BILL064(23)
Testimony

MISC. COMM. 234

PLANNING AND THE ECONOMY (P&E)

PLANNING AND THE ECONOMY (P&E) Meeting

Meeting Date: May 23, 2024 @ 09:00 AM

Support: 3

Oppose: 21

I wish to comment: 16

Name:	Email:	Zip:
Hawaii LECET	info@hawaiilecet.org	96817
Representing:	Position:	Submitted:
Hawaii Laborers & Employers Cooperation and Education Trust	Support	May 20, 2024 @ 01:56 PM

Name:	Email:	Zip:
Henrietta Emerson	fia.emerson@gmail.com	96731
Representing:	Position:	Submitted:
Self	Oppose	May 20, 2024 @ 10:34 PM

Testimony:

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

I have to look at those ugly turbines everyday facing my home. The red blinking lights are very obvious at night and is a nuisance. Everyday I am in awe that ANYONE would think it was okay to put the monster turbines this close to SCHOOLS and HOMES. I wish the turbines were gone, it ruins the beautiful mountainous backdrop of Kahuku. Alas, they are already there so I can only hope that NO OTHER COMMUNITY has to deal with this grave, environmentally atrocious injustice moving forward.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Saleia Tuia	saleiam09@gmail.com	96731
Representing:	Position:	Submitted:
Self	Oppose	May 20, 2024 @ 10:58 PM

Testimony:

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-

conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

I am of Kahuku, born and raised. Please allow me to share my personal experiences with the 2 existing wind farms that surround Kahuku in my hopes that you may have an understanding of why the language that states that the new setback requirements only apply to new large wind energy generation facilities in the current bill is unjust and inexcusable. The two existing wind farms are causing a disturbance and negative impact in my daily life. I live 0.932 miles from the first Kahuku wind farm and I have felt the negative effects. I've experienced the annoying shadow flickers and it's unbearable. The shadow flickers are when the sun shines through the spinning blade and casts a moving shadow. When the shadows move it feels like you're in strobe lights. Try blinking your eyes twice every 1 second. Imagine everything in your view flickering like that for almost an hour? It's very annoying and intolerable. It's hard to escape. You have to go indoors and close the curtains but even inside the house you get the flickering. In the current wind farm Na Pua Makani's EIS it states that "moving shadows have the potential to induce epilepsy seizures, annoyance, stress and safety concerns including vehicle driver distraction." It blows my mind that it states right in the EIS of the potential harm wind turbines can cause but was completely ignored, and then continued to be built near homes where kids live. Do our lives not matter? Another negative effect I've experienced living near a wind turbine is the loud jet-like noise it makes when it spins. I've heard the loud sounds standing 0.4 miles away from a turbine. I compare the noise to an airplane taking off over and over again. It's unbearable listening to that noise for hours throughout the day. The current wind farm's environmental impact statement states that there are many potential dangers of living near a wind turbine. It's terrifying to know that all these health risks and dangers could cause us harm or worse, death. How is that okay to completely ignore human life by placing industrial machines of that measure near homes where people can die? It's not okay, it's inhumane and flat-out wrong! Why are our cries and pleas for fairness and justice being ignored? Kahuku may be a small rural town, a little dot on the map, but we have proven multiple times of our worth and value to society. The children of Kahuku have proven multiple times the incredible impact and positive influence that they have made in the world, we ask that that positivity and aloha are reciprocated.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Thank you for the opportunity to testify.

Name: Carissa Tafuna	Email: carissam40@gmail.com	Zip: 96731
Representing: Self	Position: Oppose	Submitted: May 21, 2024 @ 05:57

		AM

Testimony:
I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

I live near the elementary school and I have 4 Keiki attending Kahuku elementary. It is disconcerting to me that new standards to protect residents do not apply to my Ohana and community. Please protect us as well!!

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Fabian Tafuna	vtolaygood@gmail.com	96731
Representing:	Position:	Submitted:
Self	Oppose	May 21, 2024 @ 06:18 AM

Testimony:
I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

I live near the elementary school and I have 4 Keiki attending Kahuku elementary. It is disconcerting to me that new standards to protect residents do not apply to my Ohana and community. Please protect us as well!!

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
James Munoz	munozhair@gmail.com	96731

Representing:	Position:	Submitted:
Self	Oppose	May 21, 2024 @ 07:00 AM

Testimony:

Written Testimony:

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

Can hear the turbines and has caused a lot of power surges in our area. I've replaced more appliances due to failure as well even with surge protecting my house and the electronics in my home.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
E. Casey Rose	casey.rose@vothi.com	96744
Representing:	Position:	Submitted:
Valley of the Temples Memorial Park	Oppose	May 21, 2024 @ 10:22 AM

Name:	Email:	Zip:
Shaun Mukai	smm@m4law.com	96817
Representing:	Position:	Submitted:
Nuuanu Memorial Park, Limited	I wish to comment	May 21, 2024 @ 10:23 AM

Name:	Email:	Zip:
Shaun Mukai	smm@m4law.com	96816
Representing:	Position:	Submitted:
Diamond Head Memorial Park, Ltd.	I wish to comment	May 21, 2024 @ 10:28 AM

Name:	Email:	Zip:
Lea Albert	lea.albert09@gmail.com	96712

Representing:	Position:	Submitted:
Self	Oppose	May 21, 2024 @ 12:03 PM

Testimony:

I am incredibly opposed to the language that pertains to large wind generation facilities as currently written. i do support the 1.25 mile setback but oppose the language which states that the new requirements only apply to new large wind energy generation facilities. it is unjust to allow the current language which allows the non-conforming use of the turbines in Kahuku to continue indefinitely. Personally, I believe the Kahuku turbines should all be at least three miles from any residential or school areas but will accept the 1.25 miles for ALL large wind turbine facilities . To allow these turbines which overwhelm Kahuku neighborhoods and both Kahuku Elementary and Kahuku High & Intermediate is a true travesty and unjust for so many reasons!

Lea E. Albert

Name:	Email:	Zip:
Earl Yamamoto	earl.j.yamamoto@hawaii.gov	96814
Representing:	Position:	Submitted:
Hawaii Department of Agriculture	I wish to comment	May 21, 2024 @ 01:40 PM

Name:	Email:	Zip:
David Tanoue	davidt@rmtowill.com	96819
Representing:	Position:	Submitted:
R.M. Towill Corporation	I wish to comment	May 21, 2024 @ 02:16 PM

Name:	Email:	Zip:
Damien Kim	info@hemep.com	96819
Representing:	Position:	Submitted:
IBEW Local Union 1186	Support	May 21, 2024 @ 03:21 PM

Name:	Email:	Zip:
Jay Morford	jay.morford@dignitymemorial.com	96817
Representing:	Position:	Submitted:
Hawaii Funeral & Cemetery Association	I wish to comment	May 21, 2024 @ 03:22 PM

Name:	Email:	Zip:
Masinaatoa Roberts	masinaatoaroberts@gmail.com	96731

Representing:	Position:	Submitted:
Self	Oppose	May 21, 2024 @ 03:39 PM

Testimony:

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

Why is it placed in Kahuku if it only benefits OTHER communities but Kahuku? I'm disgusted about this. The neglect of our rural Kahuku community members' needs makes me frustrated. These turbines are not here because of a 'futuristic wanna go green' efficiency movement...it is here because of GREED. Take it far away from my home, my family, schools and our children. Put these turbines on Diamond Head and see if the community there would like that. Probably not!

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Micah Munekata	mmunekata@ulupono.com	96813
Representing:	Position:	Submitted:
Ulupono Initiative	I wish to comment	May 21, 2024 @ 05:26 PM

Name:	Email:	Zip:
Ramsey Calimlim	calimlim96731@gmail.com	96731
Representing:	Position:	Submitted:
Self	Oppose	May 21, 2024 @ 06:46 PM

Testimony:

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

The turbines are too close to my home and we affected daily by shadow flicker on both east and west sides of my home. So much so that flicker is created by turbines tha is over 1 mile from my home. This shadow flicker is disruptive to my day and clearly affects my children.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Dawn Bruns	dawnbbruns@gmail.com	96712
Representing:	Position:	Submitted:
Self	I wish to comment	May 21, 2024 @ 06:53 PM

Name:	Email:	Zip:
Sunny Unga	kahukucommunityassociation@gmail.com	96731
Representing:	Position:	Submitted:
Kahuku Community Association	Oppose	May 21, 2024 @ 09:23 PM

Name:	Email:	Zip:
Brandon Carr-Munoz	bcarrmunoz@gmail.com	96731
Representing:	Position:	Submitted:
Self	Oppose	May 21, 2024 @ 09:42 PM

Testimony:
I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:

MARGARET PRIMACIO	stibbardm003@hawaii.rr.com	96731
Representing: Self	Position: Oppose	Submitted: May 21, 2024 @ 10:16 PM

Testimony:

Good Morning Committee Chair Kiaaina and Committee Members,

I oppose Bill 64, FD1, 2023 in it's present form. While I support a setback of 1.25 miles or 15 times the height of the wind turbine whichever is greater, further language must be included on those wind turbines whose leases expire hereafter. Bill 64, FD1,2023 must include compliance with the setback of 1.25 miles or 1:15 ratio whichever is greater to all turbines with expired leases. How otherwise would our municipal laws protect our rural community of Kahuku from years more of unsafe industrial wind turbines in the midst of our schools, homes and workplaces. Needless to say our wildlife and endangered species with numerous kill counts affect our finite ecological systems and cannot be replaced.

I request the Honolulu City Council, Planning and Economy Committee include language for setback compliance on wind turbines with expiring leases or power purchase agreements.

Mahalo nui,

Margaret Primacio

Kahuku Resident

Name: Jessica dos Santos	Email: nrtshrlv@gmail.com	Zip: 96731
Representing: Self	Position: Oppose	Submitted: May 21, 2024 @ 10:39 PM

Testimony:

To whom it may concern,

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times the height of the turbine, I strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines disproportionately and unjustly, especially after recognizing the need for a greater setback to protect residents from harm.

Being a resident of Kahuku, I experience first hand the impacts such as audible noise and shadow flicker at / in my home. I have heard from many other community members who also have been impacted and had their quality of life altered due to the shadow flicker and / or noise. For example, not being able to use or enjoy their back yard and having to use black out curtains to block out the flicker in their homes. I also wonder often whether these impacts may be negatively affecting my health, the health of my son, and/or the health of our community members. I wonder what the long term exposure to

these impacts might have cumulatively to our health over time.

I strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement."

Mahalo for taking the time to listen to and consider my testimony.
Jessica dos Santos
Lifelong Kahuku Resident

Name:	Email:	Zip:
Joshua Kaina	kainaj@hawaii.edu	96731
Representing:	Position:	Submitted:
Self	Oppose	May 22, 2024 @ 07:42 AM

Testimony:
I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

We experience shadow flicker during the winter months when the wind turbines across the street from my house (within 1 mile) line up with the setting sun. It is a disorienting and unnatural phenomenon. We can also hear the "wooshing" sound of the turbines every night while we go to sleep. I am worried that the constant noise stimulation is disrupting patterns of sleep, and causing other disturbances as it has been noted by people all around the world.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Fred Redell	fred@hawaiicleanpower.org	96813
Representing:	Position:	Submitted:
Hawaii Clean Power Alliance	I wish to comment	May 22, 2024 @ 07:58 AM

Name:	Email:	Zip:

Sunny Unga	sunnyrkim@gmail.com	96731
Representing: Self	Position: Oppose	Submitted: May 22, 2024 @ 08:10 AM

Testimony:

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

I have advocated for an increased setback since the resolution to increase setback was first introduced in 2020. I attended numerous hearings and testified as it changed under various bills over the years. Additionally, I took personal time to host Kahuku Turbine Tours to help our representatives truly understand and see the impacts of industrial wind turbines. Over the course of the hearings, we had to fight against developers and HECO, whose interests were solely for the benefit of their own company, disregarding the safety, health and quality of life of the residents. Enough is enough. Over 200 residents were arrested protesting the Na Pua Makani wind project due to the serious concerns about the close proximity of these turbines from our schools and residential homes. The Kahuku community opposed this wind development for over a decade and are voices were ignored. DPP has finally agreed to a 1.25 mile setback as has the State Energy Office on record in the previous hearings.

It would be tragic for the council to not accept a minimum setback of 1.25 and allow a loophole that will continue to perpetuate the ongoing issues and injustice our Kahuku residents face indefinitely even past the expiration of the lease and power purchase agreement.

I strongly request the council to support KCA’s proposed language and amendment especially the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming.

Name: Oriana McCallum	Email: orianamccallum@yahoo.com	Zip: 96731
Representing: Self	Position: Oppose	Submitted: May 22, 2024 @ 08:13 AM

Testimony:

I oppose applying the setback rule to only new wind turbines.

Storms are worsening and will continue to worsen with rising global temperatures. This means winds will become more severe in future hurricanes and storms that our islands are prone to. Wind turbines are not indestructible and can only withstand wind levels that are much lower than those anticipated by global warming science.

The current wind turbines must be held to the same safety standards as any future ones. It is the definition of environmental justice to ensure that all communities are given the same protection from industrial harms as others. As a Kahuku resident and mother to students at Kahuku high school, the imminent danger looms over us daily and must be remedied.

Please adjust the language to reflect the necessary change to include current wind turbines be held to these safety setback laws.

Mahalo,

Oriana McCallum

Name: Elizabeth Songvilay	Email: es569u@att.com	Zip: 96782
Representing: AT&T	Position: I wish to comment	Submitted: May 22, 2024 @ 09:02 AM

Name: ANGELA HUNTEMER	Email: ahuntemer@aol.com	Zip: 96731
Representing: Ko'olau Waialua Alliance	Position: I wish to comment	Submitted: May 22, 2024 @ 09:02 AM

Name: Tatiana Santiago	Email: tatisantiago12@gmail.com	Zip: 96731
Representing: Self	Position: Oppose	Submitted: May 22, 2024 @ 09:22 AM

Testimony:
I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after

recognizing the need for a greater setback to protect residents from harm.

I personally have seen and felt the impacts of the turbines being too close to our home in Kahuku. This include shadow flickers in mornings, loud fan noise in the evenings, and fear of the turbine blades harming my family if it malfunctions.

I strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Kehau Santiago	kehaus12@gmail.com	96731
Representing:	Position:	Submitted:
Self	Oppose	May 22, 2024 @ 09:26 AM

Testimony:
I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

As a long time resident, I can seen our community go from a small rural town to one taken over by monstrosities also known as the wind turbines. Our family has lived in Kahuku for 40 years and sadly we now have turbines too close to our home. We have seen the direct impacts. Especially at night when the neighborhood is quiet and windy you can hear the blades spinning that makes a whooshing, like a washing machine on steroids.

I strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement." Mahalo!

Name:	Email:	Zip:
Lea Albert	sbca1959@gmail.com	96712-9737
Representing:	Position:	Submitted:
Sunset Beach Community Association	Oppose	May 22, 2024 @ 09:57 AM

Name:	Email:	Zip:
ANGELA HUNTEMER	ahuntemer@aol.com	96731

Representing:	Position:	Submitted:
Sierra Club Oahu Group	I wish to comment	May 22, 2024 @ 10:03 AM
Name:	Email:	Zip:
Frederick Mencher	fmencher@hawaii.rr.com	96817
Representing:	Position:	Submitted:
East Oahu County Farm Bureau	I wish to comment	May 22, 2024 @ 10:14 AM
Name:	Email:	Zip:
Greg Shimokawa	nancy.bernal@hawaiianelectric.com	96813
Representing:	Position:	Submitted:
Hawaiian Electric	I wish to comment	May 22, 2024 @ 10:23 AM
Name:	Email:	Zip:
Mark Glick	dbedt.energyoffice@hawaii.gov	96813
Representing:	Position:	Submitted:
Hawaii State Energy Office	I wish to comment	May 22, 2024 @ 11:14 AM
Name:	Email:	Zip:
Michael Kirk-Kuwaye	mikekkfolk@gmail.com	96730
Representing:	Position:	Submitted:
Self	Oppose	May 22, 2024 @ 06:35 PM

Testimony:

Aloha Chair and Council Members,

I oppose the language pertaining to large wind energy generation facilities as currently written. While I support the 1.25 mile setback or 15 times height of the turbine, we strongly oppose the language that states that the new setback requirements only apply to new large wind energy generation facilities. This current language would allow the non-conforming use to continue indefinitely. It is unjust to apply this new setback to everywhere else except for Kahuku and expect Kahuku residents to continue to suffer from the cumulative impacts of industrial wind turbines, especially after recognizing the need for a greater setback to protect residents from harm.

