

NĀ PUA MAKANI WIND FARM: THE SHIFTING WINDS OF RENEWABLE  
DEVELOPMENT IN HAWAI‘I

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## ABSTRACT

### NĀ PUA MAKANI WIND FARM: THE SHIFTING WINDS OF RENEWABLE DEVELOPMENT IN HAWAI‘I

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In 2015, Hawai‘i set the most ambitious renewable energy portfolio goal in the nation by vowing to reach 100% renewable energy by 2045. Since then, many renewable energy development projects in Hawai‘i have been met with strong community opposition, including the Nā Pua Makani wind farm (NPM) in Kahuku. The aim of this project is to analyze the process timeline of NPM to identify factors in the development process that contributed to organized protest, and to offer recommendations for improving the process. In order to get a full picture of the events throughout the Nā Pua Makani project’s timeline, my research involved analysis of documents from the Public Utilities Commission and interviews with the stakeholders including residents of the impacted communities, legal representatives, and representatives from the final developer. Throughout my research, I found that poor community engagement was a key component of the conflict surrounding NPM. Subsequently, I use a development framework outlined in the United Nations’ Free, Prior, and Informed Consent (FPIC) Manual to identify how NPM fell short in their community engagement process, and recommend that the Hawaiian Electric Company include language within their request for proposals requiring a signed consent agreement between the developer and host community. Additionally, I

review how NPM has changed the renewable development landscape in Hawai‘i to date, and explore development options alternative to utility-scale projects that may have less impact on environmental justice communities.

## ACKNOWLEDGEMENTS

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## INTRODUCTION

In 2019, over 200 people were arrested (Bernardo 2019) for protesting the construction of the wind turbine project Nā Pua Makani in Kahuku, Hawai‘i, a community hosting wind projects that in 2020 provided 44% of O‘ahu’s wind energy and accounted for 15% of O‘ahu’s renewable (solar and wind) generation that year (HSEO 2022). This thesis includes a detailed analysis of the Nā Pua Makani project (NPM) timeline to learn how it became so controversial, and compares the process timeline of NPM to the development framework recommended in the Free, Prior, and Informed Consent (FPIC) manual compiled by the Food and Agriculture Organization (FAO) of the United Nations. While the protests were not successful in stopping the construction of the wind turbines, they did bring up poignant questions concerning renewable energy development in Hawai‘i, such as whether the development is equitably distributed across the island communities and whether host communities are adequately involved in the design/construction process and are receiving benefits comparable to the burdens they face. In the context of global conflicts between Indigenous peoples and renewable development, and the history of land grabbing and marginalization of *Kānaka Maoli* in Hawai‘i, these questions become even more relevant. How can the transition to renewable energy also be a transition away from the harmful tactics of the fossil fuel industry that disproportionately affect black, Indigenous, and people of color (BIPOC) communities?

Free, Prior, and Informed Consent (FPIC) is a concept supported by the United Nations through the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) that declares that Indigenous communities have certain rights in the face of development projects on their land. The FPIC manual compiled by FAO presents a six-step framework that is meant to work as a guideline for development organizations to respect Indigenous Peoples' rights when developing on or near their lands. By drawing a clear picture of NPM's process timeline in Kahuku through interviewing representatives of the community and the developer, I aim to identify phases of the project that meet the standards of the FPIC framework, and phases of the project that fall short of the FPIC framework. I then offer policy changes that would regulate renewable development in Hawai'i in a way that better resembles the FPIC framework.

To start out, I give a brief background on Hawai'i in order to give the reader a sufficient understanding of the historical context development has within Hawaiian communities. The background also includes a history of electricity in Hawai'i, and examines renewable resources on Hawai'i's most populated island, O'ahu. Following the background, I provide a literature review that gives a detailed explanation of Free, Prior, and Informed Consent (FPIC), and the six-step development framework proposed in the FPIC manual. Also within the literature review, I examine literature that studies various methods of community engagement in the context of renewable energy development. After the literature review, I describe the methods used to carry out my research, and subsequently present the results and discussion of my research. The results section gives a process timeline of Nā Pua Makani (NPM) from concept stage to completion. In the

discussion, I analyze the process timeline, and compare/contrast the NPM process timeline to the FPIC framework. Finally, I offer policy recommendations that would align renewable energy development in Hawai‘i closer to the FPIC recommended process.

From my analysis of the process timeline, I found that many of the issues stem from a lack of organization and regulation in community engagement. Specifically, the developers did not adequately perform three aspects of community engagement: obtaining community consent, communicating all project events to the community throughout the development, and ensuring proper representation for the community in the project’s decision-making. Since the completion of NPM’s construction in 2020, there have been some efforts made by the State and utility companies to increase public benefits from renewable development projects. However, I argue that the changes made to date are not sufficient, and recommend further policy reform at two institutions involved with renewable development in Hawai‘i. Firstly, I propose that Hawaiian Electric Company instate strict requirements in their request for proposals that requires a consent agreement between the developer and host community as a prerequisite for all projects proposed in or near environmental justice communities. Secondly, I suggest that the Public Utilities Commission should allow environmental justice communities third-party status for any project within their neighborhood.

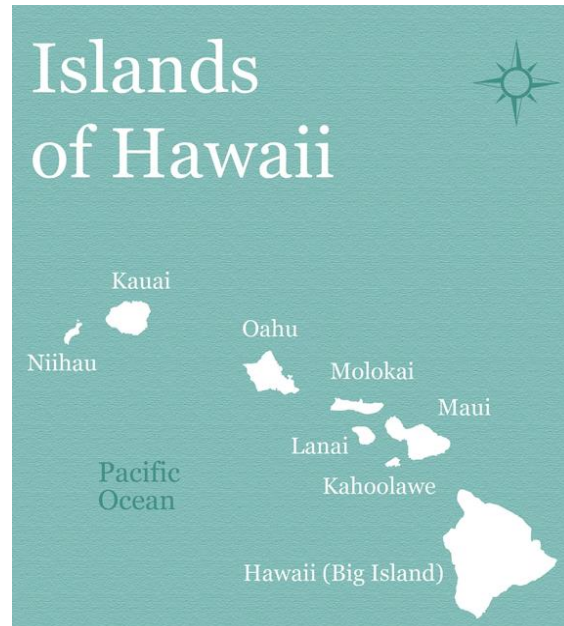
Following my proposals, I identify renewable energy development strategies that are an alternative to utility-scale projects, and discuss how these alternatives may offer a higher level of community engagement with a more positive impact.

## BACKGROUND

To fully comprehend the nuances and conflicts that surround renewable energy development in Hawai‘i, it is important to contextualize it within the history and current policies of the islands. In the background I first provide a brief history of the Hawaiian Islands and explain how it transitioned from an internationally recognized sovereign nation state to a dependent state of the USA. I then go on to discuss the history of electricity in Hawai‘i, Hawai‘i’s goals of transitioning to renewable energy, and the present policies around energy development in Hawai‘i. From there I focus on O‘ahu, the most populated island of the state, and discuss the energy consumption of the island in comparison to the renewable resource on the island. Finally, I review the Ko‘olaupoko region of O‘ahu where several wind projects have been located, including the Nā Pua Makani project.

### Hawai‘i: A Brief History

In the middle of the Pacific Ocean, there is an archipelago of islands commonly known as Hawai‘i. There are eight primary islands in the archipelago: Hawai‘i (The Big Island), Maui, Lāna‘i, Kaho‘olawe, Moloka‘i, O‘ahu, Kaua‘i, and Ni‘ihau (Figure 1); however the archipelago extends over 1,000 miles beyond these islands to the northwest in an area now known as Papahānaumokuākea Marine National Monument: the largest conservation area in the US and one of the largest marine conservation areas in the world (National Ocean Service 2022). All these islands and atolls were created from the same



*Figure 1. The eight main islands of Hawai‘i (Onolicious Hawai‘i 2021).*

volcanic “hotspot” at the bottom of the ocean, which currently lies several miles to the southeast of the Big Island. As the tectonic plate that all the islands sit on moves, each island eventually leaves the hotspot, the volcanoes on the island become dormant, and it begins to erode due to storms and waves. Currently, the hotspot is shared between the Big Island and a new submarine volcano named Kama‘ehuakanaloa (Hawaiian Volcano Observatory 2022). Hawai‘i was first populated by Polynesian explorers around the 5th century AD (Kuykendall 1938). Over the next millennia, the explorers inhabited each island while developing their own language, culture, and spiritual understanding of the newly discovered land. Dominion of the archipelago was split amongst various *Ali‘i Nui*, or royalty, that ruled over their respective islands, and the concept of a single Hawaiian Nation was not realized until 1810 when King Kamehameha of Hawai‘i succeeded in unifying all the islands under his rule, after 20 years of warfare and treaties (Kuykendall



*Figure 2. Every year on June 11, Hawai‘i residents celebrate King Kamehameha I. Here, the statue of King Kamehameha I in Waikiki is shown draped with leis, as is tradition (McAvoy 2011).*

1938). During this same time, the number of foreign visitors to Hawai‘i began to increase exponentially, starting with the arrival of Captain Cook in 1778. While Captain Cook and his crew may not have been the first Europeans to reach Hawai‘i, their arrival to the islands marked a turning point in history when many more Europeans, especially missionaries, began to show up in Hawai‘i (Silva 2004). Similar to countless other Indigenous communities invaded by Europeans, the arrival of Europeans also forecast the arrival of European diseases and mass death. Estimates of the population in Hawai‘i during the mid 18th century range from 400,000 to 1,000,000 people, but by the early 1820s the population had decreased to just 135,000 people (Swanson 2019). In order to

protect their nation, the Hawaiian monarchy learned the language, culture, and customs of the foreigners, and adapted their own ruling structure in ways that would be acknowledged and respected by foreign powers. In 1843, the British consul in Hawai‘i threatened the sovereignty of the Hawaiian monarchy by claiming ownership of the islands (Silva 2004). In response, the Hawaiian monarchy sent ambassadors to the governments of the United States, Great Britain, and France for official statements recognizing Hawai‘i as an independent Nation (Silva 2004). Following a joint written proclamation by Great Britain and France recognizing Hawai‘i’s sovereignty, the Hawaiian monarchy wrote and adopted a constitution “on which European and American types of laws could be based and by adhering to international norms of nation-statehood” (Silva 2004: p. 37).

Despite the attempts made by the Hawaiian monarchy to maintain their independent nation, *haole* (mainly white foreigners) influence in Hawai‘i grew throughout the 19th century. Large, haole-owned plantations were built that promised economic stimulation and job creation for Hawaiians. However, segregated schools and language barriers ensured that Hawaiians were kept in the position of laborer, while haole businessmen and sons of missionaries remained in charge (Silva 2004). Over time, these powerful haoles infiltrated the Hawaiian government by obtaining seats on the Cabinet or becoming advisors to Hawaiian leaders. In the 1880s, King Kalākaua started a movement to reinstate the Hawaiian culture and heritage throughout the nation, thereby threatening the foreigners’ hold on power. As a result, “a conspiracy of missionary sons and other businessmen, with support from the US military, took over Kalākaua’s government





*Figure 3. Queen Lili'uokalani, the last monarch of Hawai'i (Ho'okahua Cultural Vibrancy Group 2021).*

troops” (Silva 2004: p.126) and forced King Kalākaua to sign the Bayonet Constitution that stripped the Hawaiian monarchy of their power and placed it in the hands of haole businessmen. Less than a decade later, after King Kalākaua had died and his sister Queen Lili'uokalani (Figure 3) took the throne, the same group of white men created their own provisional government which they deemed the “Republic of Hawai'i”, and overthrew Queen Lili'uokalani at gunpoint. In response, mass protests were organized, and diplomatic letters were sent to President Grover Cleveland asking for an investigation into the illegal overthrow (Silva 2004). Upon reviewing the matters, President Cleveland

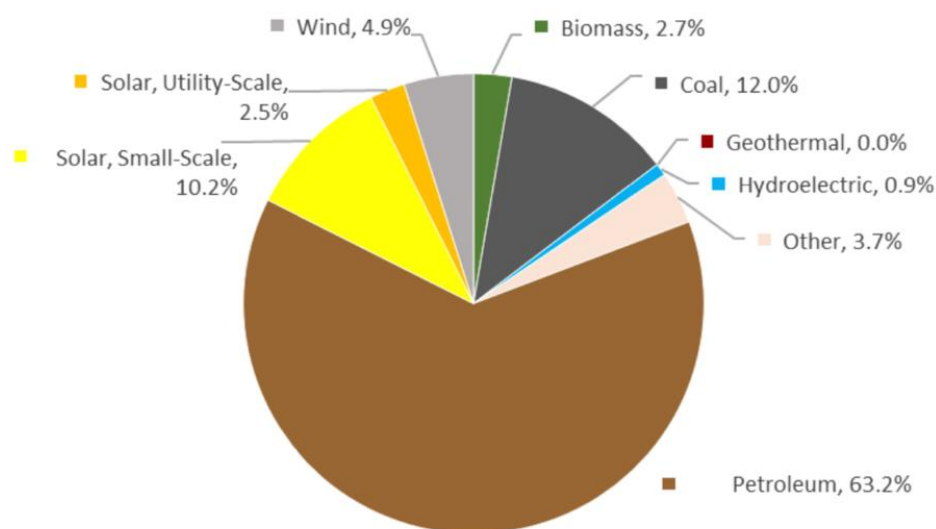
agreed that the overthrow was illegal, refused to acknowledge the provisional government, and ordered them to return power to the Hawaiian monarchy. However, the President failed to follow through with any action, and was subsequently ignored by the usurpers. Once Cleveland left office, Congress passed the Newlands Resolution which found the Republic of Hawai‘i to be legitimate and annexed Hawai‘i as a U.S. territory (Silva 2004).

Once the Hawaiian Monarchy was overthrown, “Hawai‘i was controlled by an oligarchy—a group of Caucasian men who moved in the same business, social, and political circles [...]. Sugar dominated the economy, and the oligarchy dominated the economic, political, and social life of the Islands...” (Menton 1989: p. 35). Throughout the sugar tycoons’ reign, the US was building its military presence on the strategically-located islands. When Pearl Harbor was attacked by the Japanese in 1941, the military took over the Hawaiian government, and the “defense industry, which had begun to outstrip sugar even before the U.S. entered the war, became Hawai‘i’s most important source of income” (Menton 1989: p. 35). After the war, Hawai‘i was named the 50th state of the USA in 1959, which opened Hawai‘i up to the tourism industry and “brought a huge surge in tourist travel to Hawaii” (Mak 2008: p. 16). Today, despite the continued military occupation of the islands and the ever-rising number of tourists, Native Hawaiians continue to persevere in advocating for their people and their land.

### History of Electricity in HI and the Renewable Transition

Due to the forward thinking of the Hawaiian Monarchs, the electrification of Hawai‘i started very early. In the early 1880s, fueled by curiosity and a vision for progress, King Kalākaua travelled to New York to meet with Thomas Edison in order to get a better understanding of the newfound electricity (HECO 2022). By 1886, the official residence of the Hawaiian monarchy, ‘Iolani Palace, had a steam engine installed that powered lighting throughout the entire palace. Excitement for this revolutionary commodity quickly grew, and “by 1890, this luxury had been extended to 797 of Honolulu’s homes” (HECO 2022).

As demand for electricity increased within Hawai‘i, the costs of maintaining an electric grid on an island became apparent. Up to the present day, the majority of Hawai‘i’s electricity relies primarily on imported petroleum (Figure 4), which makes



*Figure 4. Hawai‘i's Electricity Production by Source in 2019 (HSEO 2020).*

electricity in Hawai‘i extremely costly and heavily impacted by the price of oil. Hawai‘i’s reliance on imported petroleum also has a high environmental cost, due to the pollutants emitted from burning the petroleum and transporting it across the ocean. By the 1980s and 90s, several clean energy initiatives were started in Hawai‘i in order to attempt a diversification in energy production, including an 80 kV wind project in Kahuku, a geothermal power plant on the island of Hawai‘i (aka the Big Island), and Hawaiian Electric’s Energy\$olutions Program, which rebated solar water heaters for Hawai‘i residents (HECO 2022). In 2008, the government signed the Hawai‘i Clean Energy Initiative (HCEI) that set the goal to provide 70% of Hawai‘i’s electricity and ground transportation with clean energy by 2030 (HECO 2022). Following HCEI, Hawaiian Electric Company sought out utility-scale renewable projects throughout the state that resulted in several solar projects on O‘ahu, and Hawai‘i, and several wind turbine projects on O‘ahu, Maui, and Hawai‘i (HECO 2022). As pressure for a renewable transition grew, the state government signed a new bill that committed the state to reaching 100% renewable energy by 2045, which was the most ambitious renewable energy goal in the country at the time (HECO 2022).

