solutions effectively mitigate undesirable outcomes of the overall system.** Environmental, social, and economic impacts must be balanced to ensure we don't create new problems with W2E.

Investing in next-generation W2E is a forward-thinking strategy that, if done right, can contribute to a sustainable and resilient future. SR75 can help us objectively understand what the new technology can offer and ensure that we fully leverage its potential value to Hawaii.

Sincerely,

Noel Morin

Climate, Sustainability, and Resilience Advocate

Hilo, Hawaii

Relevant information:

- www.nytimes.com/2018/09/21/climate/sweden-garbage-used-for-fuel.html?ugrp=u&unlocked_article_code=1.g00.XHVY.Plj1Mr6PgsmM&smid=url-share
- smartcitysweden.com/focus-areas/energy/waste-to-energy/
- energynews.us/2013/10/17/is-burning-garbage-green-in-sweden-theres-little-debate/

SR-75

Submitted on: 3/28/2024 11:25:48 PM

Testimony for EET on 4/1/2024 1:15:00 PM

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

Comments:

Aloha legislators,

With O'ahu paying stiff "put or pay" penalties, and waste-to-energy defeated twice in the past on Hawai'i Island, I don't see any reason to support this reso.

mahalo, Cory Harden

SR-75

Submitted on: 3/31/2024 7:19:57 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Catherine Young	Individual	Oppose	Written Testimony Only

Comments:

I love clean air. Let's not make life worse in Hawaii by polluting its air on each island.

SR-75

Submitted on: 3/31/2024 8:43:49 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Diane Ware	Individual	Oppose	Written Testimony Only

Comments:

Attention all,

Burning waste and/trees is not only not renewable it leads to harmful pollution. I know I feel any smoke on my lungs and skin and sometimes need treatment.

[Burning trash](#) (and landfilling toxic ash) is the most expensive and polluting way to manage waste or to make energy. It pollutes more than burning coal, and is worse than simply landfilling trash without burning it first.

* There is no such thing as "waste-to-energy." When burned, waste is turned into toxic ash and air pollution. No company is violating the laws of physics and turning matter into energy.

* Burning trash does not replace fossil fuels. It IS fossil fuels because much of the energy comes from burning plastics, which are made from oil and gas (fossil fuels), and is very toxic to burn.

Malama Pono please,

I live in Ka'u Volcano and suffer from fireplace emissions.

SR-75

Submitted on: 3/31/2024 11:04:54 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Elizabeth Laliberte	Individual	Oppose	Written Testimony Only

Comments:

Aloha Elected Reps,

I strongly oppose burning trash. This is an extremely bad idea. It's also toxic to the air and water. Would you like to live next to a waste incinerator? If your answer is NO, it's because you know it's harmful to human health. No one should live next to an incinerator because they should not exist.

Hawaii needs actual solutions to solve the problem of trash disposal. An effective solution should start with legislating that corporations reduce packaging and use compostable packaging when possible. If they refuse to change their packaging they should be forced to take it back and deal with it themselves. It's unfair that consumers are left holding the unsustainable, unrecyclable plastic bottles and boxes.

If you are thinking that making corporations do something like this is next to impossible then raise taxes on them and use the money to build recycling facilities on the island. This will reduce waste and creat jobs. Do something actually good and helpful for the land, and for your constituents. Burning trash isn't this. No waste incinerators for Hawaii!

Mahalo and aloha,

Liz Laliberte

Hilo, HI

Aloha Chairs DeCoite and Inouye, Vice Chairs Wakai and Elefante, and Committee Members,

I am writing to submit testimony **OPPOSING SR 75**.

Hawai'i is struggling with trash, and currently is also struggling with energy. Right now, we on Hawai'i Island are being asked to reduce our energy use as production is down.

However, as several studies, including one by our very own Hawai'i County, have proven, **burning trash as proposed by SR 75 is the most expensive and polluting way to manage waste or make energy.**

1. Burning trash as proposed by SR 75 results in pollution and net economic harm.

In its technical memorandum dated February 20, 2023, for the County of Hawai'i's Integrated Solid Waste Management System Life Cycle Assessment, concluded that:

- Incineration of paper and plastics at the H-POWER incinerator on O'ahu is the more harmful to health and environment than recycling or landfilling;
- Recycling of paper and plastic, even after transporting thousands of miles to market, is a huge health and environmental benefit; and
- "Based on the data, to reduce overall emissions produced by thte solid waste stream would be to continue investing in improving recycling operations and the promotion of waste reduction in the community."

