

A Survey of Wind Siting Regulations

Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
Australia	Environment Protection and Heritage Council	2010	National Wind Farm Development Guidelines -Draft	Specific noise limits are not provided in the EPHC Guidelines because they are the responsibility of state and territory authorities. These limits should be set to protect the general noise amenity of noise-sensitive sites, and to prevent unreasonable annoyance or disturbance. Compliance with reasonable noise limits should provide for sufficient buffers between the wind farm and noise-sensitive sites, to ensure that the noise emissions are reasonable and that they are free of annoying noise characteristics (tonality, modulation and impulsiveness.) Given that certain noise characteristics are not addressed within AS 4959–2010 (Australian Standard, Acoustics Measurement), the Guidelines seek to either eliminate these at the design stage or to suggest methods for assessing whether these characteristics are present within the noise emission when received at a noise-sensitive site, with suggestions for noise reduction/mitigation. See Appendix B, pages 37-68.	http://www.scew.gov.au/sites/www.scew.gov.au/files/resources/8e446a1a-ab93-5f84-99d0-12d3422d2a23/files/draft-national-wind-farm-development-guidelines-july-2010.pdf	Noise	National Guidelines	0.5	N/A
CA	CA Legislature	7 Cal. Gov. Code Sec. 68593 et seq.	Wind Energy	Decibel levels for the WEC system shall not exceed the lesser of 60 decibels (dBA), or any existing maximum noise levels applied pursuant to the noise element of a general plan for the applicable zoning classification in a jurisdiction or applicable noise regulations, as measured at the nearest property line, except during short-term events, such as utility outages and severe windstorms. Counties may enact WEC ordinances, but standards may not be stricter than the state standards.	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=65893-65899	Noise	State statute		50 kw per customer site
CA	CA Legislature	7 Cal. Gov. Code Sec. 68593 et seq.	Wind Energy	Minimum setbacks for the system tower shall be no farther from the property line than the system height, unless a greater setback is needed to comply with applicable fire setback requirements set forth in Section 4290 of the Public Resources Code. The parcel where the system is located shall be at least one acre in size and located outside an urbanized area.	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=65893-65899	Setbacks	State Statute		50 kw per customer site
CA	Contra Costa County	County WECS Ordinance		Except as provided in subsection (b) of this section, a commercial WECS may not generate or emit any noise at any time that exceeds a maximum level of sixty-five decibels (dBA) , as measured at each line of the exterior project boundary.	http://library.municode.com/HTML/16286/level3/TIT8ZO_DIV88SPLAUS_CH88-3WIENCOSY.html#TIT8ZO_DIV88SPLAUS_CH88-3WIENCOSY_88-3.202SHTI	Noise	County Ordinance		
CA	Contra Costa County	County WECS Ordinance		Commercial WECs must be set back from each line of the exterior project boundary and from each public right of way by a distance of 3X the machine height or 500 feet, whichever is greater.	http://library.municode.com/HTML/16286/level3/TIT8ZO_DIV88SPLAUS_CH88-3WIENCOSY.html#TIT8ZO_DIV88SPLAUS_CH88-3WIENCOSY_88-3.202SHTI	Setbacks	County Ordinance		

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CA	El Dorado County	2010	WECS Ordinance	All WECS shall be subject to the Noise Standard under General Plan Policies 6.5.1.10 and 6.5.1.11. Measurement of sound levels shall not be adjusted for, or averaged with, non-operating periods.	http://www.edcgov.us/Government/Planning/Zoning_Ordinance_and_Maps.aspx	Noise	County Ordinance		
CA	El Dorado County		El Dorado County General Plan Policies	County Noise Level Performance Protection Standards for Noise- Sensitive Land Uses Affected by Non-Transportation Sources. Hourly Leq dB varies from 40-55 , depending on rural or community location, time of day. Max level dB varies from 55-70 depending on location and time of day. Levels may be lowered by 5 dB for low ambient, tone noises, recurring impulsive noises. In community areas std is measured at property line of receiving property. In rural areas, std is applied at a point 100 feet away from residence .	http://www.edcgov.us/Government/Planning/Adopted_General_Plan.aspx	Noise	County Ordinance		
CA	El Dorado County		WECS Ordinance	Required setback depends on turbine size. Greater than 1-10 kw is greater of tower height or zone standard , and minimum lot size is 1 acre . Greater than 100 kw is greater of tower height times three or 500 feet, and minimum lot size is 20 Acres per MW .	http://www.edcgov.us/Government/Planning/Zoning_Ordinance_and_Maps.aspx	Setbacks			
CO	Arapahoe County		Section 12-700 Small Wind Energy Conversion Systems	Wind energy conversion systems shall not create a detrimental effect on adjacent properties through electromagnetic interference (EMI) or noise (not to exceed maximum permissible noise levels at the property line as stated in CRS 25-12-103 for the respective zoned districts).	http://www.co.arapahoe.co.us/Departments/PW/Planning/Land%20Development%20Code/Section%2012-700%20Small%20Wind%20Energy%20Conversion%20Systems.pdf	Noise	County Ordinance		100 kw
CO	CO Legislature		Colorado Noise Statute CRS 25-12-103	Contains maximum permissible noise levels in four types of zoning districts, for periods 7 am to 7 pm and 7 pm to 7 am. Lowest is residential 7 pm to 7 am: 50 db(A) . Highest is industrial, 7 am to 7 pm: 80 db(A) . Sound levels of noise radiating from a property line at a distance of 25 feet or more therefrom in excess of the db(A) established for the time periods and zones shall constitute prima facie evidence that such noise is a public nuisance. A number of county/municipal wind ordinances reference this standard directly.	http://www.nonoise.org/lawlib/states/colorado/colorado.htm	Noise	State statute		