While Hawai‘i has managed to meet its renewable portfolio targets to date, the transition to renewable has not been without its issues. One aspect that increases the complexity of the renewable transition is the monopoly the Hawaiian Electric Company (HECO) has on providing energy to Hawai‘i residents. Currently, HECO manages electricity access for all the main Hawaiian islands except for Kaua‘i, which sums up to 95% of Hawai‘i’s population (US Census Bureau 2021). Traditionally, as an investor-

owned utility, HECO aimed “to maximize its profits by, more often than not, by selling more electricity” (Baker 2021: p. 53). This business scheme is in direct conflict with the renewable energy transition as it disincentivizes the Utility to support distributed energy resources such as customer-sited solar installations, which has become the largest contributor to Hawai‘i’s renewable portfolio, as shown in Figure 5. In 2010, the State of Hawaii addressed this conflict of interest by instating decoupling mechanisms that disassociate the utility’s revenue with volume of electricity sales. The policy consists of two parts: the Revenue Balancing Account (RBA), and the Revenue Adjustment Mechanism (PUC Docket 2013-1041). Through the RBA, the Utility is allowed an annual target revenue, and can increase or decrease their rates depending on where their actual revenue lands in relation to the target, while the RAM will “compensate the HECO Companies for increases in utility costs and infrastructure investment between rate cases” (PUC Docket 2013-1041). While these mechanisms succeeded in de-linking the Utility’s revenue from electricity sales, they also “shift risk from utility shareholders to ratepayers” (PUC Docket 2013-1041). Furthermore, the mechanisms erase the Utility’s disincentive for clean energy programs, but fail to create incentives for HECO to actively support specific initiatives.

The increased risk for ratepayers does not pose much of a problem for customers with solar installed on their home, since their solar generation insulates them from utility rate hikes. As a result, more households have begun inquiring about installing solar on their rooftop. However some communities, especially rural communities like Kahuku, have been denied that opportunity by HECO, under the explanation that too much

residential solar puts pressure on the distribution infrastructure, since it was built with the intention of moving electricity in one direction only (James 2019). HECO could update the distribution lines within these communities to accommodate a higher volume of bi-directional electricity flow, but without any financial incentives to support distributed energy generation within these communities, when choosing between upgrading distribution lines to accommodate residential solar and upgrading transmission lines to accommodate a wind farm that has signed a power purchase agreement with HECO, it seems likely that HECO will choose the latter.

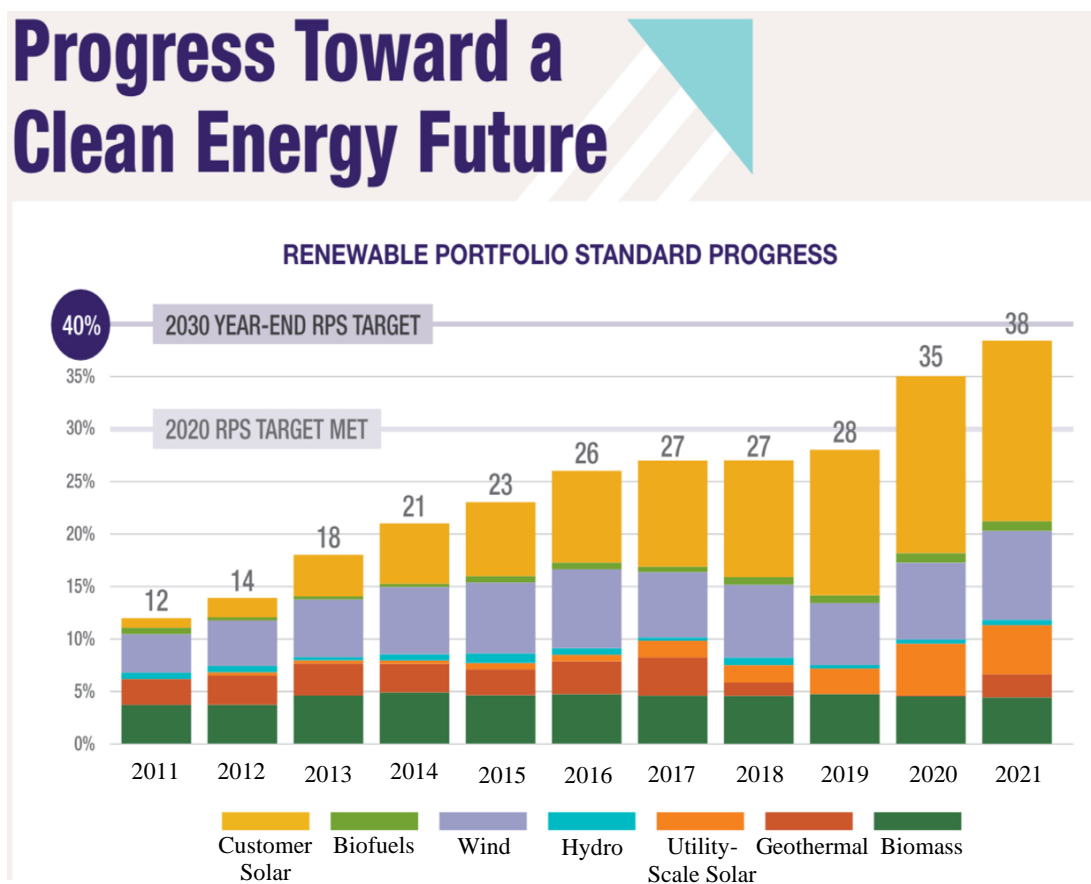


Figure 5. The trend of Hawai'i's renewable portfolio from 2011 to 2021 (HECO 2022b).

As it stands, Hawai‘i residents continue to pay the highest electricity rates in the country, with residents paying an average of \$0.448 per kWh in July 2022 compared to the national average of \$0.1546 per kWh (EIA 2022).

#### On O‘ahu: Energy Consumption and Renewable Portfolio

As the most developed and most populated island in Hawai‘i, O‘ahu has received much attention throughout the shift to renewable energy. The 2021 US Census reported the population of O‘ahu at 1,000,890 people, which accounts for 69% of the state population, while the land area of O‘ahu only accounts for approximately 9% of the state land area (US Census Bureau 2021). In 2019, O‘ahu accounted for 71% (6.5 million MWh) of the state’s total electricity consumption, but only 60.4% (1.66 million MWh) of the state’s renewable energy generation (HSEO 2020). By 2021, roughly 33% of O‘ahu’s generating capacity was renewable as shown in Figure 6.

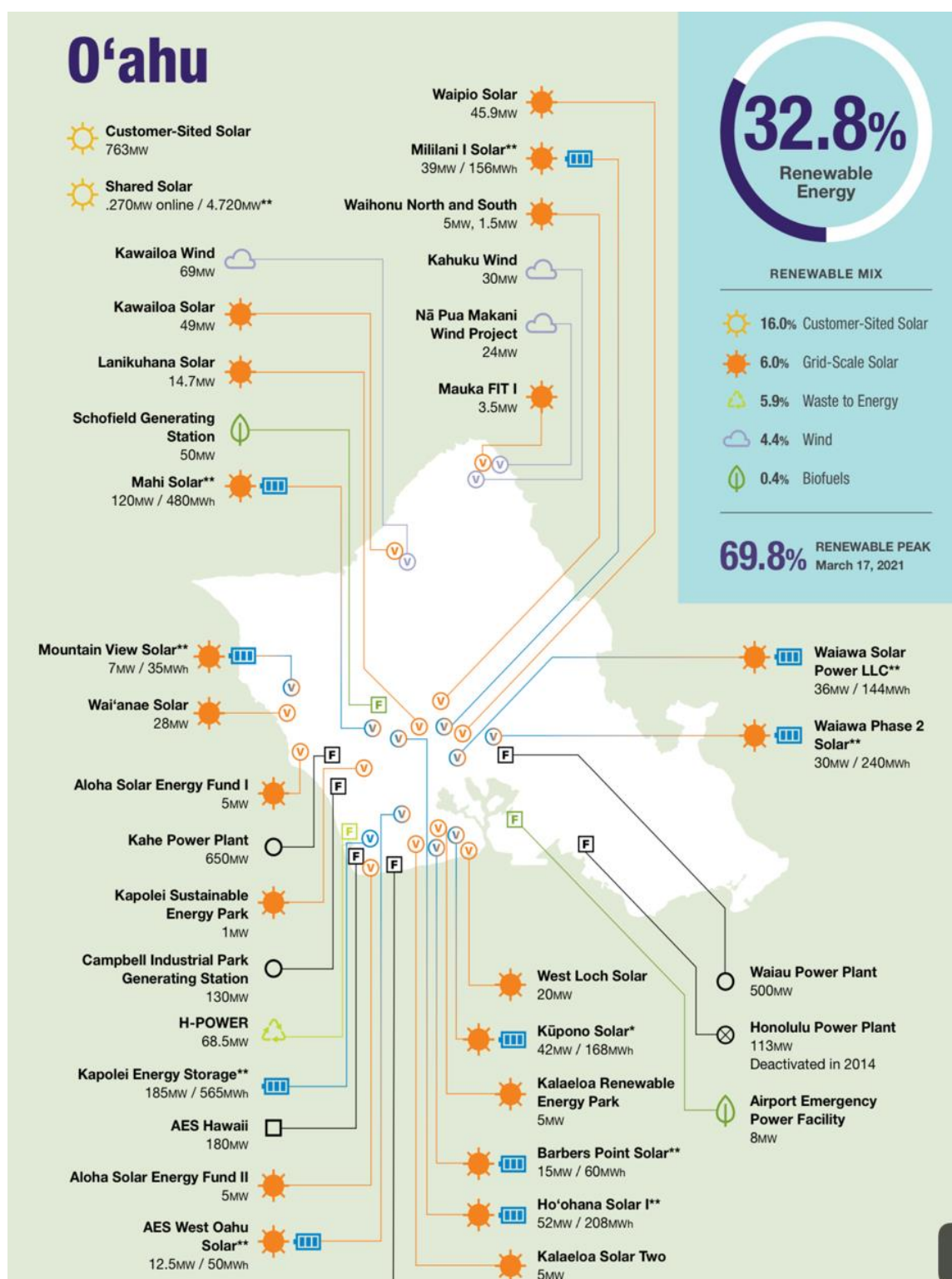


Figure 6. All energy plants in Hawai'i since 2021 (HECO 2022b).



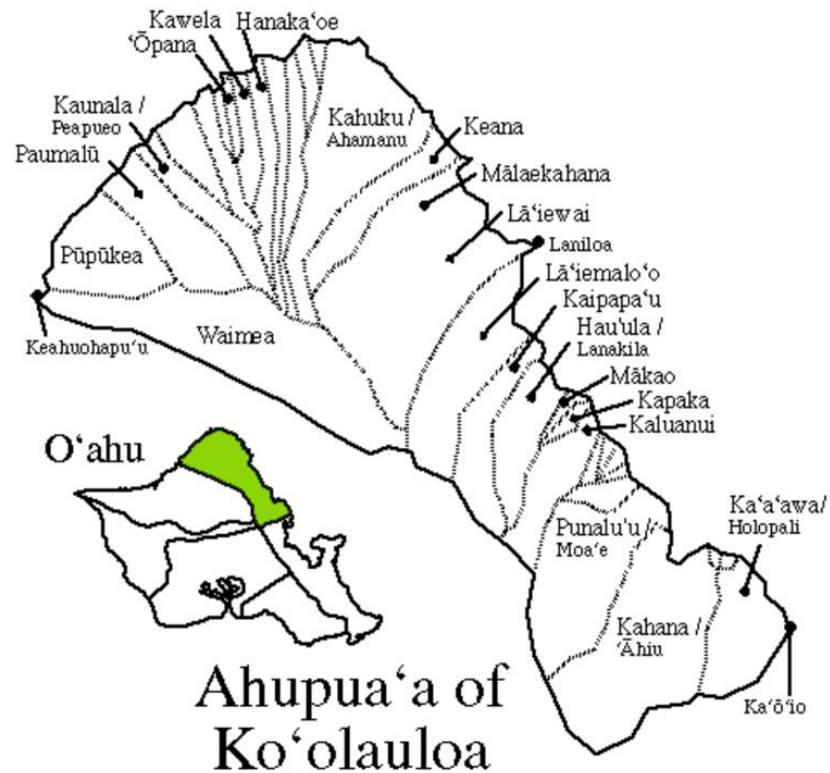
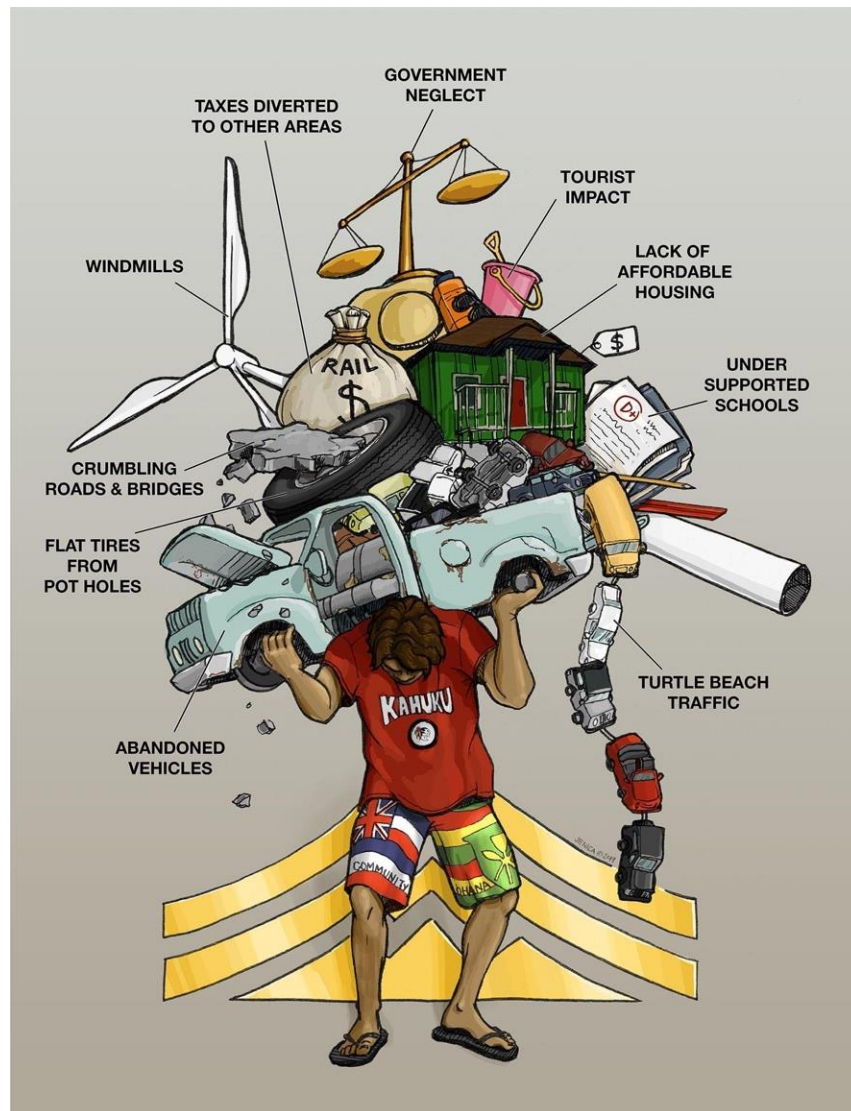


Figure 7. A map of the Ko'olauloa region. (source: <https://libapps.s3.amazonaws.com/customers/3588/images/koolauloaahupuaa.gif>)

### Ko'olauloa Region

My research focuses on wind turbine projects in the Ko'olauloa region of northern O'ahu, specifically in the Kahuku neighborhood (Figure 7). Before Europeans invaded the islands, the Ko'olauloa region was known for its kalo (taro) fields and rich marine resources. In 1865, Brigham Young requested land for a Mormon agricultural colony in Lā'ie, which was granted by King Kamehameha V (Young 2014). By 1867, the Mormon colony started planting sugarcane, and installed a mule-powered sugar mill in 1868 (Young 2014). The history of modern Kahuku town dates back to 1890, when the

Kahuku Sugar Plantation was started by James Castle (Gomes 2013). Eventually, the Kahuku Sugar Plantation processed sugarcane grown on 4,000 acres from Kahuku down to Kahana (Gomes 2013). Since the area is far isolated from any town center, “the plantation provided everything from a school to shops to housing for workers” (Gomes 2013).



*Figure 8. An art piece depicting all the burdens that Kahuku residents carry with them. Credit: Jenica Taylor 2019*

Over time, the area became a tight-knit community that took pride in their self-sufficiency and care for each other. However, due to the lack of sunshine in the area and its proximity to the ocean, the plantation's sugar yields were inconsistent and failed to keep up with the competition (Gomes 2013). From 1940, the Kahuku Plantation slowly reduced its labor force and farmed acres, and eventually closed in 1970 (Gomes 2013). Once the plantation closed, Kahuku residents were determined to find a way to stay in their home. Many of the residents were hired at the Turtle Bay Resort that opened in 1972, and the strong sense of co-dependence and aloha continued in the community up to present day. However, when speaking to residents in Ko'olauloa, there is still plenty of frustration due to the feeling that the state often overlooks the area when it comes to distributing public resources, even though the Ko'olauloa communities face a disproportionate number of burdens compared to more urban areas on the island (Figure 8).

