

PUT-OR-PAY: ERASING THE IMPACTS OF WASTE-TO-ENERGY THROUGH  
NARRATIVES OF SUSTAINABILITY IN HONOLULU

A THESIS SUBMITTED TO THE GRADUATE DIVISION OF THE

UNIVERSITY OF HAWAI‘I AT MĀNOA

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

IN

ANTHROPOLOGY

DECEMBER 2018

By

Nicole C. Chatterson

Thesis Committee:

Jonathan Padwe, Chairperson

Eirik Saethre

Christine Yano

Keywords: waste-to-energy, sustainability, Honolulu, zero waste

*For Sarah Elizabeth Bulter—the first anthropologist in our family and my mother, Terri Lynn Chattersen—thank you for teaching to never give up.*

## Acknowledgements

I appreciate the individuals from the Zero Waste the pro-WTE communities that took the time to share perspectives with me. I hope that I have done these perspectives justice in this work. Thank you to the Rise Above Plastics Coalition, the Energy Justice Network, the Post-Landfill Action Network, Covanta, Hawai'i Green Growth and the City and County of Honolulu for your role in co-creating this work.

Thank you to my committee members, Dr. Padwe, Dr. Yano and Dr. Saethre for your valuable feedback. Thank you to Dr. Kimura, Dr. Tengan, Dr. Mary Babcock, and Dr. Bilmes for your thoughtful and engaging coursework—your teaching has shaped this research and my approach to scholarship. To Dr. Mostafanezhad for encouraging me to grow as a scholar. To my cohort, it was wonderful navigating this Anthropology program with you.

To my partner, Rafael Bergstrom—thank you for the energy, support, perspective, and resources you offered to this process. To my community: Breanna Rose, Matthew Lynch, Noah Pomeroy, Doorae Shin, Rob Parsons, Krista Hiser, Shawnie Fowler—thank you for providing opportunities to challenge myself, for edits, for critical feedback, and for support, and for the incredible work you do in this world. To Anna, for reminding me that I am, indeed, an *anthropologista*.

This is a piece of work for the Zero Waste movement. It is a recognition of the hard work of the movement makers that are challenging the status quo by drawing the links between how we consume, how we discard, and the health of our human and non-human communities.

## Abstract

The City and County of Honolulu (the City) claims to observe the U.S. EPA waste hierarchy, which positions waste reduction as the most effective strategy for managing waste and minimizing pollution. Source reduction precludes the generation of trash through policy, education, and consumer-culture interventions. However, the City primarily manages waste only after it has been generated through H-POWER, a \$ 1 billion waste-to-energy (WTE) facility which burns waste to create and sell ‘clean energy’. H-POWER is owned by the City and operated by the multi-national corporation Covanta, which has contractually required the City to provide 800,000 tons of trash input annually to maintain revenue streams, which equal about \$130 million/year.

This thesis explores the material and discursive tensions of H-POWER as a sustainable waste management solution. Situated in a critical discard studies framework, and using tools from critical discourse analysis, this work unpacks the WTE-as-sustainability narrative offered by the City and Covanta, suppresses the serious consideration of waste reduction as a management modality and uplifts a neoliberal, technocratic, waste-as-commodity approach that (re)creates consumer culture ideologies. This narrative positions H-POWER as: 1) a local clean energy source, and 2) a better choice than landfills. Zero Waste advocates contest WTE on the grounds that: 1) WTE generates problematic levels of GHG emissions, which are misrepresented in industry narratives, 2) WTE reinforces upstream pollution by incentivizing the production of goods to become trash-fuel, and 3) WTE is an environmental health concern.

## Table of Contents

Acknowledgements.....	iii
Abstract.....	iv
Table of Contents.....	v
List of Figures.....	vii
Abbreviations.....	viii
Introduction.....	1
Methodology: Critical Discard Studies.....	4
Trash, Waste, Garbage, Rubbish, Discard.....	8
The Great Divide: WTE vs. Zero Waste.....	9
History and Context of WTE.....	16
Chapter 1. Expertise and Corporate-Municipal Entanglements.....	20
Case Study 1: WTE Shaping State Goals.....	22
Case Study 2: Making Authority.....	29
Conclusion.....	34
Chapter 2. Creating Clean, Renewable, Local Energy.....	36
Clean Energy Narratives.....	38
Contesting Clean Energy through GHG Emissions.....	40
Contesting “Clean Energy” through Environmental Health.....	43
Conclusions.....	48
Chapter 3. Landfill Diversion and Upstream Impacts.....	49
Zero Waste to Landfill.....	50

Trash, Climate Change and Invisible Upstream Emissions .....	54
Conclusion .....	57
Chapter 4. International Development and Individualism .....	58
Globalization Discourse: Structural Opposition and Ideological Squaring .....	59
Individual action as scapegoat: litter and population growth.....	62
Conclusions. Operating at the Bottom .....	66
Works Cited .....	71

## List of Figures

Figure 1: U.S. EPA waste management hierarchy.....	11
Figure 2: Materials Management Emissions.....	55

## Abbreviations

CAA: Clean Air Act

DES: Department of Environmental Services

H-POWER: Hawai‘i Project on Waste Energy Recovery

MSW: Municipal solid waste

MSWI: Municipal solid waste incineration

PCT: pollution control technology

U.S. EPA: United States Environmental Protection Agency

WTE: Waste-to-energy



## Introduction

*“Our whole economy is based on planned obsolescence. We make a good product, we influence people to buy them, and then the next year we deliberately introduce something that will make those products old fashioned, out of date, obsolete. We do this for the soundest of reasons...to make money!” –Brooks Stevens (industrial designer), 1958*

“*H-POWER Trash Shortage could Cost City Millions,*” reads the headline of a 2014 *Hawai‘i News Now* article. The story covered the financial implications of delivering too little trash to the Honolulu Project on Waste Energy Recovery (H-POWER), which is considered to be the “cornerstone” of the City and County of Honolulu’s waste management portfolio. Paired with the ubiquitous “reduce, reuse, recycle” mantra born out of the 1970s environmental movement, this headline is difficult to make sense of. In fact, the notion of too little trash has fueled a debate in Honolulu that echoes conversations about waste generation and consumer culture that are rippling across the globe. Given that the City and County of Honolulu (the City) generates 2.5 million tons of trash annually, the notion of a waste shortage is a surprising claim. In a post-1970s paradigm that has positioned less trash as a beneficial condition, how has the City of Honolulu ended up with a desire for more?

H-POWER is a municipal solid waste incinerator (MSWI)<sup>1</sup>, designed to burn the City’s trash and capture the energy generated from the combustion process to sell to the power utility—an incineration technique called waste-to-energy (WTE). H-POWER is a public-private partnership held between the City Department of Environmental Services (DES) and Covanta, a

---

<sup>1</sup> <https://dashboard.hawaii.gov/aloha-challenge>, accessed May 7, 2018

multi-national corporation that owns a major portion of the waste management technology market. The business model of H-POWER requires a consistent, predictable stream of trash-fuel to burn for energy sales. The terms of the contract between Covanta and the City, which is one of the longest WTE contracts in the U.S., require that the City provide 800,000 tons of municipal solid waste (MSW) per year to be sent to H-POWER. If this 800,000 ton/year quota is not met, the City incurs the cost of under-delivery—a contract structure known as put-or-pay.

MSW is the political/industry term for everyday waste items such as “product packaging, grass clippings, furniture, clothing, food scraps, newspapers, appliances, consumer electronics, and batteries” that occurs from businesses and residences within municipal boundaries (U.S. EPA 2015). While the numbers suggest that the City should be able to deliver on this agreement in excess (2.5 million tons of MSW are generated and roughly 1 million tons are recycled, thus leaving 1 million tons to burn) this has not been the case. Portions of this 1 million tons are legally required to be sent to landfill (i.e. construction and demolition debris) or are otherwise ineligible for combustion at H-POWER. Between 2014 and 2017 the City fell short of the put-or-pay quota resulting in over \$7 million in pay-outs to Covanta.

Compounding the losses from the \$7 million in pay-outs is that the less trash burned at H-POWER the less income the City gleans from electricity—a number that approach about \$130 million each year. This dilemma has raised questions about how and if the City should divert more trash to H-POWER—a conversation that is infused with political, fiscal, social and environmental implications. One controversial solution to the shortage, introduced by the Director of the City DES Lori Kahikina, is to discontinue shipping recyclables overseas for processing and instead divert them to local power-production via H-POWER. This would raise

the eligible pool of burnable trash by at least 1 million tons, thus avoiding fees, and bring in more revenue in electricity sales to the City.

This thesis begins an ethnography of H-POWER to explore the political ecology of trash in Honolulu and unpacks discourse around notions of waste management and sustainability in Honolulu. Throughout, sustainable waste management unfolds as a contested category which is imbued with material and discursive tensions. On one end of the spectrum, community members and NGOs challenge the notion that a system which requires and incentivizes waste inputs, and further, results in significant emissions can be considered sustainable. The associated narrative holds that Honolulu's market-based, infrastructure-oriented waste management approach creates negative socio-environmental conditions. This notion is perpetuated by community members and organizations interested in prioritizing a shift in consumption and production practices to minimize waste reduction prior to disposal. On the other end of the spectrum, some government officials and the WTE industry view the technology as a panacea for local energy production goals and waste management objectives. This corporate-government narrative of WTE-as-sustainability hinges on a technocratic (and arguably neoliberal) framework which situates waste as an inevitable, and ever increasing, by-product of society in need of management.

Although situated as a case study of Honolulu, the questions raised in the present work have applications globally. For every 1 ton of municipal solid waste created, 71 tons of waste are generated in the extraction, production, transportation and use of products-turned-trash. Placed against the global backdrop of finite resource extraction, environmental degradation and climate change, the enormity of the waste stream deserves close examination. In a technocratic era dominated by market mentality, perceived solutions to socio-environmental issues are often

engineered and monetized and conflate economic benefit with sustainability. Ultimately, this thesis challenges the assumptions of a techno-industrial era to explore solutions outside of growth, the market, and infrastructure to address socio-environmental problems. As such, the present work elevates the notion of Zero Waste, a social movement and philosophy which questions the naturalization of a consumer-oriented, throwaway-society by precluding the generation of waste through market reform and product redesign.

### Methodology: Critical Discard Studies

This thesis unpacks the privileged position of WTE as a management approach in City planning and policy and explores the implications of this approach through a multi-site ethnography of Honolulu's waste management regime. The data used in this study is pulled from participant observation at complex and interrelated sites of waste management narratives and discourse making. These sites include: the State and County legislature, professional and industry conferences, the City and County of Honolulu Solid Waste Management Plan (ISMWP) 10-year update Advisory Committee meetings, and meetings and events of community groups working on topics of waste management. These community stakeholder groups include Keep America Beautiful, the RAP and Rise Above Plastic Coalition meetings. These the observations were augmented with interviews from actors in Honolulu's waste management system. Interviews were conducted with individuals from the Zero Waste movement—which is comprised of community groups, organizations and individuals interested in prioritizing waste reduction—as well corporate and municipal proponents of WTE, including City employees and Covanta representatives. This thesis is interwoven with mixed-methods investigations and uses gray literature (i.e. technical reports, working papers), empirical data, and corporate-municipal

discourse from published literature (such as website and digital media) as material for critical analysis.

This project intersects with several academic fields including cultural anthropology, political ecology, environmental sociology, environmental governance, and environmental science—but primarily explores Honolulu’s waste management infrastructure through the lens of critical discard studies, an interdisciplinary field which investigates the category of waste and acts of wasting to unearth the material and social entangling of trash from multi-disciplinary perspectives. Foundational to the field are Mary Douglas’ notions of *dirt* and *matter out of place* as mechanisms for social order and boundary making (Douglas 1966). Discard studies takes Douglas as a launching point and then expands to explore multiple concepts of trash. The field employs the term *discard*, rejecting the inherent material reality implied by the terms *waste* or *trash*.

Discard studies looks at (a) what characterizes waste materiality, management, and meaning; (b) “who manages wastes and what do they become together in specific entanglements of labor, power, and possibility; and (c) how do specific wastes circulate, from whom to whom, and with what significance for specific waste regimes as well as more general global and planetary processes?” (Reno 2015). As a critical discipline, discard studies questions “...waste, not just as an ecological problem, but as a process, category, mentality, judgment, an infrastructural and economic challenge, and as a site for power struggles” (Liborion 2015).

Overwhelmingly, the literature highlights the indeterminacy of discards—exploring the processing of wasting as a category, mentality and judgement that is open to interpretive

practice. A consumer economy based on designed obsolescence, a design approach which builds in a strategic lifespan of a product, encourages an endless cycle of creating goods-to-become-discards in a cycle that encourages the purchase of new products (Kennedy 2007; Castillo Berthier 2002). Meanwhile, the indeterminacy of these discards evokes possibilities beyond the rigid idea of MSW so carefully managed by cities. Discard studies scholars examine trash in terms of identity projects in which collectors, makers, artists, or tinkerers find in other's discards as an opportunity for reinvention or play (Reno 2009; Gregson, Metcalfe, and Crewe 2007). Other authors look at the materiality of trash in places without waste management service (Castillo Berthier 2002, Drackner 2005), where waste is ever-present resource stored in community trash heaps and not swept out of sight to be sanitized and contained by municipal officials. Through discard studies, waste has been looked at from the angle of feminist social theory and inhuman epistemologies and ontologies (Yeagar 2008; Kennedy 2007, Hird 2012).

Most germane to this study are Drackner's frameworks of *waste as an asset* and *waste as risk* (Drackner 2005). For example, environmentalists and environmental health advocates understand trash as a pollutant and human health stressor. Municipal officials understand trash as a planning and sanitation issue. The private sector understands trash as income. As Castillo Berthier (2002) and Pessel (2006) highlight, previously worthless trash can acquire monetary value once it enters the discard stream. In the informal sector, trash gleaners in places like Brazil, Peru, and Mexico City have been shown to rely on reselling curated trash for inputs to other markets (i.e. steel for recycling) (Drackner 2005, Castillo Berthier 2002). In the formal sector, trash can become reimagined as a commodity to be consumed by infrastructures, like incineration and recycling, which promise to sanitize trash or haul it 'away' and create a

perpetual demand for waste inputs. Trash haulers and intermediaries exist in this realm as well, capitalizing off the movement of trash from home to dumps.

Critical discourse analysis (CDA) methods delineate the perspectives, policies and actors that are silenced, invalidated or erased through discourse (Machin and Mayr 2012). This thesis first identifies the components of the master narrative used to describe WTE infrastructure in Honolulu. A master narrative is the naturalized voice that “speaks unconsciously from the presumed center of things” (Star's 1999: 385). CDA—which assumes power relations can be illuminated through studying the links between power, language and ideology in discourse—is applied to unpack how power relations are developed, leveraged and negotiated in WTE discourse in Honolulu. CDA is carried out by evaluating discourse for features that illuminate identities, values and positions which are not necessarily made explicit in speech (written, visual or verbal). Some of these features, as defined in CDA literature, include: the use of a *discourse of information* framework, *simulated equalization*, *over-lexicalization*, *presupposition*, *structural oppositions*, and *ideological squaring* (Machin and Mayr 2012, Van Dijk 2006). These features will be discussed in turn in the coming analysis and serve to highlight spaces within which larger discourses and ideologies are being employed in interpersonal, small scale, and official speech.