CO	Town of Nederland		Town Ordinance Number 680, Zoning for Wind Turbines	Sound level. A small wind turbine shall not exceed fifty decibels , except during short-term events such as severe wind storms and utility outages. Sound shall be measured in accordance with Code Section 10-264.	http://nederlandco.org/board-of-trustees/ordinances/	Noise	Town Ordinance		20 kw

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CO	Town of Nederland		Town Ordinance Number 693	<p>Sec. 10-265. Unnecessary, excessive or offensive sound.</p> <p>(1) Notwithstanding any other provision of this Article, and in addition thereto, it shall be unlawful for any person without justification to make, continue, cause to be made or continued, or assist another to make any unreasonable and/or excessive noise in a public place or near a private residence, which, under all of the circumstances presented, causes a person of ordinary sensitivities annoyance and irritation.</p> <p>(2) For the purposes of this Section, a determination as to whether noise is unreasonable and/or excessive shall be based upon all attendant circumstances, including but not limited to the following:</p> <p>(a) The volume of sound; (b) The intensity of the sound;</p> <p>(c) Whether the nature of the sound is usual or unusual;</p> <p>(d) Whether the origin of the sound is natural or unnatural;</p> <p>(e) The volume and intensity of the background sound</p> <p>(f) The proximity of the sound to residential sleeping facilities;</p> <p>(g) The nature and zoning of the area within which the sound emanates; (h) The density of the inhabitation of the area within which the sound emanates;</p> <p>(i) The time of the day or night the sound occurs; (j) The day of the week the sound occurs;</p> <p>(k) The time of the year the sound occurs (i.e. warm weather, when windows are open; during the school year for small children); (l) The duration of the sound; (m) Whether the sound is recurrent, intermittent or constant; (n) Whether the sound is produced by a commercial or on commercial activity; (o) Whether it is a pure tone sound; or (p) Whether it is an impulse sound.</p>	http://nederlandco.org/board-of-trustees/ordinances/	Noise	Town Ordinance		

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CT	Connecticut Siting Council	2013	Proposed CSC WIND REGULATIONS – Adoption of Regulations pursuant to Public Act 11-245 <i>(Note: Submitted to the legislature on 02/05/13, NOT yet approved.)</i>	The applicant must submit a Noise Evaluation Report that looks at projected maximum cumulative sound levels, as well as projected maximum levels of infrasonic sound, ultrasonic sound, impulsive noise and prominent discrete tones at property lines. The Report should also include mitigation measures. Noise levels generated by the operation of each of the proposed WEF and any alternative WEF at the proposed site and any alternative sites shall comply with the Department of Energy and Environmental Protection Noise Control Regulations under Sections 22a-69-1 to 22a-69-7, inclusive, of the Regulations of Connecticut State Agencies. These regulations divide the state into three types of noise zones (A, B, & C). In Zone C, which includes industrial uses, the maximum a source can emit to adjacent areas are: 70 dBA (to Zone C), 66 dBA (to Zone B), 61 dBA (to Zone A during the day), and 51 dBA (to Zone A at night). On the other end of the spectrum in Zone A, which includes residential uses, the maximum a source can emit to adjacent areas are: 62 dBA (to Zone C), 55 dBA (to Zone B), 55 dBA (to Zone A during the day), and 45 dBA (to Zone A at night). In those individual cases where the background noise levels caused by sources not subject to these Regulations exceed the standards contained herein, a source shall be considered to cause excessive noise if the noise emitted by such source exceeds the background noise level by 5 dBA . The regulations also state that no person shall emit beyond his/her property infrasonic or ultrasonic sound in excess of 100 dB at any time. See http://www.ct.gov/deep/lib/deep/regulations/22a/22a-69-1through7.pdf .	http://www.ct.gov/sc/lib/csc/pendingproceeds/regulations_wind/windregs_2013_0205_resubmittal.pdf	Noise	State Regulation (Proposed)	1	N/A
CT	Department of Energy and Environmental Protection	2013	Noise Control Regulations under Sections 22a-69-1 to 22a-69-7, inclusive, of the Regulations of Connecticut State Agencies	These regulations divide the state into three types of noise zones (A, B, & C). In Zone C, which includes industrial uses, the maximum a source can emit to adjacent areas are: 70 dBA (to Zone C), 66 dBA (to Zone B), 61 dBA (to Zone A during the day), and 51 dBA (to Zone A at night). On the other end of the spectrum in Zone A, which includes residential uses, the maximum a source can emit to adjacent areas are: 62 dBA (to Zone C), 55 dBA (to Zone B), 55 dBA (to Zone A during the day), and 45 dBA (to Zone A at night). In those individual cases where the background noise levels caused by sources not subject to these Regulations exceed the standards contained herein, a source shall be considered to cause excessive noise if the noise emitted by such source exceeds the background noise level by 5 dBA . The regulations also state that no person shall emit beyond his/her property infrasonic or ultrasonic sound in excess of 100 dB at any time.	http://www.ct.gov/deep/lib/deep/regulations/22a/22a-69-1through7.pdf	Noise	State Regulation	N/A	N/A