## LITERATURE REVIEW

Hawai‘i’s transition to 100% renewable energy by 2045 calls for a complete transformation of how energy is generated, distributed, and used. This massive overhaul of the energy system also opens up an opportunity to rebuild the industry in a way that is more equitable, transparent, and sustainable; a concept that is commonly referred to as energy justice. In *Revolutionary Power*, Shalanda Baker lists the components commonly focused on by energy justice scholars: “(1) distributive justice, which is the equitable allocation of benefits and burdens; (2) procedural justice, which means fair access to process; (3) recognition justice, which is acknowledgement of and respect for all peoples; and (4) restorative justice, which addresses issues of past harms” (Baker 2021: p. 31). One integral aspect of energy justice that touches on all these components is proper community engagement, especially for projects in Indigenous, minority-majority, and low-income communities. A helpful community engagement protocol available to project developers is the Free, Prior, and Informed Consent (FPIC) model (FAO 2016). In this section, I first review what FPIC is and how it can be properly implemented in development projects. Then I review literature that explores other methods of community engagement in energy development.

## Community Engagement in Renewable Development

### Free, Prior, and Informed Consent

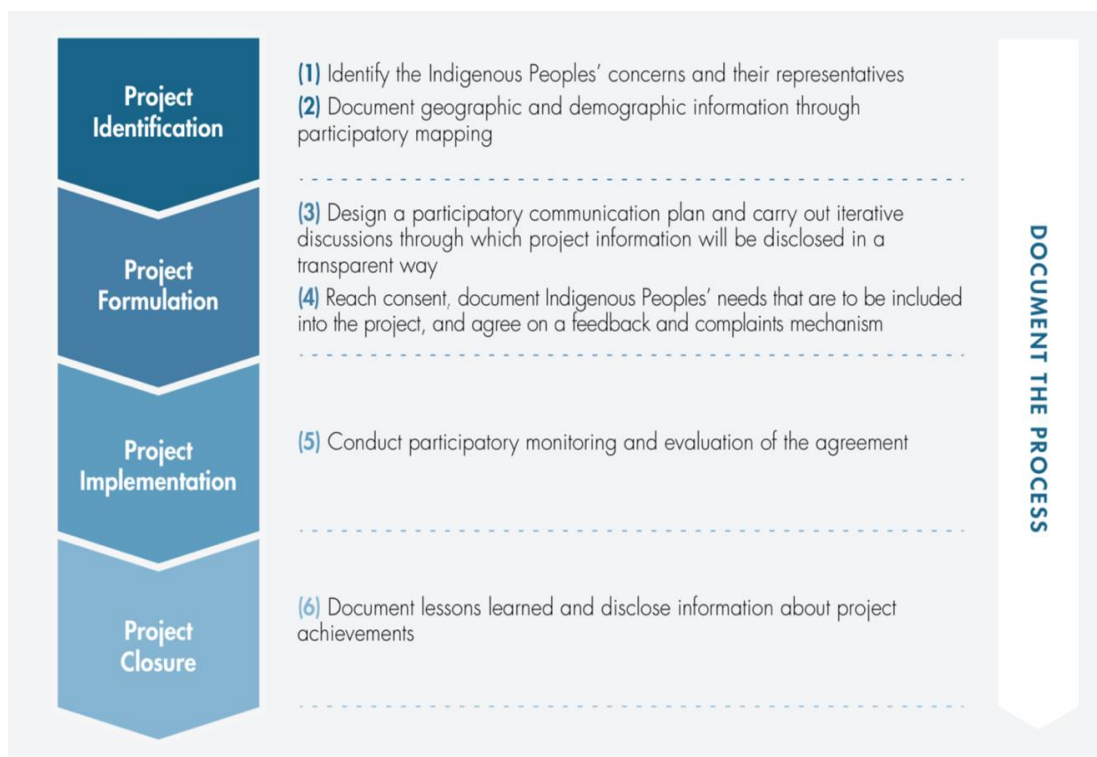
Historically, development projects have caused significant harm to the nearby communities, especially against Indigenous communities. These harms have included, but are not limited to, “water pollution (fresh and sea water), changing the course of rivers, the reduced ability of agricultural systems to produce food, disease, hunger, unemployment, child labour, violation of labour laws for women and men, privatization of community regions, [and] migration to cities and urban disorder” (FAO 2016). In 2007, in an effort to protect Indigenous communities from such harmful developments, the UN General Assembly voted to adopt the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (FAO 2016). The core principle of the UNDRIP is the Indigenous communities’ right to give or withhold their free, prior, and informed consent (FPIC) for development projects that may impact their environment, culture, or livelihood.

Nine years after the UN adopted the UNDRIP, the Food and Agriculture Organization of the United Nations (FAO) created an FPIC manual in response to a “growing volume of outcries by indigenous peoples denouncing the lack of compliance with [...] the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), especially with obtaining their Free, Prior and Informed Consent (FPIC) before enacting projects on their land” (FAO 2016). The intent of the manual was to first clarify the extent of FPIC, and subsequently provide a step by step guideline for project managers on how to

properly implement FPIC for any development project or program. The manual begins by defining each aspect of FPIC. Per the manual: “**Free** [emphasis in original] refers to a consent given voluntarily and without coercion, intimidation or manipulation” (FAO 2016). For these terms to be met, much of the decision-making of the project must be controlled by the community, including the timeline, scope, and terms of the project (FAO 2016). “**Prior** [emphasis in original] means that consent is sought sufficiently in advance of any authorization or commencement of activities [...], not only when the need arises to obtain approval from the community” (FAO 2016). **Informed** [emphasis in original] means that all “possible economic, social, cultural and environmental impacts, including potential risks and benefits” are communicated in a transparent and accurate way that can be easily and freely accessed by all members of the community (FAO 2016). Finally, “**Consent** [emphasis in original] refers to the collective decision made by the rights-holders and reached through the customary decision-making processes of the affected Indigenous Peoples or communities” (FAO 2016). It should be noted “that consent, once given, can also be withdrawn at any stage” (FAO 2016).

Upon establishing a detailed definition of Free, Prior, and Informed Consent (FPIC), the manual goes on to lay out a six step process for properly implementing FPIC in a project, as shown in Figure 9. Steps 1 & 2 are due diligence processes that are meant to help the developer understand the demographics of the community and the proper channels of communication and decision-making within the community. The manual stresses the importance of inclusivity at these steps, recommending that the developer hold “separate talks to reach consent with particular groups, but do not assume that these

groups or their views are homogenous” (FAO 2016). The heterogeneity of views in a community make it imperative that everyone agrees on a decision-making strategy early on in the negotiations, so that all community members feel that the final decision agreed upon is fair and properly represents the community’s interest.



*Figure 9. The six-step process for implementing Free, Prior, and Informed Consent (FAO 2016).*

Continuing in the process, steps 3 & 4 have to do with how communication and negotiations are made with the community, and planning ahead for any conflict resolution or clarifications that may be necessary after an agreement is reached. The manual describes the negotiations as an iterative process that that should be “as participatory as possible” (FAO 2016). The iterations should be done with the goal of coming to a consensus within the community, and therefore the community should be

given “as much time as they need to decide what is best for them” (FAO 2016). An important aspect to point out is that not all negotiations will end in an agreement, since the community always has the right to withhold their consent and refuse renegotiations. In this case, the reasons of refusal should be documented, and the development project abandoned. If an agreement is reached by all involved parties, the needs of the community throughout the development project should be discussed, including identifying “indicators that can measure the possible negative impacts of the project during implementation” and strategies for how these negative impacts will be addressed (FAO 2016). The agreement must also include an agreed up mechanism for the collection and processing of complaints and feedback from the community throughout the project, and a strategy of resolution if any disagreements escalate to conflict (FAO 2016). Finally, the agreement must stipulate terms for when the community may withdraw their consent, and detail out the exit strategy in the event that the community does decide to withdraw their consent (FAO 2016).

Finally, steps 5 & 6 describe proper monitoring and evaluation of the project via the agreement signed by the developer and community. The FPIC manual recommends that monitoring is carried out by an independent party acceptable by both the developer and the community (FAO 2016). This way, respondents that provide feedback throughout the project can maintain their anonymity, and the monitoring group remains unbiased. Furthermore, the manual emphasizes that the developer should “[e]nsure participation of individuals from the Indigenous People’s community in the project task force” (FAO 2016). The final step of implementing FPIC is to document all lessons learned.



Documenting lessons learned will help both the developer and the community navigate future projects that may arise.

Although FPIC was created with Indigenous communities in mind, the concept is applicable to other vulnerable communities as well. In the forward to the FPIC manual, the Deputy Director-General of FAO, Daniel Gustafson, stresses the universality of FPIC, pointing out that “involving [the local community] in the decision making of any proposed development activity increases their sense of ownership and engagement and, moreover, helps guarantee their right to development as a basic human rights principle” (FAO 2016). The point is brought up several more times throughout the manual, with Action Aid calling FPIC “an essential tool/approach to protect the rights [...] of all affected communities, especially the most vulnerable ones”, and all the organizations that helped compile the manual agreeing that “all project-affected peoples have the right to be part of decision-making processes in ways that are consistent with the principles underlying the right of FPIC” (FAO 2016). Therefore, it is not a stretch to demand that all development projects within historically marginalized communities (BIPOC, low-income, rural, Indigenous, etc) must be required to follow the FPIC roadmap.

### Community Benefits Packages

Gaining consent of communities is not a forgone conclusion in the FPIC process, so developers often must find some method or agreement that gains the community’s support. One widely-researched method for fostering community support of renewable projects within their area is community benefit packages (Anchustegui 2021; Haggett

2008; Dinica 2010; Roddis, et al. 2018; Munday, et al. 2011; Mathers 2018; Quiroz-Aitken, et al. 2015). In Chapter 10 of *Sustainable Energy Democracy and the Law*, Ignacio Herrera Anchustegui explores how community benefits packages may help to foster “the acceptance and, ultimately, the approval of renewable (and non-renewable) energy projects” within local communities (Anchustegui 2021: p. 217). Anchustegui starts out by acknowledging that while renewable projects are beneficial for society as a whole, “they can also negatively affect the [hosting] community and its environment in different ways, depending on the technology” (Anchustegui 2021: p. 216). Community benefits can act as a compensation for the negative impacts felt by the community, or even provide services that mitigate or even eliminate the negative impacts of the project entirely (Anchustegui 2021; Roddis, et al. 2018; Mathers 2018). Anchustegui views community benefits more as an opportunity for community empowerment rather than a mere transaction:

“Community benefits bring about elements of energy democracy regarding sustainability via renewable energy, procedural justice and distributional fairness, and promote public participation on the part of hosting communities in decision-making processes. Their design often reflects the importance of facilitating and taking into account the hosting community’s needs and opinions [...] as part of the licensing process and during the renewable project’s lifetime” (Anchustegui 2021: p. 218).

Anchustegui is joined in this view by Roddis, et al., who state that community benefits “play an important role in distributing the costs and benefits of low carbon transitions, as well as remedying ‘injustices’ [...] in renewable energy deployment” (Roddis, et al. 2018: p. 362).

In their study on the public perception of community benefits, Mathers points out that in order for community benefits to truly garner support from the public, the developer must first build a foundation of trust within the community (Mathers 2018). Indeed, several researchers have found a level of distrust and skepticism within communities towards benefit packages (Cass, et al. 2010; Mathers 2018; Aitken 2010; Anchustegui 2021). Cass, et al. note a high level of “skepticism and a significant degree of dismissal of the significance of any local benefits” (Cass, et al. 2010), while Mathers observes that “initial suspicions of the developer’s motives, and feelings of a lack of fairness in the planning process, led research participants to consider the benefits package as a bribe” (Mathers 2018). Anchustegui admits that if community benefits are approached in a purely transactional way, they can easily be seen “as bribes or as a way to ‘buy’ planning permission” (Anchustegui 2021). Subsequently, it is imperative that any community benefit package is supplemented by the FPIC community engagement strategy, or a similar framework, in order to establish a firm foundation of trust between the developer and the community.

While it certainly is possible that community benefits may facilitate an increased level of community engagement in the decision-making process of projects, there is an issue of regulation and consistency of community benefits across different projects with different developers. Many researchers have commented on the ambiguity of the term “community” and the repercussions it has on developers (Goedkoop & Devine-Wright 2016; Mathers 2018; Munday, et al. 2011; Anchustegui 2021; Simcock 2016; Bristow, et al. 2012). Bristow, et al. touch on the importance of recognizing the diversity of views

within the community, stipulating that “there are clear dangers in seeing the ‘community’ as a romanticised and quiescent phenomenon characterised by consensus, shared interests, and collaborative strategies” (Bristow, et al. 2012: p. 1109). If a community is incorrectly homogenized, then often the benefits package itself can become a point of strong contention within the community (Bristow, et al. 2012). Anchustegui brings up concerns regarding who defines the community, since if the developers to decide, then they’re likely to choose an easier, less involved benefit such as a lump sum payment, and may “seek to grant benefits to a narrow range of communities” or groups within a single community (Anchustegui 2021). Furthermore, Anchustegui and Mathers support some level of standardized benefits in order to “reduce perceptions of benefits funds as bribes” and increase the community’s bargaining power for the terms of the package. However the community and the benefits are defined, researchers agree that a community is a complex entity involving geographic, social, and political aspects, and should therefore be treated as such in the context of benefit packages (Anchustegui 2021; Bristow, et al. 2012; Mathers 2018; Munday, et al. 2011).

Regardless of how the community benefits are regulated, developers and policy makers should keep in mind that “community benefits packages are only playing a very small part in winning wider community acceptance” (Strachan & Jones 2015). For a development to successfully gain the support of proximate communities, the communities must be involved in the planning and approval of the project as much as possible (Mathers 2018; Anchustegui 2021).

### Energy Citizenship and Energy Decentralization

Community benefit packages are a good tool for energy justice within the traditional framework of energy generation, but some energy justice researchers advocate for a change within the system altogether (Carl 2013; Boucher 2021; Farley, et al. 2021; Sovacool 2017; Stein & Ucar 2018; Thombs 2019; Campos & Marin-Gonzalez 2020; Heldeweg & Saintier 2020; Baker 2021). These researchers believe that the current centralized, monopolistic structure of energy generation and distribution “undermine equity, recognition, and fairness” (Thombs 2019), and as a result call for a democratization of energy (Thombs 2019; Sovacool 2017; Devine-Wright 2007; Heldeweg & Saintier 2020; Campos & Marin-Gonzalez 2020). Two commonly discussed paths towards energy democratization are energy decentralization and utility reform.

A key aspect of energy democratization is decentralized energy. As decentralized energy (DE), by definition, is a structure that creates “pathways for communities [and individuals] to develop, own, and manage their own energy resources” (Baker 2021: p. 122), it can be described as “a ‘bottom-up’ approach [...] [that] is increasingly regarded as a strong potential for delivering a more democratic and inclusive just energy transition” (Heldeweg & Saintier 2020: p. 2). In addition to the social equalizing potential of DE, energy scholars have also pointed out that DE may “allow for a more secure and reliable generation of electricity primarily by reducing the reliance on traditional centralized generation facilities” (Boucher 2021). Traditional centralized generation facilities heavily rely on large, high-voltage transmission lines that can be damaged by natural disasters and costly to repair, while small-scale and rooftop facilities have the

potential to be more resilient and easier to repair in the same scenario (Baker 2021; Boucher 2021). While DE has much potential to address important energy justice issues, some scholars lament the fact that in many energy markets, DE is getting under-utilized and under-supported, since much of “energy policy traverses the complex domain of technology and finance” without giving much thought or “consideration to justice concerns and larger political economic questions” (Baker 2021: p. 30; Thombs 2019: p. 159). With that said, decentralized energy is not without its own issues.

The main obstacles for initiating more decentralized energy generation are cost and access (Thombs 2019; Tsuchida, et al. 2015; Barbose, et al. 2021; Baker 2021). This is best illustrated through the example of the fastest-growing distributed energy technology: residential solar (IEA 2019). A study done in Colorado found that residential solar, on a \$/kWh basis, costs nearly twice the amount that utility-scale solar costs and *more than* twice the amount if it is a leased system (Tsuchida, et al. 2015). The main factors in this price difference are economies of scale and optimized panel placement, since utility-scale projects are often sited based on the optimized solar resource of the area, while residential solar is not (Tsuchida, et al. 2015). Due to the high price of residential solar, the consumers who can afford to install it are disproportionally wealthy and white (Baker 2021; Barbose, et al. 2021). Furthermore, not all houses are a good fit for solar panels due to weather, shading, and architecture, so residents in those structures miss out on the benefits of rooftop solar. Finally, many people (especially low- to moderate-income people) do not own their home or live in apartment buildings, and therefore do not even have the option of benefiting from rooftop solar (Stein & Ucar

2018; Baker 2021). Due to these challenges faced by decentralized energy, it seems likely that “a mix of scales [is] the most foreseeable pathway to a socially just and ecologically sustainable future” (Thombs 2019: p. 165). Subsequently, it would be beneficial to find ways of making centralized energy projects more equitable and just.