As more wind turbines are built globally, it is also becoming well documented that these industrial turbines are having an adverse health impact on communities. When built too close to homes, they can be considered a hazard -- noise,

especially low-frequency*; shadow flicker; blade failure; visual impact – and should be mitigated.

We strongly request the council to support the following: 1) a 1.25 mile setback or 1:15 ratio, whichever is greater, and 2) adding this language, "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming."

Mahalo!

*Chiu, CH., Lung, SC.C., Chen, N. et al. Effects of low-frequency noise from wind turbines on heart rate variability in healthy individuals. Sci Rep 11, 17817 (2021). https://doi.org/10.1038/s41598-021-97107-8

Name:	Email:	Zip:
Larry McElheny	lkmcelheny@gmail.com	96712
Representing:	Position:	Submitted:
Self	Oppose	May 22, 2024 @ 07:02 PM

Testimony:

Aloha Council Members

While I support the 1.25 mile setback or 15 times the height of the turbine, I strongly oppose the language that states that the new requirements only apply to new large wind energy generation facilities.

This language would allow the non-conforming uses to continue indefinitely.

It is unjust to apply this new setback to everywhere else except Kahuku.

Please add the following language: "Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming."

Mahalo

Larry McElheny

Name:	Email:	Zip:
Greg Shimokawa	greg.shimokawa@hawaiianelectric.com	96813
Representing:	Position:	Submitted:
Hawaiian Electric	I wish to comment	May 22, 2024 @ 07:43 PM

Testimony:

Testimony submitted earlier.

Name:	Email:	Zip:
Christopher Bruns	sledge77@hotmail.com	96712
Representing:	Position:	Submitted:
Self	I wish to comment	May 22, 2024 @ 08:50

		PM

Testimony:

We realize when the wind farms were permitted, none of us knew they would cause such widespread damage to our families miles away, not to mention the severe impacts to the nearer residents.

Now that you know we can't live with such high levels of low-frequency sound, we are confident you will never authorize or permit a wind turbine to operate at night anywhere near a residential area. For light-wind areas, sound measurements indicate a 5-mile setback appears sufficient - any turbine operating with more than a 10 mph wind within 5 miles of a residential area will need to be shut down at night. For the east coast giant at-sea turbines, we notice planned turbines are all 15 miles away from developed areas.

Mistake made, considerable harm to me and my family at Sunset Beach, and our neighboring residents, we're looking forward to the end of the power purchase agreements in a few years so we can have our lives back. If you would like our personal health information, I and my family are available to discuss in a non-public setting rather than broadcasting health impacts to the public, relating to job prospects and considerations for our neighborhood real estate values. I wish to stay in this home I've lived in since the year after it was built- Our ability to stay on the North Shore is based on our understanding of the upcoming end of the wind turbine operations. We're confident you wouldn't have allowed it if you knew what you know now, and we're grateful you will finalize the updates to the land use ordinance to prevent such mistakes from reoccurring.

Name:	Email:	Zip:
Angela Melody Young	Alohadivinedesign@gmail.com	96817
Representing:	Position:	Submitted:
CARES Community Advocacy Research Education Services	Support	May 23, 2024 @ 08:38 AM

Testimony:

CARES testifies in strong support and wishes there to be more public outreach to get the community to have active contributions to this law.

HAWAII LABORERS-EMPLOYERS COOPERATION AND EDUCATION TRUST
650 Iwilei Road, Suite 285 · Honolulu, HI 96817 · Phone: 808-845-3238 · Fax: 808-845-8300

May 23, 2024

To: **The Honorable Esther Kia`aina, Chair**
Honolulu City Council – Committee on Planning and the Economy
City & County of Honolulu
530 South King Street
Honolulu, Hawaii 96813

Re: **BILL 64 (2023) FD1 – LUO AMENDMENT RELATING TO USE REGULATIONS**

FOR HEARING ON THURSDAY, MAY 23, 2024 at 9:00 AM, COUNCIL CHAMBERS

Aloha Honorable Chair Kia`aina, Vice-Chair Cordero and Committee Members,

The **Hawaii Laborers & Employers Cooperation and Education Trust** (Hawaii LECET) is a labor + management partnership established in 1992 between the 5,000 statewide members of the Hawaii Laborers Union and over 250 construction companies from the *General Contractors Association* and the *Building Industry Association*. The Laborers International is the largest construction trade union in North America, and Hawaii LECET is part of a network of 38 labor-management LECET Funds across the country.

Hawaii LECET supports the FD1 amendments to Bill 64 (2023), regarding Large Wind Facilities:

> (E) Large wind energy generation facilities must be set back from all property lines a minimum distance equal to the height of the facility, measured from the highest vertical extension of the facility; and a minimum distance of 1.25 miles from the property lines of any zoning lot located in the country, residential, apartment, apartment mixed-use, or resort zoning districts; provided that the setback requirements in this paragraph only apply to new large wind energy generation facilities and do not apply to the repair, maintenance, or component replacement of any existing facility covered by a power purchase contract with an electric public utility during the term of the contract, including any renewal or extension thereof. Height includes the height of the tower or its vertical support structure and the farthest vertical extension of the tower.

Our existing wind facilities are essential to providing reliable energy, and deliver huge benefits for our grid so that we do not continue to experience increasing costs and blackouts.

Mahalo,

Hawai`i Laborers & Employers
Cooperation and Education Trust

VALLEY OF THE TEMPLES
MEMORIAL PARK

May 21, 2024

Honolulu City Council
Committee of Planning and the Economy
Office of the City Clerk
Attention: Information Section
530 King Street, Room 100
Honolulu, HI 96813

Re: Regular Meeting on May 23, 2024

Dear Committee Members:

This written testimony is being sent on behalf of Valley of the Temples Memorial Park ("VOT") and Hawaii Memorial Park Mortuary (collectively, the "Company").

The Company is understandably very concerned over certain of the proposed changes. The proposed changes being imposed on existing structures that were constructed, operated and maintained in full compliance with applicable laws and regulations would deprive the owners of existing property rights without remuneration or recourse. The revisions to the existing regulations should not apply to existing structures and developments.

VOT was originally opened on June 7, 1968 to commemorate the 100 year anniversary of the first Japanese immigrants to Hawaii. Since that time a significant amount of financial resources and time has been invested in developing the cemetery, constructing mausoleums, inurnment walls, and building and maintaining one of the foremost tourist attractions on Oahu, the Byodo-In Temple. In addition, the Company recently completed the construction of a funeral home facility.

Certain of these structures contain the interment of human remains and the inurnment of cremated remains. The proposed limitation to the repair and renovation of these structures to 10% of the replacement cost could have 2 dramatic effects. If we are unable to fully repair a mausoleum or cremated remains facility, this could require VOT to disturb and disinter remains, which, by state law, would require approval from family members and create emotional upheaval for families and loved ones. This limitation as applicable to an existing funeral home could effectively close the business in the event of a material destruction. If a funeral home suffered a 40-50% loss, this regulation would effectively close the business.

Bereaved families depend on the Company to care for their loved ones and maintain a final resting place. We are privileged that so many families have entrusted us with this honor.

We respectfully request that the proposed regulations not be applicable to exiting funeral homes and cemeteries. Further, we request that we have the ability, subject to obtaining necessary local approvals, to allow for the expansion of existing structures to 50 feet and for additional interment and inurnment spaces and structures.

These requests are critical to our ability to serve the families of the loved ones entrusted to our care and to sustain our operations.

Respectfully submitted,

E. Casey Rose

Managing Partner Operations

Valley of the Temples Memorial Park

47-200 Kahekili Hwy. Kaneohe, Hawaii 96744 808.239.8811

WWW.VALLEY-OF-THE-TEMPLES.COM

VALLEY OF THE TEMPLES
MEMORIAL PARK

Hawaii Memorial Park Mortuary

Casey.rose@vothi.com

808-247-0439 Direct

Sincerely,

E. Casey Rose
Managing Partner Operations

Nuuanu Memorial Park, Ltd.
2233 Nuuanu Avenue
Honolulu, Hawaii 96817
Phone (808) 537-5255

May 20, 2024

Honorable Esther Kia'aina, Chair
Committee on Planning and the Economy
Honolulu City Council
539 South King Street, Room 202
Honolulu, Hawaii 96813

Re: Proposed Amendments to Bill 64 (2023), FD1 (Cemetery Standards, § 21-5.60-5(a))

Dear Chair Kia'aina:

Nuuanu Memorial Park, Limited respectfully submits the following testimony on the proposed amendments to Bill 64, FD1, relating to amending cemetery standards in the Land Use Ordinance of the City and County of Honolulu ("LUO") which would allow height flexibility (in addition to density and building area flexibility) through a plan review use process, which is to be heard by your Committee on Planning and the Economy on May 23, 2024.

As you may be aware, Nuuanu Memorial Park has been locally owned and operated for the past seventy-five years and remains one of the few cemeteries in urban Honolulu that provides inurnment space. Nuuanu Memorial Park and other Oahu cemetery operators will all face significant challenges in the near future in meeting the growing community need for inurnment space. It is estimated that total demand for cremated inurnment space over the next 20 years (from 2021 to 2040) will range from 125,582 to 143,024 (see 2019 Final Environmental Impact Statement for Hawaiian Memorial Park Expansion, CBRE Market Study ("Hawaiian Memorial Park EIS")).

According to the Hawaiian Memorial Park EIS, Oahu's entire available inventory of inurnment space is estimated at 20,100. Given the above anticipated demand for cremated inurnment space, expansion is inevitable for Oahu cemetery operators. Nuuanu Memorial Park's niches are on track to be sold out within the next three-to-four year period, which is a tight window to conduct planning, permitting and construction of additional niches.

With all available data indicating that Oahu will face a severe shortage of inurnment space and is unlikely to be able to meet demand in the coming decades without the City and County of Honolulu's support to expand existing cemeteries, we are grateful that that the Honolulu City Council is considering amendments to Bill 64, FD1, which amends the cemetery standards in the LUO to allow more density and building area flexibility pursuant to a plan review use process. While these proposed amendments to the LUO are steps in the right direction, we respectfully submit that cemeteries should also have the flexibility to address height issues through a plan review use process for the review of the Honolulu City Council to ensure proper and careful expansion given the existing height limitations in P-2 General Preservation District ("P-2 District").

When the LUO took effect on October 22, 1986, Nuuanu Memorial Park and other cemeteries were downzoned to the P-2 District which zoning district has a height limitation of 25 feet. The tallest structure at Nuuanu Memorial Park is 35 feet, making this structure a non-conforming use. We understand that there are other cemeteries which have structures that far exceed the 25 feet height limitation. Since the LUO currently limits repairs to nonconforming structures to only ten percent of the structure in a one year span and prohibits any expansion of the nonconforming structure unless the structure is brought in conformance, all cemeteries will need relief from the current height limitations of the P-2 district in order to properly expand and repair existing non-conforming structures to accommodate the growing demand for more inurnment space.

Nuuanu Memorial Park would support a height allowance of 50 feet in the P-2 district to foster reasonable growth and expansion of cemetery facilities.

For the foregoing reasons, we respectfully submit that changing the cemetery standards in the LUO to allow for building area, density, and height flexibility through a planned review use process is sound, sensible and practical government planning and policy.

Thank you for your consideration of the foregoing.

Very truly yours,

Nuuanu Memorial Park, Limited,
a Hawaii corporation

By: Alice K. Hahn
Alice K. Hahn
Its: President

Diamond Head Memorial Park, Ltd.
529 18th Avenue
Honolulu, Hawaii 96816
(808) 734-1954 • fax: (808) 732-8975

May 21, 2024

Honorable Esther Kia'aina, Chair
Committee on Planning and the Economy
Honolulu City Council
539 South King Street, Room 202
Honolulu, Hawaii 96813

Re: Proposed Amendments to Bill 64 (2023), FD1 (Cemetery Standards, § 21-5.60-5(a))

Dear Chair Kia'aina:

Diamond Head Memorial Park Association, Limited respectfully submits the following testimony on the proposed amendments to Bill 64, FD1, relating to amending cemetery standards in the Land Use Ordinance of the City and County of Honolulu ("LUO") which would allow height flexibility (in addition to density and building area flexibility) through a plan review use process, which is to be heard by your Committee on Planning and the Economy on May 23, 2024.

As you may be aware, Diamond Head Memorial Park has been locally owned and operated for the past eighty-eight years and remains one of the few cemeteries in urban Honolulu that provides burial space. Diamond Head Memorial Park and other Oahu cemetery operators will all face significant challenges in the near future in meeting the growing community need for inurnment space. It is estimated that total demand for cremated inurnment space over the next 20 years (from 2021 to 2040) will range from 125,582 to 143,024 (see 2019 Final Environmental Impact Statement for Hawaiian Memorial Park Expansion, CBRE Market Study ("Hawaiian Memorial Park EIS")).

According to the Hawaiian Memorial Park EIS, Oahu's entire available inventory of inurnment space is estimated at 20,100. Given the above anticipated demand for cremated inurnment space, expansion is inevitable for Oahu cemetery operators. With all available data indicating that Oahu will face a severe shortage of inurnment space and is unlikely to be able to meet demand in the coming decades without the City and County of Honolulu's support to expand existing cemeteries, we are grateful that that the Honolulu City Council is considering amendments to Bill 64, FD1, which amends the cemetery standards in the LUO to allow more density and building area flexibility pursuant to a plan review use process. While these proposed amendments to the LUO are steps in the right direction, we respectfully submit that cemeteries should also have the flexibility to address height issues through a plan review use process for the review of the Honolulu City Council to ensure proper and careful expansion given the existing height limitations in P-2 General Preservation District ("P-2 District").

When the LUO took effect on October 22, 1986, Diamond Head Memorial Park and other cemeteries were downzoned to the P-2 District which zoning district has a height limitation of 25 feet. The tallest structure at Diamond Head Memorial Park exceeds this limitation, making this structure non-conforming. We understand that there are other cemeteries which have structures that far exceed the 25 feet height limitation. Since the LUO places limitations on repairs to nonconforming structures and prohibits any expansion of the nonconforming structure unless the structure is brought in conformance, all cemeteries will need relief from the current height limitations of the P-2 district to properly expand and repair existing non-conforming structures that can accommodate the growing demand for burial space.

Therefore, Diamond Memorial Park would support an option with greater height allowance in the P-2 district to foster reasonable growth and expansion of cemetery facilities.

For the foregoing reasons, we respectfully submit that changing the cemetery standards in the LUO to allow for building area, density, and height flexibility through an optional planned review use process is sound, sensible, and practical government planning and policy.

Thank you for your consideration of the foregoing.

Aloha,

Diamond Head Memorial Park Association, Ltd.,
a Hawaii corporation

By: _____
Han P. Ching
Its: President

JOSH GREEN, M.D.
Governor

SYLVIA LUKE
Lt. Governor

SHARON HURD
Chairperson, Board of Agriculture

DEXTER KISHIDA
Deputy to the Chairperson



State of Hawaii
DEPARTMENT OF AGRICULTURE
KA OIHANA MAHIAI
1428 South King Street
Honolulu, Hawai'i 96814-2512

Phone: (808) 973-9600 FAX: (808) 973-9613

TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE CITY COUNCIL
COMMITTEE ON PLANNING AND THE ECONOMY
CITY AND COUNTY OF HONOLULU

THURSDAY, MAY 23, 2024



9:00 AM

CITY COUNCIL CHAMBER

BILL 64 (2023), FD1 (CD1 AMENDMENTS)
LUO AMENDMENT RELATING TO USE REGULATIONS

Chair Kia'aina, Vice Chair Cordero and Members of the Committee:

The Department of Agriculture (Department) has reviewed Bill 64 (2023), FD1, Proposed CD1 (approved by the Committee on Planning and the Economy on May 2,

2024 and dated May 7, 2024) and offers the following comments and recommendations.