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CT	Connecticut Siting Council	2013	Proposed CSC WIND REGULATIONS – Adoption of Regulations pursuant to Public Act 11-245 (Note: Submitted to the legislature on 02/05/13, NOT yet approved.)	Every proposal has to submit an Abutting Properties Map that delineates the setback distances to all abutters. All proposals "shall include setback distances from each of the proposed wind turbine locations and any alternative wind turbine locations of not less than 1.5 times the wind turbine height from all property lines at the proposed site and any alternative sites or shall comply with the wind turbine manufacturer's recommended setback distances, whichever is greater....In its discretion, the Council may require greater setback distances based on the results of any evaluation report submitted under Section 16-50j-94 of the Regulations of Connecticut State Agencies." These minimum setback could be waived, either through a waiver with the abutter or through the Council's determination, but they would never be less than the manufacturers recommended setback distances.	http://www.ct.gov/sc/lib/csc/pendingproceeds/regulations_wind/windregs_2013_0205_resubmittal.pdf	Setbacks	State Regulation (Proposed)	1	N/A
Denmark	Danish Energy Agency, Department of Wind Energy	2013	Executive Order on a Technical Certification Scheme for Wind Turbines. Executive Order no. 73 of 25 January 2013.	Certification of wind turbines with a rotor area of more than 40m ² shall include a source noise measurement. A source noise measurement is also required for certification of wind turbines with a rotor area of more than 5 m ² and up to 40 m ² . Noise measurement is pursuant to the Ministry of Environment's noise regulations for wind turbines. For wind turbines that are assumed to operate with special noise reduction arrangements, the company that has been certified or approved to carry out maintenance and service on wind turbines, or the person that has been approved to carry out maintenance and service on a specific wind turbine, shall read and report to the turbine owner the noise setting of the wind turbine immediately upon each service visit.	http://www.wt-certification.dk/Commun/2013%2005%2007%20Teknisk%20bkg%20engelsk%20overs%C3%A6ttelse%20070513.pdf	Noise	National Regulation	5 m ² < rotor area; 40 m ² < rotor area	rotor area ≤ 40 m ² ; N/A

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Denmark	Danish Ministry of the Environment, Environmental Protection Agency.	2011	Statutory Order on Noise from Wind Turbines. Statutory Order no. 1284, 15 December 2011.	Noise-sensitive land use refers to areas that are actually used for or designated in district plans or town planning regulations for residential, institutional, holiday home, camping or allotment purposes, or areas designated in district plans or town planning regulations for noise-sensitive recreational activities. A noise impact area around test turbines is the largest extent of the area around test wind turbines where total noise level from wind turbines is higher than 37 dB(A) at 6 m/s and 39 dB(A) at 8 m/s , determined in accordance with guidelines set out in Statutory Order No. 1284 (see Annex 1, p. 5). Wind turbines must respect noise limits in accordance with the Statutory Order. The limits are 39 dB(A) (wind speeds of 8 m/s) and 37 dB(A) (wind speeds of 6 m/s) for dwellings, summer cottages, etc.; and, 44 dB(A) (wind speeds of 8 m/s) and 42 dB(A) (wind speeds of 6 m/s) for dwellings in open country. For both categories of areas the limit for low frequency noise is 20 dB(A) at a wind speed of 8 and 6 m/s indoors in dwellings in open countryside or indoors in areas with noise-sensitive land use, respectively. Noise impact is determined in accordance with the guidelines in Annex 1 of this order and is stated as the equivalent, corrected, A-weighted noise level at a height of 1.5 meters at wind speeds corrected to a height of 10 meters at 6 and 8 m/s respectively at a roughness length of 0.05 meters . Measurements of the source strength of wind turbines and of tone levels in the noise are carried out in accordance with the instructions in Annex 1 (at p. 5 of Statutory Order no. 1284). Measurements of wind turbines fitted with several generators must use the noise emission from the wind turbine operating with the noisiest generator as the basis for the noise measurement.	http://www.mst.dk/NR/rdonlyres/E8562E10-2B2D-4BF3-BAE0-A265C5A0B86E/0/engelsk_vindmoellebekendtgoerelse.pdf	Noise	National Regulation	N/A	N/A
Denmark	Danish Ministry of the Environment, Environmental Protection Agency.	2011	Statutory Order on Noise from Wind Turbines. Statutory Order no. 1284, 15 December 2011.	In areas which, according to municipal or district planning, have been reserved for the installation of several wind turbines or designated as wind farms (a cluster of three or more wind turbines), and where notification of individual wind turbines takes place consecutively, the municipal council may ensure that the total noise impact from all the wind turbines in the mentioned areas complies with the noise limits set out in the Statutory Order. To do so, the municipal council may set more restrictive requirements for the noise contributed by the individual wind turbine than the noise limits set out in the Statutory Order, Section 4 (that is, 39 dB(A), 37 dB(A), 44 dB(A), or 42 dB(A) , as appropriate).	http://www.mst.dk/NR/rdonlyres/E8562E10-2B2D-4BF3-BAE0-A265C5A0B86E/0/engelsk_vindmoellebekendtgoerelse.pdf	Noise	National Regulation	N/A	N/A