While the vertically-integrated investor-owned utility model made sense when energy generation technology was only feasible as large-scale projects, it has become outdated in a world where “[n]ew technology, such as solar panels and batteries, make individual ownership, control, and generation of electricity resources more of a possibility for low- to moderate-income people” (Baker 2021: p. 32). Subsequently, if investor-owned utilities (IOUs) are to survive the renewable energy transition, researchers argue that they will need to be regulated or modified to better reflect the priorities of the public (Boucher 2021; Farley, et al. 2021; Baker 2021; Stein & Ucar 2018).

A common regulation seen implemented in recent years is the decoupling mechanism, which de-links the IOU’s revenue from the volume of electricity sales. By establishing a standard revenue for IOUs that is unrelated to how much electricity the IOU sells, decoupling mechanisms “create an incentive structure for the uptake of DE [distributed energy]” (Boucher 2021: p. 39). In order to strengthen the incentive for IOUs to actively support DE and focus their efforts on particular issues, decoupling mechanisms are often paired with performance incentive mechanisms (PIMs) that offer financial awards/penalties based on various metrics and targets set for the IOU (Baker 2021; Farley, et al. 2021; Stein & Ucar 2018; Lowry & Woolf 2016). Many PIMs are

geared towards generally advancing energy efficiency, smart meter installations, system efficiency, and distributed generation initiatives (Stein & Ucar 2018; Baker 2021; Lowry & Woolf 2016; PUC Docket 2018-0088), while others specifically target progressing these initiatives within low- to middle-income (LMI) communities (Baker 2021; Farley, et al. 2021; PUC Docket 2018-0088).

Investor-owned utilities (IOUs) can also be fit within a democratic energy model by modifying the structure of the utility's ownership or business in order to make room for more meaningful participation from the public (Stein & Ucar 2018; Baker 2021; Campos & Marin-Gonzalez 2020). In the European Union, many utilities have been modified to or replaced by publicly-owned entities per “the recast Renewable Energy Directive (RED-II), which aims in part, to stimulate the formation of ‘renewable energy communities’ in all EU Member States, in which ‘*citizens take ownership of the energy transition*’ [emphasis in original]” (Heldeweg & Saintier 2020: p. 2). This method democratizes “energy production and use by placing more of it in direct ‘control’ of people and communities themselves, and it also cultivates environments with more trust and accountability” (Boucher 2021: p. 40). Campos and Marin-Gonzalez characterize this utility structure “as a social movement towards a decentralized democratic energy model” (Campos & Marin-Gonzalez 2020: p. 10).

A different kind of restructuring would be to convert IOUs into distribution system operators (DSO) or distribution system platform providers (DSP). In the DSO/DSP structure, the vertical integration of the IOU would be removed and the utility would focus on “maximiz[ing] the values of distributed energy resources” (Baker 2021:



p. 59), thereby opening the market up to smaller, distributed generation sources such as rooftop solar and community-scale solar projects (Stein & Ucar 2018; Baker 2021). This transition may be simpler and less contested than publicizing IOUs, since “[s]ome IOUs already serve primarily as distribution utilities” (Baker 2021: p. 59), and distributed energy still relies on the existing infrastructure. New York has made plans to transition their utility companies into DSPs, and have started planning platform service revenues to maintain income for the DSPs (Stein & Ucar 2018). One policy in place is the non-wires alternatives (NWA) compensation structure, that “allows New York utilities to profit from *avoiding* [emphasis in original] certain infrastructure upgrades [...] relying instead on DERs [distributed energy resources] and potentially less costly capital improvements that contribute to addressing the need” (Stein & Ucar 2018: p. 26).

Community engagement and participation is an important aspect of an energy system built on equity and justice. Whether developing centralized or decentralized projects, there are careful considerations developers must make pertaining to access, cost, and impact within the community. The Free, Prior, and Informed Consent Manual offers a helpful framework to follow when deciding how to engage the community in the design, implementation, and evaluation of projects. Furthermore, in the context of centralized utility-scale projects, community benefit packages may be a good strategy for gaining community consent, but must be approached with a sense of collaboration and transparency in order to avoid getting misinterpreted as a bribe. Finally, a decentralized energy model may also facilitate greater community participation and empowerment, as long as policymakers and regulators are aware of the cost and access issues that come

with distributed energy systems, and can correct the system accordingly to better support low to mid-income (LMI) consumers.

## METHODS

The methodologies of my thesis include selection and analysis of the case study, research of publicly available documents regarding the project, textual analysis of public utilities archives and communications, and individual interviews of those involved with the development of the project, including community members, developers, and legal representatives. In this section, I provide a detailed account of each step in my research, including the procedures and reasoning behind each step.

### Site Selection

There are many controversial renewable energy projects in Hawai'i that were options for this study, but none that have faced nearly as much opposition and public scrutiny as Nā Pua Makani. When selecting a site for my thesis research, I was particularly interested in the developer-community relationship and how it ultimately affected the process timeline of the project, so the large public opposition to the project made Nā Pua Makani a strong candidate. Another unique aspect of Nā Pua Makani is the fact that it changed developers twice (for a total of three different developers), which added a layer to the developer-community relationship. Other aspects that I took into account were the location, the project's level of completion, and the level of public understanding of the project.

Concerning the location of Nā Pua Makani, there were two features that made the project more favorable for my research. First of all, the project is located on O'ahu,

which is the island on which I was born and raised. Even though I am not from the community itself, having a strong tie to O‘ahu gave me an extra level of credibility and understanding within the community which helped the people I interviewed feel more comfortable during our meetings. Had I chosen a project on another island, there may have been a heightened sense of foreign investigation within the community towards my research, which may have affected the number of willing participants. Secondly, Nā Pua Makani was built in Kahuku, HI, a minority-majority rural town on O‘ahu that has already hosted other wind turbine projects. Subsequently, focusing on this project allowed me to analyze the community’s reaction to different wind turbine projects surrounding their community. Furthermore, I’m interested in the impact renewable development has on minority-majority communities, especially those that are majority Pacific Islander.

While many renewable energy development projects in Hawai‘i face opposition, many of the projects have not yet reached completion and as a result, it is harder to analyze the impact of the controversial processes within the project. At the start of my research, Nā Pua Makani had been in operation for two years, while two of the three lawsuits against the project had been decided very recently. In this sense, the project was still fresh on the mind of Kahuku residents, but residents also had ample time to reflect on the events of the development process and feel the impact of the project. Similarly, the time that had passed since project completion affected the public’s understanding of the project. Most of the press focused on the late stages of the project when the largest protests were held and all of the arrests were made. Subsequently, several articles

attributed the questionable decisions made in early stages, such as permitting shortcuts and poor community engagement, to the developer who constructed the project. The confusion over the project timeline created an opportunity for my research to not only identify lessons learned from Nā Pua Makani, but also clarify certain events and decisions, and which parties were responsible for what.

### Public Records Research

Upon selecting the case study project, I needed to complete a more thorough research and analysis of the project. My primary source for independent research was the Public Utilities Commission Docket Archives (<https://dms.puc.hawaii.gov/dms/>), which contains a list of all documents and communications associated with every utility project in the state. The docket number that is most referenced is PUC Docket 2013-0423, which concerns Nā Pua Makani's application to the Public Utilities Commission to waive the requirement of a competitive bidding framework and approve Nā Pua Makani's Power Purchase Agreement with Hawaiian Electric. The various documents I accessed via the docket archive included the Power Purchase Agreement, third party comments and concerns, community engagement documentation, public hearing testimonies, and decisions and orders made by the Public Utilities Commission (PUC).

In addition to the PUC archives, I also studied public newspaper articles and local news stories throughout the project timeline. The articles often reflected the community's reactions to the project at a given time, and provided helpful information regarding the timeline of events. Finally, I also studied Facebook and other community advocacy

documentation such as brochures, magazines, and posters. These sources provided further insight into the community's stance on several issues, what kind of media and information the community was exposed to, and how/when the community organized in response to events throughout the project's development.

### Individual Interviews

The most important step of my methodology was the individual interviews. My initial goal was to interview 15-20 participants from all aspects of the project including residents of the community that supported the project, residents that opposed the project, legal representatives of the community, employees of the development company, and other developers in the renewable development industry. In the end, I completed a total of eleven interviews, including five community advocates in opposition to the project, two residents that supported the project, two legal representatives that were involved with the project proceedings or lawsuits afterwards, one employee of the developer, and one CEO of an unaffiliated renewable energy development company.

When selecting candidates for interviews, I first reached out through a personal acquaintance who was involved with the community and they put me in touch with several people in Kahuku who had taken part in some way. After that, most of my following interviews were acquired through references of previous interviewees. For participants that opted to keep their identity private, general terms such as "Kahuku resident", or pseudonyms are used to maintain their anonymity.

Interviews were conducted in-person and outdoors, in whatever setting the participant was most comfortable with, i.e. a backyard lanai, a public park, a coffee shop, etc. Given COVID-19 restrictions, online video conferencing and phone interviews were offered as an option. The participants were interviewed on average for an hour, although some interviews went longer due to the volume of information the participant wanted to share. In-person interview participants interacted with a handheld audio recording device (if they gave consent to an audio-recording), and online video conferencing participants interacted with their computer or smartphone. No post-study follow-up contact is necessary from their participation in this study. All study records (such as audio-recordings, recorded online interviews, and notes of interviews) are downloaded to an encrypted hard drive and stored in a secure location.

The questions asked regarded the participant's understood timeline of events of the project, their level of involvement at various stages of development, and their perspective on how the project was managed and how the community was engaged throughout. Due to the sensitivity around some aspects of the project, participants were allowed to share at their own pace and discretion, and were not pressed to share anything that they were uncomfortable with. Throughout all the interviews, the researcher took notes to refer to while compiling the final report. When speakers used the local creole Hawaiian Pidgin during an interview, their quotes are transcribed as such without transliterating it into English. For those interviews recorded, the researcher listened back to the recording to take further notes and extract any direct quotes to use in the final

report. All notes, recordings, and direct quotes were kept on the researcher's encrypted hard drive.

### IRB Details

Since this research involved human participants, the project required approval from the Cal Poly Humboldt Institutional Review Board for the Protection of Human Subjects (IRB). The identification number for the project's IRB application is IRB 21-125, and the project was approved and awarded exempt status on April 18, 2022.



## RESULTS

This section presents the results of the study in the form of a process timeline of the Nā Pua Makani project. The section starts out with a background of earlier wind turbine projects in Kahuku, and their impact on the community. After providing the background information, I begin the process timeline of the Nā Pua Makani project, starting with the original proposal sent to the Hawaiian Electric Company (HECO) in 2008. I then follow the events throughout the project development, paying close attention to community engagement, up to when the project was completed in 2020. The information in this section is sourced from a mix of interviews, public documents, and news articles.

### Previous Wind Projects in Kahuku

#### Cutting Edge Technology

Kahuku's relationship with wind projects dates back to the 1980s, when cutting edge wind turbine technology was piloted in the Kahuku area. In 1986, a single MOD-5B turbine was built on the ridge line mauka (mountainside) of Kahuku (Boeing 2022). At the time, the MOD-5B was the largest operating wind turbine in the world, and stayed in operation until 1996 (Boeing 2022). From then, O'ahu's North Shore stayed clear of wind turbines until 2010, when First Wind successfully negotiated a power purchase agreement (PPA) with Hawaiian Electric Company (HECO) for a 30 MW wind farm in

Kahuku. The First Wind project i.e. Kahuku Wind Farm, would become the first utility-scale wind development on O‘ahu, and set a precedent for more to come.

### Kahuku Wind Farm

While opposition to First Wind was scarce, it doesn’t seem as though the Kahuku community welcomed the project with arms wide open. The community engagement report that First Wind submitted to the Public Utilities Commission explains that “while a few people were strongly supportive of wind energy, the majority of Kahuku residents we met could be characterized as accepting, and seemed to think it was, ‘not that big a deal’” (PUC Docket 2009-0176). Residents did have some questions regarding the size and appearance of the turbines, sound impacts, and cultural awareness of the construction, all of which First Wind responded to accordingly and did “its best to communicate broadly and set people’s expectations” (PUC Docket 2009-0176) truthfully. Kahuku residents also asked about how the development would impact their local electricity access and bills, and what kind of benefits the community could expect from hosting the wind farm. To the former question First Wind replied that it was up to HECO, but that any kind of local special access to or benefit from the electricity generated by the wind farm “would likely not be technically possible” (PUC Docket 2009-0176). As for the latter question, the benefits First Wind mentioned in their application were ambiguous and non-quantifiable. When explaining how Kahuku Wind i.e. First Wind intended to give back to the community, the report offered broad statements such as Kahuku Wind “worked with teachers” and “met with students” in order to create “an educational opportunity for students” (PUC Docket 2009-0176). The only quantifiable benefit listed was a one-time

\$5,000 donation “to help launch a renewable energy innovation center at the school” (PUC Docket 2009-0176), but the report failed to mention any details such as who the donation was payable to, when it was donated, or which school it was meant for.

#### Trouble with Battery Storage and Community Pushback

First Wind was awarded approval and the twelve turbines, along with a battery storage facility, were built in 2010. While the wind farm continues operations today, it has not been without obstacles over the past ten years. On April 22, 2011, just under two months after the wind farm began operations, an inverter inside the battery storage facility caught fire and destroyed one of the ten power modules. A month later, another inverter caught fire, and a second power module was destroyed, causing \$2,000,000 in lost revenue for First Wind (*Lloyd’s of London v. Dynapower* 2013). Then, a year and a half later in August 2012, a third fire broke out in the battery storage facility (Figure 10);



*Figure 10. The fire at the Kahuku Wind Farm changed the mindset of many Kahuku residents towards having more wind farms nearby (Yonan 2013).*

one that “was so fierce that firefighters could not enter the building for seven hours” as toxic smoke billowed out from the facility (Davidson 2014). This third fire completely destroyed the battery storage warehouse, and put the wind farm out of commission for over a year and a half. Even after the wind farm continued operations in 2014, First Wind abandoned the option of battery storage at the facility and installed a dynamic volt-amp reactive technology that regulates the voltage at the grid interconnection, but does not store any energy. As a result, when there is not sufficient demand for electricity on the island, Kahuku residents have often noticed that the turbines are shut off since there is nowhere for the generated electricity to go.

After First Wind was built, residents of the Kahuku community started to have second thoughts on whether it was a good idea to support the construction of the project. Some residents began to grow weary of seeing the turbines sitting dormant all the time, and others were unhappy with the placement of the turbines in Waimea Valley, stating that “the turbines desecrated a culturally significant site” (Cocke 2013). So, when First Wind proposed constructing an additional five turbines to the Kahuku Community Association (KCA) in May 2012, the proposal was quickly rejected. Upon KCA’s rejection of the wind farm expansion, First Wind decided to no longer pursue construction of the five additional turbines, with their spokesman, Kekoa Kaluhiwa, stating that “[KCA] made it quite clear that they do not want to see more turbines in the Kahuku area” (Cocke 2013). Curiously enough, despite KCA’s firm refusal of First Wind’s expansion in 2012, turning away Nā Pua Makani’s wind farm proposal just a year later would prove to be much more difficult.

## Timeline of Nā Pua Makani

### Early Stages

While Nā Pua Makani didn't start construction until 2019, the project was originally proposed by West Wind in the 2008 request for proposal (RFP) by HECO. The Nā Pua Makani (NPM) proposal lost the 2008 RFP, but in 2012, West Wind petitioned the Public Utilities Commission (PUC), with the support of California-based company Champlin Wind, to either require the Hawaiian Electric Company (HECO) reconsider Nā Pua Makani's proposal for the 2008 RFP, or grant a waiver to Nā Pua Makani for negotiating a contract with HECO outside of the competitive bidding process (PUC Docket 2012-0094). The petition gives a step by step account of NPM's proposal for the 2008 RFP, complaining that when HECO rejected the proposal in 2009, they gave "no meaningful explanation of why [NPM's] bid was summarily dismissed" (PUC Docket 2012-0094). On these grounds, West Wind disputed the rejection of their proposal, and started a three-year dispute with HECO over the viability of the Nā Pua Makani proposal. West Wind's main negotiating point was that Nā Pua Makani's proposed price per kWh was much lower than that of the Kawaihoa Wind Project, a 69 MW wind farm that was approved in the 2008 RFP. Subsequently, West Wind argued that it was in the best interest of the end customer for the NPM proposal to be approved and pursued. By March 2012, HECO still had not "issued a formal statement regarding the status of its reconsideration of the Nā Pua Makani Project" (PUC Docket 2012-0094), which moved West Wind to formally submit a petition to the Public Utilities Commission with the

support of Champlin Wind. After another year of negotiations following the 2012 petition, the case was closed without any formal ruling. However, in December 2013 HECO submitted an application to the Public Utilities Commission for Nā Pua Makani to be waived from the competitive bidding process, with a Power Purchase Agreement between HECO and Champlin Wind, with no mention of West Wind, for a 24 MW wind farm in Kahuku attached for approval.