Honolulu has become a global epicenter of the WTE versus source reduction conversations. Honolulu’s WTE-focused management regime is held up by multi-national interests as model for other island nations struggling with limited land and high imported fuel costs (Ocean Conservancy 2015, Howell 2015a). While this thesis is focused on this global relationship between Honolulu and the broader international discourses, the local context of

Hawai‘i is not lost upon this research. Waste is highlighted through the discard studies lens as a site for power struggles. These power struggles may unfold in a number of ways ranging from local advocacy and resistance to matters of indigeneity, culture and colonialism.

Areas of further research emergent from the present study include waste reduction as a form of sovereignty against the state. Building off the Foucauldian notion of biopower, Zero Waste can be seen as a resistance against state calls to produce more and more waste. A starting point for this research in Honolulu might include an exploration of the Windward Zero Waste Schools Hui on O‘ahu—a collective that actively circumvented state and county regulations around on-site composting in order to prove that composting could be done safely in schools.

A second area for further exploration emergent from this research is an examination of the relationships between *haloe* (foreginer or settler), and *Kanaka Maole* (indigenous Hawaiian) groups focused on waste reduction. *Mālama ‘āina*, an indigenous framework for caring for the land (*‘āina*) as kin, strives to keep Earth’s systems balance (Trask 1991). The relationship between *Mālama ‘āina* and Zero Waste, which holds that an excessive production of waste creates imbalances in human and non-human ecosystems, might be a starting point for examining ways in which Hawaiian and non-Hawaiian communities work together and separately to achieve common environmental goals.

### Trash, Waste, Garbage, Rubbish, Discard

I have intentionally selected the terms used to describe discards in this thesis. As this section has highlighted, the notion of waste and acts of wasting are complex. Throughout this project, I maintain and uphold the discard studies perspective of trash as a sociocultural and



economic construct. Throughout the piece the term *discard* is used to engage with that notion. However, as this thesis deals with municipal and corporate conceptions of the social and material constructions of discards, it is necessary to also employ the terms *trash* and *waste*. This research has illuminated nuances in the way these terms are deployed.

The term trash appears to be most often leveraged in the upstream vs. downstream debate as a politicizing move. It is almost exclusively used in a pejorative sense—indicating a polluting matter-out-of-place that must be dealt with. There is also an informality to the term. While the term waste communicates a lost potential or an unused excess, it is typically deployed in official discourse (municipal, corporate and legislative) to describe materials that must be controlled and contained in pursuit of risk management. Although it is beyond the scope of this current work to take up this phenomenon fully, it is worthwhile to note agency these terms offer to various actors and stakeholders in the waste management system. Terms like garbage and rubbish are not employed in this thesis (unless necessary based on a quotation). Rubbish is a colloquial term used throughout Hawai‘i to describe trash—while locally appropriate, it was not often employed in the dialogues and texts used for this work.

### The Great Divide: WTE vs. Zero Waste

*“This is the Great Divide, between the linear and circular economies. The zero-waste movement is growing. It’s organized, and it’s winning.”—Marcus Eriksen “Junk Raft”, 2017.*

The waste management hierarchy is critical to understanding tensions in waste management approaches (see Figure 1 below). This framework was developed by the U.S.

Environmental Protection Agency (US E.P.A) in the 1970s to guide waste management policy and infrastructure investments in a way that minimized pollution and ensured that discarded materials were put to their highest and best use and not simply buried or burned (U.S. EPA 2016; Howell 2013). The hierarchy recognizes trash as both a product-design failure and a social construct, the latter being a concept in line with Mary Douglas's notions of dirt and matter-out-place.

The hierarchy considers discarded items to be a resource and is designed with the mentality that materials have value, even at their perceived end of life or utility. For example, food waste (like forgotten leftovers or uneaten bread crusts) can be composted to harness the energy and resources spent creating them. A plastic bottle can be recycled, avoiding the extraction of more virgin fossil fuel to create yet more plastic. The hierarchy holds that source reduction (creating less materials to become trash), especially unnecessary ones like plastic water bottles, saves resources and prevents un(fo)reseen negative impacts to people and the planet, and is thus the best method of waste management.

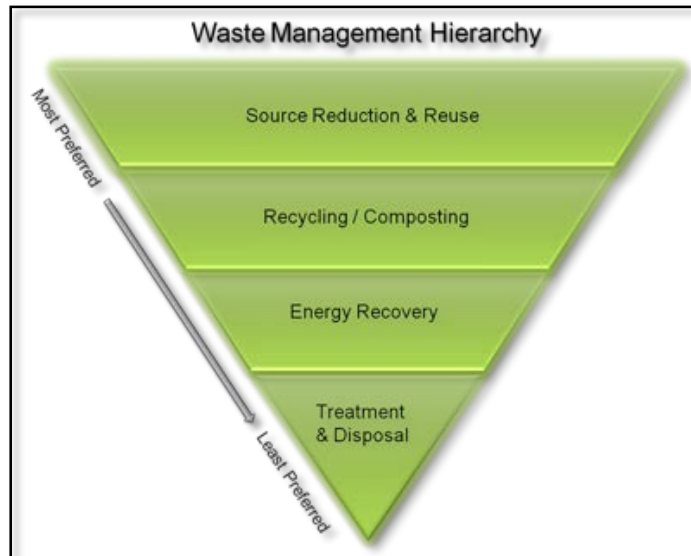


Figure 1: U.S. EPA waste management hierarchy

Walking through the model step-by-step, the most preferred management strategy is source reduction—or preventing waste through policy, design, and shifting social norms. Next, is reuse, which prevents items from being immediately disposed of through resale, donation, or repurposing. Following reuse is recycling and composting, methods which catch materials after they have already been discarded but allow for them to be processed and for some value to be recaptured (an industrial process in the case of recycling and a biological process in the case of composting). At the bottom of the hierarchy are incineration and landfilling listed under the category “treatment and disposal” in Figure 1. These two methods of waste management undermine the utility and value of discarded items by removing them from the materials cycle, either destroying them via incineration or trapping them in a landfill. WTE introduced a new level on the hierarchy, called “energy recovery”, which is positioned just above landfilling and incineration because it does harness some of the value of the incinerated items by creating energy.

The hierarchy is also conceptualized in terms of upstream and downstream techniques. Source reduction falls under the upstream category, which includes proactive management strategies that prevent items from being discarded into the waste stream. Source reduction includes policy measures and behavior change campaigns like extended producer responsibility (EPR). EPR policies require producers to design products in ways that minimize waste or take responsibility for the end of life of a product—instead of placing the disposal burden on municipalities. EPR is often coupled with measures to redesign the flow of materials, so that if a product must be discarded, it is designed to break down and become an input for another process, like recycling or composting (U.S. EPA 2009). This concept of using discards to avoid extracting virgin materials is termed circular production. Upstream approaches serve to minimize the socio-environmental impacts of the production chain, which include inputs (energy, water, land) and outputs (emissions, waste, etc.) at each stage of the production process (extraction, production, transportation, use, and disposal).

The City DES acknowledges the wisdom of the waste hierarchy as a guiding principal of waste management approach, and the State of Hawai‘i requires the City to “consider” source reduction in Hawai‘i Revised Statutes (HRS) 342-G. Source reduction is agreed upon by corporate, municipal, and community stakeholders alike as the most effective method to minimize the negative impacts of waste. While the City foregrounds the importance of source reduction in official planning and outreach materials (CH2M Hill 2018), this logic is in tension with actual waste management strategy deployed by the City—which predominantly uses downstream approaches. Downstream approaches position discards as a planning and sanitation issue, in line with Drackner’s (2005) characterization of discard relationships.

Downstream management techniques focus on processing, sanitizing, and containing waste. They manage waste only after it is generated. These strategies include recycling, composting, incineration, and landfilling. Downstream waste management techniques do not preclude the upstream impacts of the production process and also require land and capital resources to site and build infrastructure. The City has three landfills, recycling aggregation facilities (there are no local recycling plants), and a green waste processor (which does not accept food waste) in addition to H-POWER. In comparison to the City's robust downstream management infrastructure, the City's upstream waste management portfolio is nearly non-existent.

The tension around what constitutes a sustainable waste management regime can be boiled down to a tension of upstream versus downstream ethics (Howell 2017; Howell 2015a; U.S. EPA 2009; Reno 2015). Pragmatists within the City echo the views of both the WTE industry and many international development corporations that reactive management is the most impactful management strategy because: 1) waste is inevitable, and 2) the culture shifts necessary to achieve upstream measures are too difficult manifest. For pragmatists then, sustainable waste management is defined as sequestering waste while simultaneously producing a beneficial output (i.e. energy or recycled materials) and incentivizing this process through the market. This narrative aligns with a people-planet-profit, or triple-bottom-line, understanding of sustainability—situating sustainability as bounded by market health. For the purposes of this present work, this narrative will be described as pro-WTE or WTE-as-sustainability discourse.

The Zero Waste counter-narrative to WTE-as-sustainability advocates for upstream waste reduction prior to committing to expensive end-of-pipe waste management infrastructure and

firmly rejects the option to bury or burn discards (U.S. EPA 2009; U.S. EPA 2015; Open Letter to Ocean Conservancy Regarding the Report “Stemming the Tide” 2015). This perspective holds that waste can be designed out of systems. The most up to date definition of Zero Waste released by the Zero Waste International Alliance (ZWIA), a central organizing body in the Zero Waste world, is: “The conservation of all resources by means of responsible production, consumption, reuse, and recovery of all products, packaging, and materials without burning them, and without discharges to land, water, or air that threaten the environment or human health.”

Zero Waste is further elaborated by ZWIA to be “ethical, economical, efficient and visionary” and to serve as a guide to help societies to emulate “sustainable natural cycles, where all discarded materials are designed to become resources for others to use.” Zero Waste follows the waste hierarchy and privileges source reduction over all other management methods by pushing for the design and management of “products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials.” It continues following the hierarchy in stating that if products are created they should systematically “conserve and recover all resources”—a call in line with reuse and recycling. Zero Waste takes a turn from the waste hierarchy in that WTE is considered a destruction of material, not a conservation of resources. It is placed at the bottom of the hierarchy and not distinguished from incineration.

Zero Waste narratives hinge on the negative impacts associated with the production, transportation, and use of the products-turned-trash—which result in 70 tons of waste for every 1 ton of solid waste created (U.S. EPA 2016). Zero Waste narratives critique WTE as a mechanism for supporting global consumer culture. Through WTE trash becomes positioned as

a commodity with a captive consumer base. As municipalities incur large sunken-costs from the construction and operation of WTE, the production of waste to burn for energy to sell to local utilities is incentivized. The income generated covers both capital and operational expenses and serves to make a large profit—generating over \$65 million per year for the City (City and County of Honolulu 2017). This in turn reinforces status quo consumption practices and privileges business interests in which producers and consumers are not being asked to change product design or purchasing behavior, but are instead absolved of the externalities of their waste stream.

Framing this dichotomy between upstream and downstream, this thesis asks the central question: how is WTE validated in Honolulu as an environmentally and socially friendly panacea for the island's trash and what implications and erasures are embedded in this claim? This research illuminates that WTE is positioned as sustainable for two primary reasons: 1) because it reduces reliance on landfill, and 2) it creates a clean, renewable source of energy. Compounding these sustainability claims is a strong financial motive for the City to promote H-POWER. In 2017 the City accrued \$65 million in revenue from H-POWER energy sales, saw roughly \$1 million in fines for under-delivery of waste, and continued to pay off \$1 billion in debt from capital costs to construct and upgrade H-POWER (City and County of Honolulu 2017).

Simultaneously, this project takes up the social implications of this master narrative—investigating the possibilities beyond a WTE dominated management structure that are silenced, invalidated or erased. To this end, the Zero Waste movement is a primary site which contests the ethics of a waste management system built on the commodification of trash. This work is a critical analysis and argues that the City DES management strategy hinges on neoliberal market

logics and Covanta’s corporate discourse of sustainability to justify operation at the lowest levels of the waste management hierarchy. This project attempts to intervene in the conflation of a waste commodities market with sustainability—a conflation which reinforces existing paradigms of hyper-consumption, waste culture, and corporate control over public welfare while silencing the possibility of alternative economies.

### History and Context of WTE

The U.S. generates about 258 million tons of MSW and is surpassed only by Canada in per-capita waste footprint (U.S. EPA 2016; UNEP 2015). Of the 258 million tons of MSW, about 89 million tons were recycled (or about 35% of the waste stream), 33 million tons were incinerated (13% of the waste stream), and the remainder of the waste stream (136 million tons; ~52%) was landfilled (U.S. EPA 2016). From 1990 to 2014, the tonnage of waste sent to landfills has dropped in the U.S. by 6.4% (145.3 million tons to 136 million tons; U.S. EPA 2016). In parallel, the total recycling rate has increased during this period, from under 10% in 1980 to 34.6% in 2014. To put this progress into context, the total amount of trash Americans generate daily has increased by 15.9% during the same period, from 3.7 lbs./person/day to 4.4 lbs./person/day (U.S. EPA 2016). Globally, there is an annual increase in MSW of at least 2 billion tons (UNEP 2015).

Hawai‘i produces nearly double the national per-capita average of waste generation, at 9.2 lbs./person/day<sup>2</sup>. According to the Aloha+ Challenge Dashboard, which is the State of Hawai‘i’s sustainability metrics tracking platform, about 3,059,740 tons of MSW were generated

---

<sup>2</sup> <https://catalog.data.gov/dataset/table-16-solid-waste-generated-per-person-pounds-175f6>



statewide in 2016. Of this total 2,521,264 pounds (82.4%) stemmed from the City and County of Honolulu, the most populous county in Hawai‘i, which geographically accounts for the entire island of O‘ahu. In Honolulu, 733,965 tons (or about 30%) of this MSW was sent to H-POWER (30%)<sup>3</sup> in 2017, with nearly the same amount being recycled and the rest being landfilled. Given the high volume of waste produced, and the limited land space to deal with trash on an island, waste management is a relevant topic. Recognizing the spatial issues with managing waste in Hawai‘i, Honolulu Mayor Kirk Caldwell has developed an environmental platform promising to close O‘ahu’s landfills.

The H-POWER facility, which is now owned by the City and County of Honolulu and operated by Covanta, came into operation in May 1990—during an era of a liberalized economy which saw a boom in technology and infrastructure development (Steger 2013). At full capacity it can process up to 3,000 tons of MSW daily, which can meet nearly 8 percent of O‘ahu’s power needs by generating up to 90 megawatts of electricity. Typically, however, H-POWER produces well below this amount, contributing only 69 megawatts to the grid in 2017. H-POWER uses three separate boilers to incinerate waste. The first two shred waste to create refuse-derived fuel (RDF). The third boiler, which began operating in 2012, added capacity of 900 tons/day<sup>4</sup> and marked the onset of a 20- year contract with Covanta (ending in 2032). Plans for a fourth boiler are being considered within the City’s 10-year Integrated Solid Waste Management Plan update (ISMWP) (CH2M Hill 2018). Currently there are 81 incinerators in the U.S., Honolulu’s H-POWER has the 6<sup>th</sup> largest capacity for incineration <sup>5</sup>.

