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# A BILL FOR AN ACT

RELATING TO WIND ENERGY FACILITIES.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

- 1           SECTION 1. Section 205-4.5, Hawaii Revised Statutes, is  
2 amended by amending subsection (a) to read as follows:
- 3           "(a) Within the agricultural district, all lands with soil  
4 classified by the land study bureau's detailed land  
5 classification as overall (master) productivity rating class A  
6 or B and for solar energy facilities, class B or C, shall be  
7 restricted to the following permitted uses:
- 8           (1) Cultivation of crops, including crops for bioenergy,  
9           flowers, vegetables, foliage, fruits, forage, and  
10           timber;
- 11           (2) Game and fish propagation;
- 12           (3) Raising of livestock, including poultry, bees, fish,  
13           or other animal or aquatic life that are propagated  
14           for economic or personal use;
- 15           (4) Farm dwellings, employee housing, farm buildings, or  
16           activities or uses related to farming and animal  
17           husbandry [~~."Farm dwelling", as used in this~~



1 ~~paragraph, means a single family dwelling located on~~  
2 ~~and used in connection with a farm, including clusters~~  
3 ~~of single family farm dwellings permitted within~~  
4 ~~agricultural parks developed by the State, or where~~  
5 ~~agricultural activity provides income to the family~~  
6 ~~occupying the dwelling];~~

7 (5) Public institutions and buildings that are necessary  
8 for agricultural practices;

9 (6) Public and private open area types of recreational  
10 uses, including day camps, picnic grounds, parks, and  
11 riding stables, but not including dragstrips,  
12 airports, drive-in theaters, golf courses, golf  
13 driving ranges, country clubs, and overnight camps;

14 (7) Public, private, and quasi-public utility lines and  
15 roadways, transformer stations, communications  
16 equipment buildings, solid waste transfer stations,  
17 major water storage tanks, and appurtenant small  
18 buildings such as booster pumping stations, but not  
19 including offices or yards for equipment, material,  
20 vehicle storage, repair or maintenance, treatment



- 1 plants, corporation yards, or other similar  
2 structures;
- 3 (8) Retention, restoration, rehabilitation, or improvement  
4 of buildings or sites of historic or scenic interest;
- 5 (9) Agricultural-based commercial operations as described  
6 in section 205-2(d)(15);
- 7 (10) Buildings and uses, including mills, storage, and  
8 processing facilities, maintenance facilities,  
9 photovoltaic, biogas, and other small-scale renewable  
10 energy systems producing energy solely for use in the  
11 agricultural activities of the fee or leasehold owner  
12 of the property, and vehicle and equipment storage  
13 areas that are normally considered directly accessory  
14 to the above-mentioned uses and are permitted under  
15 section 205-2(d);
- 16 (11) Agricultural parks;
- 17 (12) Plantation community subdivisions, which as used in  
18 this chapter means an established subdivision or  
19 cluster of employee housing, community buildings, and  
20 agricultural support buildings on land currently or  
21 formerly owned, leased, or operated by a sugar or



1 pineapple plantation; provided that the existing  
2 structures may be used or rehabilitated for use, and  
3 new employee housing and agricultural support  
4 buildings may be allowed on land within the  
5 subdivision as follows:

6 (A) The employee housing is occupied by employees or  
7 former employees of the plantation who have a  
8 property interest in the land;

9 (B) The employee housing units not owned by their  
10 occupants shall be rented or leased at affordable  
11 rates for agricultural workers; or

12 (C) The agricultural support buildings shall be  
13 rented or leased to agricultural business  
14 operators or agricultural support services;

15 (13) Agricultural tourism conducted on a working farm, or a  
16 farming operation as defined in section 165-2, for the  
17 enjoyment, education, or involvement of visitors;  
18 provided that the agricultural tourism activity is  
19 accessory and secondary to the principal agricultural  
20 use and does not interfere with surrounding farm  
21 operations; and provided further that this paragraph



1 shall apply only to a county that has adopted  
2 ordinances regulating agricultural tourism under  
3 section 205-5;

4 (14) Agricultural tourism activities, including overnight  
5 accommodations of twenty-one days or less, for any one  
6 stay within a county; provided that this paragraph  
7 shall apply only to a county that includes at least  
8 three islands and has adopted ordinances regulating  
9 agricultural tourism activities pursuant to section  
10 205-5; provided further that the agricultural tourism  
11 activities coexist with a bona fide agricultural  
12 activity. For the purposes of this paragraph, "bona  
13 fide agricultural activity" means a farming operation  
14 as defined in section 165-2;