The Department participated in the meetings convened by the Ulupono Initiative in October 2022 and March 2023 with agricultural operations, agricultural associations, non-governmental organizations, and City agencies.

The Department concurs with the testimonies submitted by Ulupono and other meeting attendees and offers the following additional observations, comments, and recommendations to the latest draft of Bill 64.

Group Living - Small (State and not-State regulated) - Section 21-5.50-2

Small group living operations are permissible by special use permit with a maximum capacity of eight or less residents if there is a principal dwelling unit and an accessory dwelling or ohana unit. The 51 percent dedication standard (where a dedication is required of the zoning lot area suitable for crop production or livestock keeping for as long as the permitted use is in operation) applies to both.

The Department has no specific comments or recommendations but would offer that we are always concerned about incremental broadening of approved permitted and permissible uses or activities on agriculture zoned land and the ability of the counties to

regulate these uses and activities.

Education – school, vocational - Section 21-5.60-3(b)

Vocational schools (on AG-1 and AG-2 zones) are proposed to be permissible uses (subject to use standards) with no major City permit required. We note the proposed definition of "school, vocational" describes a "facility for post-secondary education with a curriculum devoted primarily to….other vocational-technical instruction…" (Bill 64, FD1, CD1, page 216) but has no specific relevance to agricultural education. The only standard applying to both major and minor vocational schools is that they "must involve agricultural education programs conducted on a farming

operation that is accessory and secondary to the principal agricultural use of the zoning lot as described in HRS § 205-4.5(19)". The statutory reference provides further definition of "agricultural education programs" as "activities or events designed to promote knowledge and understanding of agricultural activities and practices conducted on a farming operation as defined in section 165-2". Minor vocational schools must limit their hours of operation to between 6:00 a.m. and 10:00 p.m. but this standard does not apply to major vocational schools. The Department recommends there be a single standard for hours of operation. The 51 percent dedication standard is not applied. There is no discussion on structures and infrastructure that may be accessory to vocational schools.

The Department supports agricultural education on bona fide agricultural operations and offers the following amendment for both Minor and Major vocational schools (Section 21-5.60-3(b)(1)(B) and (2)):

Ramseyer format – deletions are bracketed and overstruck, additions are underscored
"In the AG-1 and AG-2 zoning districts, vocational schools must [~~involve~~] be limited to agricultural education programs conducted on a farming operation that is accessory and secondary to the principal agricultural use of the zoning lot as described in HRS § 205-4.5(19)."

The purpose of our proposed amendment is to remove any ambiguity as to the purpose of a vocational school on AG-1 and AG-1 zoned land.

Accessory Residential - Home occupation - Section 21-5.50-3

Home occupation is a permissible activity in AG-1 and AG-2 as an accessory use and may require a special use permit. It is defined as “Any activity intended to produce income that is carried on within a dwelling[,] unit, accessory structure to a dwelling[,] unit, or on a zoning lot used principally for [dwelling] residential purposes. Home occupations include the use of any residential premise as a base for an off-premise,

income-producing activity." (Bill 64, FD1, CD1, page 194)

The Department notes that State law requires a dwelling on agricultural land to be a “farm dwelling” and be “located on and accessory to a farm…or where agricultural activity provides income to the family occupying the dwelling” (Section 205-4.5(a)(4), Hawaii Revised Statutes). Section 205-4.5 also defines the uses and activities permitted on agricultural lands classified as “A” and “B” according to the Land Study Bureau’s Detailed Land Classification.

The Department has no specific comments or recommendations for home

occupations but would offer that we are always concerned about incremental broadening of permitted and permissible uses or activities on agriculture zoned land and the ability of the counties to regulate these uses and activities.

Assembly - meeting facility – small, medium, large - Section 21-5.60-1(a)

Small and medium meeting facilities are proposed as permissible uses on AG-2 agricultural lands. The maximum capacity for a meeting facility on AG-2 is 500 individuals. The Department opposes allowing meeting facilities on AG-2. These facilities, at any scale, on agricultural lands will make surrounding agricultural uses and activities, however distant, subject to nuisance complaints. While the Hawaii Right-to-

Farm law (Chapter 165, HRS) limits the circumstances under which odors, noise, dust, and vibrations emanating from normal farming activities can be declared a nuisance, we strongly recommend that these situations be avoided at the outset. The Department believes that no condition(s) attached to a permit can ensure that existing farms and establishment of new farms in an area with non-agricultural facilities will not be discouraged by nuisance complaints and subject to curtailment or cessation of operations.

Education – School, K-12 - Section 21-5.60-3(a)(4)

Private K-12 schools (Bill 64, FD1, CD1, page 216) are proposed as permissible

uses on AG-2 via Conditional Use (Major) permit and special use permit. There is no specified maximum capacity of individuals (students, staff, management). There is no plan identifying where these schools are likely to be located. The North Shore Sustainable Communities Plan has specified that private schools are not permitted in areas outside the Community Growth Boundary (2011 North Shore Sustainable Communities Plan, page 2-4). Likewise, the Waianae Sustainable Communities Plan (2012) states that private schools "should generally not be permitted in the agricultural area." (page 3-28).

The Department opposes allowing K-12 schools for the same reasons given

earlier for Meeting Facilities (small and medium) as permissible uses on AG-2 lands.

This concludes our testimony.

2024 North King Street
Suite 200
Honolulu Hawaii 96819-3470
Telephone 808 842 1133
Fax 808 842 1937
eMail rmtowill@hawaii.rr.com

R. M. TOWILL CORPORATION
SINCE 1930

Planning
Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management

May 21, 2024

The Honorable Esther Kia'aina, Chair
and Members of the Committee on Planning and the Economy
Honolulu City Council
530 South King Street, Room 202
Honolulu, HI 96813-3065

RE: Bill 64 (2023), FD1 – Relating to Use Regulations

Aloha Chair Kia'aina and Members of the Committee:

Thank you very much for the opportunity to submit written testimony regarding Bill 64 (2023), FD1. I am David Tanoue, with R. M. Towill Corporation, and I am requesting an amendment regarding the new use category of *Park, non-publicly accessible*.

In the current LUO, parks are generally considered open space and are a permitted use all zoning districts to provide visual relief and buffering from building and structural masses. In addition, park spaces within communities support various forms of recreation and are a respite from the urban environment for the residents in the area. Over the past decades, the clear majority of parks and other recreational facilities were provided by private developers, whether part of master-planned communities or individual residential projects.

Park space and uses are quality of life amenities, and right now many of our communities suffer from a shortage of park space. In this regard, the City should continue to support the development of parks in our neighborhoods and avoid placing restrictions by creating a private park category and restricting such use.

Accordingly, I am respectfully requesting that Bill 64, FD 1, Use Table 21-5.1 be amended as follows to allow non-publicly accessible parks as a permitted use in all Residential and Commercial zoning districts to promote the continued development of park space in our neighborhoods and urban communities:

Uses (Note: Certain uses are defined in Article 10)	Preservation, Agricultural, Country				Residential, Apartment					Apartment Mixed-Use, Resort				Business, Business Mixed-Use				Industrial, Industrial Commercial Mixed-Use			
	P-2	AG-1	AG-2	Country	R-20, R-10	R-7.5, R-5, R-3.5	A-1	A-2	A-3	AMX-1	AMX-2	AMX-3	Resort	B-1	B-2	BMX-3	BMX-4	I-1	I-2	I-3	IMX-1
Government																					
Consulate	–	–	–	–	P*	P*	P	P	P	P	P	P	P	P	P	P	P	–	–	–	–
Prison	PRU	PRU+	PRU+	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU	PRU
Public facility	P	P+	P+	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Parks and Open Space																					
Cemetery	P*	–	PRU+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	P*
Park, non-publicly accessible	Cm	–	Cm	~~Cm~~ P	P	P	P	P	P	P	P	P	P	~~Cm~~ P	~~Cm~~ P	~~Cm~~ P	~~Cm~~ P	–	–	–	–
Park, publicly accessible	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	–	–	–	P

Thank you for the opportunity to provide comments and proposed revisions to Bill 64 (2023) FD1. Should you have any questions, please feel free to contact me.

Very truly yours,

David Tanoue
Vice President

International Brotherhood of Electrical Workers

LOCAL UNION NO. 1186 • Affiliated with AFL-CIO

1935 HAU STREET, 5th Floor • HONOLULU, HI 96819-5003
TELEPHONE (808) 847-5341 • FAX (808) 847-2224

TO: CITY AND COUNTY OF HONOLULU CITY COUNCIL
COMMITTEE ON PLANNING AND THE ECONOMY
Meeting on Thursday, May 23, 2024, at 9:00 a.m., Council Chamber

RE: TESTIMONY IN **SUPPORT** OF BILL 64 (2023), FD1 - LUO Amendment Relating to Use Regulations

Honorable Chair Esther Kia'aina, Vice Chair Radiant Cordero, and Members of the Committee on Planning and the Economy:

The International Brotherhood of Electrical Workers Local Union 1186 (IBEW 1186), is comprised of 3,000 men and women working in electrical construction, telecommunications, civil service employees, and educator and faculty associations.

IBEW 1186 supports this Bill that address the repair and maintenance and replaceable components being specifically grandfathered in:

(E) Large wind energy generation facilities must be set back from all property lines a minimum distance equal to the height of the facility, measured from the highest vertical extension of the facility; and a minimum distance of 1.25 miles from the property lines of any zoning lot located in the country, residential, apartment, apartment mixed-use, or resort zoning districts; provided that the setback requirements in this paragraph only apply to new large wind energy generation facilities and do not apply to the repair, maintenance, or component replacement of any existing facility covered by a power purchase contract with an electric public utility during the term of the contract, including any renewal or extension thereof. Height includes the height of the tower or its vertical support structure and the farthest vertical extension of the tower.

IBEW Electricians install many of these renewable energy projects and are required to keep up with their training and knowledge of applicable building codes. Technologies are always changing in the renewable energy sector and it only makes sense that many of these existing projects need to be repaired and upgraded as time goes on. Parts also become obsolete and will need to be replaced to keep the operations efficient.

Thank you for the opportunity to submit testimony in **SUPPORT** of this bill.

Sincerely,

Damien T.K. Kim
Business Manager/
Financial Secretary

Hawaii Funeral & Cemetery Association, Inc.
1330 Maunakea Street, Honolulu, Hawaii 96817

May 20th, 2024

To: Honolulu City Council Committee on Planning & the Economy Chair Council Member Esther Kia'aina

Re: BILL 64, FD1, CD1 TESTIMONY - COMMENTS AND AMENDMENT REQUEST

Hearing Date: May 23rd 2024, Time: 9:00am

Aloha Chair Kia'aina and Members of the Committee on Planning & the Economy:

The Hawaii Funeral and Cemetery Association, Inc. ("HFCA") provides the following comments and respectfully requests certain amendments regarding Bill 64, Relating to Use Regulations.

HFCA is a Domestic Nonprofit Corporation with an independent 12-member Board of Directors. We represent 14 mortuaries and 10 cemeteries across the state serving the vast majority of Hawaii's families during their time of need.

HFCA appreciates the City's effort to update its land use ordinances. However, we find that current standards and approvals for cemeteries under the LUO pose a significant hardship on the few remaining operational cemeteries on Oahu. As such, we respectfully request certain amendments to address these issues under Bill 64.

The last new public cemetery to be built on Oahu opened in 1965. Since that time, the underlying land use regulations for existing cemeteries have changed on numerous occasions – most notably that all known cemeteries still in operation were rezoned as P-2. This rezoning of cemeteries years after they were built, has caused operations, structures, and uses at many of these cemeteries to now be considered non-conforming.

In addition, over the past 25 years, annual deaths on Oahu have risen substantially. Since 1996 when the Department of Health began tracking data by county, the number of deaths within the City & County of Honolulu have grown (from 5,557 annual deaths to 8,761, in 2023). As a result, many of the cemeteries across the island have reached their capacity. Today, only seven major endowment care cemeteries remain on Oahu along with two veteran's cemeteries. Of these remaining cemeteries, nearly all are undergoing expansion or will need to need to do so in the near future to keep pace with the growing need.

Given the need to expand existing cemeteries, the need to repair many non-conforming structures, and the minimal likelihood of establishing new cemeteries, HFCA respectfully requests certain amendments to allow for greater flexibility. Currently, the only current way to approve non-conforming uses for cemeteries is through zoning variances. Unfortunately, zoning variances are approved in only rare instances because of recent court decisions.

It is also important to note that P-2 zoning has a height restriction of 25 feet. Nearly all cemeteries have structures that exceed the 25-foot height limit and that were built years before the P-2 zoning was applied. These structures are considered non-conforming and under the LUO, can only be repaired at 10% of the replacement cost of the structure per year. To illustrate the scope of this problem, HFCA has compiled a sample list of height structures above 25 feet at cemeteries still in operation on the island.

Honolulu Memorial Park: 119'
Hawaii State Veterans Cemetery: 95'
National Cemetery of the Pacific - Punchbowl (Federal Exemption from LUO): 95'
Valley of the Temples: 70'
Mililani Cemetery: 50'
Oahu Cemetery: 40'
Nuuanu Cemetery: 35'
Hawaiian Memorial: 26'

Providing flexibility to expand and repair or renovate existing non-conforming structures is the only way for the industry to continue to serve families on the island and provide space for the entombment, interment or inurnment of their loved ones.

For these reasons, HFCA respectfully requests the following amendments (see also attached):

- Under Section 3, § 21-5.60-5(a), Cemetery standards, provide that:
    - Density, building area, and height flexibility, not to exceed 50 feet, may be permitted pursuant to the plan review use process.
    - Repairs and renovations of non-conforming structures may be permitted pursuant to the plan review use process.

HFCA appreciates the Council's consideration of these proposed amendments and respectfully requests its action to incorporate the changes into the bill.

Sincerely,

Jay Morford

President

Cc: Jay Morford, Hawaiian Memorial Life Plan

AMENDMENT FORM Bill 64 (2023), FD1
Relating to Use Regulations
PUBLIC, CIVIC AND INSTITUTIONAL USES
Proposed Amendments - Hawaii Funeral and Cemetery Association (May 23, 2024)

Item No.	Bill SECTION	ROH Section, Exhibit, or Figure, and Title	Page No.	Amendment Description	Amendment Text (In Ramseyer Format)	Comments or Clarification
1	SECTION 3	§ 21-5.60-5(a) Public, civic, and institutional uses Parks and open space Cemetery – standards	33	Amend cemetery standards	*(a) Cemetery – standards.* (1) Prior to approval of an application for a cemetery, a certificate of approval must be obtained from the Board of Water Supply indicating that there is no danger of contamination of the water supply. (2) In the AG-2 zoning district, burials are prohibited within 50 feet from the property line of any adjoining zoning lot located in the country, residential, apartment, or apartment mixed-use zoning districts. (3) In the AG-2 zoning district, a minimum 50-foot landscaped buffer is required from the property line of any adjoining zoning lot located in the country, residential, apartment, or apartment mixed-use zoning districts. (4) Density, ~~[and]~~ building area, and height flexibility not to exceed 50 feet may be permitted pursuant to the plan review use process. (5) Repairs and renovations of non conforming structures may be permitted pursuant to the plan review use process.	Provide that density, building area, and height flexibility not to exceed 50 feet, may be permitted pursuant to the plan review use process. Provide that repairs and renovations of non-conforming structures may be permitted pursuant to the plan review use process.

Email: communications@ulupono.com

HONOLULU CITY COUNCIL COMMITTEE ON PLANNING & THE ECONOMY
Thursday, May 23, 2024 — 9:00 a.m.

Ulupono Initiative offers comments on Bill 64 (2023) FD1, Relating to Land Use Ordinance (LUO) Use Regulation Amendments.

Dear Chair Kia'āina and Members of the Committee:

My name is Micah Munekata, and I am the Director of Government Affairs at Ulupono Initiative. We are a Hawai'i-focused impact investment firm that strives to improve the quality of life throughout the islands by helping our communities become more resilient and self-sufficient through locally produced food, renewable energy and clean transportation choices, and better management of freshwater resources.