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Denmark	Danish Ministry of the Environment, Environmental Protection Agency.	2011	Statutory Order on Noise from Wind Turbines. Statutory Order no. 1284, 15 December 2011.	The municipal council may order the owner of a wind turbine at his own expense to carry out noise measurements and calculations (a) when a wind turbine has been put into operation; (b) in conjunction with general statutory supervision, but not more often than once a year; or (c) in conjunction with the processing of neighbors' complaints about noise when the municipal council considers this to be necessary. Low-frequency noise refers to noise in the frequency range from 10 to 160 Hz . Low-frequency noise is characterized by the A-weighted level of noise in one-third octave bands from 10 up to and including 160 Hz, calculated indoors using the method set out in Statutory Order no. 1284 (see Annex 1, p. 5).	http://www.mst.dk/NR/rdonlyres/E8562E10-2B2D-4BF3-BAE0-A265C5A0B86E/0/engelsk_vindmoellebek_endtgoerelse.pdf	Noise	National Regulation	N/A	N/A
Denmark	Danish Ministry of the Environment.	2013	Danish Environmental Protection Agency (EPA)	The minimum distance to a neighboring home is four times the turbine's total height . There are no exceptions to the distance requirement.	http://www.mst.dk/English/Noise/wind_turbine_noise/wind_turbine_regulations/	Setbacks	National Regulation	N/A	N/A
Germany	Master Resource		Wind Ordinance Debate	"Germany's noise-based setback ranges up to a full mile (1.6 km) ".	http://www.masterrsource.org/2012/01/wind-ordinance-offset-debate/	Noise			
Germany	National Wind Watch		European Setbacks	" Different setbacks apply according to the noise level protection of the area : - "quiet regions" [35 dB(A)]: 1,000-1,500 m (3,281-4,921 ft) - "middle regions" [(40 dB(A))]: 600-1,000 m (1,969-3,281 ft) - "standard region" [(45 dB(A))]: 300-600 m (984-1,969 ft)"	https://www.wind-watch.org/documents/european-setbacks-minimum-distance-between-wind-turbines-and-habitations/	Noise	Article		
IA	Mason City Iowa Zoning Ordinance Amendment	2006	Mason City Zoning for Wind Energy Conversion Systems (WECs)	A dispersed wind energy system shall be located a minimum of one thousand feet (1,000') from the nearest inhabited residential structure, school, hospital or place of worship not on property owned or controlled by the owner/operator of the dispersed wind energy system. This setback can be reduced by up to fifty percent (50%) , at the discretion of the zoning board of adjustment (based on demonstrated results from various required studies with respect to noise and shadow flicker).	http://www.ontario-sea.org/Storage/29/2081_Mason_City_Iowa_-_Zoning_for_Wind_Energy_Conversion_Systems.pdf	Setbacks	Municipal Zoning Ordinance	Small wind = N/A; Dispersed wind energy system > 0.1 MW	Small wind = 0.1 MW; Dispersed wind energy system = N/A

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IA	Mason City Iowa Zoning Ordinance Amendment	2006	Mason City Zoning for Wind Energy Conversion Systems (WECs)	The setback of a dispersed wind energy system can be reduced by up to 50% at zoning board of adjustment discretion upon, inter alia, positive demonstration that: A noise study, prepared by a qualified professional, demonstrates that except for intermittent episodes, the dispersed wind energy system shall not emit noise in excess of the limits established in Title 8, Chapter 6 of this Code. The noise study shall include: (a) A description and map of the project's noise producing features, including the range of noise levels expected, and the basis of the expectation. (b) A description and map of the noise sensitive environment, including any sensitive noise receptors , e.g. residences, hospitals, libraries, schools, places of worship, parks, areas with outdoor workers and other facilities where quiet is important or where noise could be a nuisance within one thousand feet (1,000'). (c) A survey and report prepared by a qualified engineer that analyzes the preexisting ambient noise (including seasonal variation) and the affected sensitive receptors located within one thousand feet (1,000'). (d) A description and map of the cumulative noise impacts of any problem areas identified. (e) A description of the project's proposed noise control features and specific measures proposed to mitigate noise impacts for sensitive receptors as identified above to a level of insignificance.	http://www.ontario-sea.org/Storage/29/2081_Mason_City_Iowa_-_Zoning_for_Wind_Energy_Conversion_Systems.pdf	Noise	Municipal Zoning Ordinance	Small wind = N/A; Dispersed wind energy system > 0.1 MW	Small wind = 0.1 MW; Dispersed wind energy system = N/A
IA	Mason City Iowa Zoning Ordinance Amendment	2006	Mason City Zoning for Wind Energy Conversion Systems (WECs)	Except during short-term events including utility outages and severe wind events, a WECs shall be designed, installed, and operated so that the noise generated does not exceed the maximum noise levels established in Title 8, chapter 6 of Mason City Iowa Zoning Code. The following are the maximum permissible sound levels allowed at or within the real property boundary of a receiving land use (receiving land use is defined as the use or occupancy of the property which receives the transmission of sound): <ol style="list-style-type: none"> 1. Residential Zone: 7 am – 10 pm has a 60 decibel sound limit. 2. Residential Zone: 10 pm – 7 am has a 50 decibel sound limit. 3. Commercial Zone: At all times has a 65 decibel sound limit. 4. Industrial Zone: At all times has a 75 decibel sound limit. 5. Noise Sensitive Area: At all times has a 55 decibel sound limit. 	http://www.ontario-sea.org/Storage/29/2081_Mason_City_Iowa_-_Zoning_for_Wind_Energy_Conversion_Systems.pdf	Noise	Municipal Zoning Ordinance	Small wind ≤ 0.1 MW; Dispersed wind energy system > 0.1 MW	Small wind = 0.1 MW; Dispersed wind energy system = N/A