---

<sup>3</sup> <https://dashboard.hawaii.gov/aloha-challenge>

<sup>4</sup> <https://www.covanta.com/Our-Facilities/Covanta-Honolulu>

<sup>5</sup> <http://www.energyjustice.net/incineration/usplants>

WTE falls under the category of a larger suite of technologies known as municipal solid waste incinerators (MSWI), which encompasses any technology that uses the controlled burn of MSW (Miranda and Hale 1997). MSWI is an attractive management option from a spatial perspective, because it reduces the volume of MSW by 80-90% (Howell 2015b). Due to the controlled, enclosed combustion of waste materials, MSWI offers the potential to capture some of the pollutants produced during incineration. This makes MSWI distinct from open air burning of trash heaps (illegal in the United States), which do not have any pollution controls. The main by-products of MSWI, including WTE, are ash (residue from the incinerated materials) and flue gas emissions (in the form of chemicals and particulate from the combustion process which are emitted from the smokestacks). In terms of pollution control technology (PCT), H-POWER uses flue gas scrubbers, reverse air fabric bagasse filters, and continuous emissions monitoring system. Covanta and the City claim during their public waste management tour, called “Tour de Trash”, that H-POWER utilizes some of the most advanced PCT in the U.S.

First-generation incinerators were built prior to the onset of stringent environmental regulations and did not employ WTE technology, simply burning waste for volume reduction purposes (Howell 2013; Miranda and Hale 1997). The facilities built during this period are referred to as old-style facilities. Some of these facilities are still in operation, but in general have been retrofitted with some level of pollution control technology (PCT). In the 1960s about 1/3 of incinerators were discontinued because of links to public health and environmental impacts. New-style incinerators in the U.S. were constructed after the onset of more stringent environmental regulation in the 1990s. Many of these facilities produce emissions below federal standards for certain pollutants, including sulfur dioxide, nitrogen dioxide, and hydrochloric acid

(Howell 2015b; Miranda and Hale 1997). While the new-style incinerators are an improvement, some argue that they still emit levels of contaminants problematic for human health (Genaro and Gentilini, 2011).

The construction of WTE is experiencing a boom across the globe (The Ocean Conservancy and McKinsey Center for Business and Environment 2015). This can be seen in China's commitment to build 300 WTE plants in the next 3 years (Schmitz 2017) and through the construction of the first U.S. incinerator in 20 years in Florida in 2015. Two main factors appear to be influencing this boom. First, is the spreading notion that WTE provides clean energy. This has led to the inclusion of WTE in the renewable energy portfolio of nations and states. As a way to incentivize growth in the industry, renewable energy sources are typically legally enabled to energy at a higher rate than fossil fuel energy to the utilities —this makes WTE a lucrative business structure.

Second, international development narratives about the cause of marine plastic pollution have raised concerns about a lack of infrastructure in 'under-developed' countries. A series of reports have targeted poor waste management in developing countries as the primary reason that plastic is escaping into the marine environment (The Ocean Conservancy and McKinsey Center for Business and Environment 2015; Eriksen and et al. 2014). This framing has encouraged a boom of infrastructure development in the Global South, which is being backed by development organizations like the World Bank.

Denmark, for example, recently financed, constructed and now owns a large WTE plant in Ethiopia. This dynamic creates a system where poorer countries become indebted to wealthier

countries via public-private development projects—a system which is problematized for reproducing global inequities and power imbalances throughout critical development literature. This discourse erases the source of the poorly managed trash-to-become marine debris—which is the exportation of recyclables and waste from the Global North to the Global South. Instead of questioning the systems that serve to create and export unmanageable amounts of trash, the solution has become to use technology to enable the flow of waste. This approach serves also to reproduce neoliberal conservation ideals, which privilege the powers of privatization and the market as a way to solve environmental woes.

Chapter 1 will begin by looking at local conversations about H-POWER. The context of these local conversations will be reinforced in Chapters 2 through 4 as the broader discourses that drive these local conversations are discussed in detail. Chapter 2 looks at how the City and Covanta use narratives of clean energy to describe the value of H-POWER. Chapter 3 describes the discursive binary created between landfills and WTE and the work this narrative does to produce WTE as a sustainable technology. Finally, Chapter 4 looks at narratives at the intersection of WTE valorization and international development and individualization discourses.

## Chapter 1. Expertise and Corporate-Municipal Entanglements

Taking a CDA approach, this chapter delineates links between language, power and ideology as seen in the two distinct discursive instances examined below. This analysis of speech at more granular scale allows the reader to observe how the broader discourses outlined in Chapters 2 through 4, are deployed within the actual interactions of waste management politics in Honolulu. These two case studies are representative of the broader WTE conversation

and serve to demonstrate the ideologies representative of a set of positions within contestations over WTE.

The positions outlined in this chapter, Zero Waste and pro-H-POWER, are extracted through the discursive moves employed by participants in these dialogues. Covanta and the City emerge as a united industrial-governmental complex, building discursive interactions that reinforce the technocratic, neoliberal model of H-POWER. As Covanta and the City leverage discursive and political authority, organizations and individuals acting on behalf of the Zero Waste movement are positioned against this authority. Through these interactions, the validity of the Zero Waste is marginalized and suppressed.

The first case study uses a political ecology framework to unpack and problematize Hawai'i's statewide goal to "(r)educe the solid waste stream prior to disposal by 70% through source reduction, recycling, bioconversion, and landfill diversion methods." While supporters revel in the establishment of an ambitious statewide goal, others note the discursive co-option of the phrase "reduce the solid waste stream prior to disposal" to include "landfill diversion". Landfill diversion, as detailed in Chapter 3, is a broad term that does not serve to reduce waste prior to disposal but simply to redirect it away from the landfill. It is representative of a core set of discourses used to validate WTE as a sustainability-tech solution for waste. In this case study the discard studies frameworks of *waste as a mentality* and *waste as a category* become useful lenses through which to make sense of discourses and motives which served to generate a statewide goal which is out of touch with standard definitions of the term waste reduction.

The second case study looks at a conversation between two individuals: a representative of Covanta named Susan\*<sup>6</sup> and representative from the Rise Above Plastic (RAP) Coalition, a grassroots collective working on waste reduction and ocean health in Hawai‘i, named Mark\*. This excerpt demonstrates how Covanta evokes broader discourses of neoliberalism, technocracy, and values of reinterprets values of clean energy and landfill diversion. These discourses are privileged through discursive moves by Susan to create authority, expertise, and a perceived alignment with RAP’s waste reduction goals on behalf of Covanta. Susan’s dialogue demonstrates how Covanta’s corporate discourse subtly circumvents conversations about the implications of generating waste and turns directly toward the need for H-POWER. This discussion emerges through the lens of discard studies as a manifestation of waste as a site for power struggles.

### Case Study 1: WTE Shaping State Goals

*“If classificatory rules mediate how waste is managed, then the reverse is also true—waste management is more than a by-product of a distinctly human demand for order, but a process actively involved in reshaping our ideals and imaginations in turn.”—Joshua Reno, 2017*

Is there a relationship between waste management and “our ideals and imaginations” as Reno suggests? If so, how does that relationship play out? The following case study, which looks at Hawai‘i’s Aloha + Challenge waste reduction goal, explores these questions. Drawing

---

<sup>6</sup> \*Pseudonyms were used upon request of the informant.

on a discard studies framework, this case study unpacks the language of the waste reduction goal to examine how waste as both a *category* and *mentality* may have shaped the ideals of the goal. This goal structure raises questions about how the politics of waste can serve to influence high-level definitions of sustainability as well as the public imagination and acceptance of what waste reduction looks like.

The Aloha+ Challenge is Hawai‘i’s commitment to achieve six interconnected sustainability goals for 2030. In 2014 the Aloha + Challenge was unanimously endorsed by the Hawai‘i State Legislature and signed on to by the Governor of Hawai‘i, all four Mayors (Honolulu County, Maui County, Kauai County, and Hawai‘i County), and the Office of Hawaiian Affairs. Hawai‘i Green Growth (HGG), a local network which “brings together diverse stakeholders committed to economic, social and environmental priorities,” spearheaded the development of the challenge. HGG “supports a shared vision for a more sustainable, resilient Hawai‘i grounded in time-bound goals and measures, concrete action, and a culture of collaboration” to support “locally driven solutions to global sustainability challenges”. The Aloha + Challenge is considered to be a localized framework for the implementation of the global United Nations Sustainable Development Goals (SDGs).

The six goals of the challenge are topically focused, with one primary goal and a series of targets with indicators that support the measurement of each goal. The goals include: clean energy transformation, local food production and consumption, natural resource management, smart sustainable communities, green workforce and education, and waste reduction. Each goal was developed in meetings with topical experts and solicited the input from lay stakeholders in the HGG network. The goals were vetted in collaboration with decision makers at the County

and State levels. Progress on the Aloha + Challenge is displayed on a publicly accessible, state government website ([dashboard.hawaii.gov](https://dashboard.hawaii.gov)). This project is a part of the Hawai‘i Open Performance Initiative (OPI), which has the stated intention to provide “(a)ccess to public information to facilitate transparency and knowledge.”<sup>7</sup>

The Solid Waste Reduction Goal of the Aloha + Challenge reads: “Reduce the solid waste stream prior to disposal by 70% through source reduction, recycling, bioconversion, and landfill diversion methods.” Taken at face value, the goal is ambitious. The language leads with the term “reduce”, which indicates an alignment with the priorities of the waste hierarchy. However, a critical lens highlights conflated aspects of the goal language, which include: 1) the implication that recycling, bioconversion and landfill diversion methods equate to source reduction and happen ‘prior to disposal’, and 2) that landfill diversion is a standalone management process from bioconversion and recycling. Assuming that the statewide goal will have some bearing on how waste is managed in each county, what are the implications of a management regime convoluted by the conflation of upstream and downstream management techniques? How might this conflation shape public ideals and imaginations about discards, waste, and wasting?

Imbedded across the two issues flagged above is the term *landfill diversion*. As discussed at length in Chapter 3, the deployment of this term is characteristic of WTE value-proposition discourse. Landfill diversion is a term often used in WTE corporate value propositions as one of the major benefits of switching to WTE technology. It is a term that most everyone can get on board with. Landfills are an unpleasant reality for most communities. They

---

<sup>7</sup> <https://dashboard.hawaii.gov/>



smell, they take up valuable land space, and they create toxic leachate. Whether stemming from environmentalist ideals or a NIMBY (‘not in my backyard’) mentality that serves to displace unpleasant community services (like waste water treatment plants and landfills) far from affluent communities and closer to poor communities of color—landfills are nearly universally scorned.

Landfill diversion refers to management techniques or behaviors that prevent discards from being disposed of in a landfill—it is not generally considered to be a method of source reduction as the goal language suggests. For example, while a disposed item may not be landfilled—it could still be recycled, incinerated, or composted. This is distinctly different from the concept of source reduction, which precludes the initial creation of materials to be discarded into any downstream management system. While waste reduction typically results in landfill diversion by preventing discards, landfill diversion does not always result in waste reduction.

The notion that recycling, bioconversion and landfill diversion happen “prior to disposal” does not align with standardized uses of these waste management concepts. Further, the internal logic of the goal language raises questions about the definition of “disposal” used. According to the Revised Ordinances of Honolulu (ROH) Chapter 9: The Collection and Disposal of Refuse, the definition of *disposal facilities* and *disposal systems* align with the waste hierarchy’s delineation between upstream (pre-disposal reduction) and downstream (post-disposal) management. According to these definitions, and the U.S. EPA definition of disposal<sup>8</sup> both recycling and bioconversion are considered disposal methods. If waste management can shape

---

<sup>8</sup> (3) The term “disposal” means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

our reality, what are the implications of the official statewide waste reduction approach that confuses the definition of *prior to disposal*?

It becomes clear that the language of the Waste Reduction Goal conflates the distinct rungs of the waste hierarchy by placing disparate management techniques under the category of “reduction methods prior to disposal.” This language serves to co-opt and marry multiple rungs of the waste hierarchy under the concept of waste reduction—even though by definition, recycling, bioconversion and landfill are not considered source reduction by the U.S. EPA or the City and County of Honolulu. That three downstream management techniques were listed as methods of “source reduction prior to disposal” and that landfill diversion was awkwardly positioned as a standalone category serves to reproduce the WTE industry narrative—a narrative that hinges on lifting up WTE in comparison to landfilling.

Today, the Aloha + Challenge Dashboard includes a section “Oahu: Waste-to-Energy” and includes the following narrative note: “The state definition of waste reduction specifically excluded incineration and landfill but was silent on waste-to-energy.” City and County of Honolulu representatives utilized this definitional loophole to petition for the Aloha + Challenge goal to be inclusive of WTE, noting that due to contractual obligations to Covanta for decades to come, the City was unable to commit to Aloha+ Challenge if this was not acknowledged. The acknowledgement and inclusion of the City and County of Honolulu’s WTE was contested by county representatives from other islands (none of which currently use WTE) as well as several members of the expert working group convened to design the waste goal. While the goal was negotiated and agreed to by all four Hawai‘i counties, and both the State of Hawai‘i and the Office of Hawaiian Affairs through a consensus based process, the it is important to

acknowledge the level of influence exerted by the City and County of Honolulu in shaping the goal. The City leveraged the H-POWER contract as a way to gain sustainability validation to their waste management approach. The City did not offer a compromise in the consensus approach, and instead took an approach that forced all of the working group members to agree to include H-POWER as waste reduction or the Aloha+ Challenge would not be fully ratified.

The City and County of Honolulu's contractual obligation to H-Power continued to impact policy dialogue and decision-making in the development of the statewide indicators for the Aloha+ Challenge waste reduction goal. The City was a key stakeholder along with the other counties, state, and private sector, academia and civil society partners in the facilitated process, in which stakeholders agreed to a compromise given stark differences in waste management ideologies. The consensus-based decision was that the Aloha+ Challenge Dashboard would measure two primary indicators for waste reduction statewide: the first indicator being waste reduction *not* including H-Power facility, and the second, *including* H-Power. As a result, the Aloha+ Challenge Dashboard "Total Solid Waste Reduction" primary indicator tracks statewide waste reduction without H-POWER at 51.6% (as of January 2015). The secondary indicator includes H-POWER as a form of waste reduction and shows that with WTE the State of Hawai'i has already reached the 70% goal.

While the H-Power contract influenced the nature of the discussions in the Aloha+ Challenge goal development process, this interaction highlights the important role of non-governmental and corporate interests in policy processes. Due to the multi-stakeholder process with participation by civil society experts and community advocates, the Aloha+ Challenge goal

increased in ambition from 50% to 70% by 2030 over original government proposals and was further qualified through metrics to ensure the measurements prioritized the EPA hierarchy.