#### Early Negotiations with Kahuku and Early Dissent

Kahuku was first approached in 2008 by Keith Avery, a representative of West Wind Works. At that time, Junior Promacio, a lifelong resident of Kahuku and respected elder of the community, was president of the Kahuku Community Association (KCA) and had welcomed the developers to Kahuku as a way of providing much needed resources for the community. KCA had agreed to keep an open mind for further wind farm development in their area, as long as the developer agreed to provide a certain amount of benefits for the community. When talking about his reasoning for negotiating with the developers, Junior brought up the history of Kahuku as a sugar cane plantation town and the concept of self-sufficiency:

“Kahuku community was always—always look ahead in d’ose areas. And it was brought to our—all da leadahs of da community association, da same tinkin da plantation had. Da plantation’s philosophy in running da sugar operation. We go—we out hea in Kahuku gotta have all da amenities we need so we can be self-sufficient.”

Junior went on to compare the wind farms in Kahuku to the Turtle Bay Resort, another controversial development in Kahuku from 1971. The proposal for the resort came right around the same time the sugar plantation was closing, so faced with a sudden mass

unemployment in the community, Junior and many others in Kahuku supported the construction of the resort in order to offer local employment options to Kahuku residents.

Similarly, when wind farm developers began showing up in Kahuku, Junior and others on the KCA board immediately started thinking about how the development could benefit the community. Originally, they had hoped hosting the wind farm would reduce residents' electricity rates, so they approached the state and city government asking what could be done for the host community in the sense of reduced rates. After the city and state brushed them off, KCA went to the Hawaiian Electric Company (HECO) with the same question, but were once again brushed off. At this point, Junior and the other KCA board members knew their only chance of getting something out of the wind farm was through the developer, "so [KCA's] emphasis was stick with the developah." Eventually, Keith Avery and KCA came to an agreement that the community would be given \$10,000 per wind turbine annually for the length of the PPA agreement. At that time, the developer planned on building 12-15 wind turbines, so KCA was looking at potentially receiving \$150,000 per year for 20 years. While the negotiations were made with the Kahuku Community Association, Junior stressed during our interview that "it was da intention to share [the funds] wit da rest of our [Ko'olauloa] community based on da needs."

During the initial negotiations between KCA and Keith Avery, it was likely that the majority of Kahuku did support wind farm development in their area. Several of the Kahuku residents I interviewed that were intimately involved with the opposition against

NPM shared that they had supported wind farms earlier on. When discussing the period of early community engagement, one resident shared:

“At that point I really wasn’t interested in—in it because it’s good [...] my views of wind energy was really neutral, or positive actually, because of, you know its green energy and less pollution, less oil, climate change, all that right?”

However, while West Wind Works and Champlin Wind fought HECO on the viability of NPM, the First Wind project was built. Suddenly, Kahuku residents’ enthusiasm towards further wind farm development began to erode.



*Figure 11. Much of the communication regarding community engagement was done through facebook groups. This shows a posting advocating for a petition to increase the required wind turbine setback from residential property lines. (Kahuku Community Association n.d.)*

By the time Champlin Wind had acquired the development rights for NPM in 2013, opposition to the project had already materialized. Champlin Wind recorded that “the first public presentation was made to the Kahuku Community Association (“KCA”) Board in May 2013” (PUC Docket 2013-0423), exactly one year after KCA had voted against the expansion of the First Wind wind farm. On May 9, 2013 a petition was posted on the KCA facebook page demanding stricter setback laws for wind turbines (Figure 11) since the newly proposed wind farm by Champlin Wind planned to put turbines only 1600’ from residential areas and the Kahuku elementary and high schools. By this time,



some residents had started reporting strange symptoms such as headaches, dizziness, and tinnitus that had only started once the First Wind turbines were installed; creating concerns for what the impacts would be if more turbines were to be built much closer to the residential area. Many residents also felt that the existing wind turbines were an eyesore, and that Kahuku had already done its part in contributing to the renewable energy goals of the state. However, at this point there were few people who were actively engaging with the developers, as documented by a Civil Beat article that mentions “barely a half-dozen residents showed up at a community meeting [in early November 2013] with the developer to air their opinions about the project” (Cocke 2013). Despite the small turnout at the meeting, the sentiment from the community was very clear: “we do not want you here.” At the meeting, one resident brought up the promise made by West Wind Works representative, Keith Avery, that “if the community said we don’t want Kahuku to have wind turbines, we would stop” (PUC Docket 2013-0423). When directly asked if Champlin Wind would honor that promise as well the CEO, Mike Cutbirth, deflected the question by saying that he “wasn’t here [in Kahuku] when the discussion occurred” and proceeded to change the subject by explaining why Kahuku was sited for the wind farm (Tetra Tech: Appendix M, 2016). When pressed on the subject, Mr. Cutbirth claimed that Mr. Avery told him that “he got the community’s support” for the project back in 2008, implying that the consent given five years earlier still applied to his initiative, thereby rendering the present community opposition moot.

Despite the clear community opposition, the U.S. Fish and Wildlife Service announced a notice of intent (NOI) on November 5, 2013 to draft an environmental

impact statement (EIS) for the Nā Pua Makani project, and asked for public comments regarding the development of Nā Pua Makani to be sent in. During this comment period, 56 letters were sent in to provide comment on the draft EIS and the Nā Pua Makani project. Of the 56 letters sent in, 41 of them were Ko‘olauloa residents that stated outright opposition to the construction of the project; referencing several issues tied to wind farm development in the area including: lack of community benefits or reduced electricity rates from the existing wind farm in Kahuku, overburden of energy infrastructure in Kahuku, the existing windmills being an eyesore that frustrates tourism and lowers local property value, concern over the health and safety impacts implicated by the wind turbines built so close to the Kahuku schools and residents, and possible impacts on the local wildlife, especially those that reside in the wildlife refuge just 0.75 miles from the planned construction site. Of the remaining 15 letters, only one was from a Kahuku resident stating that as the incumbent KCA president, she reported that KCA had no stance on Nā Pua Makani at the time. The rest of the letters were from institutions such as the Hawai‘i Fire Department, Department of Health, Department of Land and Services, etc., providing comments on how the EIS should be modified to follow the regulations of the respective institution. One noteworthy letter was from the United States Environment Protection Agency, stating that the EIS “should address the potential for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation by these populations” (PUC Docket 2013-0423). Of all the letters submitted for comments, none of them stated explicit support for the project, and

all but one of the letters from residents of Kahuku and the greater Ko‘olaupia area stated explicit opposition to the project.

Despite the continued opposition to the Nā Pua Makani project, on Dec. 12, 2013 HECO submitted a formal request to the Public Utilities Commission to approve their Power Purchase Agreement with Champlin Wind. Less than two weeks later, the organization Life of Land filed a motion to intervene as a third party. Henry Curtis, the Vice President and representative of Life of Land, mentioned in his interview that “we don’t usually intervene unless the community there has a concern about [the development project].” In this case, opposition to Nā Pua Makani was on the rise, so Life of Land decided to intervene on the community’s behalf. In their motion, Life of Land stipulates that the organization “has followed energy issues since 1970 [and has] been accepted by the Commission as an intervenor or participant in over thirty regulatory dockets” (PUC Docket 2013-0423). Life of Land goes on to explain that they are “concerned with the impacts, externalities and unintended side-effects of energy projects and programs,” including impacts regarding aesthetics, land use, flora and fauna, public health, community, and environmental justice (PUC Docket 2013-0423). Under community impacts, Life of Land argues that “unlike the neighboring wind generation project [Kahuku Wind], the early project developer [West Wind Works] did not meet regularly with the community. What the West Wind Works developer did say was that ‘if the community said we don’t want Kahuku to have wind turbines, we would stop’” (PUC Docket 2013-0423). In Life of Land’s perspective, the Kahuku community had said that they don’t want more turbines, yet the developer had not stopped the project. Another

important clarification stipulated in Life of Land's motion to intervene was that other parties (specifically the Consumer Advocate) did not represent Life of Land's interests in the project. The Consumer Advocate is a required party for all dockets filed at the Public Utilities Commission, meant to "represent, protect, and advance the interest of **all consumers** [emphasis added]" (HRS 269-51). Subsequently, one may argue that the Consumer Advocate adequately represents the interests of the host community and any organization that may be intervening on their behalf, as those parties all fall under the term "consumer". However, Life of Land disputed this by pointing out that "while end-users can be lumped into a single category, they are in fact very diverse" (PUC Docket 2013-0423), and thus have unique priorities that in certain cases need to be represented on their own. To illustrate how their priorities differ from those of the Consumer Advocate, Life of the Land stressed their commitment to energy justice, and pointed out that of the 70 Information Requests the Consumer Advocate had made on all wind projects to date, "none of the Information Requests dealt with environmental impacts, social impacts, community impacts, cultural impacts, climate impacts, or aesthetic impacts" (PUC Docket 2013-0423). Additionally, Life of Land included a 26 page appendix that listed all of the Consumer Advocate's information requests for past wind projects in Hawai'i.

One month after Life of Land filed a motion to intervene, an organization local to Kahuku named "Makani Pono 'o Kahuku" filed a separate motion to intervene. Makani Pono 'o Kahuku defined itself as:

“a loose gathering of Kahuku area individuals who will be impacted by the Nā Pua Makani wind energy project [...] comprised of many individual Kahuku residents representing a multitude of cultures. Multiple members of Makani Pono ‘o Kahuku are native Hawaiian cultural practitioners who are concerned with; possible destruction of culturally significant sites, impacts on endangered Hawaiian flora and fauna species and the visual impact on the Ko‘olau” (PUC Docket 2013-0423).

In their motion to intervene, Makani Pono ‘o Kahuku focused on the proximity of the planned turbines, pointing out that despite the Kahuku Community Association’s request for a minimum setback of  $\frac{3}{4}$  mile from residential areas and schools, “the developer is moving ahead against the community’s recommendations” (PUC Docket 2013-0423). Makani Pono ‘o Kahuku continued by listing the concerns of the community due to the planned proximity of the wind turbines to their households; including health issues, sleeplessness, windblown debris in the event of a hurricane, and a decline in property value. Makani Pono ‘o Kahuku also briefly explained why the Consumer Advocate did not properly represent their interests since the majority of those represented by the Consumer Advocate live outside of Kahuku and subsequently will not feel the burden of neighboring the wind farm (PUC Docket 2013-0423).

Following each motion to intervene, HECO filed a memorandum in opposition to the motion to intervene. The two memorandums in opposition were similar and focused on many of the same issues. Namely, HECO focused on the stipulation that intervention in proceedings is not a right, but rather a matter that is at the discretion of the PUC, and neither Life of Land nor Makani Pono ‘o Kahuku properly proved a right to intervene. HECO claimed that both parties failed to prove that their interests are different enough from those of the Consumer Advocate to demand their own involvement as a third party

in the proceeding. HECO also argued that neither party properly described what information they would contribute that the Consumer Advocate could not provide themselves that would assist in the development of a sound record. Specific to the Life of Land's motion to intervene, HECO stated that their mention of issues such as justice, equality, externalities, environmental justice, and climate justice "clearly indicate[s] that its participation as an intervenor would unduly delay the proceedings and unreasonably broaden the pertinent issues in this proceeding" (PUC Docket 2013-0423).

On March 21, 2014, the Public Utilities Commission (PUC) announced their decision regarding the two motions to intervene. In response to the motion made by Life of Land, the PUC decided that Life of Land failed to adequately describe how they would contribute to the development of a sound record. The PUC also agreed with HECO that by bringing up issues such as environmental justice, externalities, and equality, Life of Land was attempting "to significantly broaden the issues as set forth" (PUC Docket 2013-0423). Subsequently, the PUC denied Life of Land's motion to intervene. However, due to Life of Land's history of participating in a number of previous proceedings, the PUC granted them participant status under the threat that the PUC "will reconsider LOL's participation in this docket if, at any time during the course of this proceeding, the commission determines LOL is unreasonably broadening the issues raised in this docket" (PUC Docket 2013-0423). The PUC also denied Makani Pono 'o Kahuku's (MPK) motion to intervene, stating that "it is clear that MPK was formed solely for the purpose of intervening in this proceeding" (PUC Docket 2013-0423), and that any interests MPK may have could be represented by the Consumer Advocate (CA) since one of the CA's

major functions is to “reconcile the competing interests of various groups” (PUC Docket 2013-0423).

#### Continued Community Opposition to NPM

While the PUC was processing the motions to intervene, residents of Kahuku and the greater Ko’olaupia neighborhood continued to make their voices heard. On January 15, 2014, the state representative for O’ahu’s North Shore held a community meeting at the Kahuku Community Center. The meeting was attended by “nearly a hundred Kahuku residents” (Gutierrez 2014), who voiced concerns over the effects of having the turbines built so close to the community. The developer, Champlin Wind, “brought in Dr. Robert McCunney, a recognized expert on the health impacts of wind turbines” (Gutierrez 2014), who classified the health symptoms brought up by the Kahuku residents as symptoms of annoyance (Gutierrez 2014). A research paper sent to the Consumer Advocate upon request echoed this conclusion, stating that “the symptoms are common in cases of extreme and persistent annoyance, [...] and may be alleviated by a course of psychotherapy” (Colby, et al. 2009). Despite the doctor’s attempt at assuaging concerns, many residents were not convinced and continued to urge Champlin Wind to set the turbines back further away from the community. Meanwhile, various community boards started holding votes to gauge the community’s support of the project. On February 14, 2014, the Ko’olaupia Neighborhood Board unanimously voted to oppose Nā Pua Makani (NPM), and on March 13, 2014, the Kahuku Community Association (KCA) also unanimously voted against NPM with two abstaining votes. Eventually, the clear community opposition caught the attention of the Consumer Advocate (CA), and the CA

set up a meeting with KCA in May 2014 to formally receive KCA's position on the project. Once again, the community expressed their opposition to the project and demanded that Champlin Wind respect their wishes.

After the community meeting in May, the Consumer Advocate (CA) submitted their Statement of Position (SOP) to the PUC regarding the approval of Nā Pua Makani. The CA started out by confessing that “addressing a community’s objection to any project typically has not been a role undertaken by the Consumer Advocate”, but since “there is no statutory impediment to the Consumer Advocate from weighing a community’s objection [...] against the potential benefit the project has to ratepayers as a whole,” the CA would do their best to “determine whether Hawaiian Electric and Na Pua Makani adequately addressed community objections and concerns” (PUC Docket 2013-0423). The CA continued by listing the various concerns of the community and acknowledging that “the Kahuku Community Association and the Ko‘olaupia Neighborhood Board adopted resolutions to oppose the Nā Pua Makani project” (PUC Docket 2013-0423). Following the summary of the community objections to the project, the CA also detailed out what Champlin Wind had done so far to mitigate the concerns of the community, which summed up to moving the closest turbines a bit further away from the residential neighborhood (but not nearly as far as the community asked), and honoring the proposed benefit package “of \$10,000 per turbine per year payable over the life of the Nā Pua Makani Project” (PUC Docket 2013-0423). By this time, Champlin Wind had also reduced the number of planned wind turbines from 12-15 turbines to 8-10 turbines, which reduced the size of the benefits package by nearly half (the benefits



package is discussed in more detail later in this section). While it was clear that the developer of Nā Pua Makani had not done much to address the community resistance to date, the Consumer Advocate quoted Champlin Wind explaining that all the concerns of the community would “be addressed in the Environmental Impact Statement” that was required, since the project was proposed to be built on state agricultural land (PUC Docket 2013-0423). The CA agreed that the EIS was “better suited to address the concerns raised by the community” (PUC Docket 2013-0423), and thus effectively removed themselves from the issue of representing Kahuku’s concerns. To sum up their Statement of Position, the CA recommended that the PUC

“withhold final approval of the PPA until the EIS is completed [...] since an unconditional approval of the Commission prior to the completion of the EIS would not fully consider all community objections and concerns [and] may lead to distrust over the EIS process, because approval would appear to be presumptuous of the outcome of the EIS” (PUC Docket 2013-0423).

Despite the Consumer Advocate’s recommendation, the PUC decided to approve the PPA between HECO and Champlin Wind in December 2014, concluding “that it is not necessary to await the outcome of the EIS before approving the PPA at issue here. The EIS proceedings are designed to address different matters, in particular, to address the objectives of the State’s environmental policy” (PUC Docket 2013-0423). The PUC’s response brings into question why both the CA and Champlin Wind thought the EIS was the best mechanism for addressing community concerns, if the main purpose of the EIS is “to address the objectives of the State’s environmental policy.”

While the PUC may have approved the PPA for Nā Pua Makani in December 2014, the project still had a long way before breaking ground on construction. Over the

next two years, a first and second draft of the Environmental Impact Study (EIS) were presented for public comment in conjunction with public meetings following each draft release in June 2015 and May 2016. While the majority of the comments on the first draft voiced support for the project (60 out of 90 comments filed), only 14 comments were from Kahuku residents, with an additional 29 supporting comments from residents of other Ko‘olaupia communities. Furthermore, the comments in opposition to the project included two petitions signed in 2015 with 415 signatures on one and 196 signatures on the other. The second draft had a smaller turnout, with only 56 comments submitted in total; 30 of which were in support of Nā Pua Makani. Of the comments in support, 8 were from Kahuku residents, and an additional 15 were from other residents of the Ko‘olaupia neighborhood. At each of the public meetings held for the drafts, 25% of the testimonies were in support of the project, while 75% of the testimonies were against it. Finally, in June 2016, the final EIS was submitted to the Federal Department of Fish and Wildlife and Hawai‘i’s Department of Land and Natural Resources.