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IA	Plymouth County Zoning Ordinance	2010	Plymouth County Zoning Ordinance (Part B: Commercial Wind Energy Conversion Systems)	(a.) Commercial WECS turbines shall be set back from any human occupied dwelling by 1200 feet or two times the total height of the WECS turbine, whichever distance is larger. (b.) Commercial WECS turbines shall be set back from any structure intended to shelter livestock or other animals by 500 feet or the height of the WECS turbine, whichever distance is larger. (c.) Commercial WECS turbines shall be set back from any public right-of-way or overhead utility easement by 115% of the height of the WECS turbine. (d.) Commercial WECS turbines shall not overhang any property line unless appropriate encroachment easements extending 115% of the height of the WESC turbine have been secured from the adjacent property owner. (e.) Commercial WECS turbines shall be set back 115% of the height of the WESC turbine from any property line or an easement granted by the owner of the adjacent property. (f.) Setback distances shall be measured from the center of the support structure for the WECS turbine to the closest point of the structure, right-of-way or utility easement or encroachment easement. (g.) The height of the WECS turbine shall be measured from the base of the support structure to the tip of turbine rotor at its highest position. (h.) Minimum separation between WECS turbines shall be determined based on common industry practice, the public interest and the impact upon the natural environment at the site.	http://www.co.plymouth.ia.us/Services/PDF/Plymouth%20County%20Zone.pdf	Setbacks	County Zoning Ordinance	N/A	N/A
IA	Small Wind Innovation Zone Program and Model Ordinance	2009	Model Ordinance, Small Wind Innovation Zone. Authority for zones derived from IA Code § 476.48; 199 IAC 15.22.	The base of the small wind energy system tower shall be set back from all property lines, public right of ways, and above ground public utility lines at a distance no less than 115% of the total extended height of the tower. Towers shall be allowed closer to a property line than its total extended height if the abutting property owner(s) grants written permission, provided that the tower installation complies with the other applicable setbacks herein provided. As long as the total extended height meets the setback requirements in this section, there shall be no specific height limitation, except as imposed by Federal Aviation Administration regulations.	http://www.iowacounties.org/News/Misc%20Recent/2010/Small%20Wind%20Innovation%20Zone%20Model%20Ordinance%20-%20Final%20Committee%20Version%20as%20of%203-04-2010	Setbacks	Model By-Law for Local Government	N/A	0.1
IA	Small Wind Innovation Zone Program and Model Ordinance	2009	Model Ordinance, Small Wind Innovation Zone. Authority for zones derived from IA Code § 476.48; 199 IAC 15.22.	Sound produced by the small wind energy system under normal operating conditions, as measured at the property line, shall: a) not produce sound at a level that would constitute a nuisance; b) shall comply with any local ordinance regulating the volume of sound as a nuisance, if applicable. Sound levels, however, may be exceeded during short-term events out of anyone’s control, such as utility outages and/or severe wind storms.	http://www.iowacounties.org/News/Misc%20Recent/2010/Small%20Wind%20Innovation%20Zone%20Model%20Ordinance%20-%20Final%20Committee%20Version%20as%20of%203-04-2010	Noise	Model By-Law for Local Government	N/A	0.1

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ID	Jefferson County: Wind Energy Ordinance	2008	Ordinance Number 08-09: Wind Energy Ordinance, Board of Jefferson County Commissioners, Jefferson County, ID	The tower shall be set back a minimum distance equal to its total height from: any public road right-of-way; any overhead utility lines ; all property lines .	http://www.co.jefferson.id.us/use_images/planning_zoning/WndmillOrd.pdf	Setbacks	County Zoning Ordinance	Small wind = N/A; Large wind energy system: tower hgt > 100'	Small wind: tower hgt ≤ 100'; Large wind energy system = N/A
IL	Coles County, IL	2008	An Ordinance Governing Wind Energy Conversion Systems in the Unincorporated Areas of Coles County, IL	(a) No WECS shall be constructed in any setback, dedicated public easement or dedicated public right-of-way without prior written authorization from the landowner, township and county. (b) Installation of any WECS may not be nearer than three hundred fifty (350) feet or 1.1 times the height of the WECS, whichever is greatest , to any property lines, dedicated roadway, railroad right-of-way or overhead electrical transmission or distribution lines. Distance shall be measured from the foundation at the base of the turbine. New structures built adjacent to wind power facilities shall maintain these same minimum setback requirements. Participating landowners within the area comprising the wind energy conversion system may waive property line setbacks with written approval from all landowners sharing such property line. (c) Except as provided herein the setback distance for turbines with a rated capacity of 1.0 MW or less shall be 1,000 feet or more from any existing or occupied residence and turbines with a greater rated capacity shall be set back 1,400 feet or more from any existing or occupied residence or from the boundary of any to which as of the date of approval of the WECS is in a platted subdivision and shall be setback from a property line 1.1 times the height of the turbine with the blade tip at its highest point . Distance shall be measured at the time of application for building permit from the foundation at the base of the turbine. A turbine with a capacity of 1.0 MW or less may be placed as near as 600 feet from an occupied residence with the prior written approval of the owner. The setback distance will be followed except in specific instances allowed by the County Board. (d) The setback distance for the turbines will be 1500 feet from any platted community which enforces its own government . Distance shall be measured from the foundation at the base of the turbine to the closest Corporate Limit boundary line which will include the 1.5 mile extraterritorial jurisdiction boundary in municipalities having zoning authority.	http://www.ilcounty.org/news/images/ColesCountyWindEnergyConservationSystemOrdinance.pdf	Setbacks	County Zoning Ordinance	> 0.1 MW, height ≥ 100'	N/A