Keeping items out of the landfill is something both the Zero Waste and pro-WTE camps agree upon, however, Zero Waste camp makes a clear distinction between landfill diversion to WTE and waste reduction. While still paying homage to source reduction, this language and the dual measurement approach may confuse or mislead the public and policy makers who look to these numbers for guidance. This corporately influenced goal reflects the on-going debate driven by the City's H-Power contract with Covanta, and more importantly, the risk that Hawai'i will not strive to reduce the waste stream if H-POWER is upheld as a primary strategy.

The implications of privileging H-POWER over source reduction can be seen through the lack of waste reduction policy in Honolulu. As other island nations, ranging from New Zealand to Indonesia, are pursuing aggressive single-use item reforms Hawai'i manages to lag behind the curve of waste reduction policy while simultaneously announcing commitments to sustainability and *mālama 'āina*. Bills to ban everything from plastic straws to polystyrene take-out containers are consistently shot down by state legislators. A watered down version of plastic bag ban, which still allows for the use of plastic bags for restaurant take-out or double-thick plastic bags to be purchased, finally went into effect in Honolulu in 2018. In comparison, more holistic and effective bag bans had passed in Maui County and Kauai County years before. In the testimony against these plastic ban bills, plastics industry consistently cites H-POWER and litter prevention (not waste reduction) as the best way to keep the trash out of the environment.

As highlighted in the introduction of this piece, and as we will see in Chapter 3, landfill diversion is a key frame through which WTE energy is validated as sustainable. That this language was used to reformat statewide goals speaks to the success of Covanta (via the City) at influencing sustainable waste management. With over 1 billion dollars of sunken cost in the infrastructure of H-POWER and \$130 million/year in revenue at stake, the financial motivations of the City DES to vie for H-POWER are worth considering.

## Case Study 2: Making Authority

The excerpt below is taken from a meeting between Susan, a public affairs representative for Covanta, and Mark, a leader from the RAP Coalition. RAP works to reduce single-use plastics production through education, policy reform, producer responsibility and grassroots mobilization and aligns with a Zero Waste perspective. Covanta had voiced an oppositional stance to some of the waste reduction measures introduced by RAP during the legislative session. The meeting, which spanned roughly two hours, was called to discuss ways in which the two groups might resolve competing visions of sustainable waste management—especially given that both organizations make claims to environmental stewardship.

### **Transcript of excerpt from meeting between Covanta and RAP regarding the Honolulu WTE facility, H-Power**

Participants: CR (Covanta Representative) and RAPR (RAP Representative)

CR: I just have a little, umm, kind of outline that we could walk through and can skip around and talk, just giving you a framework of, ya know, H-POWER and waste-

to-energy, and how it works, and on kind of the energy side, on the conservation side, on that type of thing, um, we actually, on the plastics in the ocean, it's actually one of the projects, the bigger projects, we've worked on with the Clinton Foundation

RAPR: mhhmmm

CR: and continue to work on with the Clinton Foundation, and it is kind of the whole Pacific vortex, and the plastics, and the Pacific vortex. And so, one of the big reports that just came out like a month and a half ago, and I'll make sure you get a copy of it, but was um, with Clinton Foundation, was like countries like Indonesia and that type of thing...

RAPR: mhhmm

CR: I mean the plastic's not coming from your shore right (*laughs*),

RAPR: yeah

CR: is kind of the gist of this big report

RAPR: right

CR: But so, in kinda the countries where it is coming from and what is happening there and the currents

RAPR: mhhmmm

CR: and that type of thing, and what are the technologies, or, what are infrastructure investments that more developing countries need to make as, kind of, this problem is something that we all share cuz it's one ocean

RAPR: riiiiight

CR: Um one of the technologies that was referenced in there, or recognized in there, or advocated in there was kind of waste-to-energy meaning that you know instead of putting this... instead of landing up in the ocean. Being that you know, many, some of these countries are, um... is that waste-to-energy could hit two balls with one stone. Is that, turn it into energy if there is not other, you know, solid waste infrastructure in these developing countries.

This dialogue displays several features which illuminate how Covanta is negotiating a position of authority in this discussion—which in the lens of CDA is a key move in negotiating for discursive power. This conversation is a microcosm for the types of discursive moves employed at multiple scales (local, national, global) which position WTE as a solution to socio-environmental waste issues. This analysis demonstrates how an overlying discourse of information framing serves to build a position of epistemic authority for CR.

From the outset, CR evokes a discourse of information. This genre of speech is described by Fairclough (1995) as marking an imparting of knowledge and/or facts from the speaker to the listener. A conversation framed by this discourse can set up a power dynamic of teacher/learner and thus serve to position the speaker as an authority or specialist (Ottinger 2013; Brown 2007). This single conversation is indicative of the trend in power dynamics between corporate-municipal actors and actors within the zero waste movement. Industry interests and technological knowledge have historically been privileged in municipal waste management regimes, while Zero Waste or waste reduction schema are often positioned as noble (but unrealistic) solutions offered by idealistic NGOs.

This first indicator of a discourse of information is CR's statement that she will offer an 'outline' and a 'framework' for understanding how WTE 'works'. CR places herself in a position of epistemic authority in relation to RAPR as she indicates that she is providing facts and knowledge for RAPR's consumption, thus implying the CR is the holder of specialist knowledge (Ottinger 2013; Brown 2007; Corburn 2005). Throughout the remainder of the meeting CR does not invite RAPR to share knowledge about the topic of WTE, but instead

invites RAPR to ask questions or for clarification. This further reinforces the authority regimes and messages about who holds relevant knowledge in the conversation.

CR also employs a lexical field associated with official or specialist speech—further cementing her discursive status as an authority. Specialist speech utilizes formalized and specific vocabulary, including technical terms. The evocation of these terms displays expert knowledge and therefore epistemic authority (Machin and Mayr 2012: 46). CR uses terms such as ‘energy’ and ‘infrastructure’ which indicate specialist knowledge about technology and development. CR also uses terms like ‘vortex’ and ‘currents’ which demonstrate specialized knowledge about the oceanographic complexities of the marine plastic pollution (Eriksen et al. 2014)

Presupposition is a rhetorical technique that reifies a concept, idea, or category by presenting it as uncontested, factual, logical, or rational component of reality. Presupposition reinforces a sense of natural logic by asserting an idea without the offer of proof, definition, or qualification and is often an indicator of ideology at work (Fairclough 1995; Van Dijk 2006; Machin and Mayr 2012). In this piece of talk presupposition is used frequently by CR, including to present the findings from an ambiguous ‘big report’ as seen in the excerpt below.

Presupposed phrases are underlined.

CR: ...and how it works, and on kind of the energy side, on the conservation side ...

And so, one of the big reports that just came out like a month and a half ago, and I'll make sure you get a copy of it, but was um, *with Clinton Foundation*, was like



countries like, and Indonesia, and that type of thing, I mean the plastic's not coming from your shore right (*laughs*) is this gist of this big report.

CR precedes the introduction of the report by setting up a lexical field in which she will explain WTE in terms of its relationship on “the conservation-side”, the “energy-side”, and with the issue of “plastic pollution”. While avoiding any of these specifics about the report (other than that it was associated with the Clinton Foundation) CR aligns the report with an environmentalist agenda. She naturalizes WTE as related to environmental interests by presupposing links between WTE energy, conservation, and plastic pollution. The result is the listener is asked to assume that the conclusions CR shares are indeed representative of the conclusions of the report, and by proxy, that Covanta and RAP have aligned organization foci.

This presupposition puts CR at a power advantage, allowing her to control the knowledge available for discussion. She reinforces her unique access to this knowledge by stating that the report ‘just came out like a month and a half ago’. CR then breaks her authoritative stride to align with the RAP by stating that she can get them access to the report—presupposing that access to this released report is not public. Here the presupposition is used to create an illusion of alliance. An alliance is also suggested by the presupposition rhetoric used by CR to naturalize WTE as a solution to RAP’s issues of concern, particularly plastic pollution.

According to Fairclough (1995), the fusion of formal and informal lexicons works “to imbed a populist voice in official discourse”. Informal, or conversational speech serves to create a feeling of a dialogue between peers, which mediates authoritative distance created by technical language. The deployment of informal speech in official discourse is what Fairclough

(1989:184) has termed *simulated equalization*. Simulated equalization is a method by which a speaker creates an appearance of familiarity and equality by employing informal word choices and phrases.

As such, the combination of these two lexical fields results in the delivery of expert information in a way that suggests equality and obscures the underlying power moves (Machin and Mayr 2012: 44). Informal phrases, such as, ‘you know’ and ‘I mean’ are used frequently in CR’s speech. Foxtree and Schrock (2002) argue that the use of these phrases demarcates a familiar relationship and shared experience. This marking of a shared experience can work to create a sense of alignment, allowing for a participant to create a sense of equal footing while quietly asserting power and expertise (Machin and Mayr 2012; Corburn 2005)

## Conclusion

Taken as a whole, this section outlines an epistemic power differential which privileges a WTE-centric perspective and silences alternative definitions of sustainable waste management. These discursive moves also served to align Covanta’s business practices with environmental priorities. Throughout this talk a discourse of globalization (Steger 2013) was drawn upon, which positions developing countries in need of the specialized technology and infrastructure of wealthier countries. The lens of globalized economies served to erase differences between RAP and Covanta, joining them under a project of global sustainable development imperatives. The Zero Waste narrative was undermined in the first section as Covanta co-opted RAPs sustainability interests, claiming they were the same as Covanta’s own. Similarly, in Vignette 1 we saw how Zero Waste ideals were muddled by the City in support of WTE through the Aloha+ Challenge goal-making process.

Covanta and the City have had a long and publicly critiqued relationship (Office of the City Auditor 2015)<sup>9</sup>. Much of this critique questions if the contracts and contract amendments between the City DES and Covanta are in the best interest of the public. The City Auditor released a report detailing the contract and procurement issues between DES and Covanta in 2015. This report echoed the concerns of multiple stakeholders in the Zero Waste community about the City’s motivation for relying on WTE infrastructure—which uses market over socio-environmental logic. The City Auditor stated that Covanta, and associated consulting firms, had “taken advantage of” the DES by dictating contract terms that ignored state and city procurement policies.

The Covanta partnership was the first major public-private project taken on by the City—and the auditor’s report pointed out that the City staff was not equipped to negotiate with well-resourced private interests. The auditor’s report questioned the logic behind the City DES’s agreement to renew a 20-year put-or-pay contract with Covanta—which ends in 2032. The report also outlined illegal contract amendments which directed significant additional funds towards both Covanta and private consultants. The original contract, signed in 1985, totaled \$313.7 million. Since then, the City DES issued 79 contract modifications which increased that total to about \$993.3 million.

These observations are reinforced by scholarship on waste management. Most relevant is the work of Jordan Howell, a geographer studying waste systems in Hawai‘i and the Pacific. Howell created a Latourian actor network map of WTE infrastructure development. According to Howell’s analysis of WTE actor networks, engineering firms and operators, like Covanta,

---

<sup>9</sup> <http://www.civilbeat.org/2015/12/honolulu-gets-trashed-in-h-power-audit/>

often serve as ‘experts’ to City Planners and the public (Howell 2013; Howell 2015b). This positioning of industry-as-expert is a vehicle through which corporate narratives are taken up by municipalities. Moving forward in this text, the WTE-as-sustainability narrative will be explored within the complex relationship between the City and Covanta. This framing will attempt to highlight the interwoven nature of Covanta and City discourse around sustainable waste management and draw a link between the way the City conceptualizes H-POWER and Covanta’s corporate discourse.

The following two chapters dissect the primary narratives which I argue are employed by the City and Covanta to build up WTE-as-sustainability. Chapter 2 will look at how WTE is validated as a clean, renewable energy resource (Drackner 2005; Pavlas and et al. 2010; Giusti 2009). This analysis will follow with the often silenced counter narrative offered by the Zero Waste movement, which demonstrates the problematic greenhouse gas footprint of WTE that is glossed by municipal-corporate narratives. Chapter 3 examines how WTE is discussed in terms of landfill diversion, and thus positioned a way to reduce reliance on landfills while backgrounding a Zero Waste framework in which there would be much less waste to process through either landfills or incineration. Building upon the establishment of epistemic authority displayed by both Covanta and the City in Chapter 1, the following Chapters serve to highlight the broader discourses that builds up WTE as the preferred solution Honolulu’s waste management needs.

## Chapter 2. Creating Clean, Renewable, Local Energy

*“Powering today, Protecting tomorrow.”*—Covanta’s corporate slogan

In 2017 Hawai‘i committed to using 100% renewable energy by 2045. Despite the complex material contradictions of using trash as “renewable” energy, H-POWER continues to be listed as an authorized energy source within Hawai‘i’s renewable energy portfolio. This tension around clean energy discourse is not unique to Hawai‘i, but is seen globally in corporate-government discourse to narrate the benefits of WTE (Drackner 2005; Pavlas and et al. 2010; Giusti 2009). This chapter explores the contested position of WTE as clean energy.

Amidst growing awareness of the need to address climate change by moving away from fossil fuel derived energy, a focus on decreasing fossil fuel reliance has created a blind spot around the upstream impacts of WTE. As a result, WTE has been unreflexively uplifted as a solution to both waste management and climate change challenges—despite the fact that many of the discards burned for energy are fossil fuel derived. This clean energy rhetoric presents WTE as a lesser of two evils. The perceived choice in Honolulu becomes: a landfill that offers little displacement of fossil fuel energy (and takes up a lot of precious land) or an incineration plant that can power (up to) 10% of a city. The socio-environmental implications of WTE-as-renewable-energy are marginalized through the presentation of this false dichotomy.

This first section of this chapter looks at how clean energy rhetoric is used to validate WTE as an asset for Honolulu’s renewable energy portfolio. The second section of this chapter discusses two particular fronts on which the narrative of WTE as clean energy is contested by the Zero Waste community. The first questions GHG emission reporting structures that allow WTE facilities to avoid counting biogenic emissions—or emissions stemming from biological sources and simultaneously questions the placement of MSW in the category of biogenic carbon sources.

On the second front, social and environmental justice scholars refute the claim that WTE pollution control technology actually absolves environmental and human health risks.

### Clean Energy Narratives

*“(E)mpirical evidence of accelerating climate change, habitat destruction, and species extinction all testify to the fact that the combined forces of population and consumption growth tend to override any positive gains promised by scientific and technological advancement.” –Helena Kopnina, 2014*

“Waste-to-energy facilities provide a safe and sustainable means of waste disposal that reduces greenhouse gases, generates clean energy and recycles metal,” states Covanta’s sustainability webpage. In an interview for a waste industry publication, Covanta’s CEO Stephen Jones stated that addressing climate change “allows states to use flexible, affordable and reliable technologies like Energy-from-Waste to achieve carbon reduction goals.”<sup>10</sup> The City DES website notes, “... H-POWER reduces our dependence on imported oil. One ton of trash produces saleable energy equivalent to 60 gallons of oil.” These statements are representative of the claims that align WTE with contemporary climate change mitigation goals and policy, as well as notions of energy independence from foreign nations. These statements do the work of uplifting WTE while marginalizing the relevance of the implications of consumption growth.