The final draft includes a detailed list of the public scoping meetings that were held, and indexes all the community concerns “into 21 issue categories and 55 issue codes with accompanying summary statements” (Tetra Tech 2016). The issue categories included those of Socioeconomic Resources, Threatened and Endangered Species, Visual Resources, Public Health and Safety, and Environmental Justice. The level of impact for each issue category was then determined for four different project alternatives:

Alternative 1 — No Action (the baseline), Alternative 2 — A Wind Project of up to 10 Turbines, Alternative 2a — Modified Proposal of up to 9 Turbines, and Alternative 3 —

Larger Generation Wind Project up to 12 Turbines. The study also reviewed other alternatives that were deemed non-viable, including building the turbines at a greater setback distance from Kahuku and considering an alternate location on O‘ahu altogether. The study explained that “lands farther inland were not considered further because they are Federally-owned by the Army” and that other project sites were not viable either because “there was no available transmission capacity [...], the wind resource was not



*Figure 12. Top: A simulated view of NPM included in the EIS (Tetra Tech 2016).  
Bottom: Four pictures showing the view of NPM wind turbines after construction. (Kahuku Community Association n.d.)*

sufficient,” or the land was either too small or too expensive to suit the project (Tetra Tech 2016). The EIS also distinguishes Alternative 2a as the preferred alternative by the developer. Ultimately, the EIS concludes that “in all resource areas evaluated, neither significant cumulative impacts nor secondary impacts would result from construction or operations of the Project” (Tetra Tech 2016). Regarding community concerns over property values decreasing due to proximity of the turbines, the EIS referenced seven studies that analyzed property values around wind farms. While the EIS focused on the four studies that found no impact on property values, three of the seven studies found evidence that the wind farms negatively impacted property values, with effects increasing “the closer a property was to the nearest wind turbine” (Tetra Tech 2016), and “most of [the] studies concluded that more research is required to more fully understand the impacts of wind facility development on property values” (Tetra Tech 2016). The EIS also included renderings of the potential visual impact of the wind turbines from several viewpoints (Figure 12), and decided that the visual impact was “moderate”, claiming that “[t]he Project would not dominate [the landscape] [...] because there is already a substantial degree of landscape modification in most views” (Tetra Tech 2016).

Regarding the community’s concerns over health impacts, the EIS quoted a study that concedes “while some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct casual link between wind turbine noise and adverse health effects” (UK Health Protection Agency 2010). To explain these health effects, the EIS pointed to studies that claim the health effects are due to an annoyance of the wind farm

“strongly related to visual cues, noise sensitivity, and attitude about the wind turbines” (Tetra Tech 2016). With regard to residents with autism, the EIS admitted that “there is a lack of research into health effects on [...] those with autism, living near sources of noise from power facilities such as wind turbines” (Tetra Tech 2016). Despite admitting this lack of research, the EIS went on to claim that “the Project is not expected to have disproportionate effects to people with autism or others with noise sensitivity” (Tetra Tech 2016). Finally, concerning Environmental Justice, the EIS quoted a Hawai‘i legislation that “recognizes that no one segment of the population or geographic area should be disproportionately burdened with environmental and/or health impacts resulting from development, construction, operations and/or use of natural resources” (Kahihikolo 2008). The EIS also identified the Kahuku and the greater Ko‘olauloa population as a minority environmental justice population due to the high percentage of Native Hawaiian residents in the area. Subsequently, the community has the right “to participate in the project planning process” (Tetra Tech 2016). To verify that this right was fulfilled, the EIS deemed the outreach efforts in the form of public scoping meetings and comment collection as sufficient. Furthermore, since the EIS concluded that “there are no high or adverse effects to *any* population [...] [there are] no environmental justice issues resulting from this Project” (Tetra Tech 2016).

With the Power Purchase Agreement approved and the Environmental Impact Study completed in late 2016, there was not much left to get in the way of the completion of Nā Pua Makani. In February 2017, a public hearing was held in Kahuku regarding the construction of a 46 kV transmission line required to connect the planned wind farm to

the existing transmission lines. While many residents attended the hearing and gave testimony in opposition to the transmission lines, much of the opposition focused on the wind farm itself which had been approved two years earlier, and did not apply to the construction of the transmission lines. Subsequently, the request to build the transmission lines was approved by the PUC with few complications.

#### Resignation within the Community and Community Benefits

Once the project was approved and the Environmental Impact Study was submitted, some residents began to see the writing on the wall and decided that if the project could not be stopped, then the community should benefit from it as much as possible. As a result, in April 2017, Champlin Wind signed two separate community benefits contracts with two parties: the non-profit organization, North O‘ahu Hometown Opportunities (NOHO); and the Lā‘ie Community Association (LCA). The contract with NOHO was the benefits package that was originally negotiated between West Wind Works and Junior Promacio amounting to \$10,000 per turbine per year for the duration that the wind farm remains in operation. Originally, the deal was meant to be between the Kahuku Community Association and the developer, since Junior Promacio negotiated the deal as the KCA president. Even into 2015, Champlin Wind told the Consumer Advocate that they were “working with **the community** [emphasis added] to determine how this money would be used to best serve the community” (PUC Docket 2013-0423). However, as the Kahuku community organized in opposition to the project, they began to vote in KCA board members who also opposed the project. As a result, the CEO of Champlin Wind, Mike Cutbirth, no longer wanted to work with KCA, and urged Junior Promacio to

create a separate non-profit organization that Champlin Wind could pass the benefits onto. By 2015, North O‘ahu Hometown Opportunities was created and achieved non-profit status by 2017, after which an official contract was signed with Champlin Wind for the sum of \$80,000 annually throughout the duration of Nā Pua Makani’s operation.

The origin of the agreement between Champlin Wind and the Lā‘ie Community Association is less clear, but according to a Lā‘ie resident who was on the LCA board at the time, there reached a point when it became clear that the project was going to be built regardless of the community’s stand on the matter. At that point, the members of the LCA board decided to approach the developer to negotiate a deal so the community wouldn’t be left empty-handed once the project was built. The result was a contract between the developer and LCA for \$20,000 per year throughout the operation of the wind farm. Put in similar terms as NOHO’s agreement with Champlin, the agreement with LCA equates to \$2,500 per turbine annually.

#### Protecting the ‘Ōpe‘ape‘a

By the end of 2017, all that was left for the project to move forward was for the Habitation Conservation Plan (HCP) to be approved in order for the developer to acquire the Incidental Take License required for the land permit. The HCP was relatively straightforward since the land proposed for the project is mostly agricultural land, and therefore does not have ideal habitats for most of the endangered bird species in Hawai‘i. However, one part of the HCP that caused friction was the estimated “take”, i.e. fatalities, of the ‘ōpe‘ape‘a, the endangered Hawaiian hoary bat (Figure 13). The ‘ōpe‘ape‘a is not just the only native bat species to Hawai‘i, but “is the only fully terrestrial native



*Figure 13. The ‘ōpe‘ape‘a is the only native land mammal in the Hawaiian Islands. Their dispersed nesting habits make them hard to estimate their population. (Mā‘alea 2022)*

mammal in the Hawaiian Islands” (Tetra Tech 2016). Unlike other species of bat, the hoary bat individually nests in trees and other foliage, thereby making it very difficult to estimate the total number of bats across the state. According to Nā Pua Makani’s HCP, “[p]opulation estimates for this species range from hundreds to a few thousand” (Tetra Tech 2016). Around the time Nā Pua Makani’s HCP was submitted, wind farms across



the state were finding that they were killing more *‘ōpe‘ape‘a* than previously estimated. By January 2017, five major wind farms in Hawai‘i “killed 146 Hawaiian hoary bats out of the 187 they are allowed. They [had] killed that many in 6.4 years while they were expected not to reach the total for 20 years or more” (Mykleseth 2017). On O‘ahu, the Kawailoa Wind Farm, just three miles away from the proposed site for Nā Pua Makani, had already killed an estimated 54 *‘ōpe‘ape‘a* in its first 5 years of operation; an alarming 90% of the project’s total allowed “take” over its 20-year lifetime (Mykleseth 2017).

Nā Pua Makani’s HCP offered a tiered approach to estimating their take, with Tier 1 representing an estimated take of 34 bats, and Tier 2 representing an estimated take of 51 bats. The HCP also included a mitigation strategy in the form of funding research for studying *‘ōpe‘ape‘a*, and funding forest restoration and management near the proposed site. The HCP explained that “when 75 percent of the take associated with the current mitigation tier is reached”, the mitigation strategy for the next tier will be initiated (Tetra Tech 2016). While the HCP was approved by the Bureau of Land and Natural Resources (BLNR) in May 2018, the project’s impact on the *‘ōpe‘ape‘a* population would be brought up once more as one of the final lawsuits made against the project.

#### A New Developer Comes with New Benefits

With all permits, licenses, and approvals acquired, everything was in place for Nā Pua Makani to break ground and start construction by the end of 2018. It therefore came as a surprise when Champlin Wind suddenly sold the project rights without warning to a different developer: Applied Energy Services (AES). The first time the Ko‘olauloa

residents heard of the sale was in December 2018, when AES reached out to the community to recruit a community liaison for the project. AES ended up selecting Verla Moore, a generational local to Lā‘ie who was chair of the Ko‘olauloa Neighborhood Board in 2013 when they voted in opposition to Nā Pua Makani. When hired by AES, Verla was honest with them, saying straight out that she “was against the project and would fight hard for a better community benefits package.” When asked about her responsibilities as the Community Liaison, Verla said that mainly, her job was “just to get the correct information out there. There was a lot of disinformation [regarding the project] at that time, and AES needed someone to [get the right information out].” However, when she wasn’t doing that, Verla was busy negotiating an additional benefits package for the community, as she believed that if the project was to be built, the community should be receiving more than what Champlin Wind had agreed to. Luckily, AES was open to the idea, as they had quickly realized that tensions were high surrounding the project and hoped that an additional benefits package would “bring more cohesion in the community and ensure that the project could move forward peacefully,” according to a representative of AES.

When talking about the negotiations for the benefits package, Verla laughed while recounting a conference call with AES:

“we [the community representatives] actually met at, um, in the lobby of the Mariot, and when we sat down we said ‘okay guys what are we gonna get for this, two and a half...’ but I said ‘bro we need at least five, six million dollars.’ So when we stood up we agreed to this ballpark range, by the time we got to the door its like—‘Ten million! Ten million! Who’s gonna ask?’ And then Aaron goes ‘I’ll ask!’ I said ‘Okay we got a—we got a conference call coming on.’ ...I said, ‘You ask.’ And we sat down and he asked! I—I’ll vouch for that. Everybody, we had the CEO, the

CFO, we had everybody and the—and their ‘C’s’ on their phone, and they went dead silent, I had to mute I was laughing so hard. But he asked. He said, ‘we want ten million dollars as a benefits package. And that started the negotiations. ’

Naturally, AES negotiated the number down, but Verla and the others still walked out of the room with a \$2.5million lump sum with an additional \$1.5million if it was matched by another entity, which would bring the total to \$4 million from AES. The package was earmarked for “a recreation center in Ko‘olauloa”, since that was the biggest need denoted by the community in an assessment run by AES. By September 2019, the deal was signed and settled, but not everyone was ready to give up on the fight against the project.

#### Protests, Lawsuits, and Community Tension

In October 2019, the wind turbine parts were delivered to O‘ahu and were prepped to be transported to Kahuku. Back in Kahuku, residents were organizing a peaceful protest to attempt to block the road and prevent the turbine parts from arriving at their destination (Figure 14). For a month, turbine parts were trucked from the west side of O‘ahu to Kahuku five nights a week, and night after night, a crowd of peaceful protestors stood their ground in opposition to the project. By the end of November, “a total of 200 arrests [had] been made” (HNN Staff 2019). Meanwhile, Life of Land was defending their final effort to stop the project that was initiated in September: a Motion for Relief of the PUC’s approval of NPM’s PPA on the following grounds:



Figure 14. Top left: To stop construction materials from reaching the site in Kahuku, protestors stood in the road and taped their arms together (Wade 2019). Bottom Left: 200 protestors were arrested during the peaceful protests (Wade 2019). Right: A flyer posted on KCA's facebook page (Kahuku Community Association n.d.).

1. The developer failed to timely obtain site control per the PPA agreement, thus causing a breach of contract
2. The PUC did not consider greenhouse gas emissions of the project, “which deprived LOL of its property interests in a clean and healthful environment”
3. The price of the agreement is unreasonable, and therefore not in the public interest (PUC Docket 2013-0423)

Both HECO and the Consumer Advocate sent in memorandums of opposition to the motion for relief, namely asserting that the motion was untimely, since Life of Land (LOL) should have voiced their concerns at the time the approval was issued. They also brought up the fact that LOL was only a participant and never a third party to the

proceeding, and thus had no right to assert a breach of contract in regard to the PPA.

While HECO and the Consumer Advocate (CA) may have been in opposition to the motion for relief, LOL had the full support of the host community. During the public comment period in November 2019, a total of 858 comments were filed in support of the motion for relief, 533 of which were from households in Kahuku (PUC Docket 2013-0423). After hearing the arguments from each party, the PUC agreed to a hearing on November 22, 2019 that would lead to a final decision.

Parallel to the Public Utilities Commission proceeding, two other lawsuits were filed by the end of 2019 regarding Nā Pua Makani by the community advocate group Keep the North Shore Country (KNSC). The first lawsuit started back in November 2016, when KNSC sent a petition to BLNR contesting Nā Pua Makani's Habitation Conservation Plan regarding the take of *'ōpe'ape'a*. The approval of the HCP was upheld at the BLNR and again at the Circuit Court of Appeals. By December 2019, KNSC was waiting for the Hawai'i Supreme Court to accept the transfer of the lawsuit to their court. The other lawsuit concerned the Department of Planning and Permitting's (DPP) approval of Nā Pua Makani's request for a minimum setback distance of 275 feet from property lines. The DPP approved the shortened setback distance in June 2019 without any kind of public notice or hearing, even though the reduced setback directly affected the Kahuku community. As a result, the public did not hear about the reduction in setback until December 2019, when KNSC immediately submitted a petition for a contested case.

The first of the three lawsuits against NPM to reach a final decision was the PUC proceeding on Life of Land's motion for relief. In April 2020, the PUC announced their decision to deny LOL's motion for relief, asserting that LOL should have filed their concerns within the allotted time period after the PPA was approved. The PUC also agreed that as a participant in the proceedings, LOL did not have the right to claim a breach in the PPA agreement in the first place, so their arguments were not considered (PUC Docket 2013-0423). The next lawsuit to reach a final decision was KNSC v. BLNR regarding the approval of NPM's HCP. After the Hawai'i State Supreme Court accepted transfer of the case from the Intermediate Court of Appeals, a hearing was held on April 1, 2021. Finally, in February 2022, the Supreme Court announced their decision to uphold BLNR's approval of NPM's HCP, noting that the estimated take of *'ōpe'ape'a* was reasonable. As for the zoning lawsuit against DPP, both the Zoning Board of Appeals and the Circuit Court rejected the case on the grounds that the petition for a contested case was untimely. Up to present day, the case is pending at the Intermediate Court of Appeals.

While the lawsuits were ongoing, tensions were rising in Ko'olauloa. As word spread that LCA had arranged a benefits package with Champlin Wind in addition to the NOHO agreement, several residents saw it as a sign of betrayal. Furthermore, many Kahuku residents felt that if any money was getting sent out, most of it should go to Kahuku since they are the most impacted community. As a result, a sense of distrust started to build between various parties, and communication between them deteriorated. Many residents unfairly targeted Verla Moore for agreeing to work as the Community

Liaison for AES, calling her a turncoat or traitor. Unfortunately, matters did not improve after the AES benefits package was made public. Similar to the case with the first benefits packages, several Kahuku residents felt that only Kahuku residents should be able to decide how the money is spent, since Kahuku is the most impacted community by the turbines. On the other hand, Verla naturally feels a sense of responsibility to see the benefits package to the end, since she was a big influencing factor in getting the benefits package in the first place. In February 2020, AES hired a Hawai‘i Market Business Leader, making sure the candidate was from Hawai‘i so they would have a better understanding of the culture and community. Part of their role as the Market Business Leader is to facilitate negotiations within Ko‘olaupua in order to ensure the community is getting the most out of the benefits package. However, two years later, the community still hasn’t come to an agreement on how to use the \$2.5 million lump sum plus \$1.5 million matched sum, and they are running out of time. While there is no time constraint on the \$2.5 million sum, the benefits package contract stipulates that if the \$1.5 million aren’t matched by another party by the end of December 2022, those funds will no longer be available.