Ulupono offers comments on Bill 64 (2023) FD1. This bill proposes amendments to the regulation of uses throughout Chapter 21, Revised Ordinance of Honolulu 1990 ("Land Use Ordinance").

Agriculture

In October 2022, Bill 10, relating to land use regulations, was postponed by the Council to allow for further discussion and collaboration with the community, including the agricultural industry who requested additional time to address the many updates made to agricultural land uses. The bill's postponement was done with the understanding that the agriculture industry would bring recommendations to the Council for the next round of hearings in 2023 and 2024.

During that time, Ulupono had the opportunity to convene and participate in several, all-day weekend meetings with agricultural producers and stakeholders for review and comment on the proposed bill. The following organizations were included in these discussions: O'ahu Agriculture and Conservation Association, Kuilima Farm, Kualoa Ranch, Waimānalo Agricultural Association, KōHana Distillers, Kunia Country Farms, Hawai'i Cattlemen's Council, Ulupono Initiative, Hawai'i Farm Bureau, and East County Farm Bureau.[1] The group also included the City and County of Honolulu's (CCH) Department of Planning and Permitting, CCH Office of Economic Revitalization, and State of Hawai'i Department of Agriculture.

After going line by line on the measure's proposed amendments and additions to the agricultural uses in the Land Use Ordinance, our group was able to produce several

[1] Note: we recognize that this group is not a full representation of the entire O'ahu agriculture community, but it does offer significant and meaningful representation of those who were active in Council deliberations of Bill 10 in 2022.

recommendations that we believe support the future of agriculture on Oʻahu. The results of these meetings are reflected in the recommendations provided below[2]:

Assembly
In Section 21.5.60-1 Use Table, relating to Assembly, the FD1 allows small meeting facility use on AG2 land as Cm*+ (Minor Conditional Use, Standards, SUP) and on Country land as Cm* (Minor Conditional Use, Standards), and medium meeting facility use on AG2 land as C*+ (Major Conditional Use, Standards, SUP) and on Country land as C* (Major Conditional Use, Standards). We oppose this provision and propose that meeting facilities should not be allowed on AG1 and AG2 land, which should be preserved and used for active agriculture production and accessory agriculture. Meeting facilities of all sizes may be placed in country-zone districts; however, some country-zoned districts are small and located between AG1 and AG2 farms. Such proximity can compromise normal agriculture activities (i.e., herbicide/insecticide spraying, animal odors, machinery noises, etc.) by complaints from meeting attendees.

Communication
In Section 21-5.60-2(b), relating to Communication, we support the allowance of communication towers in AG1 and AG2 districts as the communications tower footprint is small, and it is federally regulated. We offer the suggestion to give neighbors notice of conditional use permits in ag lots as sometimes they come up overnight. Currently, it is believed that a neighborhood board notice is required.

Education (K-12)
In Section 21-5.60-3, relating to Education, we respectfully oppose K-12 schools in AG2 districts as C*+ (Major Conditional Use, Standards, SUP). Schools are incompatible with normal ag activities (i.e., herbicide/insecticide spraying, animal odors, machinery noises, etc.), and this could generate complaints and hinder management of the farm. We ask for the removal of schools as a permitted use on country-zoned parcels that are *adjacent* to AG1 or AG2 parcels. Some of the country ag parcels are small and between AG1 and AG2 farms. When schools are allowed on these parcels zoned for agriculture, it infringes on the "right to farm" as preserved in the Hawaiʻi State Constitution.

Parks and Open Space (Cemetery)
In Section 21-5.60-5(a) relating to Cemeteries, we agree with the stated cemetery standards and higher PRU+ (Plan Review Use, SUP) in the AG-2 District. The PRU+ requirement is the highest level of review and, as such, we support this.

Utility
In Section 21-5.60(a), relating to Utility, we recommended amending this to: wind energy generation facilities of all categories, small, medium, and large, when placed on AG1 and AG2 lands, must dedicate at least 51% of the zoning lot area suitable for crop raising, animal raising, or aquaculture. The Director may adopt rules pursuant to HRS Chapter 91 to determine the zoning lot area considered suitable for crop raising, animal raising, or

[2] There are several recommendations that came out of these meetings and they will be provided to the Council as additional agricultural items are taken up for Bill 64 (2023).

aquaculture. Soil classifications (addressed by State Land Use HRS) and specific agriculture zone designations (addressed by County AG1 and AG2 districts) for wind energy generation facilities should be considered in the approval of the location of such facilities on agricultural lands.

Energy

Ulupono has concerns with the proposed 1.25-mile wind machine setback and wants to help ensure that the "costs" of such a setback are clear for decision makers. In short, this policy will likely increase electricity costs for residents and hinder Hawai'i's progress towards achieving our renewable energy goals. Onshore wind projects are a low-cost option to advance our clean energy goals, so the proposed setback may exacerbate our state's dependence on high-cost and polluting energy resources, such as fossil fuels, and thereby contribute to the increased severity and frequency of storms, sea-level rise, eroding beaches, and more.

Ulupono believes it is important that the proposed setback sufficiently balance the ability to repower (replacing old turbines, etc.) existing wind power sites/projects. Repowering existing turbines is especially important to O'ahu's ratepayers and low- to middle-income residents, as repowering an existing facility would cost substantially less than developing an entirely new project—a cost that would be passed on to all O'ahu ratepayers. Additionally, repowering an existing wind facility may prevent the County from sliding backwards on our renewable energy goals. We are hopeful that language to create an exclusion from this setback for any repowering of existing wind power facilities is carefully considered.

We appreciate your consideration of these comments and hope to contribute further to this important conversation as we look to update the many important land uses in Bill 64 (2023).

Respectfully,

Micah Munekata
Director of Government Affairs

Dawn Bruns, Kaunala Resident, Sunset Beach, North Shore Oahu, Recommending nighttime wind turbine shutdown, or nighttime wind turbine sound limit of 55 dB low-frequency sound, or 5-mile wind turbine setback from residential areas.

May 21, 2024, for City Council Planning and the Economy Committee meeting Bill 64 (former Bill 10):

Recommendation: In residential-zoned areas, keep wind turbine low-frequency sound pressure pulses below 55 decibels at night and limit daytime low-frequency wind turbine sound to 60 decibels. Accomplish this with either a night-time wind turbine shutdown or, in high-wind areas like Kahuku, a 5-mile wind turbine setback.

Wind Turbine Sound Physics Background Information: The downstroke of the wind turbine blade, as it passes the tower, makes an audible (above 20 Hz) whooshing sound (audible more than one mile away) and each turbine blade tower pass also produces an inaudible air pressure pulse if approximately 1 Hz (detected by humans but not "audible"). This very low-frequency sound is measured with sensitive microphones or with air pressure sensors. The lower the frequency (Hz), the farther the sound travels – it also travels farther with the wind, and when the atmosphere is stable (such as when cool air sinks at night) with a low mixing height. The stronger the wind is, the faster the blade is moving, the higher the decibel level of the low-frequency sound pulse from the wind turbines. Harmonics of the fundamental frequency occur at multiples of the fundamental frequency produced by the turbine blade pass. The decibel scale is logarithmic – a 3 decibel increase in decibel level is a doubling in power (https://www.animations.physics.unsw.edu.au/jw/dB.htm).

Summary of Health Effects occurring miles from the wind turbines because of Wind Turbine Low-Frequency Sound:

At very high levels (levels normally only experienced occupationally, e.g., 100-decibels at 1 Hz tilt-rotor aircraft cockpits and unfortunately the levels occurring in Kahuku, low-frequency sound exposure limits are in hours rather than days; prolonged exposure to such high levels of low-frequency sound causes permanent thickening of tissues around the heart, changes in collagen related to thickening of arteries, epilepsy, birth defects, and other serious consequences regardless of the whether or not the person feels any discomfort (see references links below). Very high levels of low-frequency sound affect the town of Kahuku on most days because of the extremely close proximity of the wind turbines.

Chronic, prolonged nighttime exposure to low-frequency wind turbine pulses **above 55 decibels** causes an estimated 10-30% of the general population many miles from wind turbines to experience significant disruptions to their use of their home by significantly impairing their health (whether they are aware of it or not), safety, peace, comfort, and convenience (one person per every one to three households). The most common problem caused by this dose of low-frequency wind turbine sound, documented in 93% of the patients that physician/PhD Nina Pierpont (2009) studied, was memory and concentration deficits (a known effect of lack of REM sleep). The second-most common problem, which affected 89% of the affected patients she studied, was noticeable chronic sleep disturbance. Chronic sleep disturbance appears to be the

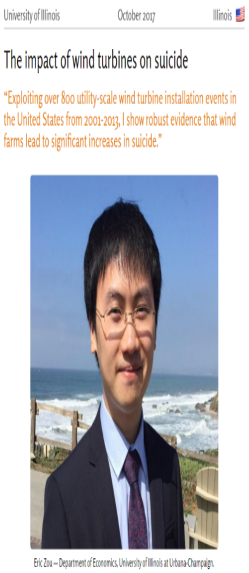
underlying cause of the fatigue (75%) and irritability (76%) experienced by the patients she studied. Wind turbine-caused sleep disturbance has been well-documented. Wind turbine low-frequency sound sleep disturbance appears be the cause of the increased suicide rate Zou (2017) found during windy periods at distances spanning more than 25 km upwind and downwind from the 828 turbine installation events spanning 39 states between 2001 and 2013.

The sleep disturbance resolves immediately after the family moves away from the wind farm. Memory deficits usually resolve over a period of weeks to months after moving away from the wind farm.

Bottom Line: Turn the turbines off at night or don't build turbines within 5 miles of residential, school, and hospital areas. Failing that, allow us to park and sleep in our vehicles in county parks with restrooms away from the Kahuku turbines on windy nights. Sleeping in our cars to get away from the turbines carries its own public health and safety aspects that could be mitigated with these facilities.

Annotated bibliography/links to most relevant literature (more wind turbine health effects peer-reviewed literature available my Google Drive Wind Turbine Noise Folder at https://drive.google.com/drive/folders/1x2bYkblTkTN_wmeht3eh8Row3tLpmkoO?usp=sharing:

1.) Zou 2020, The Impact of Wind Farms on Suicide, American Economic Journal: Economic Policy, in prep: Wind turbines increased suicide rates during windy periods in residents **more than 25 km (15 miles) upwind and downwind of turbines**. University of Oregon economics professor studied 828 turbine installation events spanning 39 states in the United States from 2001 to 2013. Sleep disturbance the likely cause. Wind turbine installation resulted in a total of 34,000 life years lost (LYL) due to increased suicides within a year after installation. To put this number in perspective, during the same one-year time window, the new wind capacity generated roughly 150 million megawatt hours (mWh) of clean energy; by comparison, based on existing estimates of the per mWh health cost of coal-generated electricity (Epstein et al., 2011), generating the same amount of electricity with coal would have resulted in around 53,000 life years lost due to air pollution.
https://static1.squarespace.com/static/56034c20e4b047f1e0c1bfca/t/5f612bb98bdfff6199b3a97c/1600203713573/turbine_zou202009.pdf



2.) Cape Bridgewater (2014-2015) This wind farm-funded study made measurements of low-frequency sound while residents documented their discomfort. Residents reported "severe impacts (significant changes in behavior, and/or inability to mitigate effect leading to psychological stress or physiological effects, e.g., regular sleep deprivation/awakening, loss of appetite, significant, medically definable harm" when **1 Hz wind turbine sound exceeded 58 decibels (72 decibels was the highest level studied)**, https://drive.google.com/drive/folders/1x2bYkblTkTN_wmeht3eh8Row3tLpmkoO?usp=sharing)

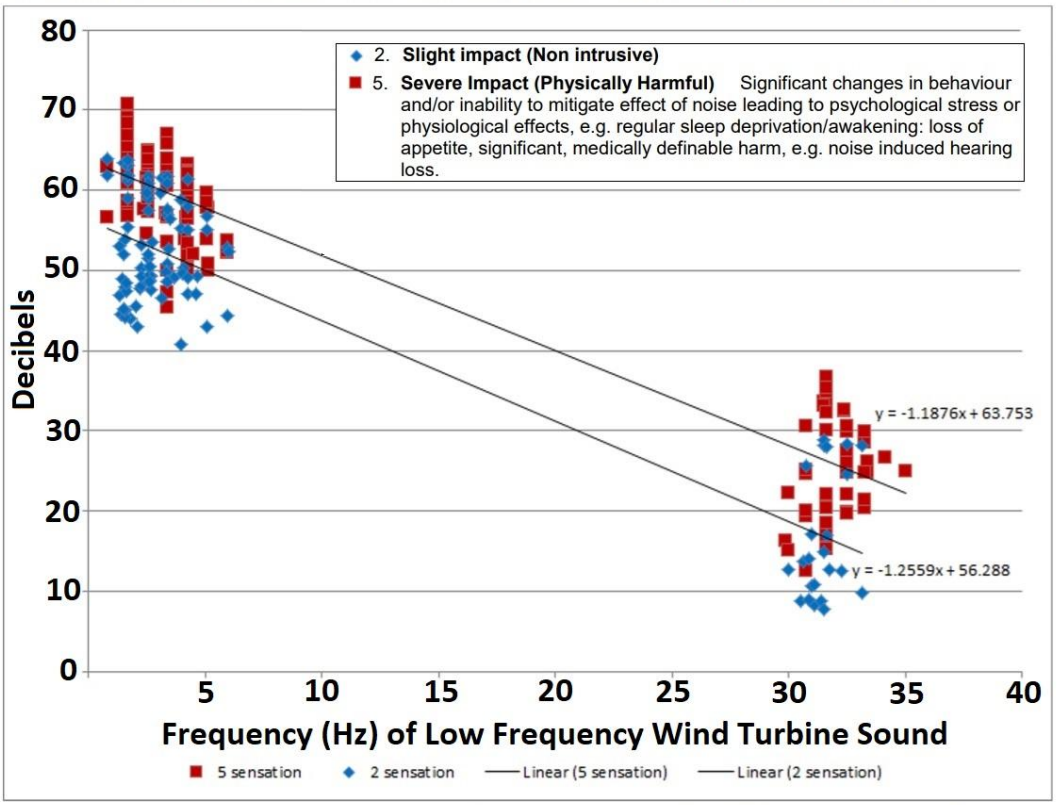


FIGURE 49: Human response to sound pressure of wind turbine signature and 31.5 Hz wind turbine amplitude modulation (both do not occur in the ambient environment) https://drive.google.com/open?id=180jlKaO_Z9pdWpQ64z8EFEh1vYdiqqrp

3.) Dr Alves Pereira (2019) University of Waterloo presentation (wind turbine low-frequency sound pressure is chronic – though exposure levels are usually below level of occupational exposure of military aircraft workers, biological effects to tissues are expected to be similar – thickening of the pericardial tissues around the heart, changes in collagen related to thickening of arteries, increased epilepsy, high blood pressure, heart conditions. In addition, low-frequency sound (**55-60 dB at 1 Hz**) caused residential structures to resonate (55-60 dB at around 10 Hz) – the resonance frequency of wood frame and concrete structural materials is around 10 Hz – in addition to low-frequency sound itself, the structure's resonance is often the significant cause of discomfort, causing the people to move away or sleep in the basement) https://livestream.com/itmsstudio/events/8781285/videos/196181579?fbclid=IwAR3pwiRLGzoHYKJqmEZJhjuIjCHehJIrgaP1QauPpGpDntVQNYuf6oHygLo

4.) Stepanov (2000) Biological effects of low frequency oscillations (Russian **75 dB limit for 2 Hz**. low-frequency sound for "living and public premises" based on exposure time, p. 15. Russia has a lot of experience with low-frequency sound (as does NASA) due to the space programs. https://apps.dtic.mil/dtic/tr/fulltext/u2/a423963.pdf

Page 15 in Stepanov 2000 Biological effects of low frequency oscillations (Russia's low-frequency sound exposure limits) https://apps.dtic.mil/dtic/tr/fulltext/u2/a423963.pdf

Table 7 – Permissible infrasound levels at workplaces, living and public premises and populated areas

No.	Premise	Sound pressure levels, dB, in octaval bands of averaged geometric frequencies, Hz				General sound pressure level dB "Lin"
		2	4	8	16	
1.	Different jobs inside industrial premises and production areas:					
	- Different physical intensity jobs	100	95	90	85	100
	- Different intellectual emotional tension jobs	95	90	85	80	95
2.	Populated area	90	85	80	75	90
3.	Living and public premises	75	70	65	60	75

5.) The 65 dB ANSI threshold for low-frequency sound is based on effects of less-harmful traffic and aircraft noise. The physiological response to wind turbine sound is significantly greater than the physiological response to the same decibel sound from traffic and aircraft noise Schaffer 2016. Apparently, Hawaii doesn't even appear to have adopted the 65 dB ANSI low-frequency sound limit (let alone the Russian 75 dB limit to low-frequency sound, above) – adopting these general health-related restrictions to low-frequency noise (of any type, let alone the more harmful wind turbine pulses) seems like it should have been done already.