According to state statute Hawai‘i Revised Statutes (HRS) §269-91 renewable energy is defined as energy being generated or produced from the following sources: wind, the sun, falling

---

<sup>10</sup> Energy-from-Waste (EfW) is an emerging term for waste-to-energy, intended to foreground the energy production capabilities of the technology to better align with emerging clean energy legislation.

water, biogas (including landfill and sewage-based digester gas), geothermal, the ocean, biomass, biofuels, and hydrogen produced from renewable energy sources. MSW, including non-organic materials) is awkwardly positioned under the category of biomass. Biomass typically refers to organic matter, like crops, agricultural and animal wastes.

Under Hawai 'i's Renewable Portfolio Standard (RPS), renewable energy sourcing requirements gradually escalate from 10% by 2010, 30% by 2020, to 100% by 2045. Twenty-one states, including Hawai 'i, allow WTE in their renewable portfolio standards. As the upstream implications of WTE have been illuminated, several states have removed WTE as a RPS option. Pulling from the conversation between Covanta and RAP in Chapter 1, there is a useful example of how the Covanta representative reinforces the inherent benefit of energy from waste, which reads:

CR: waste-to-energy could hit two balls with one stone, that is turn it into energy

Metaphors use symbolism to describe an object or concept through an unrelated yet applicable concept, object or image. The use of metaphor has the power to “highlight one aspect of experience, while at the same time concealing others” (Machin and Mayr: 2012: 163). Because metaphors are frequently used to make sense of the world in everyday talk, they can easily be leveraged to naturalize arguments or delegitimize others. Naturalized metaphors can “have implications not only for how we think about and understand the world, but also for how we act, the institutions we build and how we organize our societies” (Machin and Mayr: 2012: 164).

This metaphor follows CR's fumbled and partially coherent remarks summarizing the way the report 'referenced', 'referred to', or 'advocated for' WTE as a solution to plastic pollution. While she misquoted this common figure of speech, 'hitting two *birds* with one stone', CR is still drawing on the meaning of the metaphor which connotes the value that *two is better than one*. CR employs this metaphor to make the claim that WTE is a good thing because: 1) keeps the waste generated by developing countries out of 'our' shared oceans, *and* 2) it produces energy.

While this foregrounds the perspective that *two is better than one*, it erases an issue central to RAP—how to prevent waste from being produced in the first place. It suppresses waste reduction as a solution in favor of the combination of waste management plus energy production. It presupposes that waste generation is inevitable and highlights that using trash as fuel is a prudent use of an inevitable material. What this metaphor conceals then is the complex interrelationship between consumer culture and waste generation—and the Zero Waste community argues that this discourse silences the upstream extraction and emissions implications of this process and thus problematizes WTE as a renewable fuel.

### Contesting Clean Energy through GHG Emissions

*“Traditionally, when it came to handling garbage, the deciding factors were space and money. With climate change on everyone’s lips — including politicians seeking re-election —both sides are doing creative number crunching.” — Jean Bogner, lead waste management author for the Intergovernmental Panel on Climate Change (IPCC), 2010*



Trying to quantify GHG emissions from WTE operations can feel like a nebulous topic. Debates around the GHG savings of WTE (versus other forms of waste management) are longstanding (Howell 2013; Baptista and Amarnath 2017). Covanta discusses landfills as well as oil and coal fired power plants as the emissions culprits, and uplifts WTE as a GHG reduction solution. Zero Waste groups like the Environmental Justice Network (EJN) and GAIA challenge this notion calling incineration one of the dirtiest forms of power generation. “Which is correct? Both or neither, it seems. No one really knows,” points out Jean Bogner—the lead author on the waste impacts section for the IPCC.<sup>11</sup>

The U.S. Clean Power Plan, introduced during the Obama administration (and in threat of repeal from the Trump administration), mandates that each state reach a 32% reduction in carbon emissions from the power sector by 2030. This plan raised a few flags for energy justice and Zero Waste advocates because it does not count *biogenic* CO<sub>2</sub> emissions from emitting entities. Biogenic CO<sub>2</sub> is emitted from the combustion or decomposition of these biogenic fuels, which are biologically based (as opposed to fossil fuel based). The U.S. EPA holds that biogenic waste is carbon neutral because it is a part of the natural carbon cycle. For Honolulu, this means about 59% of H-POWER’s GHG emissions are not included in official GHG accounting.

Some groups—including the United Nations (UN)—argue that biogenic CO<sub>2</sub> is released much faster when incinerated than it would be if the organic material were left to decompose. The UN argues this timing is important because a slower release of CO<sub>2</sub> allows for uptake into

---

<sup>11</sup>

[https://www.thestar.com/yourtoronto/yourcitymycity/2010/04/02/landfill\\_or\\_incineration\\_the\\_climate\\_change\\_dilemma.html](https://www.thestar.com/yourtoronto/yourcitymycity/2010/04/02/landfill_or_incineration_the_climate_change_dilemma.html)

carbon sinks. Further, they argue that atmosphere does not differentiate between a molecule of biogenic CO<sub>2</sub> and fossil fuel derived molecule.

On this last point Michael (Mike) Van Brunt agrees. Mike is trained as an environmental engineer. He is the Senior Director of Sustainability for Covanta, and has worked in the paper recycling industry and as an environmental consultant prior to joining Covanta in 2008. Mike's primary job is understanding and communicating the sustainability of Covanta with a focus on GHG emissions. From his perspective, a molecule of biogenic CO<sub>2</sub> is not different from fossil fuel CO<sub>2</sub> once in the atmosphere. For Van Brunt, it is what happens upstream that is the differentiating factor. He points out that fossil fuel based CO<sub>2</sub> requires fossil fuel extraction, whereas biogenic CO<sub>2</sub> does not.

Adding to the arguments around biogenic emissions is a confusing array of metrics and narrative claims about H-POWERs emissions performance in comparison to other sources. "Energy-from-Waste (or waste-to-energy) provides a safe, technologically advanced means of waste disposal that reduces greenhouse gases," states the Covanta website. However, in 2016 H-POWER emitted more CO<sub>2</sub> equivalent per megawatt hour than Honolulu's largest oil burning plant, called the Kahe Station. Emissions per megawatt (MW) can be calculated using data from the Hawaiian Electric Company (HECO), the local electric utility in Honolulu, and data from the U.S. EPA Green House Gas Reporting Tool (GHGRT). Crunching these numbers shows that Kahe Station, which runs off imported oil, emitted the least per megawatt at 3,124 tons CO<sub>2</sub>eq/MW. H-POWER was next at 9,480 tons CO<sub>2</sub>eq, and AES (Honolulu's coal plant) came in slightly higher than H-POWER with 10,724 CO<sub>2</sub>eq/MW. H-POWER emits slightly less than the coal energy plant and roughly three times more than the Kahe oil plant.

## Contesting “Clean Energy” through Environmental Health

*“Incinerators are protested and resisted as a source of pollution despite their long-favored status among sanitary waste engineers as an efficient way to eliminate waste while recovering heat and power.”—Joshua Reno, 2017*

“They use lime to treat the ash. That’s the trick, that way when it’s being tested the toxic substances don’t register” shared Mike Ewell, the director of the Energy Justice Network (EJN) during the Students for Zero Waste Conference in Philadelphia in November 2017. Mike is a passionate advocate for social justice and works to hold energy companies and systems accountable for externalities associated with the production and siting of energy infrastructure. Mike discussed the ways in which the WTE and local governments circumvent U.S. EPA regulations that monitor the toxicity of incinerator ash. The addition of this high pH, or basic, compound would register the ash as inert during testing. This allows the incinerator ash to be incorporated into landfills, as is the case in Honolulu where the ash is buried in portion of the Waimanalo Gulch Sanitary landfill that is dedicate for ash.

The problem, Ewell claimed, is that that lime is only a temporary fix. When the ash ends up in the uncontrolled environment of a landfill, the toxins become mobilized again in an acidic environment. According to Mike Van Brudt, none of Covanta’s WTE plants have ever tested above EPA emissions standards. Ewell questions the safety and effectiveness of the EPA’s toxic exposure limits, claiming they are an unworthy rubric because they are influenced by industry interests. Van Brudt addressed Ewell’s concerns about lime being a temporary fix by citing a study which shows that ash monofills have less toxic leachate than landfills. Employing a

discard studies lens here, both camps engage with the notion of waste-as-risk—Covanta claims this risk can be mitigated while EJN questions that claim.

As the WTE industry and local governments talk about the effectiveness of pollution controls, Zero Waste advocates challenge the efficacy of regulatory limits and PCTs and are thus rising up against proposed and existing WTE projects. This resistance from the Zero Waste community is occurring within formal organizations and through grassroots uprising. An example of a formal organization resistance occurred in early 2018 when the Seneca County Board of Health issued a statement of formal opposition to a WTE project proposed for construction in Romulus, New York. The Board cited concerns about negative health impacts from the incinerator ash and emissions. Circular enerG, the firm proposing the incinerator, received such staunch community resistance that they discontinued local community engagement to change course and vie directly for state approval instead. In Detroit grassroots uprising is driving the conversation. Residents and environmental health advocates are challenging their municipal incinerator on the grounds of health concerns, particularly around the issue of particulate matter (PM) emissions.

For pro-WTE and Zero Waste camps alike, it remains uncontested that pollution is inherent to the incineration process and that the pollutants emitted pose a risk to human health (Miranda and Hale 1997; Rabl, Spadaro, and Zoughaib 2008; Genaro and Gentilini 2011). This difference in perspective centers around the perceived effectiveness of PCTs. MSWI emits over 30 different pollutant compounds, including particulate matter (PM), dioxins, furans, hydrochloric acid, hydrocarbons, heavy metals, sulfur dioxide, and nitrogen dioxide (Genaro and Gentilini 2011; Schell et al. 2010, Rabl, Spadaro, and Zoughaib 2008). Most pollutants from

MSWI are either ingested or inhaled and stem from two main sources: flue gas emissions and ash (Rabl et al. 2008). Flue gas emissions result from the combustion of waste, and contain a mixture of chemicals such as nitrogen oxide, sulfur dioxide and particulate matter (PM). The ash, which is the remnants of combustion, is known to have high levels of furans, dioxins, and lead and is known to be a prominent source of PM pollution. Some of these pollutants, like dioxin, are known to be carcinogenic and disrupt both the human developmental process and endocrine system (Isaksson 2015; Miranda and Hale 1997; Rabl, Spadaro, and Zoughaib 2008; Pizzol, Moller, and Thomsen 2013; Fry and Rager 2013; Schell and Denham 2003, Genaro and Gentilini 2011) .

Communities around the world challenge local incinerator projects on these grounds, yet are often unsuccessful because of the difficulty of tracing explicit links between chronic, long term health issues. This phenomena of “insecurity, precarity, and disorder too slow to achieve recognition as crises” can even lead to a sense of ordinariness or complacency with the symptoms (Ahmann 2018). The difficulty of drawing causal links is well summarized in a 2016 article in *The Guardian* about the aforementioned Detroit WTE plan. An interviewee aptly described the dilemma, noting that while the incinerator emits a significant amount of PM, and although PM is known to trigger asthma, it remains difficult to directly link PM emissions from the incinerator to cases of asthma—“so nothing gets done.”<sup>12</sup>

Exacerbating the ability for communities to successfully contest incinerators because of health concerns is the use of expert framing, like cost-benefit analyses and risk assessments,

---

<sup>12</sup> <https://www.theguardian.com/us-news/2016/oct/23/detroit-garbage-incinerator-pollution-health-problems-environmentalists>

which dictate the types of data considered relevant. Often times, this means that lay knowledge and social concerns are left out of analyses (Corburn 2005, Miranda and Hale 1997). In the case of WTE, a typical analysis compares WTE's costs and benefits to either other forms of energy production or other forms of waste management and ignores health implications (Zuberi and Ali 2015).

Pollution control technologies (PCTs) have been developed to mitigate exposure to known pollutants. PCTs are focused on capturing specific pollutants after they are created and before they are released. A review of MSWI PCTs claims that 99% of hydrochloric acid emissions, 95% of sulfur dioxide emissions, 90% of mercury, and about 70% of nitrogen dioxide emissions can be removed from flue gas (Miranda and Hale 1997). However, other scholarship notes that even with high pollutant capture, MSWIs still emit problematic levels of pollution (Schell and Denham, 2003; Rabl et al., 2008; Pavlas and et al., 2010; Schmitz, 2017) . For example, a study in France demonstrated that women exposed to dioxins from MSWI by-products experience increased cancer risk. Heavy metal exposure from incineration ash was linked to increased cancer risk among women in Italy (Genaro and Gentilini 2011; Schell, Burnitz, and Lathrop 2010). Researchers continue to experiment with the best ways to mitigate pollutants and PCTs are constantly being refined and updated (Chen, Chang, and Wey 2008).

Although below the EPA limits, H-POWER is still one of the highest emitting entities of particulate matter (PM) on O'ahu based on an emissions inventory of 72 EPA regulated entities.<sup>13</sup> PM is a general term for a complex and dynamic airborne mixture of thousands of potential organic compounds, metals, and acids (Hannigan, Busby, and Cass 2005) and is

---

<sup>13</sup> At the time of writing, the Clean Air Act website was only updated up to 2011.

generally categorized into two forms—PM<sub>10</sub> and PM<sub>2.5</sub>. PM<sub>10</sub> includes particles between 10 and 2.5 microns in size, whereas PM<sub>2.5</sub> refers to particles less than 2.5 microns. In 2016 H-POWER released 126 tons/year of PM<sub>10</sub> (more than 95% of regulated sources) and emitted more PM<sub>2.5</sub> than 93% of the other sources. PM<sub>2.5</sub>, or ultra-fine particulate matter, causes the most severe health impacts and is created during the MSWI process. PM exposure has been linked with lung, stomach, liver, colon-rectal, and childhood cancers as well as soft tissue sarcoma and non-Hodgkin's lymphoma. It is known to cause oxidative stress, bronchitis, inflammation, increased blood viscosity, genetic damage, and alteration of cell function (Genaro and Gentilini 2011; Hannigan, Busby, and Cass 2005; Rabl, Spadaro, and Zoughaib 2008).

The U.S. Environmental Protection Agency (EPA) sets maximum exposure levels (MELs) or permissible exposure levels (PELs) based on average human tolerance of stressors. A MEL is considered likely to result in human health impacts and a PEL is the level industry is permitted to emit. The EPA standards themselves are challenged by groups pursuing environmental justice, including the Zero Waste community. The overall sentiment in the Zero Waste Community is well captured by Kahi Paccaro, the Executive Director of Sustainable Coastlines (one of the member organizations of RAP Coalition) who stated in a recent Hawai'i Business Magazine Article that "(c)orporations set the EPA standards through influence on political contributions, etc." In addition to calling out corporate influence on regulator standards, the Zero Waste community argues that socioeconomic factors influence exposure and sensitivity to pollutants and that these varying sensitivities are not considered when setting safe exposure limits (Ottinger 2013; Brown 2007).