Far from being a solution, burning trash through operations such as H-POWER causes significant emissions, as it results in toxic ash and air pollution. It does not magically turn matter into energy, as Table 1 (below) from the report documents:

Table 1. Summary of Total eCO2 Emissions Produced in 2021

Scenarios:	Scenario 1: Recycling	Scenario 2: WTE, H-Power	Scenario 3: Landfilling, WHSL
Materials:	(Tons of eCO2 emissions for 2021 tonnage of collected material)		
Office Paper	-301	137	265
Mixed Paper	-1,559	506	1,306
Carboard/OCC	-4,213	2,293	3,112
#2 Plastics (HDPE)	-38	55	1
#5 Plastics (PP)	-26	37	1
Mixed Scrap Metals	-2,789	N/A	31
Total Emissions:	-8,926	3,028	4,716

Table 2 (below) shows that **burning trash (WTE, H-POWER) results in overall economic harm**, as it results in toxic ash and air pollution. In Hawai'i County, there are numerous existing pathways to divert paper, such as newspaper and cardboard, from landfills.

Table 2. Summary of Economic Benefit/(Harm) for Each Scenario

Scenarios:	Scenario 1: Recycling	Scenario 2: WTE, H-Power	Scenario 3: Landfilling, WHSL
Materials:	(per ton of material)		
Office Paper	\$649	(\$172)	(\$344)
Mixed Paper	\$656	(\$119)	(\$322)
Carboard/OCC	\$581	(\$160)	(\$235)
#2 Plastics (HDPE)	\$434	(\$112)	(\$6)
#5 Plastics (PP)	\$449	(\$112)	(\$6)
Mixed Scrap Metals	\$1,836	N/A	(\$6)

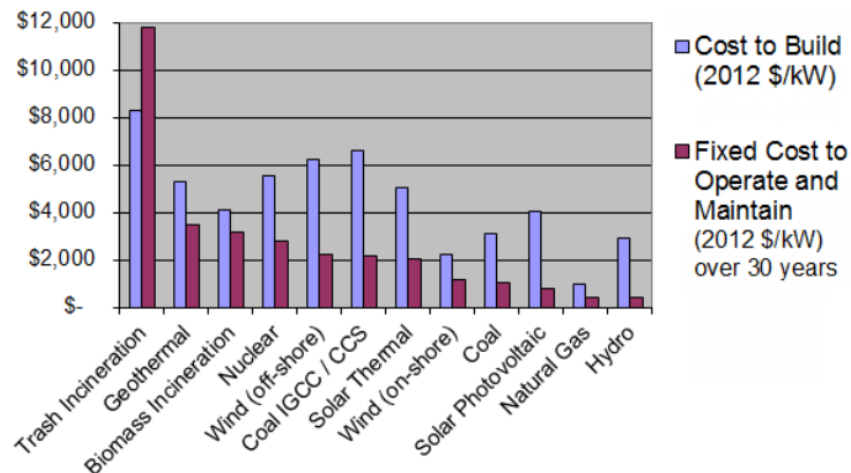
WTE = waste to energy

As a result, trash incineration conflicts with our state's climate change goals and our right as the people of Hawai'i to a clean and healthful environment under Article XI, Section 9, of our State Constitution.

2. Burning trash as proposed by SR 75 is the most expensive way to generate energy.

A 2013 report by the Energy Information Administration, found that trash incineration was significantly more expensive to build and to maintain than 11 other forms of energy production:

Trash Incineration is the Most Expensive Way to Make Energy



Further, SR 75 will waste time and resources because

- Hawai'i County does not produce enough waste to support a new incinerator, and transportation across the island to a single large incinerator will defeat the purpose.
- Far from replacing fossil fuels, burning trash is a fossil fuel because much of the energy comes from burning plastics, which are made from petroleum.
- Last year's waste solicitation for sustainable infrastructure requests (RFI #4444) specifically rejected waste combustion proposals. Worse, because it is considered as renewable energy under state law, it competes with solar and geothermal within the state's renewable energy mandate.
- West Hawai'i Sanitary Landfill, pronounced "a modern, well operated, and environmentally sound facility that provides effective and efficient disposal" for materials that can't be cost-effectively diverted by the Hawai'i County Life Cycle Assessment, has room until 2050 and is not bothering local residents.
- Multiple incinerator proposals have already been rejected in the past.

Burning trash is not a solution, but simply compounds the problem, by needlessly producing pollution, drawing limited resources away from options that are actually viable and beneficial, and wasting precious time.

I respectfully urge you to **OPPOSE SR 75**.

Sincerely yours,

Michele Mitsumori

A resident of Hilo, Hawai'i 96720

LATE

SR-75

Submitted on: 3/31/2024 2:54:36 PM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Keith Neal	Individual	Oppose	Written Testimony Only

Comments:

Aloha Chairs DeCoite and Inouye, and Vice Chairs Wakai and Elefante, and members of the EET and WTL committees.

Strongly oppose SCR89 / SR75.

Waste-to-Energy schemes are polluting to air, the toxic ash pollutes the land, and water. H Power incinerator in Kapolei on O'ahu does not operate with Clean Air standards installed and only does so with many regulatory wavers. H Power pollutes.