6.) Walker, Hessler, Rand, and Schomer (2012) Shirley Wind Farm, Wisconsin, in particular Appendix C, Rand Acoustics, pp 35-36, "intolerable" (headaches, nausea, dizziness, sleep interference) when wind turbines on (intolerable during the daytime at **73 decibels at 0.3 Hz fundamental frequency),** relief during the daytime at 3.5 miles away **(calculated to be approximately 61 dB at 0.3 Hz**).

7.) The 2.5 MW Clipper turbine, currently in use at the Kahuku Wind Farm has been declared a public health hazard by a Wisconsin county where residents 4.2 miles away are adversely affected and low-frequency sound pulses are detected more than 6 miles away (Wisconsin).

8.) Falmouth, Massachusetts wind turbines removed because they were a public health hazard Falmouth, MA Health Board 2012

9.) Pierpont (2009) Wind Turbine Syndrome book by physician, see "Report for Clinicians, Table 3 (Page 51) and Chapter 3, Case Histories, the raw data. (order $11 book, free shipping, from https://www.windturbinesyndrome.com/wind-turbine-syndrome/)

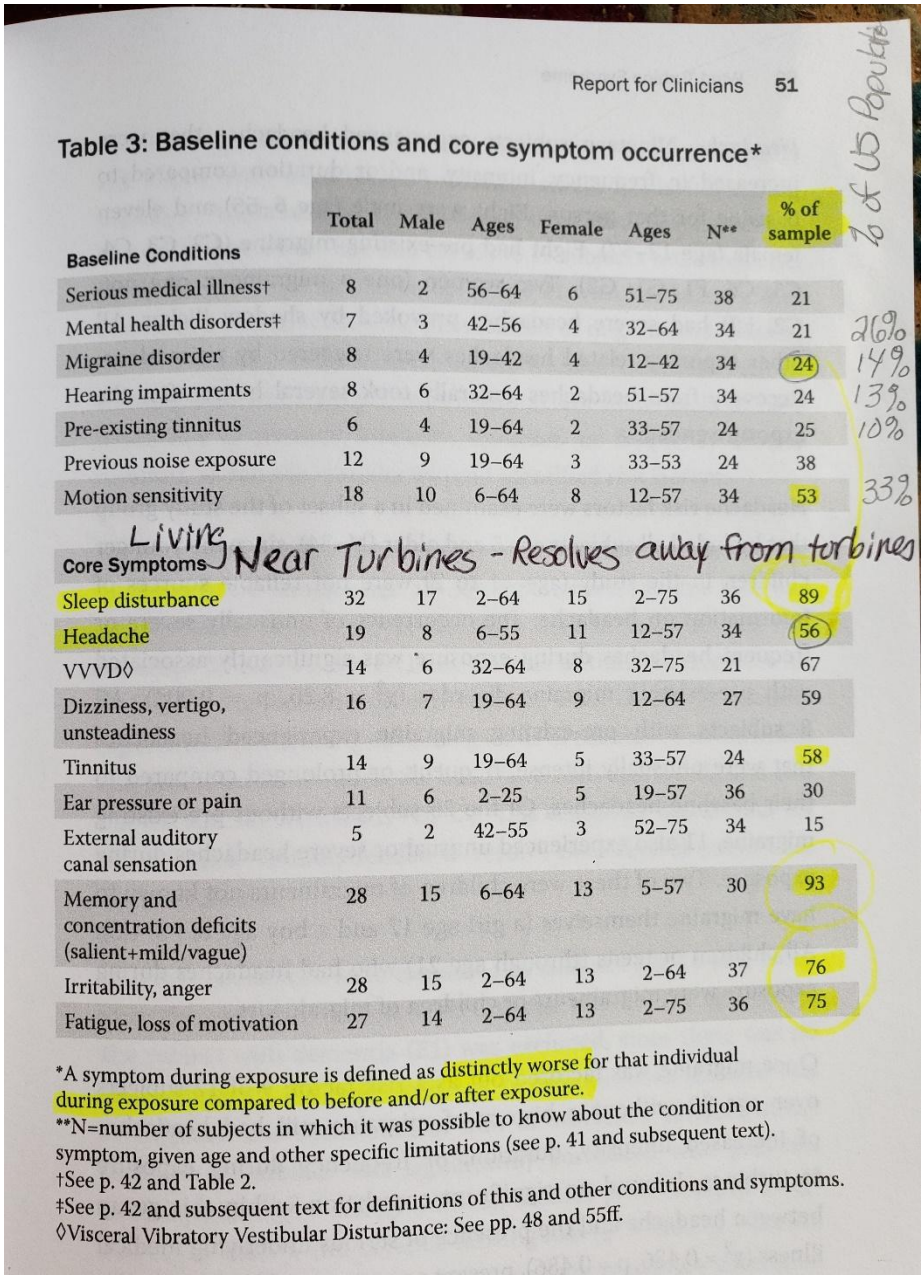


Table 3: Baseline conditions and core symptom occurrence*

	Total	Male	Ages	Female	Ages	N**	% of sample
Baseline Conditions							
Serious medical illness†	8	2	56–64	6	51–75	38	21
Mental health disorders‡	7	3	42–56	4	32–64	34	21
Migraine disorder	8	4	19–42	4	12–42	34	24
Hearing impairments	8	6	32–64	2	51–57	34	24
Pre-existing tinnitus	6	4	19–64	2	33–57	24	25
Previous noise exposure	12	9	19–64	3	33–53	24	38
Motion sensitivity	18	10	6–64	8	12–57	34	53
Core Symptoms							
Sleep disturbance	32	17	2–64	15	2–75	36	89
Headache	19	8	6–55	11	12–57	34	56
VVVD◊	14	6	32–64	8	32–75	21	67
Dizziness, vertigo, unsteadiness	16	7	19–64	9	12–64	27	59
Tinnitus	14	9	19–64	5	33–57	24	58
Ear pressure or pain	11	6	2–25	5	19–57	36	30
External auditory canal sensation	5	2	42–55	3	52–75	34	15
Memory and concentration deficits (salient+mild/vague)	28	15	6–64	13	5–57	30	93
Irritability, anger	28	15	2–64	13	2–64	37	76
Fatigue, loss of motivation	27	14	2–64	13	2–75	36	75

*A symptom during exposure is defined as distinctly worse for that individual during exposure compared to before and/or after exposure.
**N=number of subjects in which it was possible to know about the condition or symptom, given age and other specific limitations (see p. 41 and subsequent text).
†See p. 42 and Table 2.
‡See p. 42 and subsequent text for definitions of this and other conditions and symptoms.
◊Visceral Vibratory Vestibular Disturbance: See pp. 48 and 55ff.

10.) Salt and Hullar 2010 ear response to low frequency sounds turbines https://pubmed.ncbi.nlm.nih.gov/20561575/

11.) Rand, R.W., S.E. Ambrose, and C.M.E. Krogh. 2011. Occupational Health and Industrial Wind Turbines: A Case Study. Bulletin of Science, Technology, and Society 31(5) 359-362. Excerpt from Page 361 - the author was personally affected when low frequency sound measurements exceeded 60 dB.

> Salt and Hullar (2010) that certain structures in the inner ear are sensitive to infrasound and can be stimulated by low-frequency sounds at levels starting at 60 dBG, well below levels that can be heard. The stimulation is maximal at low background sound levels (e.g., indoors). The authors found that when the wind turbine modulating, pulsing infrasonic levels dropped below 60 dBG (nearest wind turbine OFF), there was improvement in health status.

12.) Ambrose, S.E., R.W. Rand, and C.M.E. Krogh. 2012. Wind turbine acoustic investigation: Infrasound and low-frequency noise – a case study. Bulletin of Science, Technology & Society 32(2): 128-141. In an email to me yesterday, Dr. Rand highlighted the following - apparently in addition to the ear structures detecting the low-frequency sound pressure pulses, the nerve fibers are directly responding. Dr. Rand is very approachable and helpful and he takes phone calls in case you are interested in speaking with an expert – his contact information is in his signature line:

> Adverse impacts were associated to acoustic pulsations exceeding the Salt threshold for OHC triggering. Of note, and please read carefully, "low-frequency sounds produce a *biological* amplitude modulation of nerve fiber responses to higher frequency stimuli. This is different from the amplitude modulation of sounds detected by a sound level meter."
>
> If you have any questions, please contact me.
>
> Thank you kindly,
> Rob
>
> --
> Robert W. Rand, Member ASA, INCE (Member Emeritus)
> Rand Acoustics
> Tel: 207-632-1215
> Fax: 206-339-3441
> Web: http://randacoustics.com
>
> On 3/11/21 5:16 PM, Dawn Bruns wrote:

13.) Punch and James 2016 – review of literature https://drive.google.com/file/d/10JQcxsMC0j6XIrTyLzaM_M1IYtAPBLox/view?usp=sharing

14.) Smith et al. A laboratory study on the effects of wind turbine noise on sleep: results of the polysomnographic WiTNES study. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7487868/

Any study failing to detect the considerable reduction in REM sleep in 10-30% of humans does so by failing to measure 1-Hz sound levels in relation to REM sleep, or by using small samples and lumping adversely affected subjects with the unaffected study participants. Impacts to affected people are considerable.

If you want to use wind turbines as a long-term clean energy generation source that won't be shut down by public nuisance litigation, keep wind turbine sound in residential-zoned areas BELOW 55 decibels at night (I'm not sure how much below 55 decibels – I just know 55 decibels is a serious problem - 52 dB doesn't affect my sleep), for sleeping, and limit low-frequency wind turbine sound to 60 decibels, daytime, in residential-zoned areas.

My Sunset Beach Measurements: It only cost me $3,000 to purchase low-frequency (full-spectrum) microphones with calibration and notebook computer interface – it's very easy to measure low-frequency wind turbine sounds http://www.smart-technologies.co.nz/rapley.html
At our Sunset Beach house three miles from the Kahuku Wind Farm, the fundamental frequency from the 12 original 2.5 MW Clipper wind turbines of the Kahuku Wind Farm is 0.8 Hz and the first two harmonics, at 1.6 Hz and 2.4 Hz are shown in Figure 1.

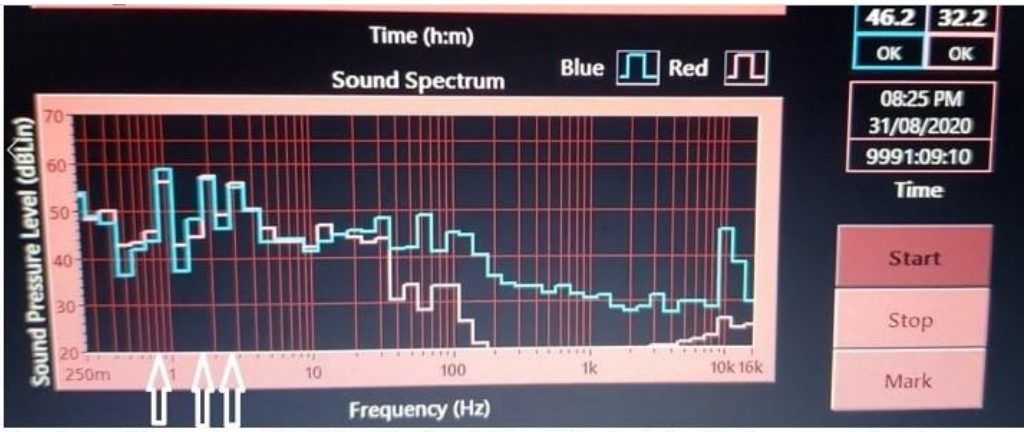


Figure A. Blue microphone Sunset Beach (three miles downwind from turbines), red microphone in garage "crypt" sleeping area (which does nothing to block 1 Hz, 2 Hz, and 3 Hz low-frequency air pressure pulses "low-frequency sound pressure" registering at 55 60 dB (see white arrows). Winds were 18 MPH, gusts to 26, from the east (92 degrees).

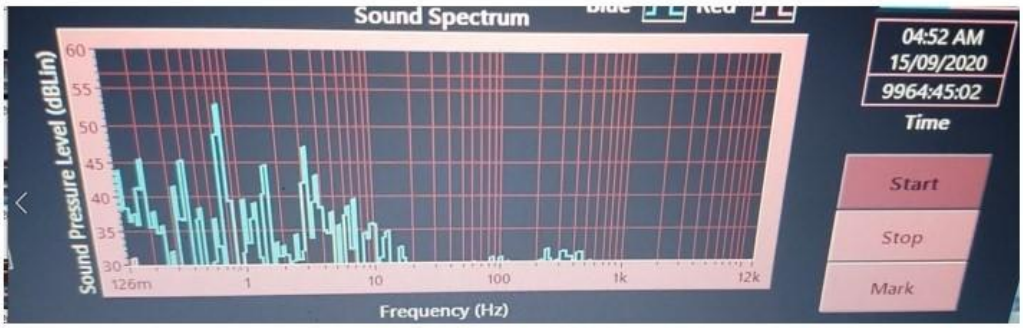


Figure B: Turbines on with light wind. This is the sound pressure level three miles downwind from Kahuku with about the lightest winds the turbines are allowed to operate during April through October nighttime (James Campbell Weather Station: winds 10, gusts to 13, 99-degrees/East wind). This 50-55 dB 1 Hz signal (and its 2 Hz and 3 Hz harmonics.

The difference in power between 55 decibels and 60 decibels is more than double the sound power because decibels are on a log scale. The decibel level of the 12 original 2.5 MW turbines in Kahuku, at 3 miles, in light 10 mph winds, is 53 decibels; the same turbines cause the low-frequency sound level to be 60 decibels here, three miles away, when wind is 18 mph (the attenuation rate of 3 decibels per doubling of distance would mean it would be 57 decibels at 6 miles (REM sleep disturbance annoyance to a considerable number of residents, early cognitive decline from chronic, years, without enough REM sleep, relieved by periods traveling or sleeping away from the turbines); and it would be 54 decibels at 12 miles (so on windy nights, the safe setback distance would be farther than 5 miles).
When wind turbines are situated in high-wind areas such as Kahuku, low-frequency sound from the blades affects large areas of the island. Siting turbines in low-wind areas is much less problematic - my measurements 3 miles downwind from Kawailoa Wind Farm don't detect wind

turbine sound, but the wind has always been light there when I've measured). Oahu is too small and densely populated to have industrial wind turbines operating at night in high-wind areas like Kahuku, Kailua, Diamondhead, and ridge lines, because high levels of low-frequency sound from large fast-spinning turbine blades prevents up to 30% of residents from getting needed REM sleep many miles away.

Kahuku Community Association

Honolulu City Council
530 South King Street Room 202
Honolulu, HI 96813

May 20, 2024

RE: Bill 64 (2023), FD1

Dear Chair Kiaʻāina and fellow Council Members,

Kahuku Community Association (KCA) strongly requests the Council to establish a setback of a minimum 1.25 mile setback or a 1:15 ratio whichever is greater for large wind energy generation facilities. Furthermore, we request that the Council remove any language limiting these setback requirements to only apply to new wind energy generation facilities. Existing large wind energy generation facilities that do not meet the setback requirements must be classified as nonconforming after the expiration of their lease or power purchase agreement. Below are KCA's requests for amendments.