Some policy makers see new-style incinerators as having negligible health impacts and as being the best option for waste management. In this view, the risks associated with these technologies are seen as a result of an uninformed public and alarmist environmental and social justice groups (Giusti 2009). Giusti's review of waste management practices claims that the association between human health impacts and MSWI are weak and inconclusive and suggests that studies which do link MSWI to human health risks use outdated data from old-style incinerators with weaker PCTs. According to Giusti, modern medicine and health surveillance is advanced enough to catch and address human health issues that may surface from MSWI pollution. In contrast, other authors state that MSWI presents "several problems related to human health" (Pavlas et al. 2010, pp. 2328) and that there is risk of pollutant exposure at "every step of the handling, treatment, and disposal of waste" (Giusti 2009, 2231).

## Conclusions

The numbers around H-POWER's energy production potential vary, leaving much room for debate around how much energy from fossil fuel H-POWER actually offsets. Covanta's website<sup>14</sup> claims that H-POWER produces "nearly 8%" of the Honolulu's energy needs while the City's website<sup>15</sup> says "up to 10%". According to IslandPulse, a data visualization tool using electric utility data to track how various energy sources are contributing to powering Honolulu on a given day, H-POWER is producing 3-7% of Honolulu's energy demand. While both the City and Covanta highlight the potential that H-POWER can process 'up to' 90 megawatts of electricity annually, the utility reports that H-POWER produced 69 megawatts in 2017.

---

<sup>14</sup> <https://www.covanta.com/Our-Facilities/Covanta-Honolulu>

<sup>15</sup> [http://www.opala.org/solid\\_waste/archive/How\\_our\\_City\\_manages\\_our\\_waste.html](http://www.opala.org/solid_waste/archive/How_our_City_manages_our_waste.html)



Despite the relatively low percentage of actual fossil fuel offsets offered by H-POWER, it remains in Honolulu's imagination as pragmatic solution to local renewable energy goals. The upstream and lifecycle greenhouse emissions associated with products-turned-trash remain largely uncontested outside of critical climate change policy and Zero Waste circles. Simultaneously, the emissions associated with WTE are erased by simple rhetorical claims that position H-POWER as clean technology.

This Chapter shows that Covanta and the City comingle narratives of WTE-as-sustainability and use a framework of Drackner's waste-as-asset to uplift clean energy goals. Waste is imagined by the City and Covanta as a management and infrastructure challenge, but one that can be leveraged for income and energy generation. For example, in discussing clean energy Covanta and the City both frame as an inevitable output of society that must be handled somehow. As the logic of the narrative argues, one can kill two birds with one stone by making energy at the same time as containing waste. The Zero Waste community simultaneously leverages Drackner's waste-as-risk framework to form a counter-narrative. In this logic discards are too much of an environmental and human health risk to burn, because of the emissions implications, and dually that the large embedded resource expenditures involved in making items-to-become-trash encourage an extractive mindset that overburdens planetary limits.

### Chapter 3. Landfill Diversion and Upstream Impacts

*"We know that we cannot continue unabated to consume and dispose of the world as we now do." –Greg Kennedy, 2007*

Landfill diversion has long been a priority of Honolulu’s mayor, Kirk Caldwell. Landfills live in the environmental imagination as a nemesis to environmental health and social justice—a manifestation of *discard as a management challenge*. They leak, they off-gas, and they are typically placed in poorer neighborhoods of color (Ahmann 2018). Mayor Caldwell’s campaign rhetoric claims to prioritize closing Honolulu’s largest landfill, Waimanalo Gulch Sanitary Landfill (WGSL)—a goal that has already passed its initial 2012 deadline. Due to a lack of a consensus around a new landfill site and the need for a H-POWER ash repository, the landfill has remained open.<sup>16</sup> While Mayor Caldwell evokes the public imagination of landfills and a well-trodden course of NIMBY, it remains that H-POWER will need to continue to deliver ash from incineration to the landfill. About 90% of material landfilled at WGSL in 2016 was ash or non-combustible residue from H-POWER<sup>17</sup>

### Zero Waste to Landfill

“(S)ustainable waste and energy solutions ensure no waste is ever wasted,” reads part of Covanta’s mission statement. This model, the website claims, allows the company to “Protect Today. Power Tomorrow”. Waste emerges from Covanta’s discourse not just as valueless trash—but as a valuable resource to be used. Simultaneously, waste is held up as a potential global warming risk if left in a methane-producing landfill and not mitigated by H-POWER. The lens of discard studies becomes useful again as we see trash positioned as both a commodity to generate income for the City (a framing in line with Drackner’s waste-as-asset) and as a

---

<sup>16</sup> <https://www.wastedive.com/news/honolulu-mayor-opposes-new-landfill-site-pledges-to-maximize-existing-one/511759/>

<sup>17</sup> [http://www.opala.org/solid\\_waste/pdfs/WGSL\\_01-08-18\\_Status\\_Report.pdf](http://www.opala.org/solid_waste/pdfs/WGSL_01-08-18_Status_Report.pdf)

contributor to global warming if left in the landfill (a waste-as-risk notion). In debates around the benefit of landfill versus WTE, discards once again emerge as a site for power struggles.

Rubrics of success make certain criteria salient while silencing other criteria, which can invisibly reinforce or create an ideology (Star 1999). The City's rubric for sustainable in waste management has become, in part, diverting waste from the landfill. This can be seen in the Statewide Aloha+ Challenge goals discussed earlier, in the Mayor's environmental platform, and in Covanta's value-proposition discourse. This rubric frames the benefits of WTE in terms of the risks posed by landfills and the potential to create energy and income from WTE. It (re)creates a mentality towards and category of waste that is defined by where trash ends up, as opposed to a mentality that looks upstream of disposal and problematizes its initial creation. A sustainability rubric that values 'generating less trash', however, might drive a different type of system. While the WTE versus landfill debate is waged internationally, it is especially relevant in Hawai'i where the limited landmass of the islands offers little space for citing a landfill. This scarcity of space adds weight to local conversations discussion about land use for waste management.

Zero Waste to Landfill is a term coined within Covanta's corporate sustainability dialogue. It reifies the landfill diversion as a major benefit of WTE while conflating the term Zero Waste, which focuses creating less trash, with the notion of keeping trash out of the landfill. The work done by this terminology is apparent in an interview with Stephen Jones, the CEO of Covanta, about New York's Zero Waste goal. While the goal calls for a 90% reduction in the waste stream, Jones claims that "the first step in that Zero Waste process is to take the city's 800,000 tons of waste a year and dispose of it via a non-landfill option."

Jones' language reinforces a landfill diversion rubric of success for waste management, and casts aside the central call of the Zero Waste movement—to create less trash. This notion of Zero Waste to Landfill also emerges as a category or discard possibility within the Aloha + Challenge Waste Reduction goal, as discussed in Chapter 1. This logic uplifts the success of WTE as a waste management on the premise that it diverts discards from the landfill. Simultaneously, this logic enables the City to operate at the bottom of the hierarchy while continuing to claim a source reduction ethic.

Interestingly, these same narratives that position WTE as an environmentally and economically preferential alternative to landfills are also seen in plastics industry discourse. The American Chemistry Council (ACC), a national plastics group, has a history of intervening in local waste management legislation. The ACC spent years lobbying against a plastic bag ban in Hawai'i before it finally passed. In 2017 the ACC submitted testimony in support of HB 749, a Hawai'i bill that would have directed each county to consider WTE as part of their waste management portfolio. In their testimony they stated that "...reducing landfill disposal, marine debris and litter requires the implementation of a variety of tools...A range of energy recovery technologies are being used to complement recycling in helping to divert more valuable post-use materials from landfills. Some of the most widely used and rapidly emerging technologies include waste-to-energy, plastics-to-fuels, gasification, and solid recovery fuels."

What does a national plastic manufacturers professional's organization serve to gain from advocating for WTE in Honolulu? The techno-industrial logic employed in their testimony, which highlights discards as an untapped asset if left in a landfill, serves to uplift WTE as a solution to the inevitable problem of trash. WTE is positioned as a two-for-one deal where waste

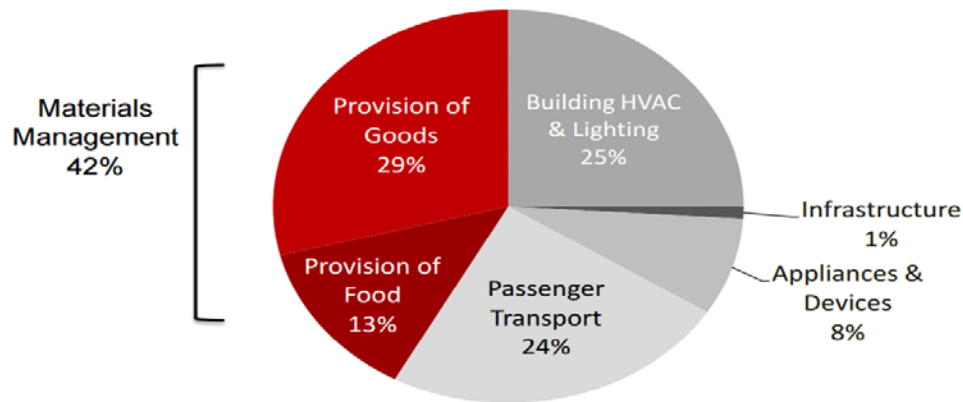
is contained and energy is created, and this logic reinforces a production-consumption cycle. This cycle is critiqued by members of the Zero Waste movement for supporting an over-production of plastic designed for single-use and disposal (Eriksen 2017). Zero Waste groups, like the RAP coalition, problematize the assumption that waste infrastructure solves the socio-environmental factors of waste. They push to reform product design to minimize waste, and ultimately reduce reliance of waste management infrastructures. With ample funds to lobby for their cause, the ACC's voice is at a power advantage over most of the community groups that advocate for Zero Waste. The ACC is better able to deliver their discourse to the ears of politicians and cast aside the feasibility or perception of value offered by a waste reduction centered approach.

As the Zero Waste movement grows—taking hold in communities ranging from the European Union to New Zealand to Austin, Texas to Fort Collins, Colorado—this ideology is beginning to upset the interest of single-use item producters (like the ACC member corporations). Each of the communities mentioned, and many more, have adopted some form of single-use plastic ban or Zero Waste Plan to eventually phase these materials out. In a fight to maintain a market hold, groups like ACC are waging a rhetorical war against Zero Waste. If Zero Waste wins, their product becomes obsolete. WTE emerges as a silver bullet—consumers do not need to change their habits, producers do not need to stop producing, landfills can close *and* energy can be created. WTE provides a powerful logic to validate the resource intensive production of single-use plastic, while the WTE industry is positioned to continue growing as a service to meet a single-use economy.

In defining sustainable waste management in terms of landfill avoidance, the WTE industry is able to quiet calls for upstream source reduction. While source reduction policies would aim to reduce single-use plastic, WTE promises an eternal end-of-life solution for plastic products which then allow for the production and sale of more and more plastic. This promise of WTE courts support from producer groups, like the ACC, because of its support for the longevity of the market for their product. The power struggles to influence waste policy play out as Zero Waste advocates challenge special interest collectives that work together in reinforce the perceived binary of landfill or incineration and maintain a market for their products.

### Trash, Climate Change and Invisible Upstream Emissions

In March 2018, Stanford climate scientist Dr. Chris Field presented a talk at the University of Hawai‘i at Mānoa titled “Climate Change: Finding the Accelerator Pedal”. As Dr. Field interpreted his data for the audience, he drove home the point that a rapid and significant decrease in global carbon output is required to maintain Earth’s temperatures within a safe range. Two degrees Celsius of change is all that stands between a salvageable climate and a climate that will spiral out of control. The title of the talk had suggested radical techniques that would quickly turn the tide on our carbon output and get us back on track. In his talk, Dr. Field directed the audience to a pie chart projected onto the large screen behind him. This pie chart, unlike most visualizations of greenhouse gas emissions which look at sector based emissions, held the spotlight on consumption as driving roughly 1/3 of the global carbon footprint (see Figure 2 below). Without a doubt, he stated, a drastic overhaul of system production and cultures of consumption would yield a major reduction in carbon output.



Source: *Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices*. U.S. EPA.

Figure 2: Materials Management Emissions

Forty-two percent of U.S. greenhouse gas emissions are attributed to the production, use, and consumption of materials (see Figure 2, U.S. EPA 2009). Of this, 32% of the nation's emissions are a direct result of producing the materials, 7.1% is from shipping, and only 2.2% is a result of disposing of materials in landfills (U.S. EPA 2014). If the majority of GHG emissions stem from the production of things, why does the City focus on minimizing miniscule landfill emissions instead of reforming local consumption and disposal practices? As the City made nearly \$130 million in 2017 from energy sales to HECO, the City stands to lose a lot (including the sunken capital costs of H-POWER) if the economy creates less items to burn.

Dr. Field's talk, like so many others, highlights a conceptual fog that settles when we are forced to contend with making changes to our economic system under a neoliberal framework which valorizes the power of the market and technology to fix our woes. The pie chart he presented, makes a clear statement that consumer culture is a monumental piece of climate change mitigation and yet he flew right past it and instead focused the remaining 95% of his talk on how to build clean energy markets. We know our consumption habits are causing

problems—but instead of asking ourselves how we might radically re-conceptualize the socioeconomic system that led us to this point, we remain stuck in a cycle that requires solutions to be measured in terms of commodities, profit, technology and modernization. This privileging of technology as the solution to climate change and concurrent glossing of production-consumption reforms is salient to the Zero Waste discourse about the relationship to WTE and climate change.

The RAP Coalition, and other Zero Waste advocates, employ the U.S. EPA's consumption-based emissions inventory to challenge claims by both the City and Covanta that WTE is a climate change mitigation tool. Zero Waste advocates argue that WTE is problematic from a climate change standpoint because it encourages disposal, through put-or-pay contracts. These contracts then drive the upstream extraction, manufacturing, and transportation of materials—a system which is creating 42% of U.S. GHG emissions. Each of these points in the supply chain has associated GHG emissions (and pollutant outputs) that contribute to global carbon levels. Meanwhile, renewable sources like wind and sun can be used with relatively little emissions and less material use (although there are emissions and impacts that stem from manufacturing and decommissioning the infrastructure). Trash-as-fuel, on the other hand, encourages the upstream depletion of raw materials by encouraging the consumption of products to be thrown away and then burned.

Trash, as outlined throughout this thesis, is positioned by the City and by Covanta as a sustainable fuel. One that is clean, and renewable—and preferential to coal and oil. While this thesis is not attempting to uplift coal or oil energy, Chapter 2 served to problematize that narrative. From the perspective of smokestack GHG emissions, we saw that in Honolulu H-



POWER emits more CO<sub>2</sub> equivalent than oil—and that coal only emits about 11% more CO<sub>2</sub> equivalent per megawatt hour of electricity than H-POWER. Further, from a toxicity perspective, we saw how WTE releases carcinogens like dioxins and particulate matter—and the safe exposure limits delineated by governments are called into question by scholars and communities around the globe. If the landfill diversion value proposition sits upon a foundation of climate change mitigation—how does this argument stand when it becomes clear that the upstream lifecycle of trash-energy is burdensome on the climate, accounting for 46% of U.S. GHG emissions, as well as marginally better than coal to worse than oil as it emits from H-POWER's smokestacks.