15 (15) Wind energy facilities, including the appurtenances  
16 associated with the production and transmission of  
17 wind generated energy; provided that the wind energy  
18 facilities and appurtenances are compatible with  
19 agriculture uses and cause minimal adverse impact on  
20 agricultural land; provided further that any wind  
21 energy facility that utilizes wind turbine generators



1           and that has the capacity to generate one megawatt or  
2           more shall be located no less than one foot for every  
3           foot of height of a wind turbine from the nearest farm  
4           dwelling or off-site residential dwelling unit in  
5           existence at the time of the application for necessary  
6           permits, measured from the center of the nearest wind  
7           turbine generator to the nearest exterior of the farm  
8           dwelling or residential dwelling unit;

9           (16) Biofuel processing facilities, including the  
10           appurtenances associated with the production and  
11           refining of biofuels that is normally considered  
12           directly accessory and secondary to the growing of the  
13           energy feedstock; provided that biofuel processing  
14           facilities and appurtenances do not adversely impact  
15           agricultural land and other agricultural uses in the  
16           vicinity.

17                   For the purposes of this paragraph:

18                   "Appurtenances" means operational infrastructure  
19                   of the appropriate type and scale for economic  
20                   commercial storage and distribution, and other similar



1 handling of feedstock, fuels, and other products of  
2 biofuel processing facilities.

3 "Biofuel processing facility" means a facility  
4 that produces liquid or gaseous fuels from organic  
5 sources such as biomass crops, agricultural residues,  
6 and oil crops, including palm, canola, soybean, and  
7 waste cooking oils; grease; food wastes; and animal  
8 residues and wastes that can be used to generate  
9 energy;

10 (17) Agricultural-energy facilities, including  
11 appurtenances necessary for an agricultural-energy  
12 enterprise; provided that the primary activity of the  
13 agricultural-energy enterprise is agricultural  
14 activity. To be considered the primary activity of an  
15 agricultural-energy enterprise, the total acreage  
16 devoted to agricultural activity shall be not less  
17 than ninety per cent of the total acreage of the  
18 agricultural-energy enterprise. The agricultural-  
19 energy facility shall be limited to lands owned,  
20 leased, licensed, or operated by the entity conducting  
21 the agricultural activity.



1           As used in this paragraph:

2           "Agricultural activity" means any activity  
3 described in paragraphs (1) to (3) of this subsection.

4           "Agricultural-energy enterprise" means an  
5 enterprise that integrally incorporates an  
6 agricultural activity with an agricultural-energy  
7 facility.

8           "Agricultural-energy facility" means a facility  
9 that generates, stores, or distributes renewable  
10 energy as defined in section 269-91 or renewable fuel  
11 including electrical or thermal energy or liquid or  
12 gaseous fuels from products of agricultural activities  
13 from agricultural lands located in the State.

14           "Appurtenances" means operational infrastructure  
15 of the appropriate type and scale for the economic  
16 commercial generation, storage, distribution, and  
17 other similar handling of energy, including equipment,  
18 feedstock, fuels, and other products of agricultural-  
19 energy facilities;

20       (18) Construction and operation of wireless communication  
21 antennas, including small wireless facilities;





1 provided that, for the purposes of this paragraph,  
2 "wireless communication antenna" means communications  
3 equipment that is either freestanding or placed upon  
4 or attached to an already existing structure and that  
5 transmits and receives electromagnetic radio signals  
6 used in the provision of all types of wireless  
7 communications services; provided further that "small  
8 wireless facilities" shall have the same meaning as in  
9 section 206N-2; provided further that nothing in this  
10 paragraph shall be construed to permit the  
11 construction of any new structure that is not deemed a  
12 permitted use under this subsection;

13 (19) Agricultural education programs conducted on a farming  
14 operation as defined in section 165-2, for the  
15 education and participation of the general public;  
16 provided that the agricultural education programs are  
17 accessory and secondary to the principal agricultural  
18 use of the parcels or lots on which the agricultural  
19 education programs are to occur and do not interfere  
20 with surrounding farm operations. For the purposes of  
21 this paragraph, "agricultural education programs"



1 means activities or events designed to promote  
2 knowledge and understanding of agricultural activities  
3 and practices conducted on a farming operation as  
4 defined in section 165-2;

5 (20) Solar energy facilities that do not occupy more than  
6 ten per cent of the acreage of the parcel, or twenty  
7 acres of land, whichever is lesser or for which a  
8 special use permit is granted pursuant to section  
9 205-6; provided that this use shall not be permitted  
10 on lands with soil classified by the land study  
11 bureau's detailed land classification as overall  
12 (master) productivity rating class A;

13 (21) Solar energy facilities on lands with soil classified  
14 by the land study bureau's detailed land  
15 classification as overall (master) productivity rating  
16 B or C for which a special use permit is granted  
17 pursuant to section 205-6; provided that:

18 (A) The area occupied by the solar energy facilities  
19 is also made available for compatible  
20 agricultural activities at a lease rate that is



1           at least fifty per cent below the fair market  
2           rent for comparable properties;

3           (B) Proof of financial security to decommission the  
4           facility is provided to the satisfaction of the  
5           appropriate county planning commission prior to  
6           date of commencement of commercial generation;  
7           and

8           (C) Solar energy facilities shall be decommissioned  
9           at the owner's expense according to the following  
10          requirements:

11          (i) Removal of all equipment related to the  
12          solar energy facility within twelve months  
13          of the conclusion of operation or useful  
14          life; and

15          (ii) Restoration of the disturbed earth to  
16          substantially the same physical condition as  
17          existed prior to the development of the  
18          solar energy facility.

19          For the purposes of this paragraph, "agricultural  
20          activities" means the activities described in  
21          paragraphs (1) to (3);

1 (22) Geothermal resources exploration and geothermal  
2 resources development, as defined under section 182-1;  
3 or

4 (23) Hydroelectric facilities, including the appurtenances  
5 associated with the production and transmission of  
6 hydroelectric energy, subject to section 205-2;  
7 provided that the hydroelectric facilities and their  
8 appurtenances:

9 (A) Shall consist of a small hydropower facility as  
10 defined by the United States Department of  
11 Energy, including:

12 (i) Impoundment facilities using a dam to store  
13 water in a reservoir;

14 (ii) A diversion or run-of-river facility that  
15 channels a portion of a river through a  
16 canal or channel; and

17 (iii) Pumped storage facilities that store energy  
18 by pumping water uphill to a reservoir at  
19 higher elevation from a reservoir at a lower  
20 elevation to be released to turn a turbine  
21 to generate electricity;



- 1 (B) Comply with the state water code, chapter 174C;
- 2 (C) Shall, if over five hundred kilowatts in
- 3 hydroelectric generating capacity, have the
- 4 approval of the commission on water resource
- 5 management, including a new instream flow
- 6 standard established for any new hydroelectric
- 7 facility; and
- 8 (D) Do not impact or impede the use of agricultural
- 9 land or the availability of surface or ground
- 10 water for all uses on all parcels that are served
- 11 by the ground water sources or streams for which
- 12 hydroelectric facilities are considered.

13 For the purposes of this subsection, "farm dwelling" means

14 a single-family dwelling located on and used in connection with

15 a farm, including clusters of single-family farm dwellings

16 permitted within agricultural parks developed by the State, or

17 where agricultural activity provides income to the family

18 occupying the dwelling."

19 SECTION 2. The University of Hawaii at Manoa John A. Burns

20 school of medicine shall conduct or contract for a study on the

21 effects of noise produced by wind energy facilities in Hawaii



1 that utilize wind turbine generators and that have the capacity  
2 to generate one megawatt or more on the health of residents and  
3 students. The study shall include but not be limited to:

4 (1) Measurements of noise levels associated with wind  
5 turbines currently operating in locations around  
6 Hawaii and under diverse conditions that include  
7 differing wind directions and velocities, varied  
8 atmospheric conditions, various distances, and  
9 different background sound levels; and

10 (2) Collection and examination of data from noise-exposed  
11 residents, including quantification of noise  
12 annoyance, sleep disturbance, and potential noise-  
13 related health issues, such as headache, vertigo,  
14 tinnitus, concentration, anxiety, and hearing loss.

15 The University of Hawaii at Manoa John A. Burns school of  
16 medicine shall submit a report of the study's findings and  
17 recommendations, including any proposed legislation, to the  
18 legislature no later than twenty days prior to the convening of  
19 the regular session of 2021.

20 SECTION 3. There is appropriated out of the general  
21 revenues of the State the sum of \$ or so much thereof



1 as may be necessary for fiscal year 2020-2021 to carry out the  
2 study set forth in section 2 of this Act.

3 The sum appropriated shall be expended by the University of  
4 Hawaii at Manoa John A. Burns school of medicine for the  
5 purposes of this Act.

6 SECTION 4. Statutory material to be repealed is bracketed  
7 and stricken. New statutory material is underscored.

8 SECTION 5. This Act shall take effect on July 1, 2050.



**Report Title:**

Wind Energy Facilities; Wind Turbines; Setback; Study; Health Effects; Appropriation

**Description:**

Establishes a setback of one foot for every foot of height of a wind turbine from the nearest existing farm dwelling or residential dwelling unit for certain wind energy facilities in agricultural districts. Requires a study on the effects of noise production by wind energy facilities on the health of residents and students. Appropriates funds. Effective 7/1/2050. (SD1)

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