

TROUBLES WITH A WIND FARM PROJECT

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The Kahuku Wind Farm of Hawaii has been laden with controversy since its inception in 2011. Although it was one of the two wind farms on Oahu responsible for supplying a combined 14% of the island's renewable energy in 2018, citizens have been outspoken in their criticism of the facility. Local residents have cited concerns regarding adverse health effects to the surrounding community, as well as deaths of native birds and endangered bats caused by the turbines. The impact on the Hawaiian hoary bat population has been a focal point of numerous complaints, as more bats are being killed than initially predicted. To the dismay of their opponents, eight additional turbines are being erected in Kahuku as part of the Na Pua Makani Wind Energy Project. And, as of November 2019, approximately 200 individuals have been arrested while protesting it. To add to the controversy, wind farm officials are currently facing legal hurdles, as challengers are skeptical on whether the project's environmental review correctly estimates the number of birds and bats that will fall victim to this new development. The purpose of this study is to analyze and evaluate the issues associated with the Kahuku Wind Farm and Na Pua Makani Wind Energy Project, as well as the position and arguments of stakeholders and litigants.

Keywords: Environment, Hoary bat, Energy, Law enforcement, Megawatts, Wind turbines, Renewable energy, Scenic beauty, Litigation.

1 BACKGROUND

The Kahuku Wind Farm is a 30-megawatt wind farm owned by TerraForm Power consisting of twelve turbines located in Kahuku, Hawaii, on the North Shore of the island of Oahu. In July 2010, the U.S. Department of Energy financed the Kahuku Wind Farm with a \$117 million loan guarantee (Star-Advertiser Staff 2010). The plant commenced operations in 2011 and possesses the capacity to provide power to 7,700 households annually (Hawaii State Energy Office 2020). The development of this project created approximately 200 job opportunities within the construction field, in addition to jobs in other disciplines such as design and engineering.

2 PUBLIC PERCEPTION OF WIND FARMS

Although this wind farm has provided significant benefits, the community was quick to voice their resentment toward it. Some claimed that the turbines have caused them to experience health issues. For example, Kahuku homeowner Neva Fotu stated that she suffers symptoms such as dizziness, migraines, fainting, and insomnia (Jedra 2019b). Another resident, Joshua Kaina, noted similar problems when he moved into the area. Both Fotu and Kaina also stated that their sleep quality improves when the turbines are not running. It is important to note, however, that these claims are anecdotal and there is no valid correlation between wind turbines and adverse

health effects (Tsipis 2018). Regardless, individuals from across the globe have voiced similar complaints and believe that neighboring turbines are the roots of their problems (Keen 2008). Many think that their quality of life would improve if wind farms were to be located further away.

In addition, residents have deemed these wind turbines as eyesores. An attractive aspect of Kahuku was the sheer beauty of the natural landscape. However, the scenic views have been partially obstructed as there are now turbines stretching hundreds of feet into the sky along the formerly unaltered hilltop. Other reported inconveniences include the low frequency hums that these turbines emit, as well as shadow flicker, the term for the pulsation of sunlight caused by the rotating turbine blades. This can be maddening for residents at certain times of day as it can leak into homes through windows, causing an irritating strobing effect (Schworm and Filipov 2013).

Aside from concerns regarding their own quality of life, islanders are also worried about the well-being of native animals. The state's five major wind farms are killing the endangered Hawaiian hoary bat approximately three times faster than anticipated. These wind farms are permitted to kill a total of 187 hoary bats by 2030, and 146 have already fallen victim as of January 2017 (Follett 2017). Hawaii's state bird, the endangered nene goose, is also being killed by these turbines. At a 2017 hearing regarding an upcoming wind farm project, Kahuku resident Charlotte Kamauoha stated that locals do not support developments that will harm or kill animals, especially those with cultural significance (Kubota 2017).

For these reasons, opponents prefer developers to consider solar farms in lieu of wind farms. However, a senior spokesman for Hawaiian Electric Company stated that various sources of energy needed to be utilized in order to attain the state's goal of 100% renewable power (Mizuo 2019). A June 2015 bill, HB623, signed by Hawaii Governor David Ige requires the state's electricity to be generated solely from renewable resources by the year 2045 (Namata 2015).