IL	Coles County, IL	2008	An Ordinance Governing Wind Energy Conversion Systems in the Unincorporated Areas of Coles County, IL	Noise and vibration levels shall be in compliance with all County and Illinois Pollution Control agency (IPCA) regulations: < http://www.nonoise.org/lawlib/states/illinois/H901.htm >.	http://www.ilcounty.org/news/images/ColesCountyWindEnergyConservationSystemOrdinance.pdf	Noise	County Zoning Ordinance	> 0.1 MW, height ≥ 100'	N/A
IL	IL Pollution Control Board Noise Standards	2003	35 Illinois Administrative Code Chapter 1 Part 901	Projects in IL, including wind projects, must comply with noise standards of the IL Pollution Control Board.	http://www.nonoise.org/lawlib/states/illinois/H901.htm	Noise	State Regulation	N/A	N/A

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IL	Vermilion County, IL	2009	Vermilion County Wind Energy Structure Ordinance, Vermilion County, IL	Noise levels from either WECS or WECS Project shall be in compliance with applicable IPCB regulations. The applicant, through the use of a qualified professional, as part of the permit approval application process, shall appropriately demonstrate compliance with the above noise requirements.	http://www.co.vermilion.il.us/ctybrd/Wind%20Ordinance.pdf	Noise	County Zoning Ordinance	0.1	N/A
IL	Vermilion County, IL	2009	Vermilion County Wind Energy Structure Ordinance, Vermilion County, IL	All WECS towers shall be set back at least 1000' from any primary structure (the structure that one or more persons occupy the majority of time on that property for either business or personal reasons). The distance for the setback shall be measured from the point of the primary structure foundation closest to the WECS tower to the center of the WECS tower foundation. The owner of the primary structure may waive this setback requirement , but in no case shall a WECS tower be located closer to a primary structure than 1.10 times the WECS tower height .	http://www.co.vermilion.il.us/ctybrd/Wind%20Ordinance.pdf	Setbacks	County Zoning Ordinance	0.1	N/A
IN	Benton County	2006	Ordinance for Regulating Energy Generation Using Wind Power in Benton County, IN	Noise and vibration levels shall be in compliance with all County, State and Federal regulations.	http://www.in.gov/oe/d/files/Benton_County_Wind_Ordinance.pdf	Noise	County Zoning Ordinance	N/A	N/A
IN	Benton County	2006	Ordinance for Regulating Energy Generation Using Wind Power in Benton County, IN	(1) No WECS shall be constructed in any setback, dedicated public easement or dedicated public right-of-way without prior written authorization from the county. (2) Installation of any WECS may not be nearer than three hundred fifty (350) feet or 1.1 times the height of the WECS tower, whichever is greatest , to any property lines, dedicated roadway, railroad right-of-way or overhead electrical transmission or distribution lines. Distance shall be measured from the center of the foundation at the base of the tower. New structures built adjacent to wind power facilities shall maintain these same minimum setback requirements. Participating landowners within the area comprising the wind energy conversion system may waive property line setbacks with written approval from all landowners sharing such property line. (3) Except as provided herein the setback distance for turbines with a rated capacity of 1.0 MW or less shall be 1,000 feet or more from any existing or occupied residence and turbines with a greater rated capacity shall be set back 1,000 feet or more from any existing or occupied residence or from the boundary of any to which as of the date of approval of the WECS is in a platted subdivision and shall be setback from a property line 1.1 times the height of the turbine with the blade tip at its highest point . Distance shall be measured at the time of application for building permit from the center of the foundation at the base of the tower. A turbine with a capacity of 1.0 MW or less may be placed as near as 600 feet from an occupied residence with the prior written approval of the owner. The setback distance will be followed except in specific instances allowed by the County Board. (4) The setback distance for the WECS will be 1500 feet from any platted community under the zoning jurisdiction of a municipality . Distance shall be measured from the center of the foundation at the base of the WECS to the closest Corporate Limit boundary line.	http://www.in.gov/oe/d/files/Benton_County_Wind_Ordinance.pdf	Setbacks	County Zoning Ordinance	N/A	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
KS	Kansas Energy Council	2005	Wind Energy Siting Handbook: Guideline Options of Kansas Cities and Counties	There are no quantitative noise guidelines . Instead the guidelines advise developers to "consider whether there are adequate setbacks from residential areas and rural homes, especially where the residential unit is in a relatively less windy or quieter location than the turbines." Several of the counties have more specific noise guidelines. Butler County simply mandates that WEFs must comply with current noise standards of the county. Geary County requires that the noise level measured at the property line shall not exceed 55 decibels at any time ("A" or "C" weighted). Riley County requires the noise at the property boundary shall not exceed 65 decibels (A-weighted) or 50 decibels (C-weighted) if a pure tone noise is generated by the project. Wabaunsee's guidelines are more qualitative; Wabaunsee requires a noise report that describes any noise impacts and how they will be mitigated . There does not appear to be a state-wide noise standard.	http://kec.kansas.gov/reports/wind_siting_handbook.pdf	Noise	Guidelines	0	N/A