§ 21-5.60-6 Utility.(c) (2) (E), page 36:

(E) Large wind energy generation facilities must be set back from all property lines a minimum distance equal to the height of the facility, measured from the highest vertical extension of the facility; and a minimum distance of 1.25 miles or 15 times the height of the facility, whichever is greater, from the property lines of any zoning lot located in the country, residential, apartment, apartment mixed-use, or resort zoning districts. In addition to the setback distance, all projects must adhere to all of the following: 1) no part of the facility shall cause more than 0 hours per year or 0 minutes per day of shadow flicker on occupied buildings or residences; 2) the distance to any occupied buildings or residences shall be greater than the wind generation equipment manufacturer safety limits; 3) and facility noise levels do not exceed 10 dBA above ambient sound levels at occupied buildings or residences during normal operation. Models of anticipated shadow flicker shall use site-specific cloud cover (weather) data and turbine operating characteristics.~~; provided that the setback requirements in this paragraph only apply to new large wind energy generation facilities~~ and Existing large wind energy generation facilities that do not meet the setback, shadow flicker and noise requirements in this paragraph would become nonconforming. The setback requirements in this subsection do not apply to the repair, maintenance, or component replacement of any existing facility covered by a power purchase contract with an electric public utility during the term of the contract	15 times the height of the facility is incorporating the State Energy office's new proposal for setback. Given the likelihood of increasing turbine heights, it was desirable to establish a distance ratio to the height of the turbine to minimize the impacts of larger turbines. Incorporating State Energy Office's recommendations. Supporting strongly Council Member Weyer and Kia`aina's recommendation to delete. Incorporating and in strong support of

provided that the repair,maintenance, or component replacement is allowed under existing facility permits~~, including any renewal or extension thereof~~. Height includes the height of the tower or its vertical support structure and the farthest vertical extension of the tower.	councilmember Kia'āina's comment in her recommendations. Incorporating language from previous Bill 41.

The State Energy Office and Department of Planning and Permitting has supported a 1.25 mile setback on record in previous hearings regarding large wind turbine setbacks. Which is a positive step in the right direction, however, fails to account for the increased distances needed to adequately protect residents and communities from larger turbines. In the testimony for the May 2nd hearing, the State Energy Office noted that a ratio would be more appropriate given the likelihood of increasing turbine heights. Recent discussions between KCA and the State Energy Office have led to an agreement that a 1:15 ratio would be more appropriate than a 1:10 ratio previously noted, as the latter would not provide sufficient distance to protect nearby residents and homes. For instance, the 1:10 ratio will not meet the 1.25 mile setback allowing the existing 453 feet tall First Wind Turbines just 0.8 miles away and 568 feet Na Pua Makani turbines only 1 mile away from the property line. For a larger turbine of 600 feet, a 1:10 ratio would place a turbine a mere 1.13 miles from the property line. A 1:15 ratio aligns better with the minimum 1.25 mile setback and also accounts for greater setback needed for larger turbines to better protect residents and communities impacts of industrial wind machines such as shadow flicker, noise, blade throw, tower collapse, etc etc.

Additionally, KCA strongly opposes any language that states the new setback requirements to apply only to new large wind energy projects and that it would also not apply to any renewal or extension. KCA strongly requests that the Council add language that will mandate existing large wind energy generation facilities, which do not meet the new setback, shadow flicker and noise requirements, to become nonconforming. Thus, requiring these large wind facilities to relocate further from our residents and homes if they wish to repower or renew their lease. This measure is crucial for our Kahuku community, which is currently surrounded by 20 turbines and experiences the cumulative impacts of industrial wind such as safety concerns related to blade throw, tower collapse, fire, and health impacts from audible noise, inaudible noise, shadow flickers that greatly impact the overall safety, health, and quality of life of our Kahuku residents. Correcting this injustice under the new setback law is essential. It will be tragic to include language that allows existing projects to avoid compliance with the new setback, further perpetuating the risks to our children and residents even more. Allowing existing turbines within the 1.25 mile setback or 1:15 ratio to extend, repower, or renew despite the recognized impacts is a great injustice and travesty that must be addressed. We must not allow any loopholes that perpetuate the ongoing issues and injustice our Kahuku residents currently face and undermine the progress we hope to achieve.

KCA also incorporated language recommended by the State Energy Office from their previous testimony from the May 2nd hearing, adding an additional requirement to ensure protection of communities from shadow flicker and noise. We strongly oppose any language that allows wind turbines to operate within the buffer zone or permits developers to conduct studies to demonstrate potential impacts on the community to secure exceptions. The State Energy Office has agreed to delete this language but retain those criteria to better protect communities from harm. One main difference is that KCA stipulates households should experience 0 minutes of shadow flicker, as we strongly believe no one should be forced to endure shadow flicker in their home. While it is a significant annoyance for most people, the impact on those with sensitivity issues and medical conditions such as epilepsy can be severe. Many residents in Kahuku experience the negative impacts of shadow flicker entering their home. This flickering has caused some residents to go to the extreme of tinting their windows to lessen the flickering, keeping their curtains closed and even fleeing the comfort of their homes to escape

shadow flicker. This is unacceptable. These detrimental impacts harm the health and quality of life of our Kahuku residents and no one should be forced to endure them.

KCA acknowledges the need for clean energy as our communities face the effects of extreme weather events caused by climate change. However, it is imperative to strike a balance by implementing regulations that ensure renewable energy projects do not compromise the health, safety and quality of life of host communities and its residents. As currently experienced by Kahuku residents, poorly sited industrial wind turbines near schools and residential homes have devastating impacts. These include blade throw, tower collapse, fire from mechanical failures, shadow flicker, both inaudible and audible noise, aesthetics and more.

An adequate setback is the only proven safety measure to protect and prevent host communities from the negative impacts of industrial scale wind turbines. The Land Use Ordinance aims to promote and protect public health, safety and welfare of the people whom these projects will directly affect. The threat to those who live in close proximity to industrial wind turbines are clearly evident to our Kahuku residents. KCA has been advocating to increase the setback for the past 4 years and over 200 people were arrested opposing the Na Pua Makani Project due to its close proximity to our schools and residential homes.

We respectfully ask the Council to heed to our community who speaks from firsthand experience. Now is the time to correct the injustice that was forced onto our Kahuku community by supporting KCA's request for amendments and proposed language. Mahalo for your attention to this critical matter.

Respectfully,

Sunny Unga (e-sign)

Kahuku Community Association

Sunny Unga - President
Valeriano Garrido- Vice President
Tatiana Santiago- Secretary
Budde Cabael -Treasurer
Atalina Pasi - Director
Budde Cabael - Director
James Munoz - Director
Ralph Makaiau - Director

HAWAII CLEAN POWER ALLIANCE

Honolulu City Council
Committee on Planning and the Economy

Bill 64, FD1 (2023) – Land Use Ordinance Amendment Relating to Use Regulations
Hearing - May 23, 2024, 9:00 AM

Chair Kia'āina, Vice Chair Cordero and Members of the Committee,

Hawaii Clean Power Alliance ("HCPA") is a nonprofit alliance organized to advance and sustain the development of clean energy in Hawaii. Our goal is to support the state's policy goal of 100 percent renewable energy by 2045. We advocate for utility-scale renewable energy, which is critical to meeting the state's clean energy and carbon reduction goals.

HCPA supports the approved version of Bill064(23), FD1-12-06-23 CCL regarding 21-5.60-6 Utility (C) (2) (E) (Pages 36-37), which provides:

> (E) Large wind energy generation facilities must be set back from all property lines a minimum distance equal to the height of the facility, measured from the highest vertical extension of the facility; and a minimum distance of 1.25 miles from the property lines of any zoning lot located in the country, residential, apartment, apartment mixed-use, or resort zoning districts; provided that the setback requirements in this paragraph only apply to new large wind energy generation facilities and do not apply to the repair, maintenance, or component replacement of any existing facility covered by a power purchase contract with an electric public utility during the term of the contract, including any renewal or extension thereof. Height includes the height of the tower or its vertical support structure and the farthest vertical extension of the tower.

It is imperative that existing wind projects be able to continue to fulfill contractual obligations to operate and be permitted to conduct repairs, maintenance, and replacement of project components without being subject to newly adopted standards. The imposition of newly adopted standards, without an explicit statement that the new standards do not apply to existing wind projects, could have unintended consequences that should be avoided in the interest of the public. Explicit amendments as stated in FD1-12-06-23 CCL are necessary so that the City Council does not inadvertently impair the existing wind energy projects' ability to provide valuable renewable resources necessary for Oahu, such as by preventing their ability to obtain financing.

Specifically, the City and County of Honolulu's Bill 20-47 (2020) requires 100% renewable energy and promotes resiliency of Oahu communities. The State of Hawaii enacted

Act 97 and Act 15, respectively, mandating achievement of a 100% renewable portfolio standard and carbon neutrality goal by 2045.

Wind energy projects provide a critical cornerstone towards meeting these goals and work in concert with solar energy projects to reduce the State's reliance on high-priced, imported fossil fuels. Currently, existing wind energy projects are capable of producing approximately 123 megawatts of energy, enough to supply power to approximately 45,000 homes annually and are an integral component of Oahu's existing diversified supply mix to ensure reliability and energy security at cost potentially significantly lower than other renewables.

Maintaining existing renewable energy facilities is more critical than ever, given the premature closure of the Coal Plant in September of 2022 which removed 20% of the lowest cost electricity supply to Oahu's households and businesses. Adopting new standards that could inadvertently curtail existing wind energy projects currently providing low cost, renewable energy could be an unintended and counterproductive consequence to the public. Hawaii consumers already pay the highest energy bills in the nation, which will likely further increase due to the electric grid investments needed for wildfire mitigation. We must support renewable energy to eliminate fossil fuel price volatility and help drive costs down. As recently experienced earlier this year, all of Oahu was impacted by unfortunate rolling blackouts from a lack of adequate energy production and reserve margins, as well as a lack of diversified mix of energy resources.

Communities have many opportunities during numerous public approval processes to influence and shape energy facilities, including during the electric utility's RFP selection, which requires community outreach prior to selection and throughout the development process, the design of community benefits programs, the Public Utilities Commission Power Purchase Approval (PPA) Docket, and a variety of discretionary permit processes including Environmental Impact Statements, Habitat Conservation Plans, Conditional Use Permits (CUP), and other permitting processes. We encourage the Council to refrain from foreclosing any particular renewable energy through the Land Use Ordinance, especially given the numerous opportunities that provide for a community voice, and the benefits energy projects bring to communities, including good-paying local jobs, new sustaining community benefits programs, and more.

As the Committee evaluates other proposed amendments, we also want to provide perspective that the reliance on the "nonconforming" statute in "Revised Ordinances of Honolulu ("ROH") § 21-4.110 Nonconformities" is inadequate to assure existing wind projects the ability to repair, maintain or replace components because the ROH is written too broadly to ensure this reliance. It states "(3) Any nonconforming structure may be repaired, expanded, or altered in any manner that does not increase its nonconformity." As written, the reliance on this ROH would inadvertently impair these facilities by significantly limiting, if not preventing, their ability to obtain financing because lending institutions will not approve customary

financing for "nonconforming" facilities. Additionally, the CUP and other permitting processes provide assurance to the community that community concerns and voices will be considered.

For the reasons noted above, HCPA respectfully urges that the Bill move forward with the existing approved version of Bill064(23), FD1-12-06-23 CCL to be clear that existing wind energy facilities may continue to operate and make necessary repairs and component replacements and to ensure projects can provide reliable and low-cost energy to the residents of Oahu. We request that the proposed ordinance explicitly state that the new standards only apply to new wind energy generation facilities.

Thank you for the opportunity to submit testimony regarding Bill 64, FD1 relating to large wind energy generating facilities.

May 22, 2024

Chair Esther Kiaʻāina
Planning & Economy Committee
Honolulu City Council
South King Street
Honolulu, HI 96813

Dear Chair Kiaʻāina, Vice Chair Cordero, and members of the Planning & Economy Committee,

We write to you today as stakeholders of the telecommunications industry who help to provide wireless services to customers across Oʻahu. We thank the Planning & Economy Committee for its work to update Honolulu's Land Use Ordinance and for this opportunity to provide testimony and feedback to proposed changes in Bill 64.

We also want to acknowledge and share our appreciation for the Department of Planning and Permitting's (DPP) Land Use Division for meeting with members of our industry throughout this process, especially in recent weeks.

On Oʻahu, our companies are responsible for building and upgrading wireless facilities, and in some cases, we also own the underlying infrastructure. These projects are typically initiated in response to increased wireless data traffic and demand, which saw a 38 percent increase nationally in 2022 alone.[1]

This demand comes from an increased number of wirelessly-connected devices (e.g. smart city technology, security cameras, smartwatches) and increased technological capabilities that require more network data (e.g. live streaming, videochatting with friends, family, coworkers, and health professionals). Our infrastructure facilitates these connections, and our customers rely on us to keep up with increased demands. In 2022, the wireless industry invested tens of billions of dollars to improve the nation's networks and maintain network reliability, quality, and speeds, including in Hawaiʻi.[1] This investment fuels economic growth where the wireless industry generates $2.1 billion in annual GDP growth.[2]

[1] CTIA 2023 Annual Survey Highlights, *available at* https://api.ctia.org/wp-content/uploads/2023/11/2023-Annual-Survey-Highlights.pdf
[2] CTIA Our Economic Impact, *available at* https://www.ctia.org/the-wireless-industry/map/4g

To best provide services that our customers rely on each day, reasonable land use requirements and permit review timelines in the City & County of Honolulu are critical. We appreciate the work and attention on bill language impacting wireless communications thus far by this committee and DPP, and we thank the Committee for its consideration of our feedback and proposed changes provided in our testimony today.

Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012

We appreciate Chair Kia‘āina’s proposed amendment to reinstate language recognizing of eligible facility requests, as defined by a federal law nicknamed “Section 6409,” in Bill 64, and we propose minor changes.

Background

“Section 6409” references Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, which was enacted in 2012 and codified at 47 U.S.C. Section 1455. The Federal Communications Commission adopted regulations implementing Section 6409(a) in 2014 (47 C.F.R. Section 1.6100).

Under the FCC’s regulations, if a proposed modification does not involve a “substantial change” to the facility under the federal test codified in 47 CFR §1.6100(b)(7) and the proposal meets building, structural, electrical, and safety codes, the modification must be approved within 60 days of the applicant’s request for review, after accounting for any tolling. If the local government fails to act on the request within 60 days, the request is “deemed granted” when the applicant notifies the local government that the 60-day review period has expired. Some zoning standards, such as height limitations and design guidelines, are preempted by Section 6409(a).

Examples of projects where Section 6409 would be applicable include replacing radios, adding another panel antenna to an existing site, or collocation (adding a new wireless facility to an existing structure where another wireless facility has been installed).

As mentioned in our May 2, 2024 testimony, we appreciate the steps DPP has taken in recent months to incorporate Section 6409 in its processes, which has already brought increased investments into wireless networks on O‘ahu and benefitted wireless users. Recognizing Section 6409 in the City & County of Honolulu’s code will enable consistency in the City’s permitting processes and requirements for qualified projects. This will ultimately support continued progress toward more efficient reviews and quality wireless network services for O‘ahu’s residents and visitors.

Proposed changes

We propose the following amendments to the Chair Kia‘āina’s proposed language within the Communication Tower and Communication Support Structure sections:

For Communication Tower standards (§ 20-5.60-2(b)(5)):

> *Proposed modifications to telecommunications facilities or ~~C~~communication towers that qualify as ~~an~~ eligible facility requests under 47 U.S.C. § 1455(a) and 47 C.F.R. § 1.6100, as may be amended or superseded, do not require any additional land use permits or applications under this chapter provided that the proposed modification ~~communication tower~~ complies with all conditions of the initial land use permit or approval (except as preempted by 47 U.S.C. § 1455(a) and 47 C.F.R. § 1.6100).*

For Communication Support Structure standards (§ 20-5.60-2(c)(3)):

> *Proposed modifications to telecommunications facilities or ~~C~~communication support structures that qualify as ~~an~~ eligible facility requests under 47 U.S.C. § 1455(a) and 47 C.F.R. § 1.6100, as may be amended or superseded, do not require any additional land use permits or applications under this chapter provided that the proposed modification ~~communication tower~~ complies with all conditions of the initial land use permit or approval (except as preempted by 47 U.S.C. § 1455(a) and 47 C.F.R. § 1.6100).*

This clarification seeks to cover all projects that would qualify as an "eligible facility request" as defined by federal law. Such projects could include modifications (i.e. adding equipment, swapping equipment) at an existing telecommunications facility on a communication tower or communications support structure. Eligible facility request projects could also include modifications to a communication tower or a communication support structure, such as a collocation (adding another telecommunications facility).