Furthermore, incineration conflicts with the state's climate change goals and the peoples' constitutional right to a clean and healthful environment under Article XI, Section 9 of the Hawai'i Constitution.

Waste-to-Energy is toxic, expensive and dangerous.

Recycling, repurposing, and promoting a circular economy are far better and offers more jobs.

Sincerely,

Keith Neal

LATE

SR-75

Submitted on: 3/31/2024 5:12:44 PM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Leigh Knittle	Individual	Oppose	Written Testimony Only

Comments:

Aloha,

I strongly oppose this measure as burning trash pollutes more than burning coal. I agree we need waste management strategies and solutions, however, not at the cost of air quality. We cannot put a price on having clean air to breathe as this can greatly affect individual and community health, and exacerbate health problems for those who already have respiratory conditions.

Burning trash does not replace fossil fuels. It IS fossil fuels because much of the energy comes from burning plastics, which are made from oil and gas (fossil fuels), and is very toxic to burn. Because trash incineration counts as [renewable energy](#) under state law, it does not replace oil burning, but replaces solar and geothermal by competing within this state renewable energy mandate.

A 2021 [life cycle analysis](#) conducted for the County of Hawai'i found that incineration of paper and plastics at the H-POWER incinerator on O'ahu is the most harmful option for health and environment, that landfilling is far less damaging, and that recycling those materials (even after barging them thousands of miles to market) is a huge health and environmental benefit.

Incineration conflicts with the state's climate change goals and the peoples' constitutional right to a clean and healthful environment under Article XI, Section 9 of the Hawai'i Constitution.

Incineration and other so-called "waste-to-energy" technologies are considered unacceptable in a [Zero Waste](#) system, which is the better way to manage materials to preserve landfill space. Zero waste strategies also produce many times more jobs than burning or burying trash or ash.

No one has built a commercial-scale trash gasification or pyrolysis facility in the U.S., and despite hundreds of attempts, no trash incinerator has been built at a new site since 1995 due to high costs and community opposition. There is no way any community in the state would accept one.

Island-specific points:

Kaua'i already exploring "waste-to-energy" options for a second time. Last time, it was apparent that no one would build such a facility so small as the island needs, because it's uneconomical. At the current rate, Kekaha Landfill will be full by 2030 even with a vertical expansion, and the new landfill won't be ready until about 2033. No "waste-to-energy" solution can happen soon

enough to avoid the need to cut waste in half with Zero Waste strategies to close this gap and avoid a crisis.

O'ahu is already home to one of the nation's largest incinerators, H-POWER, and does not have enough waste to feed it. It is operating at only about 2/3rds capacity, and the county pays a penalty fee for not feeding it enough to burn, which is a disincentive to reduce, reuse, recycle or compost.

Maui does not produce enough waste to support a new incinerator. Central Maui Landfill has room until 2039 and adjacent land for expansion. The county is already working on plans to acquire the land for this purpose.

Hawai'i does not produce enough waste to support a new incinerator. Multiple incinerator proposals have been rejected in the past. Last year's waste solicitation for sustainable infrastructure requests ([RFI #4444](#)) specifically rejected waste combustion proposals. West Hawaii Sanitary Landfill has room until 2050, is in an area not bothering local residents, and there is plenty of space to expand it.

Thank you for valuing my vote and considering this information.

Warm Regards,

Leigh Knittle

LATE

SR-75

Submitted on: 3/31/2024 7:46:02 PM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
claudia rohr	Individual	Oppose	Written Testimony Only

Comments:

COMMENTS OPPOSED TO SR75

Dear Legislators- Incineration is NOT the solution. Solid waste disposal should be home rule as it impacts our right to live in a clean, healthful and life sustaining environment. Incineration contracts have bankrupted county governments. There is not enough solid waste to make it economical and the thought that economic need might lead to importing solid waste is a distasteful proposition.

Claudia Rohr, Hilo, HI

LATE

SR-75

Submitted on: 3/31/2024 10:47:37 PM

Testimony for EET on 4/1/2024 1:15:00 PM

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

Comments:

Aloha

I STRONGLY OPPOSE SCR89 / SR75!

There is enough scientific evidence to show this is bad for the air, expensive, and backward.

There are better options being proposed, let's start listening to bioremediation efforts that heal the land instead.

Thank you
Maki Morinoue
Hawai'i Island, Holualoa
96725

SENATE COMMITTEE ON ENERGY, ECONOMIC DEVELOPMENT, AND TOURISM
SENATE COMMITTEE ON WATER AND LAND
Hearing on April 1, 2024 at 2:15 pm

OPPOSING SCR 89 AND SR 75

My name is John Kawamoto, and I oppose SCR 89 and SR 75.