2.1 Locals React to a Second Wind Farm in Kahuku

Despite the public's blatant disapproval, power company AES Corporation is in the process of completing an additional wind farm in Kahuku called the Na Pua Makani Wind Energy Project. Expected to begin operation in the Summer of 2020, this 28 MW wind farm will have the capacity to provide power to approximately 7,000 households annually (Kubota 2019). The facility will include eight 568-foot turbines, 100 feet taller than those found at the Kahuku Wind Farm (Drewes 2016). Public outcry has risen, and approximately 200 arrests were made of protesters attempting to prevent trucks from transporting turbine parts to the project site (Bernardo 2019).

Tension between wind farm opponents and local law enforcement boiled over during a November 2019 protest, where police officers were alleged to have used excessive force in a confrontation that led to the arrest of 26 protesters (HNN Staff 2019). A Republican Party representative of the Hawaii State Senate attended the rally and claimed that female protesters were shoved by at least three police officers (Bernardo and Ladao 2019). Furthermore, he claimed that officers utilized bicycles to push the crowd and that injuries and mishaps occurred. However, none of the arrested individuals reported any injuries, and a police spokeswoman affirmed that officers issued multiple warnings to protesters and responded to their insubordination appropriately (Bernardo and Ladao 2019). Despite the efforts of the protesters, transportation of all of the large turbine parts was finished later that month (Bernardo 2019), and construction of the eighth and final turbine was completed in January 2020 (Ladao 2020).

3 KAHUKU WIND FARM FIRES

On April 22, 2011, just seven weeks after the Kahuku Wind Farm commenced operation, a small fire broke out in the battery room causing minor damage (Star-Advertiser Staff 2011). A month later, another fire of similar magnitude took place on May 23, 2011 (Associated Press 2013). As a result, Xtreme Power Solutions sued Dynapower for allegedly supplying them with inverters that contained defective capacitors (Nemani 2012). Xtreme claimed that both fires were caused by the inverters and that repairs would cost them millions of dollars. According to a spokeswoman for Xtreme, the suit has been settled out of court (Yonan 2013).

A third fire broke out on August 1, 2012, burning the battery room to the ground. 12,000 individual battery packs were also lost as a result. The blaze lasted for three days and emitted toxic lead smoke into the air (Walden 2013). Due to the voltage of the system, firefighters could not use water to extinguish the fire and had to use dry chemicals instead. They did not have enough to put out a fire of that size, so they needed assistance from Hawaiian Electric Company, which owns a large truck capable of hauling 1,000 pounds of the chemical (Shikina 2012). Luckily, they were able to contain the fire to only that one building. The wind farm went back online in February 2014, over a year and a half later (Associated Press 2014).

3.1 Impact on Future Wind Farms

Ironically, the inventive battery system was viewed as a selling point during the project's preliminary phase and helped to obtain the \$117 million loan from the U.S. Department of Energy (Kubota 2012). However, developers of the upcoming Na Pua Makani Wind Energy Project decided against the use of batteries for their wind farm. Instead, power lines will be utilized to transmit energy directly to Hawaiian Electric Company, reducing the risk of fires (Gutierrez 2015). It is possible that wind farm developers became wary of battery storage as a result of the three fires at the Kahuku Wind Farm.

4 EXPLOSIVE USE AT THE NA PUA MAKANI WIND ENERGY PROJECT

Although the Na Pua Makani Wind Energy Project is yet to be completed, it has already experienced its fair share of controversy. For instance, developers were shown using explosives at the project site in a video dated March 2019. A Democratic representative of the Hawaii State Senate believes that the State Historic Preservation Division may not have consented to this and suspects that developers overlooked permitting processes (Mangieri 2019). Explosives put Native Hawaiian burial grounds at risk, which are held sacred and must be preserved by law.