Definition of Telecommunications Facility

We propose the following amendments to Chair Kia'āina's proposed definition for Telecommunications Facility:

> ***Telecommunications Facility.*** *~~Facilities integrated with communication towers or communication support structures that are regulated by the Federal Communications Commission, and may include~~ The structures and equipment which make up a telecommunications network, including but ~~is~~ not limited to, transmitting panel antennas, radio transmitters regulated by the Federal Communications Commission, GPS antennas, ~~accessory satellite dish antennas~~ microwave dishes, remote radio units, power cables, and similar equipment. The term includes accessory structures that may be located elsewhere on the zoning lot, including equipment cabinets, ~~emergency~~ backup power generators, and fencing.*

The above proposed changes focus on the make-up of a telecommunications facility. Although reference to communication towers and communication structures is removed from this definition, the term telecommunications facility is included in definitions for communication tower and communication support structure.

We propose to include microwave dishes, which are necessary to provide backhaul services (internet connection) to a wireless facility if a fiber connection is not available. Satellite backhaul is not common but may be used temporarily during certain events (i.e. disaster response) if fiber connectivity is destroyed or is not otherwise available.

The remaining proposed changes included here aim to capture the various types of structures and equipment commonly included at a telecommunications facility.

Communication Towers

Use table

We appreciate Chair Kia‘āina’s proposed amendments to change Communication Towers in the I-1, I-2, and I-3 districts back to a permitted use on page 1 of the May 17, 2024 proposed amendments.

We would like to also request the Committee’s consideration to change all requirements for a conditional use permit (CUP) major back to what is required today, which is a CUP minor. The CUP major process requires a significant amount of time for all involved. We believe that DPP Land Use’s review of a CUP minor applications is sufficient to ensure new communication towers adhere to the updated code.

Definition

We propose the following amendments to the Chair’s proposed definition for clarity:

> ***Communication Tower.*** *A freestanding structure that supports a telecommunications facility. The term includes monopoles, monopalms, monopines, lattice towers, and similar structures. The term does not include broadcasting antennas ~~(see broadcasting antennas)~~ or ~~structures that support or conceal an antenna~~ communications support structures ~~(see communications support structures).~~*

Communication Support Structures

Definition of Communication Support Structures

We propose the following amendments to the Chair’s proposed definition of Communication Support Structure for clarity:

> ***Communication Support Structure.*** *A structure ~~designed for a separate use or purpose that also supports or conceals a telecommunications facility~~ not built for the primary purpose of supporting a telecommunications facility, but where a telecommunications facility will be installed on or inside. Communication support structures include, but are not limited to a ~~Equipment may be mounted on an integrated with a~~ rooftop, building ~~or~~ façade, ~~light pole,~~ bell tower, clock tower, campanile, steeple, light structure, or similar structure.*

We propose shifting the focus to the communication support structure rather than the associated equipment because equipment placement standards for communication support structures is addressed in the bill.

We also propose to strike reference to street light poles or traffic signal poles, so that it is included as a light fixture. Initially, our industry stakeholders sought to distinguish installations on structures that is within DPP's jurisdiction from structures within another Department's jurisdiction. We since learned from DPP that there are some street light poles and traffic signal poles that would fall within their jurisdiction.

Communication Support Structure – Standards

We would like to especially acknowledge DPP for their time in discussing standards for communication support structures with our industry stakeholders. Our discussions were very helpful for the industry to understand the goals of this section, in particular.

For this section, we propose two sets of amendments to Chair Kia'āina's proposed amendments for the Committee's consideration.

Visual mitigation of antennas

We understand the goal of (c)(2)(A) and (c)(2)(B) to require the wireless industry to conceal or integrate antennas to achieve minimal visual impact to help preserve the island's beauty. Our industry stakeholders appreciate this goal and support it. However, we must respectfully oppose design standards that may not be necessary in all cases and does not allow for flexibility, especially in cases where the standards cannot be met and would either compromise wireless coverage or effectively prohibit a carrier from deploying a facility to certain areas.

Every communication support structure is different and the way each carrier may need to utilize a communication support structure will be dependent on coverage needs. Factors taken into consideration when identifying options for an installation include whether the structure can be utilized to meet the coverage objective, whether the landlord is willing, and whether the structure can host a telecommunications facility. At times, industry stakeholders may not have more than one option or any options at all. In cases where there are limited options, we are concerned that design standards that are too restrictive and do not allow for flexibility will make it extremely difficult or impossible to install wireless facilities in certain areas, which would impact wireless services.

The challenge we face with Bill 64 is drafting language that will both achieve the desired design standards while accounting for every possible situation that may occur. We do not think this is possible. Instead, we propose language that we feel captures the general goal of the design standards and offer to work with DPP on guidance to further specify what may be acceptable and what is unacceptable. We feel such guidance would be helpful for industry stakeholders as we apply for permits as well as for building permit reviewers.

We propose the following amendments to § 20-5.60-2(c)(2):

(2) Antennas ~~and other equipment~~ must be:

(A) ~~Must be c~~Concealed within the communication support structure or obscured to minimize visual impacts. ~~Integration with existing structures or with existing uses must~~ Acceptable concealment may be accomplished through the use of architecture, landscape, and site solutions~~. Acceptable concealment~~, includ~~es~~ing, but not limited to, screening antennas~~,~~ or flush-mounting to a wall and colored to match ~~painting or coloring antennas to match~~ abutting building materials, and integration with architectural features or elements of the structure such as alignment with corners or columns. ~~Paint color alone is not sufficient to minimize visual impacts if the antenna or equipment extends above the roofline, or if the antenna or equipment is installed against a building but there is no integration with abutting architectural features or elements, such as alignment with corners or columns.~~, or

(B) ~~When located on the roof of an existing communication support structure without architectural integration or concealment, antennas must be s~~Set back or located to minimize visual impacts, from ground level on public rights-of-way and public places.

(C) If the design standards in subsections (A) or (B) of this section create a condition that make it technologically infeasible for a telecommunications facility to operate, the Department may waive the design standard in whole or in part but only to the extent sufficient to allow the telecommunications facility to operate. As used herein, "technologically infeasible" means that the telecommunications facility is not able to provide the service that it was designed to provide and "operate" means the antenna is able to provide service in the desired coverage area. Examples of technologically infeasible design requirements include, but are not limited to, requiring an antenna to be screened or painted when the antenna is not able to transmit radio frequencies through screening materials or paint; requiring an antenna to be set back from the edge of a roof when the antenna must be close to or at the edge of the roof in order to operate; or, requiring painting or screening materials would cause any antennas or other equipment to overheat or otherwise compromise functionability.

We propose to focus this section on antennas, which seems to be the focus of the language. To include "other equipment" would be difficult and unnecessary. It would be difficult because, as noted in the definition section, telecommunication facilities can include a variety of equipment and it is not clear here what "other equipment" includes. The language is unnecessary because equipment often near antennas, like fiber optic cables and connection boxes, are not visible from a distance.

For consistency, we propose removing the word "integration." "Integration" is not otherwise used in the section.

We propose to strike the sentence that begins with "Paint color alone is not sufficient" because we are concerned that it is too restrictive. For this reason, we incorporated components of the language we propose striking into the list of acceptable examples. Flush-mounting is a commonly used term in wireless industry, which means placing an antenna and its mounting device close to a wall in an attempt to make it look as if it is part of the wall (i.e. building façade, elevator shaft, penthouse, etc.).

We also included language to make clear that the acceptable methods of concealment is not limited to what is written here to provide industry stakeholders and DPP the flexibility to agree on other methods of concealment that may accomplish the goals sought in this language.

We believe the intent of this section is to require concealment unless antennas are placed in such a way (i.e. set back from the roofline) to minimize visual impacts. To make it clear that antennas strategically placed to minimize visual impacts from ground level on public rights-of-way and public places is not also subject to concealment requirements, we proposed language to adjust the section to say that antennas must either adhere to requirements in (A) *or* in (B).

Finally, we propose the inclusion of language to account for situations where the design standards may not be met due to technological infeasibility.

Again, we sought to strike a balance between the goals of these standards and the flexibility needed by the wireless industry to effectively deploy telecommunications facilities where wireless coverage is needed. And, we would be glad to work with DPP on guidance to implement communication support structure design standards for industry stakeholders and permit reviewers, which we believe would be mutually beneficial.

<u>Exemption from industrial-zoned districts</u>

We also propose the following addition to §20-5.60-2(c)(2):

> *<u>(D) Antennas do not have to be concealed when in the industrial-zoned districts, unless the communication support structure is within 100 feet from the property line of any adjoining lot that is zoned residential, apartment, or apartment mixed-use.</u>*

We appreciate the flexibility provided to communication towers more than 100 feet from a lot that is zoned residential, apartment, or apartment mixed-use, and respectfully request this treatment to be applied to telecommunications facilities placed on communication support structures in the same areas.

There are times where property owners, who we enter into leases with, may impose their own aesthetic preferences as part of the lease negotiation. The intent of our proposed language is not to prohibit property owners from making such requests.

In closing, thank you again for the Committee's work and attention on the Communications section and all of Bill 64. We appreciate the opportunity to provide testimony and the Committee's consideration of our proposed amendments. We look forward to continuing to work with you as Bill 64 moves forward.

Sincerely,

AT&T
Crown Castle
Dish
T-Mobile
Verizon
CTIA
WIA

KO'OLAU WAIALUA ALLIANCE

May 22, 2024
Kahuku
Subject: Bill 64(23) PLANNING AND THE ECONOMY Meeting, May 23, 2024 at 9:00am

Dear Chair Kia'āina and Council Members,

The Ko'olau-Waialua Alliance supports the establishment of a minimum 1.25 mile setback or a 1:15 ratio, whichever is greater, for new **and renewing** large wind energy generation facilities. Existing large wind energy generation facilities (such as the ones in Kahuku, Oahu) that do not meet the setback requirements must be classified as **nonconforming** after the expiration of their lease or power purchase agreement.

When the Na Pua Makani project was being installed in Kahuku in 2019, more than 200 community members were arrested opposing its close proximity to schools and homes. We join with our community of Kahuku in asking that the amendments outlined by the Kahuku Community Association be incorporated into the Land Use Ordinance regarding height:distance ratios and/or setbacks and shadow flicker.

This measure is crucial for the community in Kahuku, Oahu, which is currently surrounded by 20 turbines and experiences cumulative impacts from audible noise, inaudible noise, shadow flickers that impact the safety, health, and quality of life of Kahuku residents. We also have to contend with safety concerns related to blade throw, tower collapse, fire, and health impacts. **We cannot allow existing projects to avoid compliance with the new setback.**

Thank you for your attention to this important matter.

Angela Huntemer
Ko'olau-Waialua Alliance

Sunset Beach Community Association
P.0. Box 471
Hale'iwa, Hawai'i 96712

Sunny Unga
President, Kahuku Community Association

March 21, 2024

Aloha President Unga,

The Sunset Beach Community Association (SBCA) is in full support of the Kahuku Community Association's (KCA) opposition to some of the language in Bill 064. Both community associations understand and support the need for clean energy, including wind farm facilities. Both support the 1.25 mile distance from residential or school areas. It is important, however, that there be balance between the needs of communities, their quality of life, and any form of clean energy. This balance should be present in the form of very clear language in law that would not permit any nonconforming wind farm facilities and huge turbines fewer than 1.25 miles from a residential area or school. .

The SBCA agrees with KCA that the installation of clean energy in the form of **all** large wind energy generation facilities be included in any law, ordinance, or policy. The SBCA is also in full agreement with KCA that any non-conforming language which would permit any large wind energy generation facility, such as the one that exists in Kahuku, is totally unjust. Kahuku residents and some Sunset Beach residents, along with students, particularly those who live in Kahuku, continue to suffer from the cumulative effects of the huge wind turbine facilities close to home and school. These large turbines should not be near any residential area or any school. Again, SBCA by unanimous vote of the membership, remains opposed to any allowance of non-conforming language that permits the large wind turbine facility in Kahuku, or anywhere else, to continue indefinitely.

Sincerely,

Lea E. Albert

Lea E. Albert
Sunset Beach Community Association
Corresponding Secretary

SIERRA CLUB
O‘AHU GROUP

HONOLULU CITY COUNCIL
Planning and the Economy Committee Hearing

Offering Comments on Bill 64 (2023)
RELATING TO THE LAND USE ORDINANCE
Thursday, May 23, 2024 9AM

Dear Chair Kia‘āina and Committee Members,

Sierra Club O’ahu Group is dedicated to justice and equity in the energy transition, and wish to **offer comments on Bill 64 (23).** We support the establishment of a minimum 1.25 mile setback or a 1:15 ratio whichever is greater for new and renewing large wind energy generation facilities. Existing large wind energy generation facilities (such as in Kahuku) that do not meet the setback requirements must be classified as **nonconforming** after the expiration of their lease or power purchase agreement. This is a matter of rectifying the sustained harms this project has placed on the community.

We align with Kahuku in advocating for the incorporation of their proposed amendments into the Land Use Ordinance, particularly concerning height: distance ratios, setbacks, and shadow flicker. Their firsthand experience with the cumulative adverse effects of industrial turbines, including safety hazards such as blade throw, tower collapse, fire, and health impacts from audible and inaudible noise, as well as shadow flickers, underscores the urgent need for action to safeguard the well-being and quality of life of Kahuku residents. Despite voicing these concerns for nearly a decade before the project's final installation, their voices were disregarded, culminating in over 200 community members being arrested during the Na Pua Makani project's installation in 2019.

We cannot allow existing projects to avoid compliance with the new setback. In past hearings on similar setbacks, the State Energy Office and Department of Planning and Permitting has supported a 1.25 mile setback for large wind turbine setbacks. The Sierra Club, O’ahu Group believes that there is a way to balance the urgency of the renewable energy transition with the fundamental importance of equity, including rectifying past harms, in the energy transition.

Mahalo for the opportunity to offer comments,
Sierra Club, O’ahu Group Executive Committee

EAST OAHU COUNTY FARM BUREAU
910 CALIFORNIA AVE., WAHIAWA, HI 96786

May 21, 2024

Councilmember Esther Kia'aina, Chair
Councilmember Radiant Cordero, Vice Chair
Committee on Planning and the Economy
Honolulu City Council
Honolulu, Hawai'i 96813-3077

Dear Chair Kia'aina, Vice Chair Cordero, and Members of the Committee,

The East O'ahu County Farm Bureau represents approximately 420 farmers and supporters of agriculture from Waimanalo to Kahuku. We stand by our testimony of April 30 regarding the public, civic, and institutional sections of Bill 64 (2023) FD1 as they may affect farming operations:

Section 21-5.30 (Table of Permitted Uses):

The proposed use table permits small meeting facilities as Cm*+ and medium meeting facilities as C*+ in AG-2 districts. We feel that these facilities are not appropriate uses on agricultural lands, as they would require that some of the land be taken out of production for purposes unrelated to agriculture. Normal agricultural practice may involve noise, dust, spraying of pesticides, and operation of heavy equipment – activities that may inconvenience or even endanger individuals meeting on the site. Further, most AG-2 lots are small, in keeping with the 2-acre minimum lot size for this zoning category. Under Bill 64, a small meeting facility could hold up to 100 people, and a medium facility up to 2,000. (A proposed amendment would limit this number to 500 on AG-2 lots, still a very large number for a small lot.) These facilities and the associated parking and sanitary structures are unlikely to fit on an AG-2 lot, especially when half the lot's arable surface must be dedicated to agricultural activities.