These resolutions are based on the false assumption that waste-to-energy technology, particularly H-POWER, offers a clean, renewable avenue for waste disposal. In reality, burning trash is the most expensive and polluting way to manage waste or to make energy. It pollutes more than burning coal, which is considered to be a dirty fuel, and it is worse environmentally than simply landfilling trash without burning it first.

On a molecular level, waste-to-energy technology does not convert matter into energy. Rather, it simply rearranges molecules of matter. The molecules of waste are rearranged into molecules of air pollution and toxic ash. That process generates energy.

These resolutions inaccurately emphasize the energy that is produced by waste-to-energy technology, while ignoring the pollutants that are also produced.

For example, H-POWER generates tons of air pollution every day that it operates, as well as toxic ash. When all of the products of burning are considered -- including the pollutants -- waste-to-energy is dirtier than oil by comparison, and oil is considered to be one of the dirtiest forms of energy.

Hawaii has adopted a goal of net-negative greenhouse gas emissions by 2045 -- a goal that was passed by the Legislature. It is a lofty and worthy goal, and it requires many programs to be adopted that reduce emissions. Undoubtedly, it will be very difficult to achieve. Since waste-to-energy facilities emit such high levels of greenhouse gases, these resolutions are inconsistent with Hawaii's net-negative emissions goal.

Instead of backsliding, Hawaii should be moving more quickly to a clean, renewable energy future.

I urge the joint committee to hold these resolutions.

LATE

SR-75

Submitted on: 4/1/2024 8:17:41 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Mary Kathryn Afable	Individual	Oppose	Written Testimony Only

Comments:

Aloha,

I oppose the incineration of municipal waste (trash) by any means, including the failed technology called pyrolysis. The incineration of municipal waste is a no-win approach because it pollutes our air and land, and burdens taxpayers and state and local governments with high costs for decades.

Incinerators Pollute our Environment

Burning municipal waste and landfilling toxic ash is the most expensive and polluting way to manage waste or to make energy. It pollutes more than burning coal, and is worse than simply landfilling trash without burning it first. There is no such thing as "waste-to-energy." When burned, waste is turned into toxic ash and air pollution. Soil is also contaminated when toxic particles in the air that fall to the ground. The amount of toxic generated ranges from 15-25% by weight of the MSW processed and from 5-15% of the volume of the MSW processed. What will be done with the toxic ash?

A 2021 [life cycle analysis](#) conducted for the County of Hawai'i found that incineration of paper and plastics at the H-POWER incinerator on O'ahu is the most harmful option for health and environment, that landfilling is far less damaging, and that recycling those materials (even after barging them thousands of miles to market) is a huge health and environmental benefit.

Taxpayers and State and Local Governments Saddled with High Overhead Costs

Gasification and pyrolysis are incinerators rebranded to give them the luster of a new technology. Both gasification and pyrolysis have been touted for decades as the answer to municipal waste, but technical failures caused efforts for commercial-scale trash gasification or pyrolysis facility in the U.S. to be abandoned after incurring high development costs. Despite hundreds of attempts, no trash incinerator has been built at a new site since 1995 due to high costs and community opposition. There is no way any community in the state would accept one.

Hawai'i County does not produce enough waste to support a new incinerator. The current contract with the company managing the landfill requires a minimum tonnage of trash. The amount of trash generated is far lower than the tonnage needed to feed the landfill and an incinerator. Many cities on the mainland have learned the true financial cost of feeding an

incinerator. In addition to \$100 million plus costs of building the incinerator usually paid by the local government (taxpayers), long-term costs balloon in part due to ever increasing tipping costs. The experiences of Harrisburg, Pennsylvania, Detroit, Michigan, and multiple incinerators in Florida should inform our decisions about incinerators.

In Hawai'i County, multiple incinerator proposals have been rejected in the past. Last year's waste solicitation for sustainable infrastructure requests specifically rejected waste combustion proposals. West Hawaii Sanitary Landfill has room until 2050, is in an area not bothering local residents, and there is plenty of space to expand it.

Please stop this effort to contaminate our precious environment and financially burden our local and state governments!

Respectfully Submitted,

Mary Kathryn Afable, Hilo

LATE

SR-75

Submitted on: 4/1/2024 9:09:35 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Valerie Barnes	Individual	Oppose	Written Testimony Only

Comments:

Burning trash has terrible environmental consequences - worse than burning fossil fuels. This proposal has the potential to further poison our islands. Please do not support!

LATE

SR-75

Submitted on: 4/1/2024 11:31:22 AM

Testimony for EET on 4/1/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Katherine Fryer	Individual	Oppose	Written Testimony Only

Comments:

There is no such thing as "waste-to-energy." When burned, waste is turned into toxic ash and air pollution. Incineration conflicts with the state's climate change goals and the peoples' constitutional right to a clean and healthful environment under Article XI, Section 9 of the Hawai'i Constitution.