## Conclusion

Taken together, the valorization of landfill diversion as the primary rubric for success and the erasure of upstream emissions have excluded serious discussion of the reduction of the waste stream prior to disposal. In not acknowledging the upstream implications of a system that requires constant waste input and in measuring the merits of incineration against a rubric of landfilling, H-POWER is reinforced as the fitting solution for Honolulu waste management needs.

According the U.S. EPA Greenhouse Gas Emission Reporting Program (GHGRP), which tracks the top 25 GHG emitters in each state, H-POWER emitted 268,495 metric tons (mt) of carbon dioxide equivalent (CO<sub>2</sub>eq) in 2016. But this is not the whole picture, as discussed in Chapter 2, an additional 380,855 tons of *biogenic* carbon is discounted from H-POWER's official carbon footprint reporting. With biogenic carbon factored in, the total emissions from H-

POWER are 649,350 mtCO<sub>2</sub>eq (U.S. EPA 2017). Combined, the three landfills in Honolulu emitted 112,267 mtCO<sub>2</sub>eq—less than half of H-POWERs discounted emissions rate. H-POWER emits more than double the GHG emissions of all three of Oahu’s landfills combined. Yet, the WTE has been successfully uplifted by municipal-corporate discourse as a cleaner, better option than landfills.

## Chapter 4. International Development and Individualism

*“Today it’s World Bank loans to small counties, so they can buy waste-to-energy incinerators to burn it all and keep new plastic production alive.”—Marcus Eriksen, 2017*

At the time of this writing Indonesia is under scrutiny for being a top contributor to marine debris through a lack of adequate waste management and is working with a U.S. based company to adopt WTE infrastructure. Scholars and policy-makers alike are recommending WTE as a solution to Indonesia’s waste issues (Howell 2015b, The Ocean Conservancy and McKinsey Center for Business and Environment 2015). Amidst this discussion, little credence is given to the potential to lessen Indonesia’s waste stream. As places like the United Kingdom, Canada and the U.S. continue to export wastes to Indonesia for “recycling” and as consumer markets for convenience items continue to grow—Indonesia’s waste footprint is exploding. While a lack of waste infrastructure is a contributor to pollution from escaped waste, the root cause of the waste stream is ignored and the WTE tech-fix is uplifted to catch an ever-present (and ever-increasing) flow of waste. This framework is consistent with other scholarship on neoliberal conservation and international development interests—which prioritize modernization

schemes that rely on expensive technology which inevitably indebts poorer countries to rich ones and reinforces global power regimes.

### Globalization Discourse: Structural Opposition and Ideological Squaring

This section builds off the following excerpt from the previously detailed discussion between the RAP Coalition and Covanta.

CR: And so, one of the big reports that just came out like a month and a half ago, and I'll make sure you get a copy of it, but was um, with Clinton Foundation, was like countries like Indonesia and that type of thing... I mean the plastic's not coming from your shore right (*laughs*), is kind of the gist of this big report, but so, in kinda the countries where it is coming from and what is happening there and the currents, and that type of thing, and what are the technologies, or, what are infrastructure investments that more developing countries need to make as kind of this problem is something that we all share cuz it's one ocean. Um one of the technologies that was referenced in there or recognized in there or advocated in there was kind of waste-to-energy..."

CR is evoking a discourse of globalization, which includes an opposition between developed and developing countries as well as a focus on market-based solutions, infrastructure and technology (Steger 2013). This globalization discourse becomes apparent when CR poses a rhetorical question, asking the listeners 'I mean that plastic's not coming from your shore, right?' It is at this point that CR begins to naturalize an alignment between RAP and Covanta and position 'Indonesia' as the other. CR does this by evoking well-trodden global development

categories of *developing* and *developed* countries, which although pervasive, are deeply contested (Steger 2013; Global Alliance for Incinerator Alternatives 2015).

‘Developing countries’ are introduced by CR as a natural contributor to plastic pollution, and example of which is Indonesia. This claim is naturalized by evoking the findings of the ‘big report’ which shows that plastic pollution is flowing into the ocean from places like Indonesia and not from ‘our shores’, which is intended to imply the shores of developed countries. In her talk CR has set up the discursive realm of structural oppositions—or a constructed set of opposing concepts or groups (Machin and Mayr 2012: 40). The opposition quietly pointed to is between the waste management systems of *developing countries* and the implied opposite actor, *developed countries*.

CR further builds upon this structural opposition to align Covanta and RAP alongside each other (and other developed countries) and against Indonesia (and other developing countries) through a process of ideological squaring (Van Dijk 1993; Van Dijk 1998). Ideological squaring is the process of applying implicit or explicit normative judgements to a set of opposites. Ideological squaring tends to oversimplify issues in such a way that the speaker can control the meaning of the categories presented. This then can reflect the values and ideas of the speaker.

CR aligns both Covanta and RAP with the implicit developed countries by using the pronoun ‘our’, stating ‘the plastic isn’t coming from our shores’. The normative judgement developed through the ideological squaring between developed and developing countries positions Covanta, RAP, and other developing countries as victims of plastic pollution.

Indonesia and developing countries are represented as perpetrators—polluting the ocean because of a lack of technology and expertise to do anything differently.

This tapestry of structural oppositions and ideological squaring simplifies the complex interrelationship between the discursively constructed dichotomy of ‘developing’ and ‘developed’ countries. It backgrounds, for example, that the United States is a global leader in waste, generating 258 million tons of MSW in 2014 and surpassed only by Canada in per-capita waste generation (U.S. EPA 2016; UNEP 2015). The total amount of trash Americans generate daily has increased by about 15% from 1980 to 2014, from 3.7 lbs./person/day to 4.4 lbs./person/day (U.S. EPA 2016). While some of this waste is addressed within national borders through waste management infrastructure, much is also exported in the form of recyclables and electronic waste to ‘developing countries’, like Indonesia. While the ‘big report’ blames plastic pollution on ‘countries like Indonesia’, it ignores the consumption patterns of the countries, like the United States, that send trash to Indonesia.

Simultaneously, the potential of source reduction as a solution is quieted. The focus is applied to infrastructure—not consumption patterns. With the onset of globalization, waste generation in poorer countries is indeed increasing (Drackner 2005; Quest 2016). As corporations relocate their factories to developing nations, industrial wastes increase. As transportation has opened new markets, a wider array of products are available in places that have been spatially detached from supply chains (Quest 2016). Further, there are more and more humans entering the consumer economy, which combined with large scale migration into urban centers, is increasing generation of waste in developing countries (Drackner 2005).

Instead of addressing increasing consumption and importation of waste as the root cause of waste generation and reimagining the systems that produce this problem, the WTE industry and allied producer groups simply position waste an inevitable nuisance. These same organizations “promote the sale of technology produced in the First World, (such as) incinerators, compost plants, metal foundries, sanitary fills, etc.” (Castillo Berthier 2002: 195) to places like Indonesia. The ability for technology to solve modern issues without requiring people or systems to change has come to colonize modern ways of thinking and being (Kennedy 2007, Castillo Berthier 2002, Hird 2012). As Castillo Berthier notes, perhaps “(i)t is not useful to view technology as a miraculous panacea that solves problems...” (2002: 196). Drackner (2005) argues that an increased reliance on infrastructure distances us from the impacts of our consumer cultures, and perhaps disincentives behavior change need to reduce waste. “Carefreeness is the real promise of technology, and its real fulfillment is trash” (Kennedy 2007: 122).

#### Individual action as scapegoat: litter and population growth

*"Here we see how the corporate world can play the same individual responsibility theme that permeates science and governments. The more those institutions emphasize personal control over hazards, the more the corporate claim of individual responsibility is legitimized." –Phil Brown, 2007*

Phil Brown engages with the power of individualizing discourse in his 2007 book *Toxic Exposures: Contested Illnesses and the Environmental Health Movement*, in which he discusses the minimization of structural inequalities and issues in environmental health issues through the deployment of an individual responsibility and individual predisposition dialogue. He argues that the narrative moves made by government and industry to weight the causation of disease on

individual factors, like housing choices or genetic predisposition, suppress the serious consideration of industry reform by backgrounding environmental and social factors of disease. In using notion of individual accountability, Covanta is able to position WTE as more feasible solution to trash than reorganizing an entire industry.

This individual action narrative backgrounds the link between social structures, like disproportionate exposure to environmental toxins, on disease. An example of this framework can be seen in the case of fenceline communities, where people of color are disproportionately impacted by exposure to industry toxins because of the structural income inequality (among other social factors) traps families on low-value lands—the same cheap land that is of interest to industry (Coburn 2005, Ahmann 2017). To argue that these families are exposed to toxins because of their choice in housing, or genetic predisposition to disease, is to dodge the foundational issue of the ways in which regulators permit industry to pollute, cite, and operate.

In the case of WTE, individualizing discourse can be seen in two primary ways. First, through the positioning of waste generation as an inevitable. This move states that population growth and the strength of the economy are the driving factors of waste generation—and that waste is just a part of growth. Further, when the economy booms people have more expendable income and spend more money—generating more waste. This argument reifies the idea that consumption is destined to increase and increases in waste will thus follow. WTE infrastructure is then positioned to manage an ever-present and growing flow of waste.

The second way individualizing language is leveraged to validate WTE is through language about litter prevention. In this framework, the structural issues within the supply chain

(i.e. planned obsolescence, single-use convenience culture generating lots of packaging waste) that result in waste are quieted while the individual action of littering is foregrounded as the cause of environmental-bads. The argument is something like: trash itself is not the issue bad, the issue is that people do not throw it away properly (because of lack of suitable infrastructure or education). This individualizing argument is leveraged into a technocratic solution scheme—in which all nations need better infrastructure and better solution systems, and first world companies should be hired to lead the way. This logic is used by Covanta to vie for more WTE infrastructure. Groups like the ACC also use this logic to displace the blame for plastic pollution on to consumers that just cannot seem to properly throw things away—while working in discursive collaboration with the WTE industry to suggest more infrastructure to solve the problem.

The idea of the inevitability of trash can be seen in national discussions around the role of personal consumption expenditure (PCE), a federal measure of U.S. consumer spending on goods and services. These goods and services include food, clothing, vehicles, recreation and comprise nearly 70 percent of U.S. Gross Domestic Product. The U.S. EPA narrates PCE as “the strongest driving force of MSW generation.” The logic follows that “consumer spending leads to obtaining products or packaging that ends up being discarded as MSW” (U.S. EPA 2014). While it is not false that purchasing products can lead to waste, it is problematic that this narrative naturalizes a future of ever-increasing consumption and disposal while silencing the possibility of decreased or alternative consumption. With measures like gross domestic product (GDP) and PCE normalizing consumption, it becomes difficult to imagine a world where consumption is reduced or not product-based.



This same notion is apparent in the City’s narrative of population growth, economic health, and waste production. As a part of the 2018 Integrated Solid Waste Management update process (ISWMP), which maps out the City’s waste management strategy for the following 10 years, the City projected a consistent increase in MSW generation. This projection was used to scope future infrastructure needs, which led the City to plan to consider a fourth boiler for H-POWER in order to handle an ever increasing waste load. During the ISWMP planning meetings Zero Waste advocates argued that by considering waste growth as a given condition the City failed to consider the possibility of managing waste by reducing it. If focusing on waste growth, infrastructure additions may make sense—which would also have the added benefit of increased revenue for the City (a fourth boiler means more energy to be sold to the utility). If focusing on the possibility of less waste, however, it becomes much less prudent to continue to invest in expensive infrastructure.

Litter prevention programs, funded by the ACC through community-based organizations like Keep America Beautiful also serve to (re)produce individual accountability discourse. These litter campaigns, which are launched throughout the U.S. and can be seen in Hawai‘i, encourage single-use plastic consumers to recycle. These campaigns send the message that as long as recycling happens and litter is avoided, individual environmental accountability is absolved. They circumvent the global implications of continuing to use problematic amounts of natural resources to make convenience products, and message to the consumer *‘the only thing you have to change is where you throw your trash.’* As scholars like Brown and Corburn argue such individualization discourse confuses the root cause of socio-environmental health issues. It

allows for corporations, when called out for destructive processes, to shift the blame to consumers for not throwing things away properly.

## Conclusions. Operating at the Bottom

*“Revealing the nature of the links between language, power and ideology can play an important emancipatory role.”—Machin and Mayr, 2012*

This analysis has attempted to show how the City and Covanta were able to foreground WTE as *the* solution for waste management in Honolulu. Using a critical discourse analysis of official literature (policy as well as corporate and municipal publications) and drawing from interviews, literature reviews and participant observation this project has demonstrated the complex narrative moves used to create the notion of WTE-as-sustainability in Honolulu. These moves include the deployment of a discourse of information, simulated equalization, structural opposition, ideological squaring, and metaphor in order to create a master narrative in which: 1) WTE is equated with clean energy, and 2) WTE is measured against the rubric of landfill diversion. Further, the thesis has highlighted how the WTE-as-sustainability narrative is strengthened by neoliberal notions of trash is inevitable, of individual action, and alignment with global ‘sustainable’ development interests.

In a global setting where waste reduction is erased as a valid option for municipal solid waste management, it is important to highlight that end-of-pipe technology is not universally accepted as a panacea for waste pollution and is indeed contested ground (Global Alliance for Incinerator Alternatives 2015; Open Letter to Ocean Conservancy Regarding the Report “Stemming the Tide” 2015; U.S. EPA 2009). Teasing apart this narrative, we can extrapolate

this conversation to the power of building a brand—and the push to align sustainability with business in a neoliberal world. Brands are social significations that create and recreate cultural worlds through their emotional value to customers (Heilbrunn 2015; Matsunaga 2016). Brands have become “a way of knowing the world, a classificatory system or discourse that provides resources for the construction of identities, communities, and, more broadly, social relationships” (Matsunaga 2016: 231).

Covanta is building a brand value on the platform of sustainability. The emotional value created through brand helps neutralize or erase some of the tensions that exist between incineration and concepts of sustainability. For example, Swatch does not sell watches, but “fashion accessories that incidentally tell the time” (Heilbrunn 2015: 44). Analogously, Covanta does not burn trash as a lucrative waste management tool—but is pushing forward a sustainable future by generating renewable energy from waste. In an era where social justice and environmental responsibility are considered marketing tools (Matsunaga 2016), especially for reaching the liberal left, Covanta is making an important move by positioning themselves within a web of social and cultural signification that says ‘we are ethical.’ The symbolic nature of H-Power serves as a distraction from the material and fiscal realities.

In Honolulu, the master narrative used to validate WTE compares the cost and benefits of WTE against other forms energy production or waste management (Zuberi and Ali 2015). Throughout the preceding chapters we have seen how WTE validated H-POWER’s benefits in terms of clean energy and landfill diversion. As this thesis has demonstrated, a neoliberal logic using a market-based approach to sustainability underpinned this narrative. The City and Covanta use a waste-as-commodity and technology-as-solution framework to uphold WTE as the

best solution. By exposing this underlying ideology, this thesis has denaturalized the claims used by the City to validate WTE.