The same concerns apply to the permitted placement of K-12 schools as C*+ on AG-2 lots by Bill 64 FD1's use table. Even if a lot can be found that is large enough for such a school, conflicts will almost certainly arise between the agricultural use of the land and the presence of children, teachers, and staff. We therefore oppose allowing either meeting facilities or K-12 schools on AG-2 lots. **The new amendment proposed for your Committee's May 23 meeting that would change the school designation to pre-K-12 only increases our concern.** Pre-kindergarten children may not recognize pesticide warning signs, may not be visible among rows of crops, and may stray into the path of farm machinery. Even if no such disaster occurs, the presence of small children on or near growing or harvested crops could cause a farm to lose its food safety certification.

In contrast, Bill 64 FD1's use table would not permit the establishment of vocational schools on AG-1 and AG-2 lands. This prohibition could restrict valuable vocational programs like the University of Hawai'i's GoFarm program, which allows students to farm small plots, giving

them real-world experience in agricultural techniques. Programs like GoFarm are essential to develop a capable future agricultural workforce in Hawai'i. We therefore support amending the proposed use table to allow vocational schools on AG-1 and AG-2 lands, under the condition that the primary purpose of the school be agricultural education, and that all structures on the lot be in support of agricultural programs or of production agriculture.

Section 21-5.60-6 (Utility):

Item (2) (D) (ii) states that a solar energy generation facility is not considered a small utility if the zoning lot is within the State land use agricultural or conservation districts. So far as we can tell, Bill 64 FD1 does not define what such a facility in those districts actually is – just what it is not. This lack of clarity could cause problems for farmers who want to install small-scale solar systems to provide electricity for on-farm use. Such systems cannot fall under the category of "agricultural-energy facility," since the definition of an agricultural-energy facility specifically excludes solar facilities. Farmers, like homeowners, should be encouraged to install renewable energy to supply their needs. We therefore request that Bill 64 FD1 be amended to state specifically (whether in the utility section or in the agricultural section, or both) that the installation of small-scale solar facilities for exclusively on-farm use be permitted in AG-1 and AG-2 lots.

Thank you for the opportunity to testify on this important matter.

Sincerely,

Frederick M. Mencher

Frederick M. Mencher
for Grant Hamachi, President
East O'ahu County Farm Bureau

TESTIMONY BEFORE THE COMMITTEE ON PLANNING AND THE ECONOMY

COMMENTS ON PROPOSED AMENDMENTS IN COUNCIL COMMUNICATION 144, 145 AND 159 REGARDING PUBLIC, CIVIC, AND INSTITUTIONAL USES IN BILL 64 (2023), FD1

Thursday, May 23, 2024
9:00 A.M.
City Council Chamber

Greg Shimokawa
Director, Renewable Acquisition Division
Hawaiian Electric

Dear Chair Kia‘āina, Vice Chair Cordero, and Members of the Committee,

My name is Greg Shimokawa and I am submitting testimony on behalf of Hawaiian Electric **with comments** to proposed amendments in Council Communication 144, and 145, and 159 regarding Public, Civic, and Institutional Uses in Bill 64 (2023), FD1 (respectively, “CC-144,” “CC-145,” or “CC-159,” and collectively, the “Proposed Amendments to Bill 64”). While Bill 64 is proposing a myriad of changes to land use laws, Hawaiian Electric is only focused on the section that applies to existing wind energy generation facilities, as their current production of renewable energy is vital to the State’s decarbonization plans and Renewable Portfolio Standards (RPS) goal of 100% renewable energy by 2045. As the county with the largest population, peak demand for energy on ‘Oahu reaches about 1,100 MW, serving not only our local residents, but the demands of the military and our tourism industry.

Hawaiian Electric understands there are concerns regarding setbacks for wind energy generation facilities and is sensitive to concerns raised by the community.

Hawaiian Electric does not oppose operational limits on existing farms to address flicker, subject to further understanding on the limitation of output. However, Hawaiian Electric would like to point out that the Proposed Amendments to Bill 64 remove language that would have applied setback and buffer zone requirements only to newly constructed large wind energy generation facilities, and not to the repair, maintenance, or component replacement of any existing facility covered by a power purchase contract with an electric public utility during the term of the contract, including any renewal or extension thereof.

Hawaiian Electric understands that during the Committee's May 2, 2024 meeting, there was testimony indicating that the terms of an existing facility's Conditional Use Permit would determine if that facility, whether under an existing power purchase agreement (PPA) or a renewal or extension thereof, would be subject to these new requirements. Hawaiian Electric also understands that a re-powering or significant upgrade as part of a PPA renewal or extension would likely necessitate re-permitting. Accordingly, in the absence of language exempting existing facilities, it is likely that existing large wind energy generation facilities would be unable to continue operations.

Hawaiian Electric acknowledges that the Honolulu City Council is the appropriate policymaking body on this matter. Hawaiian Electric is therefore not advocating for a particular outcome, but would like to advise the Committee of possible consequences should existing large wind energy generation facilities be required to cease operations:

- With the absence of these resources, Hawai‘i may be unable to achieve its goal of 100% renewable energy by 2045.
- These existing facilities, which currently provide the only utility scale non-photovoltaic variable renewable generation on ‘Oahu, **would not** be able to participate in future procurements, reducing competition and increasing costs to customers via development of new facilities.

- Construction of new facilities would likely require significant additional resources, such as:
    - Approximately 123 MW of photovoltaic solar generation;
    - Additional land, estimated at approximately 5-10 acres per MW, and
    - New interconnection facilities to connect these new facilities to the Hawaiian Electric grid.
- Replacing wind with photovoltaic solar generation would reduce the resource diversity of Hawaiian Electric's renewable generation portfolio, with generation becoming more dependent on sunny weather.

The cessation of existing wind energy generation could thus result in an inability to meet Hawaii's renewable energy goals, additional costs to customers who will need to fund replacement projects that could potentially be more costly than maintaining projects and interconnection facilities that are already built, and increased uncertainty in electrical generation.

We sincerely appreciate the efforts of the Honolulu City Council and the Committee on Planning and the Economy in developing this bill and look forward to continuing our work together as the bill progresses.

Thank you for the opportunity to testify.

HAWAII STATE ENERGY OFFICE
STATE OF HAWAII

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARK B. GLICK
CHIEF ENERGY OFFICER

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Testimony of
MARK B. GLICK, Chief Energy Officer

before the
HONOLULU CITY COUNCIL
COMMITTEE ON PLANNING AND THE ECONOMY

Thursday, May 23, 2024
9:00 AM

Providing Comments on
BILL 64 (2023), FD1, CD1

RELATING TO USE REGULATIONS

Chair Kia‘āina, Vice Chair Cordero, and members of the Committee, the Hawai‘i State Energy Office (HSEO) offers comments on Bill 64 (2023), FD1, CD1, that repeals and replaces Revised Ordinances of Honolulu 2021 ("ROH") Chapter 21, Article 5, and amends related sections throughout the ROH.

HSEO’s comments today will be limited to large wind energy facilities. HSEO met with members of the Kahuku Community Association to discuss future actions. Their response was positive, appreciating efforts to address the issues. Given the likelihood of increasing turbine heights, it appeared desirable to establish a distance from country, residential, apartment, apartment mixed-use, or resort areas of 15 times the height of the facility.

The current ordinance (ROH § 21-5.700, Wind machines) requires a setback equal to the height of the turbine:

> (a) All horizontal-axis wind machines and ground-mounted vertical-axis wind machines must be set back from all property lines a minimum distance equal to the height of the system. Height includes the height of the tower or its vertical support structure and

> the farthest vertical extension of the wind machine.

The ordinance was in place prior to the construction of the three wind farms on O‘ahu’s north shore. Information on the wind farms is provided in the table below.

Wind Farms on O‘ahu

Details	Kahuku	Kawailoa	Na Pua Makani
Contract expiration (20 years)	3/22/2031	11/2/2032	12/11/2040
Number of Turbines	12	30	8
Wind Farm Energy Capacity (MW)	30	69	24
Height (feet)	453	493	568
Avg Electricity Price, Fiscal Year 2023	$0.2214/kWh	$0.2359/kWh	$0.1413/kWh
Energy production, Fiscal Year 2023	75,947 MWh	113,467 MWh	95,870 MWh
Source: https://puc.hawaii.gov/wp-content/uploads/2024/01/Final-PUC-Annual-Report-FY23-01.16.2024-v1.pdf			

Information describing the setback distance based on the current height of large wind energy facilities can be found in the table below.

Facility Height Multiplier Impact on Setback Distances

Setback distance is the height of the facility times the multiplier.

Note: There are 5280 feet in 1 mile.

	Height Multiplier				
	1	5	10	12	15
	Setback in feet				
Kahuku	453	2265	4530	5436	6795
Na Pua Makani	568	2840	5680	6816	8520
Kawailoa	493	2465	4930	5916	7395
	Setback in miles				
Kahuku	0.09	0.43	0.86	1.03	1.29
Na Pua Makani	0.11	0.54	1.08	1.29	1.61
Kawailoa	0.09	0.47	0.93	1.12	1.40

The largest setback HSEO found in current county zoning applies to waste processing facilities, with a required distance of one-half mile to the nearest residence or school. This would align with a 5X height multiplier. However, residents living near the wind farms have observed and communicated concerns about issues related to the proximity and location of the wind turbines relative to homes, schools, and other occupied buildings, chief among which are issues of shadow flicker and noise. These impacts could be reduced through siting and operational requirements in zoning

ordinances across the country, with examples compiled into databases by the National Renewable Energy Laboratory (NREL), https://data.openei.org/submissions/5733. Members of the Kahuku Community Association have requested a 15X height multiplier as the setback distance.

HSEO notes that there are different impacts associated with each form of energy production for which policies are devised to inform future development, with careful consideration of community input and commentary. HSEO also acknowledges that energy plans and strategies to meet renewable portfolio statutory requirements for O‘ahu, as well as other parts of the state, require a significant amount of additional renewable energy. Further, wind energy located onshore has demonstrated potential to cost-effectively deliver renewable resources to meet those policy objectives, and NREL has concluded that restrictive siting and zoning can significantly limit the potential for wind energy development (https://www.nrel.gov/news/program/2022/nrel-releases-comprehensive-databases-of-local-ordinances-for-siting-wind-solar-energy-projects.html).

On the other hand, given the island’s limited land availability, large wind energy facilities may pose undesirable impacts on neighboring residences and schools such as impacts to property values, as found by Lawrence Berkeley National Laboratory (https://emp.lbl.gov/publications/impact-wind-power-projects).

To further the state’s ability to produce renewable energy from large wind energy facilities, appropriate public policies that reduce and avoid negative impacts on neighboring residential areas and community facilities should be pursued. Accordingly, HSEO recommends establishing limitations and requirements that directly address the issues of shadow flicker and noise.

Shadow flicker may occur on a clear day, at sunrise or sunset, when the rotating blades of a wind turbine cast moving shadows on an occupied building. This can disrupt normal conditions, especially when three conditions occur simultaneously at sunrise or sunset:

1. Skies are clear, with strong shadows;
2. There is enough wind for the turbine blades to be rotating; and
3. The rotating shadows are cast on an occupied building.

The effect of shadow flicker on any specific building changes from day to day, as the location of sunrise and sunset change from north to south and back again over the course of the year. Also, it is possible for shadow flicker protection systems to sense conditions and calculate the location of the shadows. Several areas that regulate this issue impose a limit of no more than 30 hours of shadow flicker per year, with a daily maximum of 30 minutes. For occupied buildings, it is possible to use software tools like WindPro to generate accurate predictions of the expected shadow flicker impacts from nearby wind turbines. The project owner is responsible for conducting a shadow flicker analysis at the time of permitting and this analysis should consider the residences present at that time. Properties built within a setback after a large wind energy facility permit is issued, similar to “coming to the nuisance,” should not require any additional modeling or adjustments by the preexisting wind facility.

Regarding noise management, several locations cap noise levels between 40 – 45 dBA, or 5 – 10 dBA above ambient sound levels, whichever is lower. Similar to shadow flicker, software tools are available to enable data-driven modeling and objective decisions. The assumptions and configurations of model inputs can be validated by third parties to ensure that large wind energy facilities will operate within applicable flicker and noise limits, enabling enforcement by county officials.

Finally, existing facilities must be able to maintain the safety of their operations, and should be able to replace components as needed without jeopardizing an existing permit. We propose a de minimis threshold for conforming use that enables an existing large wind energy facility to continue with maintenance, repair and replacement needed for safe operations.

HSEO provides the attached language for the committee’s consideration which does a better job in protecting communities, in our opinion, than the current ordinance that stipulates the setback to be equal to the height of the turbine.

Thank you for the opportunity to testify.

Attachment to testimony: Recommended Language

Bill SECTION	3
ROH Section, Exhibit, or Figure, and Title	§ 21-5.60-6 Utility.
Page No.	39
Amendment Text (in Ramseyer Format)	Please see below

Proposed Revisions to Councilmember Kia‘āina’s Proposed Amendments:

Large wind energy generation facilities must be set back from all property lines a minimum distance equal to the height of the facility~~, measured from the highest vertical extension of the facility~~; and a minimum distance of 15 times the height of the facility~~1.25 miles~~ from the property lines of any zoning lot located in the country, residential, apartment, apartment mixed-use, or resort zoning districts.[~~; provided that the setback requirements in this paragraph only apply to new large wind energy generation facilities and do not apply to the repair, maintenance, or component replacement of any existing facility covered by a power purchase contract with an electric public utility during the term of the contract, including any renewal or extension thereof~~]. In addition, no part of the facility shall cause more than 30 hours per year or 10 minutes per day of shadow flicker on occupied residences; the distance to occupied buildings shall be greater than the wind generation equipment manufacturer safety limits; and facility noise levels shall not exceed 10 dBA above ambient sound levels at occupied residences during normal operation. To demonstrate conformity with noise and shadow flicker limits, software models such as WindPro or iNoise shall be used with site-specific data at the time of siting, such as weather, topography, and turbine operating characteristics, so that conformity can be readily verified by county officials prior to the issuance of the use permit. Height includes the height of the tower or its vertical support structure and the furthest vertical extension of the blade tip from the tower, and any component repair or replacement at an existing facility that does not increase the total height by more than 7% shall be considered a conforming use.

Additional Information

General:

- Report for Linn County by the University of Iowa. Includes discussions of multiple issues and siting factors, with diagrams. Z. Chen et al., “Linn County Wind Farm Siting Analysis.” https://iisc.uiowa.edu/sites/iisc.uiowa.edu/files/2022-09/final_report_-_linn_county_wind_farm_siting_analysis.pdf

Shadow flicker:

- Energy Research and Social Science, “In the shadow of wind energy; Predicting community exposure and annoyance to wind turbine shadow flicker in the United States.” https://www.sciencedirect.com/science/article/pii/S2214629621005582?via%3Dihub
- E Koppen et al., Conf. on Wind Turbine Noise Rotterdam (2017), 7th International Legislation and Regulations for Wind Turbine Shadow Flicker Impact. https://www.slideshare.net/ErikKoppen/wtn-2017-international-legislation-and-regulations-for-wind-turbine-shadow-flicker-impact
- World Bank Group, “Environmental, Health, and Safety Guidelines - Wind Energy.” https://documents1.worldbank.org/curated/en/498831479463882556/pdf/110346-WP-FINAL-Aug-2015-Wind-Energy-EHS-Guideline-PUBLIC.pdf

Noise:

- World Health Organization Europe, Environmental Noise Guidelines for the European Region: https://iris.who.int/bitstream/handle/10665/279952/9789289053563-eng.pdf?sequence=1
- National Association of Regulatory Utility Commissioners, Wind Energy & Wind Park Siting and Zoning Best Practices and Guidance for States: https://pubs.naruc.org/pub.cfm?id=539BA6EE-2354-D714-5157-359DDD67CE7F
- Lawrence Berkeley National Laboratory, Wind turbine audibility and noise annoyance in a national U.S. survey: https://eta-publications.lbl.gov/sites/default/files/haac_et_al._2019_wind_turbine_audibility_and_noise_annoyance_in_a_national_u.s._survey.pdf