#### Completion of the Project

In spite of the persistent protests and lawsuits, Nā Pua Makani (NPM) completed construction in early 2020 and started operations on November 30, 2020 (HSEO 2022b). The project consists of eight (8) three-megawatt (3 MW) turbines, totaling a generating capacity of 24 MW. In 2020, NPM generated a total of 14,388 MWh, and in 2021 generated 97,803 MWh (EIA 2022b). For residents who experienced wind turbine

syndrome (WTS) symptoms from the Kahuku Wind Farm built in 2010, Kahuku has become “uninhabitable”. One resident who lives a few miles outside of Kahuku described her experience in our interview:

“When it was just Kahuku Wind Farm, I would get stiff shoulders and headaches after being in Kahuku for an hour. Now, within fifteen minutes of getting into town I get extreme nausea and dizziness and migraines, and I get this...this uncontrollable burping reaction.”

As a result, the interviewee has been looking for opportunities to leave the area for her own health benefit. Another interviewee is also leaving Kahuku, explaining that during the windy season, the symptoms get so bad that he cannot sleep or focus on work.

There are other residents not as affected by the WTS symptoms who are staying and continuing to bring awareness to Kahuku’s situation through “wind turbine tours” and advocacy for further setback laws. As for the multi-million dollar benefits package, the conflict over where to direct the funds is ongoing, but when I called the community divided over the issue during my interview with Verla Moore, she was quick to correct me on my terminology.

“I don’t like when outsiders come in and say we’re divided. The community is healing, enough time has gone that i—it is healing. And it’s wrong for somebody from the outside to keep coming in saying we’re divided, we’re not. We’re not. We’re healing. It is a healing process.”

From what I saw throughout my interviews, I’m confident that Verla is right. While a great injustice was done, the Ko‘olauloa communities will continue to work together.



## DISCUSSION

This section takes a deeper look into the events of Nā Pua Makani in order to discern the lessons learned from the project. First, I draw a comparison between the process timeline of the Nā Pua Makani project and the development framework specified in the Free, Prior and Informed Consent manual. I then take a look at what has changed or is in the process of changing within renewable energy development in Hawai‘i, either as a direct result of Nā Pua Makani or as a result of other pressures. Finally, I offer my own recommendations for further progress and change within the Public Utilities Commission and regulations concerning energy developers in Hawai‘i, and investigate alternative approaches to the traditional development structure that are gaining traction in Hawai‘i.

### Injustices Within the Nā Pua Makani Project Timeline

Now that I have established the process timeline of the Nā Pua Makani project (NPM), it is important to look back and identify the various injustices experienced by the community. For each injustice, I use the recommended development strategy presented in the Free, Prior, and Informed Consent (FPIC) manual to explain the ideal process as per this framework and then contrast this with the events of NPM. After discussing each injustice faced by the community, I finish the section by considering who is at fault for these injustices.

### Insufficient Communication

FPIC framework. The first violation of the community's rights that I will discuss is the lack of communication with the community. According to the FPIC manual, in order to properly communicate with the community, the developer must first learn the proper channels of communication to use within the community. This is accomplished through several separate meetings with different community groups such as *kupuna* (elders), men, women, youth, Native Hawaiians, and community associations, during which the participants draw the community by mapping out their typical communication networks, social networks, and daily routines. Through these participatory mapping sessions, the developer gains a better understanding of the community's land usage patterns, communication and decision-making channels, and perspectives on further development. Using this information, preferred modes of communication can be established between the developer and various groups within the community, thereby ensuring maximum community engagement on important issues throughout the project.

Throughout the rest of the project, it is imperative that “the process is as participatory as possible, and keep[s] community members informed **at every step** [emphasis added]” (FAO 2016). The communication should be transparent and inclusive, meaning every detail of the project is made available to the community, and the developer listens to the community's feedback and modifies “objectives so all parties are fully satisfied” (FAO 2016).

Nā Pua Makani process. In the case of the Nā Pua Makani project (NPM), the original developer, West Wind Works, skipped the participatory mapping process

completely. As a result, a very narrow selection of the community was involved in early negotiations with the developer. Furthermore, the lack of proper communication from the beginning set a precedent for the entire project, which resulted in the community getting left in dark during pivotal decisions throughout the project timeline.

The first time insufficient communication harmed the community was during the first transfer of developers on the project. When NPM was transferred from West Wind Works to Champlin Wind, the community had no say on the terms of the transfer, which was particularly relevant since in between developers, the community's sentiment towards wind farm development changed. During original negotiations in 2008, Keith Avery, the West Wind Works representative, was quoted stating that "if the community said we don't want Kahuku to have wind turbines, we would stop" (PUC Docket 2013-0423). If the Kahuku community was involved in the transition of developers, it is likely that this condition would have been part of the transfer agreement.

Insufficient communication was also apparent during the second transfer of the project developer from Champlin Wind to Applied Energy Services (AES). Verla Moore, a Lā'ie resident who eventually became the Community Liaison for AES, remarked that

"the first time I heard about AES was when they called me to interview for the Community Liaison position. No one told us that Champlin was planning to sell, and we never saw any AES representatives around before either."

A representative from AES also admitted that they could have done better to assess the situation before purchasing the project.

"In hindsight, we really didn't do our due diligence when we bought the project. You know AES just flew in a bunch of people from the mainland to assess the

project, so they didn't know anything about talking to the community or the culture here."

If the project was following the FPIC framework, the community would have been intimately involved with each of these transitions, subsequently informing each new developer of the existing terms and conditions of the project. Without properly established communication channels with the community, each developer entered the project without any context of previous events which ultimately harmed the community much more than it harmed the developer.

### Invalid Community Consent

FPIC framework. Community consent lies at the center of the FPIC framework, thus the FPIC manual is very clear in stipulating the requirements for gaining community consent. First of all, for the project to move forward, a written agreement between the developer and community representatives must be signed. The agreement should include the project scope and duration, best practices for communication and decision-making within the community, an agreed upon mechanism for feedback and complaints throughout the project, a monitoring and evaluation plan, and terms for the community's withdrawal of consent along with an exit strategy in the event of withdrawn consent. In order for the final agreement to be legitimate it "must be mutual and recognized by all parties, taking into consideration customary modes of decision-making and consensus-seeking" (FAO 2016).

It is important to note that consent should be given, and the agreement between the developer and community finalized and signed, **before** any commitments are made by

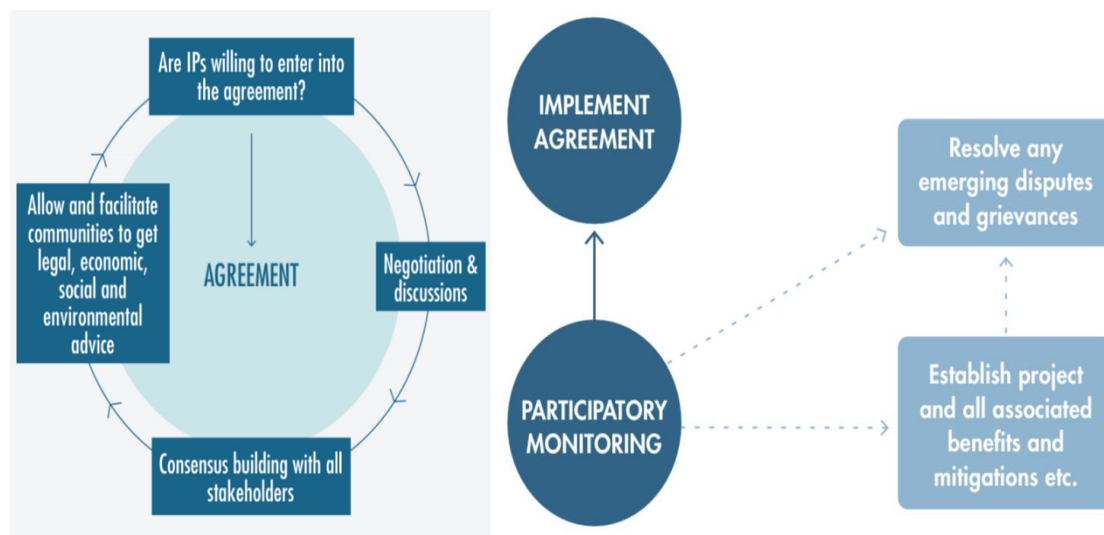
the developer such as leasing/buying land, completing a power purchase agreement, or applying for any permits. Furthermore, the terms for the community's withdrawal of consent should be simple and clear enough so that in the event that the community does wish to withdraw their consent, they are able to do so without getting tied up in legislative red tape. Finally, the validity of the consent agreement is contingent on the condition that all previous steps specified in the FPIC framework (i.e. participatory mapping and transparent communication) have been adequately implemented, since the previous steps are required for the "informed" aspect of FPIC to be fulfilled.

NPM process. Throughout the NPM process timeline, there were two times when a consent agreement should have been negotiated, but failed to be pursued by the developer: during initial negotiations with West Wind Works in 2008, and during the reinstated community engagement by Champlin Wind in 2013. Each time, the developer disregarded the need for community consent, and moved the project forward without receiving valid community consent. Champlin Wind in particular, took advantage of the lack of terms set by West Wind Works and pushed the project through under the claim that the "consent" given to West Wind Works in 2008 applied to Champlin's community engagement in 2013. Subsequently, Kahuku was never given the opportunity to negotiate terms or conditions around their consent, which effectively relinquished all autonomy over the project proceedings to Champlin Wind. Furthermore, by signing a power purchase agreement with Hawaiian Electric Company (HECO) before gaining community consent, Champlin Wind all but stripped the community of their right to withdraw consent.

### Insufficient Community Representation

FPIC framework. The FPIC process does not end with the consent agreement. Throughout the project, the community must retain their autonomy over project decisions, and remain informed on all details of the project (Figure 15). A mechanism for communicating feedback and complaints from the community to the developer (and any third party regulators) should be established within the consent agreement and followed closely at all phases of the project. In the event that conflict arises between any parties involved with the project, a third party mediator that was agreed upon in the consent agreement will step in to resolve the issue to the best of their ability per the terms and conditions stipulated in the signed agreement.

NPM process. Although the community was not given any autonomy over project decisions to begin with, they still could have been represented better throughout the rest



*Figure 15. Iterative negotiations should be made with the community before any agreement is reached. During the project it is imperative that the community participates in the monitoring of the project (FAO 2016)*

of the project. Life of Land attempted to provide proper representation for the community, but were denied on the grounds that the community was already represented by the Consumer Advocate. However, when it came time for the Consumer Advocate to advocate on behalf of Kahuku, even they admitted that it is not typical for the Consumer Advocate to represent a single community. As a result, the Consumer Advocate did the same thing Champlin Wind did when encountering complaints and concerns from the community: they passed the buck onto the Environmental Impact Statement (EIS). To be clear, an EIS has never been, and will never be, a proper tool for community advocacy. Properly processing and responding to feedback, complaints, and concerns of the community is an iterative process that must be repeated constantly throughout a project cycle (as shown in Figure 13). An EIS is a single report issued in the late stages of a project, past the point when any substantial changes can be made to the project scope.

Unable to represent themselves, and denied any proper representation within the proceeding, Kahuku had their hands tied from the start, so when residents had legitimate concerns about the project, they had no one to direct their concerns towards. The most poignant example of concerns gone unanswered is the health impacts experienced from living near wind turbines, i.e. Wind Turbine Syndrome (WTS). The brunt of the conflict around WTS discusses whether it is a bonafide medical phenomena or a fabrication of the mind due to annoyance and general disapproval of the wind farm. What these studies miss is the fact that **why** the symptoms are occurring does not change the fact that the symptoms are **real lived experiences**. Every single resident that I interviewed that experienced WTS has decided to move away from the area due to the debilitating and

unbearable symptoms. With proper representation, residents of Kahuku would have received the resources to properly investigate, monitor, and treat the strange symptoms they were experiencing. Instead, they were unwillingly pushed out of their homes since the EIS deemed their concerns “addressed”.

### Community Benefits

FPIC framework. Within the FPIC framework, a community benefits package can be an effective tool for negotiating the community’s consent. Subsequently, any benefits package should be discussed and finalized prior to the signing of the consent agreement, as all the terms and conditions of the benefits package must be included within the signed agreement. Furthermore, any negotiations for the benefits package must go through the same communication and decision-making channels as all other project information, in order to avoid confusion and conflict within the community. It is imperative that the developer have an intimate understanding of the different players in the community, and the social, political, and cultural niceties in the community. Every group should be involved in negotiating and benefiting from the agreement, and the final package should be agreed upon by all parties. Finally, any modifications to the benefits package after the consent agreement is signed shall be passed through a vetting process agreed upon by both the developer and community representatives.

NPM process. The fact that the community benefits were still getting negotiated after the Power Purchase Agreement was approved should be a big red flag. As Verla Moore asserted in our interview, “all the negotiations for the community benefits need to



be done in the beginning. Before the permitting, before the Utilities Commission, the first thing.” Up until April 2017, the community benefits package was a verbal agreement between Mike Cutbirth and Junior Promacio, meaning if he had wanted to, Cutbirth could have backed out of the agreement at any time without any legal repercussions. Not only that, neither party had any kind of standards or rules of thumb to follow. All things considered, the deal that Champlin Wind made with North O‘ahu Hometown Opportunities (NOHO) was a fraction of what the community could have gotten had they been properly informed on the finances of the project. Furthermore, the extent of the “community” was never properly defined, and so even though Cutbirth quietly stepped around the Kahuku Community Association in order to deal directly with Junior Promacio, Champlin Wind still claimed to be “working with the community,” which was recognized by the PUC. To say the least, the informal negotiations, lack of standardized/minimum benefit sums, and poor definition of the term “community” ended up creating high tensions within the community due to different viewpoints and misunderstandings.

### Who Is to Blame?

When looking at all the rights violations and injustices faced by Kahuku and the greater Ko‘olauloa neighborhood, it is easy to point the finger at the developer and lay all the blame at their feet. To an extent this is true, since most of the issues aforementioned stem from the gross negligence of Champlin Wind in the early phases of the project, when the developer should be actively establishing a relationship with the community

based on trust and collective goals. However, the actions of Champlin Wind should not come as a surprise. After all, the company was only doing what it was contracted to do: build a wind farm as cheaply and quickly as possible, within the (bare minimum) regulations of the county and state. It is therefore reasonable to consider the responsibility to be held by policy makers that failed to create and implement regulations that adequately protect communities from getting taken advantage of by developers. For any substantial change to be enacted, the Hawai‘i state and county governments must mobilize to write, implement, and enforce forward-thinking policies that regulate development within Hawai‘i in a way that more closely resembles the FPIC framework.

#### After Nā Pua Makani: Changes Made

Since Nā Pua Makani was finished, several changes have been made to the energy development landscape in Hawai‘i both through legislation and social programs. Several of the changes are still in development, but show promise for progress towards a more equitable development process.

#### New Laws and Regulations

Starting as early as 2019, Nā Pua Makani started influencing new proposals for bills and resolutions within the Honolulu City Council and State Legislature. In 2019, Honolulu City Council member Heidi Tsuneyoshi introduced Resolution 305 stipulating that all wind turbines of a generating capacity greater than 100 kW must be a minimum distance of five miles from all property lines (Resolution 19-305). Two years later, three bills were introduced at the City Council regarding wind turbine setbacks: Bill 28, Bill

29, and Bill 30. The bills each required a setback of 1.25 miles, 1,500 feet or twice the height of the wind turbine (whichever is greater), and five miles respectively. While all three of the bills passed their first reading, they all seemingly became dead afterwards, as no further action was taken on any of the three bills (potentially a result of the COVID-19 pandemic, since the last meeting held for each bill was in early 2020). However, in 2022, wind turbine setbacks made a reappearance in Bill 10. Originally, the bill stipulated that all wind generation facilities with a rated generation greater than 100 kW must be a minimum distance of 1.25 miles from residential zones. However, a recent amendment that modified the language stipulates “large wind energy generation facilities must be set back from all property lines at a minimum distance equal to the height of the facility [...] and a minimum of 1 mile from the property lines of any zoning lot located in the country, residential, apartment, apartment mixed use, and resort zoning districts” (Bill 10 2022). The bill passed its second reading with the 1-mile setback language, which if passed, may give Kahuku residents an avenue to relocate the two turbines nearest their community, though it is unclear whether the setback stipulated in the bill would apply to existing structures.

Another bill influenced by Nā Pua Makani is SB2072, introduced in 2020. SB2072 essentially admonishes the Hawai‘i government and Hawai‘i State Energy Office (HSEO) for setting renewable portfolio goals without having a plan on how to achieve the goals. The bill would have required the HSEO to collaborate with various government agencies to develop a strategic plan to:

1. Attain the statutory renewable portfolio standard goals and zero emissions clean economy target
2. Provide clarity for utilities, utility-scale developers, the public, and Hawai‘i’s communities and energy broader stakeholders in planning to achieve the benchmarks determined under paragraph (1).

A second part to the bill also requires an advisory group of Hawai‘i citizens and state agencies to be established which would essentially ensure that communities impacted by energy development projects are given ample opportunity to participate in the projects affecting them, and have a clear avenue of consult on issues relating to the projects (Bill SB2072). The bill was adopted by the Senate and passed two readings by the House, but unfortunately was stopped short of being passed due to the start of the COVID-19 pandemic. Nevertheless, it is promising that the Hawai‘i State Legislature has been discussing these issues.