4.1 Keep the North Shore Country Announces Intent to Sue Developer

“Keep the North Shore Country” is a volunteer-based non-profit organization whose goal is to preserve the North Shore of Oahu, Hawaii. In November 2019, the group declared their intent to sue the developer of the Na Pua Makani Wind Energy Project and gave a 40-day notice (Jedra 2019a). They claimed that the project's 2016 environmental review did not cover the additional five parcels of land that were recently added to its plans. The group also opposed the security measures, such as the fencing and road gates that were implemented at the Kahuku agricultural park, claiming that these methods were not acknowledged in environmental reviews. The president of Keep the North Shore Country believes that AES Corporation is cutting corners and

operating without obtaining all required approvals and reviews. In response, AES asserted that they acquired all necessary permits (Jedra 2019a). No updates have been released on this dispute.

4.2 Construction Proceeds Despite Two Ongoing Legal Challenges

Much of the public's disapproval of wind farms pertains to their impact on local bird and bat populations. The species drawing the most concern is the Hawaiian hoary bat, which is listed as endangered. An attorney for Keep the North Shore Country has stated that all major wind farms in the state have exceeded the number of bats that they were originally permitted to kill (Kubota 2017). In May 2018, the Board of Land and Natural Resources approved the habitat conservation plan and incidental take license for the Na Pua Makani Wind Energy Project. Keep the North Shore Country subsequently filed an appeal. In April 2019, the circuit court upheld the board's initial decision, stating that their review process was adequate, as they relied on the expertise of the Endangered Species Recovery Committee (Wu 2019). As a result, Keep the North Shore Country has appealed the ruling to the Intermediate Court of Appeals (Yerton 2019).

Another non-profit environmental organization, Life of the Land, challenged the project, as well. They cited many problems, including the Public Utility Commission's failure to evaluate greenhouse gas emissions and AES's oversight of the acceptable timeline to obtain permits (Burgos 2019). As a result, Life of the Land filed a motion to invalidate the agreement between AES and Hawaiian Electric Company. This challenge is currently ongoing.

4.3 New Bill Package Addresses the Public's Opposition to Wind Farms

On January 23, 2020, seven bills for this year's legislative session were introduced regarding wind energy projects. One of them, Senate Bill 3051, would give the Governor the power to terminate the Na Pua Makani Wind Energy Project (Ladao 2020). To dampen the animosity of turbine neighbors, Senate Bill 2801 would give preferential electricity rates to residents living within a five-mile radius of any wind farm. Another, Senate Bill 2804, would require turbines to be located at least fifteen feet for every one foot of height from all property lines. Since each of Na Pua Makani's turbines is 568 feet tall, the minimum setback distance would be 8,520 feet. This would be a dramatic change, as the distance from the turbines to the nearest home has been approximated at 1,648 feet (Richardson 2019). Senate Bill 2048 focuses on the same issue, aiming to lengthen the minimum distance between any utility-scale energy project and the boundary of residential areas to half a mile.

If these bills gain approval and become law, it would undoubtedly help to ease tension within the community. This bill package appears as a step in the right direction toward ensuring that Hawaii's clean energy future does not come at the expense of the public's well-being.

5 CONCLUSION

The Kahuku Wind Farm has been the topic of controversy ever since its establishment back in 2011. Public perception regarding the project has been largely dominated by negative sentiments. Most notably, residents have blamed the facility for inflicting them with health problems and are angered by the fact that the turbines pose a threat to native animals. Adding fuel to the fire, the battery storage room had burst into flames on three separate occasions in the span of just 16 months, the most recent of which emitted toxic smoke into the air for three days and suspended operations for over a year and a half.

While the public was already fed up with the Kahuku Wind Farm, developers are in the process of completing another project in the area. The Na Pua Makani Wind Energy Project is anticipated to be up and running by the Summer of 2020. This project has been the focal point of numerous protests that involved citizens blocking trucks from hauling turbine parts to the project area. Approximately 200 total arrests were made as a result. Developers of this project are also facing legal challenges from two non-profit organizations. Both cases are currently ongoing. Despite these obstacles, the project is on schedule, and all eight turbines have been constructed.

The troubles with the Kahuku Wind Farm and upcoming Na Pua Makani Wind Energy Project emphasize the difficulties of balancing modern development with public morality. Ultimately, it is up to lawmakers and developers to determine a compromise.

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