KS	Kansas Energy Council	2005	Wind Energy Siting Handbook: Guideline Options of Kansas Cities and Counties	Adequate setbacks" are suggested under the noise guidelines and "sufficient spacing from public access ways, and particularly for residential areas and structures" is mentioned under safety. There are no specific setbacks suggested in the guidelines. All four counties have specific setback requirements , not under noise, but under safety guidelines . Butler has a setback of 500 feet or the turbine height + 50 feet to public roads and 1000 feet from a residential structure , and the turbine height + 50 feet from a common agricultural/residential accessory structure . In Geary County, the setbacks are two times the turbine height from property lines and at least 1500 feet from residential structures . In Riley, the setbacks are 1.5 times the turbine height from property lines and public roads. In Wabaunsee the setbacks are 2 times the system height to property lines, and 1 time the system height plus 50 feet to public roads.	http://kec.kansas.gov/reports/wind_siting_handbook.pdf	Setbacks	Guidelines	0	N/A
KS	Kansas Renewable Energy Working Group Environmental and Siting Committee	2003	Siting Guidelines for Wind Projects in Kansas	There are no quantitative noise guidelines. Instead the guidelines advise developers to "consider whether there are adequate setbacks from residential areas and rural homes, especially where the residential unit is in a relatively less windy or quieter location than the turbines." The guidelines also advise developers to consider sound reduction technology on appropriate turbines in sensitive areas. There does not appear to be a state-wide noise standard .	http://www.kansarenewableenergy.org/documents/KREWGSitingGuidelines.pdf	Noise	Guidelines	0	N/A
KS	Kansas Renewable Energy Working Group Environmental and Siting Committee	2003	Siting Guidelines for Wind Projects in Kansas	The guidelines encourage developers to include the need for safety setbacks when evaluating specific parcels with the idea that sufficient spacing from public access ways, and particularly from residential areas and structures can mitigate many siting issues. The guidelines advise developers to "consider whether there are adequate setbacks from residential areas and rural homes, especially where the residential unit is in a relatively less windy or quieter location than the turbines."	http://www.kansarenewableenergy.org/documents/KREWGSitingGuidelines.pdf	Setbacks	Guidelines	0	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
MA	Boston Redevelopment Authority	2008	Article 88: Wind Energy Facilities	WEFs shall comply with the Boston Air Pollution Control Commission's Regulations for the Control of Noise in the City of Boston (see separate entry) or the Massachusetts Department of Environmental Protection's noise regulations, whichever is more stringent. An analysis prepared by a qualified engineer shall be presented to demonstrate compliance with these noise standards, if required by the Boston Redevelopment Authority.	http://www.bostonredevelopmentauthority.org/pdf/zoningcode/Revised%20Draft%20Wind%20Energy%20Facilities%20zoning%20article,%20Article%2088.pdf	Noise	Municipal Zoning Ordinance	0.1 -- Large WEF (Building Integrated not included in "Large WEF")	n/a
MA	Boston Redevelopment Authority	2008	Article 88: Wind Energy Facilities	Large wind turbines shall be set back a distance equal to 1.2 times the height of the wind turbine from all buildings, lot lines, and overhead utility lines. Buildings and structures included on the same lot as the proposed installation and owned by the Applicant are exempt from this requirement.	http://www.bostonredevelopmentauthority.org/pdf/zoningcode/Revised%20Draft%20Wind%20Energy%20Facilities%20zoning%20article,%20Article%2088.pdf	Setbacks	Municipal Zoning Ordinance	0.1 -- Large WEF (Building Integrated not included in "Large WEF")	n/a
MA	Cape Cod Commission	2004	Model Bylaw for Land-Based Wind Energy Conversion Facilities	The wind energy conversion facility and associated equipment shall conform with Massachusetts noise regulations (310 CMR 7.10) . An analysis, prepared by a qualified engineer, shall be presented to demonstrate compliance with these noise standards and be consistent with Massachusetts Department of Environmental Protection guidance for noise measurement.	http://www.capecodcommission.org/resources/bylaws/ModelWindBylaw.pdf	Noise	Model By-Law for Local Government		
MA	Cape Cod Commission	2004	Model Bylaw for Land-Based Wind Energy Conversion Facilities	WEF and associated equipment shall comply with the building setback provisions of the zoning district in which the facility is located. In addition , the following setbacks shall be observed: 1. The minimum distance from the base of any wind turbine tower to any property line, dwelling, business or institutional use shall be equal to the total height of structure to the highest point . 2. The setback or clear areas should be kept free of all habitable structures so long as the facility is in place; however, these areas need not be cleared of trees or other vegetation. Setbacks shall be measured from the outside surface at the base of the turbine tower. The SPGA may reduce the clear area as appropriate based on site specific considerations and if the project is consistent with the Special Permit granting criteria of the town.	http://www.capecodcommission.org/resources/bylaws/ModelWindBylaw.pdf	Setbacks	Model By-Law for Local Government		