This project has also explicated the arguments of the Zero Waste movement, which built on an ethic of waste reduction. The official discourse used by the City and Covanta suppresses the full realization of waste reduction as a legitimate and official approach and elevates WTE technology as a superior approach. The silencing of source reduction is not without consequences. At the time of this writing, Honolulu is undergoing a 10-year Integrated Solid Waste Management Plan Update. Initial drafts of the plan included the consideration of expansion of the H-POWER facility and very little language about source reduction. This expansion would require the construction of a fourth boiler and offer the potential to divert recycling to incineration—a prospect which the Director of DES suggests would save on GHG emissions by creating local energy and discontinuing the shipment of recyclables for processing. Along these lines, the DES supported a resolution in 2018 that would redefine recycling to include incineration—without explicitly informing the public in the change of the destiny of their recyclables.

In comparing the environmental and socio-economic implications of burning or recycling PET plastic disposal in Honolulu, Young Park and Gupta (2003) found that “the answer to this question depends on the criteria according to which we assess sustainability.” Their work challenges the idea that local processing is necessarily better, as purported to be the case by the City. They summarized their stance as follows:

“In the case of PET waste bottles, the environmental costs (in terms of emissions) associated with the long distance and fuel consumption that waste must travel to be

recycled are dramatically outweighed by the environmental benefits of the avoidance of production of new resin and fiber. Conversely, the environmental benefits (in terms of emissions) of waste's short transport to an incinerator are outweighed by the costs of emissions associated with incineration that leads to high levels of greenhouse gas emissions."

In terms of action, they recommended educating the public and policy-makers that local "energy recovery of plastic, and potentially other combustible materials, may have unintended environmental consequences, and may be better utilized—at least from a global warming standpoint—in global rather than local metabolic processes." They argue that in evaluating the sustainability of urban waste-to-energy generation, the benefit of decreased cumulative energy demand for a given locality must be weighed against the cost of increased greenhouse gas emissions from combustion. Honolulu's reliance and weddedness to H-POWER create the risk that these alternative perspectives will fall to the wayside.

This thesis has traveled upstream of our waste disposal systems to question the political ecology of trash in Honolulu and the assumptions and alignments that create conditions for wastage. While the City and Covanta posture as proponents of source reduction through declarations and soft policy, operationally the City is wedded to WTE. Through WTE trash becomes positioned as a commodity with a captive consumer base and solutions that reimagine systems to stop the flow of trash are ignored. As municipalities incur large sunken-costs from the construction and operation of WTE, it becomes important to acquire waste to burn and sell to local utilities for income to cover these expenses. This in turn reinforces status quo consumption practices and the associated emissions and pollution from the production, transportation and use

of goods-turned-trash. In a WTE framework, producers and consumers are not being asked to change product design or purchasing behavior but are instead imaginatively absolved of environmental guilt by turning their trash into energy. An endless cycle is created where discards are burned to drive an economy in which more and more discards can be made—an approach that lines the pocket books of a few, jeopardizes the health of many, and creates havoc for the ecosystems and natural resources to which all human and non-human livelihoods are connected.

## Works Cited

Ahmann, Chloe

2018 "It's Exhausting to Create an Event out of Nothing": Slow Violence and the Manipulation of Time. *Cultural Anthropology* 33(1): 142--171.

Baptista, Ana, and Kumar Amarnath

2017 Garbage, Power, and Environmental Justice: The Clean Power Plan Rule. *William and Mary Environmental Law Review* 41: 33.

Brown, Phil

2007 *Toxic Exposures: Contested Illnesses and the Environmental Health Movement*. Columbia University Press.

Castillo Berthier, Hector

2002 Garbage, Work, and Society. *Resources, Conservation and Recycling* 39: 193–210.

CH2M Hill

2018 ISMWP Update.

Chen, J.C., F.Y. Chang, and M.Y. Wey

2008 Modification of Pd/Al<sub>2</sub>O<sub>3</sub> Catalyst to Improve the Catalytic Reduction of NO in Waste Incineration Processes. *Catalysis Communication* 9(6): 1106–1110.

Clinton Foundation

2015 CLINTON GLOBAL INITIATIVE ANALYSIS OF COMMITMENT PORTFOLIO ALIGNMENT WITH THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS. [https://www.clintonfoundation.org/sites/default/files/cgi\\_commitments\\_analysis\\_unsdg\\_2005-2015.pdf](https://www.clintonfoundation.org/sites/default/files/cgi_commitments_analysis_unsdg_2005-2015.pdf).

Corburn, Jason

2005 *Street Science: Community Knowledge and Environmental Health Justice*. Cambridge, Mass: MIT Press.

Douglas, Mary

1966 *Purity and Danger*. New York, N.Y.: Frederick A. Praeger Publishers.

Drackner, Mikael

2005 What Is Waste? To Whom? *Waste Management and Research* 23(3): 175–181.

Eriksen, Marcus, and et al.

2014 Plastic Pollution in the World's Oceans" More than 5 Trillion Plastic Pieces WEight over 250,000 Tons Afloat at Sea. *PlosOne*.

Fairclough, Norman

1995 *Critical Discourse Analysis: The Critical Study of Language*. London: Longman.

Foxtree, Jean, and Josef Schrock

2002 Basic Meanings of You Know and I Mean. *Journal of Pragmatics* 34: 727–747.

Fry, R.C., and J.E. Rager

2013 Air Toxics and Epigenetic Effects: Ozone Altered Microsputum of Human Subjects. *American Journal of Physiology* 306(12). Lung Cellular and Molecular Physiology: L1129–L1137.

Genaro, V., and P. Gentilini

2011 Human Health and Pollution Due to Soild Waste Incinerators (SWI): A Selection of Two Recent Well Conducted Studies. *Journal on Biological Research* LXXXIV.(1).

Giusti, L.

2009 A Review of Waste Management Practices and Their Impact on Human Health 23: 2227–2239.

Global Alliance for Incinerator Alternatives

2015 Technical Critique of “Stemming the Tide.” Global Alliance for Incinerator Alternatives. [http://www.no-burn.org/wp-content/uploads/Technical\\_critique\\_Stemming\\_the\\_Tide\\_report.pdf](http://www.no-burn.org/wp-content/uploads/Technical_critique_Stemming_the_Tide_report.pdf), accessed December 5, 2017.

Gregson, Nicky, Alan Metcalfe, and Loise Crewe

2007 Identity, Mobility, and the Throwaway Society. *Environment and Planning D: Society and Space* 25: 682–700.



Hannigan, M., William Busby, and Glen Cass  
2005 Source Contributions to the Mutagenicity of Urban Particulate Air Pollution. *Journal of Air and Waste Management* 55(4): 3999–410.

Heilbrunn, Benoît  
2015 *Market Mediations: Semiotic Investigations on Consumers, Objects and Brands*.

Hird, Myra J.  
2012 Knowing Waste: Towards and Inhuman Epistemology. *Social Epistemology* 26(3–4): 453–469.

Howell, Jordan .P.  
2013 *Technology and Place : A Geography of Waste-to-Energy in the United States*.  
University of Michigan.

2015a ‘Modes of Governing’ and Solid Waste Management in Maui, Hawai‘i, USA.  
*Environment and Planning A* 47(10): pp.2153-216.

2015b The Fate of Waste in Hawai‘i: Technology Assessment and Solid Waste Planning in  
Hawai‘i, 1968–78. *Singapore Journal of Tropical Geography* 36(1).

2017 Waste Governance and Ecological Identity in Maui, Hawai‘i USA. *Geoforum* 79: 81–89.

Isaksson, C.  
2015 Urbanization, Oxidative Stress and Inflammation: A Question of Evolving,  
Acclimatizing, or Coping with Urban Environmental Stress. *Functional Ecology* 29(7): 913–923.

Kennedy, Greg  
2007 *An Ontology of Trash: The Disposable and Its Problematic Nature*. Environmental  
Philosophy and Ethics. Ithica, N.Y.: Suny Press.

Kopnina, Helen  
2014 Environmental Justice and Biospheric Egalitarianism: Reflecting on a Normative-  
Philosophical View of Human-Nature Relationships. *Earth Perspectives* 1(8): 1–11.

Machin, David, and Andrea Mayr  
2012 *How to Do Critical Discourse Analysis : A Multimodal Introduction*. SAGE Publishing.

Mathews, Andrew

2011 *Instituting Nature: Authority, Expertise, and Power Mexican Forests*. London, England: MIT.

Matsunaga, Louella

2016 Chapter 15: The Corporate Brand: Toward an Anthropology of Brandin. *In Enterprise as an Instrument of Civilization, Translational Systems Sciences*.

Miranda, M.L., and B. Hale

1997 Waste Not, Want Not: The Private and Social Costs of Waste-to-Energy Production. *Energy Policy* 25(6): 586–600.

Office of the City Auditor

2015 Audit of the Department of Environmental Services H-POWER Contract and Procurement Practices.

2017 Audit of the City's Recycling Program. Report to the Mayor and the City Council of Honolulu, 17–06. Honolulu: City and County of Honolulu State of Hawai'i.

Open Letter to Ocean Conservancy Regarding the Report “Stemming the Tide”

2015. [http://www.no-burn.org/wp-content/uploads/Open\\_Letter\\_Stemming\\_the\\_Tide\\_Report\\_2\\_Oct\\_15.pdf](http://www.no-burn.org/wp-content/uploads/Open_Letter_Stemming_the_Tide_Report_2_Oct_15.pdf), accessed December 5, 2017.

Oregon DEQ

2009 Lifecycle Assessment of Drinking Water Systems: Bottled Water, Tap Water, Home/Office Delivery Water. Oregon: Oregon Department of Environmental Quality (DEQ). <http://www.deq.state.or.us/lq/pubs/docs/sw/LifeCycleAssessmentDrinkingWaterReportOnly.pdf>, accessed December 10, 2016.

Ottinger, Gwen

2013 *Refining Expertise: How Responsible Engineers Subvert Environmental Justice Challenges*. New York University.

Pavlas, M., and et al.

2010 Waste to Energy--An Evaluation of the Environmental Impacts. *Applied Thermal Engineering* 30(16): 2326–2332.

Pessel, Włodzimierz Karol

2006 Rubbish as Informants: A Cultural Contribution to Polish “Garbeology.” *Anthropology Matters* 8(1): 1–6.

Pizzol, Massimo, Flemming Moller, and Marianne Thomsen

2013 External Costs of Atmospheric Lead Emissions from a Waste-to-Energy Plant: A Follow-up Assessment of Indirect Exposure via Topsoil Ingestion. *Journal of Environmental Management* 121: 170–178.

Quest, Kenneth J.

2016 *Cultural Anthropology: A Toolkit for a Global Age*. New York, N.Y.: W.W Norton and Company.

Rabl, Ari, Joseph Spadaro, and Assad Zoughaib

2008 Environmental Impacts and Costs of Solid Waste: A Comparison of Landfill and Incineration. *Waste Management and Research* 26: 147–162.

Reno, Joshua

2009 Your Trash Is Someone Else’s Treasure: The Politics of Value at a Michigan Landfill. *Journal of Material Culture* 14(1).

2015 Waste and Waste Management. *Annual Review of Anthropology* 44(1): 557–572.

Schegloff, Emmanuel

2007 A Tutorial on Membership Categorization. *Journal of Pragmatics* 39(27): 462–482.

Schell, L.M., K. Burnitz, and P. Lathrop

2010 Pollution and Human Biology. *Annals of Human Biology* 37(3): 347–366.

Schell, L.M., and M. Denham

2003. Environmental Pollution in Urban Environments and Human Biology. *Annual Review of Anthropology* 32: 111–134.

Schmitz, Rob

2017 The Burning Problem of China’s Garbage. NPR, February 20.

<http://www.npr.org/sections/parallels/2017/02/20/515814016/the-burning-problem-of-chinas-garbage>, accessed May 1, 2017.

Song, Qingbin, and Xianlai Zeng

2015 Minimizing the Increasing Solid Waste through Zero Waste Strategy. *Journal of Cleaner Products* 104: 199–210.

Star, Susan Leigh

1999 The Ethnography of Infrastructure. *American Behavior Scientist* 43.

Steger, Manfred

2013 Political Ideologies in the Age of Globalization. *In The Oxford Handbook of Political Ideologies*. Oxford University Press.

The Ocean Conservancy, and McKinsey Center for Business and Environment

2015 Stemming the Tide: Land-Based Strategies for a Plastic-Free Ocean.

<https://oceanconservancy.org/news/ocean-conservancy-releases-global-report-outlining-solutions-critical-problem-plastic-waste-oceans/>.

UNEP

2015 Global Waste Management Outlook. United National Environmental Programme; International Waste Management Assc.

U.S. EPA

2009 Sustainable Materials Management: The Road Ahead.

<https://www.epa.gov/smm/sustainable-materials-management-road-ahead>, accessed December 10, 2016.

2014 Source Reduction-Scoping Analysis. US Environmental Protection Agency, Office of Resource Conservation and Recovery. [https://www.epa.gov/sites/production/files/2016-01/documents/msw\\_task10\\_sourcereductionscoopinganalysis\\_508\\_fnl.pdf](https://www.epa.gov/sites/production/files/2016-01/documents/msw_task10_sourcereductionscoopinganalysis_508_fnl.pdf), accessed December 10, 2016.

2015 Quantity of Municipal Solid Waste Generated and Managed. EPA's Report on the Environment. <https://cfpub.epa.gov/roe/indicator.cfm?i=53#1>, accessed March 31, 2017.

2016 Advancing Sustainable Materials Management: 2014 Fact Sheet.

[https://www.epa.gov/sites/production/files/2016-11/documents/2014\\_smmfactsheet\\_508.pdf](https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf),

[https://www.epa.gov/sites/production/files/2016-11/documents/advncng\\_smm\\_infogrphc-2014-sm.pdf](https://www.epa.gov/sites/production/files/2016-11/documents/advncng_smm_infogrphc-2014-sm.pdf), accessed December 10, 2016.

2017 Facility Level Information on Greenhouse Gas Emission Tool. US Environmental Protection Agency. <https://ghgdata.epa.gov/ghgp/main.do#/facility/>, accessed March 10, 2018.

Van Dijk, Teun

1993 *Discourse and Elite Racism*. London: Sage.

1998 *Ideology*. London: Sage.

2006 Ideology and Discourse Analysis. *Journal of Political Ideologies* 11(2: Special Tenth Anniversary Issues: The Meaning of Ideology: Cross-Disciplinary Perspectives): 115–140.

Wilk, Richard

N.d. Chp 16: Consuming Ourselves to Death: The Anthropology of Consumer Culture and Climate Change. *In Anthropological Actions*.

Yeagar, Patricia

2008 Editor's Column: The Death of Nature and the Apotheosis of Trash: Or, Rubbish Ecology. *Modern Language Association* 123(2): 321–399.

Young Park, Joo, and Clare Gupta

2019 Evaluating Localism in the Management of Post-Consumer Plastic Bottles in Honolulu, Hawai'i: Perspectives from Industrial Ecology and Political Ecology. *Journal of Environmental Management* 154.

Zuberi, Jibran, and Shazia F. Ali

2015 Greenhouse Effect Reduction by Recovering Energy from Waste Landfills in Pakistan. *Renewable & Sustainable Energy Reviews* 41: 117–131.