Finally, in 2022, the senate introduced a bill that would require the Department of Planning and Permitting to “publish on its website all decisions regarding waivers and variances” (SCR204 SD1). The bill was adopted by both the Senate and the House by April 2022, and could have a direct impact on the only remaining open lawsuit against Nā Pua Makani regarding the setback variances approved in 2019 and 2017 without public notification.

### Community Engagement

Besides the senate bill SB2072 that would have established a community advisory committee to the Hawai‘i State Energy Office, there have been several other attempts to increase community engagement and benefits within renewable energy development. In

2018, the Hawai‘i State Energy Office (HSEO) piloted the Community Based Renewable Energy (CBRE) program. The main goal of the CBRE program is to pass energy savings from renewable energy projects directly to consumers on the grid who may otherwise not be able to benefit from renewable technology such as rooftop solar. In a nutshell, the developer builds the renewable energy generation facility, and then sells subscriptions of the project to consumers on the grid, so that these consumers essentially “own” a piece of the renewable generating capacity that subsidizes their own electric bill. While the first phase of the program was not very successful due to a few logistical hiccups and lessons, the second phase in 2022 is showing much more promise, creating unique opportunities for some communities as discussed in the next section.

One of the reasons the first phase of the CBRE program was not very successful is simply because not many people knew about the program. To remedy this, HSEO created “Clean Energy Wayfinders,” a program that is meant to “share information and opportunities for energy conservation and clean energy adoption with Hawai‘i’s schools, community organizations, and households” (HSEO 2022). Through this program, HSEO sends out representatives to their assigned community to spread the word about various programs and opportunities, such as “federal Low Income Home Energy Assistance Program (LIHEAP) and Weatherization Assistance Program (WAP) funds, statewide Solarize initiatives, community-based renewable energy (CBRE) subscriptions, and clean energy workforce development opportunities” (HSEO 2022). While the program is still too new to comment on its effectiveness, it has potential to increase participation in

community energy programs, and hopefully increase the benefits seen by low- and moderate-income households from renewable energy development.

Community benefits packages have also gained traction in the past few years. Some developers, like AES, have taken the initiative to make community benefits packages a standard among their own projects. Perhaps even more promising is the addition to HECO's Stage 3 Request for Proposals (RFP) that will require a community benefits package for all proposals. Currently, the draft RFP requires that "Proposers should commit to setting aside at least \$3,000 per MW, capped at a minimum of \$200,000 per year, for community benefits. [...] Preference will be given to Proposers that commit to setting aside a larger amount or commit to providing other benefits" (PUC Docket 2017-0352). While the regulations surrounding the community benefits package is not perfect, having some kind of minimum benefit for the host community is a form of progress.

### Performance-Based Regulation

In addition to policy changes requiring an increased level of community engagement and compensation for utility-scale renewable projects, the Public Utilities Commission (PUC) has also recently passed a set of three performance incentive mechanisms (PIMs) as part of its performance-based regulation initiative (PUC Docket 2018-0088). The first PIM is meant to incentivize utilities to expedite the approval of distributed energy systems, such as rooftop solar, by creating a three-tier monetary bonus system (PUC Docket 2018-0088). The quicker utility companies approve distributed

energy systems on average, the greater the monetary reward. The mechanism is planned to last until 2025, with the target approval periods for each tier reducing on an annual basis. There is also a three-tier penalty mechanism if average approval periods are longer than specified targets (PUC Docket 2018-0088). The second PIM incentivizes utility companies to work with low- to moderate-income (LMI) consumers on energy efficiency measures (PUC Docket 2018-0088). This PMI is broken down into three metrics: energy savings per participant, peak demand reduction, and increased participation in energy efficiency programs organized by Hawaii Energy (PUC Docket 2018-0088). The first two metrics offer a \$/kWh saved by participants reward and a \$/kW of peak demand reduction respectively (PUC Docket 2018-0088). The third metric offers a reward that is calculated by multiplying the number of program participants that exceeded the target by a company reward factor (PUC Docket 2018-0088). Finally, the last PIM incentivizes the utility companies to install advanced meters for residential consumers and enroll consumers in the following select benefits: customer authorization for the sharing of interval data with third parties, provision of customer energy usage alerts, and participation in the next generation time-of-use (TOU) and distributed energy resource (DER) programs (PUC Docket 2018-0088).

Ultimately, the goal of these PIMs is to achieve a higher rate of participation from the public, especially low- to moderate-income (LMI) consumers, in various DER programs offered by the State. They also give the utility companies another revenue path, which should offset some of the revenue lost from the increased distributed energy installations.

## Recommended Policy Changes

While there has been some reform enacted in regards to community benefit agreements and community engagement within renewable energy development, the policy updates to date still do not sufficiently protect the autonomy of environmental justice communities. In fact, under the present policies and regulations of the renewable sector in Hawai‘i, there is nothing that would have prevented or mitigated the community engagement issues of Nā Pua Makani had they been in effect. Subsequently, this section offers further policy updates that would make renewable development in Hawai‘i closer to the process recommended in the FPIC manual.

### Reform Within Request for Proposals

The majority of the justice issues associated with Nā Pua Makani could have been avoided had the developer been required to sign a consent agreement with the community prior to submitting the project proposal to Hawaiian Electric Company (HECO). Unfortunately, up to now, the request for proposal (RFP) released by HECO makes no distinction or additional requirements for developments proposed in or near environmental justice communities, and has no mention of community consent. Modifying the language in the RFP to include the Free, Prior, and Informed Consent (FPIC) framework or something similar could reduce the likelihood of repeating some of the issues experienced in the context of the Nā Pua Makani project, and thereby provide better protection and autonomy for host communities, particularly environmental justice communities.



In order for the FPIC framework to be integrated into RFPs, there must first be a distinction made for projects proposed in or near environmental justice communities. In the past, environmental justice communities have been identified through one of two criteria: race and ethnicity, and income levels. Concerning race and ethnicity, if a community has a disproportionately large percentage of Native Hawaiians or other Pacific Islanders compared to the state average, then the community qualifies as an environmental justice community (Tetra Tech 2016). Concerning income level, the community is considered an environmental justice community if 20 percent of the community lies below the poverty level (Tetra Tech 2016). Another helpful metric for determining environmental justice communities could be whether any utility-scale energy projects have been built in their proximity. These definitions of environmental justice communities are a good place to start the conversation of distinguishing different types of communities that deserve different levels of participation in development projects, and can be refined over time as needed.

Once environmental justice communities are defined, all that is needed is an additional clause within the community outreach requirements in the RFP that requires a signed agreement between the prospective developer and impacted environmental justice community. The details of what must be included in the agreement can be built off the FPIC manual, including the terms and conditions of the consent, an agreed upon feedback and complaint mechanism to be used throughout the project, and terms of when/how the community may withdraw their consent.

For this policy change to operate as intended, it is very important that the FPIC protocol is only made a requirement for projects proposed in or near environmental justice communities. Up to now, affluent communities have had greater protection from developments near their homes due to various factors, including the costs associated with building in the area, as mentioned in NPM's EIS. Including this new language in HECO's RFPs is meant to equalize the playing board and incentivize developers to propose projects outside of where they normally would (i.e. rural, low- to moderate income, minority-majority communities). If the FPIC protocol is required for *all* proposals, then the playing field remains unbalanced, and affluent communities maintain their leverage over environmental justice communities when it comes to deterring development in their area.

#### Reform Within the PUC Review Process

Since the FPIC framework is a process that lasts through to project completion, further policy updates should be passed to ensure proper representation and engagement of environmental justice communities beyond the proposal. Particularly, the role of the Consumer Advocate (CA) within the Public Utilities Commission (PUC) review process needs to be clarified, especially in the context of a project within an environmental justice community. The logical role of the CA is to represent the "greater consumer", i.e. the average customer of the Hawaiian Electric Company (HECO), on issues of scale; such as pricing analysis over the lifetime of the project, economic terms for project extension, and emissions analysis. When it comes to energy justice issues specific to host

communities, the CA is not well equipped or trained to handle the matters properly, and should subsequently not be assigned to represent the community on those issues. Instead, environmental justice communities should be able to choose their own representative from a list of qualified candidates provided by the PUC, and automatically be granted third party status in the PUC proceeding. Again, this benefit should be reserved for environmental justice communities.

### Promising Alternatives

Besides protecting community interests in large utility projects, there are other ways energy justice can be pursued within renewable energy development. In this section, I give an overview of a promising alternative to large-scale utility projects, that give more focus to community empowerment and autonomy over their own energy sources.

#### Decentralized Energy in Hawai‘i

In recent years, decentralized energy strategies have gained more traction in Hawai‘i as an alternative (or supplement) to traditional centralized utility-scale developments. In particular, rooftop solar and community solar projects are two decentralized energy methods that have great potential to make a big impact in Hawai‘i’s energy market. While the State has taken some steps towards supporting these decentralized strategies, more can still be done to support low- to moderate-income (LMI) consumers in adopting and exploring these energy generation options.

Rooftop Solar. As discussed earlier, rooftop solar is one of the fastest-growing renewable energy sources in Hawai‘i, and also has become the largest contributor to Hawai‘i’s renewable energy portfolio since 2017 (HECO 2022b). In the past few years, the State and Hawaiian Electric Company (HECO) have taken steps to further incentivize consumers to install rooftop solar through the performance incentive mechanisms described earlier, the Customer Grid Supply (CGS) program, and various rebates on rooftop solar or related technology (HECO 2022c). The CGS program is the replacement program for Net Energy Metering (NEM), which was closed in 2015 (HECO 2022c). Under the CGS program, participants receive monthly credit on their electricity bill based on how much electricity they put back into the grid from their rooftop solar system at 15.07 cents/kWh for O‘ahu residents (HECO 2022c). There is also a stipulated minimum electricity bill amount of \$25 that covers various maintenance and operations fees, so the bill credit is capped at this point (HECO 2022c). Any excess credit accrued beyond the limit lapses and does not roll over to the next month (HECO 2022c).

The CGS program is very different from the original NEM program implemented in Hawai‘i from 2005 to 2015. Under that program, consumers with rooftop solar are given a one-to-one credit for any electricity sent into the grid (PUC Docket 2005-0037). Not only that, but if the consumer sends more electricity into the grid than they used that month, the excess credit rolls over as credit for the next month (PUC Docket 2005-0037). Since the original NEM program does not require a minimum monthly payment, consumers under this program could feasibly pay nothing on their electricity bills for the entire year. Since the majority of these consumers still use electricity from the grid during

times their system does not produce enough (i.e. at night, during rainstorms, etc), the utility ends up losing money and increasing electricity rates to offset their losses. In theory, the changes made between the NEM program and the CGS program were much needed, due to the unfair burden NEM placed on consumers without rooftop solar, since the losses experienced by the utility had to be offset by the ratepayers (Baker 2021; Borenstein 2021). However, while the NEM program was closed to any new applications in 2015, the benefits for those enrolled in the program *have not been discontinued* up to the present day. As a result, the affluent consumers that had the capital to invest in rooftop solar 15 years ago continue to reap disproportionate benefits from their rooftop solar systems, while the low- to moderate-income consumers for whom rooftop solar is just becoming economically feasible for are receiving less than half the benefits for an equivalent rooftop system. This is completely backwards, especially since the main argument against NEM was that it disproportionately burdened low to moderate-income (LMI) consumers (Baker 2021; Borenstein 2021).

Subsequently, more needs to be done to support LMI consumers to afford installing rooftop solar on their own homes. As a start, the CGS program could be modified in a way that offers better benefits for LMI consumers with rooftop solar systems (or other distributed energy generation sources). Furthermore, the benefits of the original NEM program should be discontinued, and replaced with terms similar to the current CGS program. Finally, additional performance incentive mechanisms (PIMs) should be passed that specifically target the installation of distributed energy sources at LMI households. Currently, the only PIMs that target LMI consumers are energy

efficiency programs such as appliance trade-ins and installation of energy efficient lightbulbs (PUC Docket 2018-0088). While these programs certainly provide value and savings for the LMI consumers, the benefit of installing LEDs in your home is nowhere near the benefit of installing solar panels on your rooftop.

Community Energy Projects. “Community energy” normally refers to the public ownership of energy developments (Baker 2021; Heldeweg & Saintier 2020; Campos & Gonzalez 2020). These projects can be a valuable resource for LMI consumers that rent their homes or live in apartment buildings, since they make the benefits and savings associated with renewable energy accessible for those who do not own the infrastructure on which to build their own systems. The level of public participation in the project, however, varies across different interpretations of the term. In her book *Revolutionary Power*, Shalanda Baker explains two common interpretations of community energy:

“For most energy democracy advocates, community energy means small-scale energy production located within a community, controlled by the community, and owned by the community. [...] By contrast, when the solar industry and utilities use the term ‘community solar,’ they generally refer to a large shared installation in which customers can purchase subscriptions or ownership of part of the solar project” (Baker 2021: p. 123).

In Hawai‘i, the community-based renewable energy (CBRE) program has, up to this point, been utilized in the latter sense of the term. Large developers have built utility-scale projects, and consumers from across the entire state can purchase subscriptions for those projects. One developer, however, has decided to take a different approach.

Shake Energy Collaborative is a start-up solar developer that is changing the way community energy projects are approached in Hawai‘i. Instead of building large, utility-

scale projects and selling subscriptions to the entire state, Shake Energy focuses on smaller, community-scale solar projects, and co-designs the project with the host community (Shake Energy Collaborative 2022). Their design process focuses on integrating local expertise and preference into siting, sizing, and designing the project, and building local capacity for the maintenance of the system after construction is complete. Furthermore, all their projects are submitted through the CBRE program, which allows the developer to target specific populations to sell subscriptions to. As a result, the community can give preference to their own residents when filling subscriptions for the project, thereby giving direct benefits to the host community (Shake Energy Collaborative 2022).

While Shake Energy's method is a promising development model, they are a young company and are still navigating the challenges associated with having a community organization design, manage, and maintain a mid to large scale solar project. Furthermore, when submitting a proposal for a project, Shake Energy competes with large, corporate development proposals, and has trouble showcasing the same financial liability and development experience as their corporate counterparts. However, the feedback Shake Energy has received from the communities it has collaborated with has been enthusiastic and welcoming. Communities have been proud of the projects they plan with Shake Energy, and eager to share their experiences with other communities. If Hawai'i wants to reach the target of 100% renewable energy by 2045 with minimal pushback, this is the kind of framework that needs to be supported within the proposal process. Therefore, more metrics should be added to the proposal process that award

points to proposals that collaborate with the host community to this scale. Some example metrics could be: number of locals on the project planning committee, dual land use at the project site such as mixed agriculture or animal grazing, or whether a preference for project subscriptions is given to the host community. These metrics can slightly offset the advantages large corporations have over smaller start-up developers, and give companies like Shake Energy the chance to prove their community co-design approach.



## CONCLUSION

In critically analyzing the Nā Pua Makani project (NPM), I have identified several social and environmental justice issues within its process timeline, the repercussions of which the community is still dealing with today. Specifically, the developers of NPM, especially Champlin Wind, failed to respect the community's right to give consent, did not sufficiently communicate project decisions with the community, and failed to advocate for proper representation of the community throughout the project. When meeting with various residents in Kahuku, the common sentiment among them was frustration and exhaustion from getting continuously denied the right to be heard by the parties involved with the project. While the resistance in Kahuku was not successful in stopping the construction of NPM, their voices brought important energy justice issues to light within the renewable sector in Hawai'i, and catalyzed action at the county council, as well as at the State Senate. It is also likely that the protests in Kahuku are part of the reason community benefits are now requirements stipulated in Hawaiian Electric Company's Stage 3 RFP, which is tangible change that will positively impact host communities in the near future.

Despite the small progress that has been made since NPM was built, there is still much work to be done in order to adequately protect the rights of environmental justice communities within Hawai'i in the context of development in their area. The Free, Prior, and Informed Consent (FPIC) manual compiled by the Food and Agriculture Organization (FAO) of the United Nations offers a helpful framework to base further

community engagement policies off of. The three main phases of the framework are participatory mapping within the community, negotiating a consent agreement with the community, and initiating a feedback and complaint mechanism that allows the community to retain their autonomy over project decisions through completion of the project. Subsequently, policy reform at the stages of development that align with these phases is necessary to transform renewable development in Hawai‘i to better resemble the FPIC process. Specifically, language in the request for proposals (RFP) by HECO should make specific mention of environmental justice communities, and require developers to receive these communities’ consent through a signed, collaborative document. Furthermore, the review process at the Public Utilities Commission (PUC) should offer proper channels of representation for environmental justice communities so that the terms and conditions of the agreement made between the developer and community may be properly monitored throughout the development.

In addition to reforming policy and regulation surrounding the traditional framework of centralized energy projects, Hawai‘i should put more resources into supporting low to moderate-income (LMI) consumers’ adoption and installation of distributed energy systems; rooftop solar and community solar projects in particular. By writing performance incentive mechanisms that specifically target installing distributed energy systems in LMI households, modifying the community grid-supply (CGS) program to give better benefits to LMI participants, and including metrics in the RFP that give preference to community co-design frameworks, Hawai‘i can ensure that the

renewable energy transition is not only a transition away from fossil fuels, but also a transition towards a more equitable and just environment.

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