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MA	City of Boston, Air Pollution Control Commission	?	Regulations for the Control of Noise in the City of Boston	<p>Maximum Allowable Octave Band Sound Pressure Levels (Residential*)</p> <table border="1"> <thead> <tr> <th>Octave Band Center (Hz)</th> <th>Daytime dBA**</th> <th>All Other Times dBA</th> </tr> </thead> <tbody> <tr><td>31.5</td><td>76</td><td>68</td></tr> <tr><td>63</td><td>75</td><td>67</td></tr> <tr><td>125</td><td>69</td><td>61</td></tr> <tr><td>250</td><td>62</td><td>52</td></tr> <tr><td>500</td><td>56</td><td>46</td></tr> <tr><td>1000</td><td>50</td><td>40</td></tr> <tr><td>2000</td><td>45</td><td>33</td></tr> <tr><td>4000</td><td>40</td><td>28</td></tr> <tr><td>8000</td><td>38</td><td>26</td></tr> <tr><td>Single Number Equivalent</td><td>60</td><td>50</td></tr> </tbody> </table> <p>* Measured at any lot line of any lot located in a Residential Zoning District **Daytime – 7:00 am to 6:00 pm daily, except Sunday</p>	Octave Band Center (Hz)	Daytime dBA**	All Other Times dBA	31.5	76	68	63	75	67	125	69	61	250	62	52	500	56	46	1000	50	40	2000	45	33	4000	40	28	8000	38	26	Single Number Equivalent	60	50	http://www.cityofboston.gov/Images_Documents/noise_reg_tcm3-13127.pdf	Noise	Municipal Zoning Ordinance		
Octave Band Center (Hz)	Daytime dBA**	All Other Times dBA																																								
31.5	76	68																																								
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500	56	46																																								
1000	50	40																																								
2000	45	33																																								
4000	40	28																																								
8000	38	26																																								
Single Number Equivalent	60	50																																								
MA	MA Association of Health Boards	1996	MAHB Model Noise Regulations	<p>Noise either 50 feet from a source or at the residential lot line shall not exceed 55 dBA daytime (7:00 am to 6:00 pm, M-F) and 50 dBA night-time. In addition: no daytime activities allowed that are likely to exceed normal background noise levels by more than 10 dBA; no nighttime activities allowed that are likely to exceed normal background noise levels by more than 5 dBA. Pure tone threshold penalty: 5 decibels. In high noise level area (i.e. 55 dBA residential), no person shall cause the noise level to increase by more than 3 decibels. Ambient sound levels shall be measured with the sound-level meter set for slow response. Impulsive noise shall be measured with sound-level meter set for fast response.</p>	http://www.mahb.org/bohregs/mahbnoise.htm	Noise	State Regulation	N/A	N/A																																	
MA	MA Department of Environmental Protection	1990	310 CMR 7.10	<p>A noise source will be considered to be violating the Department’s noise regulation (310 CMR 7.10) if the source: 1. increases the broadband sound level by more than 10 dB(A) above ambient, or 2. produces a “pure tone” condition – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more. These criteria are measured both at the property line and at the nearest inhabited residence. “Ambient” is defined as the background A-weighted sound level that is exceeded 90% of the time, measured during equipment operating hours. “Ambient” may also be established by other means with consent of the Department.</p>	http://www.mass.gov/dep/air/community/noiseefs.pdf	Noise	State Regulation	N/A	N/A																																	
MA	Mass DOER and Mass Executive Office of Environmental Affairs	2008	Model Amendment to a Zoning Ordinance or By-law: Allowing Wind Facilities by Special Permit	<p>WEFs cannot increase the broadband sound level by more than 10 dB(A) or create a pure tone condition of more than 3 dB(A) either at the property line or the nearest inhabited residence, based on the discretion of the special permit granting authority.</p>	http://www.mass.gov/envir/smart_growth_toolkit/bylaws/wind-by-permit.pdf	Noise	Model By-Law for Local Government	0.06	N/A																																	

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
MA	Mass DOER and Mass Executive Office of Environmental Affairs	2008	Model Amendment to a Zoning Ordinance or By-law: Allowing Wind Facilities by Special Permit	WEFs shall be set back at least 1.5 times the overall blade tip height of the wind turbine from the nearest existing residential or commercial structure and 100 feet from the nearest property line and private or public way. The special permit granting authority may reduce the minimum setback distance as appropriate based on site-specific considerations. Also, WEFs should not be more than 400 feet above the current grade without special consideration.	http://www.mass.gov/envir/smart_growth_toolkit/bylaws/wind-by-permit.pdf	Setbacks	Model By-Law for Local Government	0.06	N/A
MA	Town of Bourne, Board of Health	2012	Wind Energy Conversion System Regulations	WEC shall not exceed 6 dB(A) above ambient or a total value of 65 dB(A) at the closest property line; 40dB(A) night-time (7pm - 7am) cap value. Board may allow a greater cap value where applicant has proven no inhabitants will be adversely affected. Amplitude modulated noise shall not exceed 4 db(A) peak to trough at the closest property line (unless applicant has demonstrated to Board that no inhabitants will be adversely affected). Board may grant variance if applicant demonstrates that no nuisance will affect any property within radius of 3 times blade tip height .	http://www.townofbourne.com/LinkClick.aspx?fileticket=PKIEzfontE8%3D&tabid=129&mid=1380	Noise	Municipal Bylaw		
MA	Town of Bourne, Board of Health	2012	Wind Energy Conversion System Regulations	Acoustical Setback: minimum acoustical setback from any residentially used or zoned parcel should be at a distance of at least 10 times the rotor diameter; commercial: equal to (height + rotor diameter x 1.5) from any occupied structure , public or private road or regularly used public area	http://www.townofbourne.com/LinkClick.aspx?fileticket=PKIEzfontE8%3D&tabid=129&mid=1380	Setbacks	Municipal Bylaw		
MA	Town of Fairhaven	2013	Article 19 - Amendment to Zoning Bylaws (Wind Turbine)	WEF must conform to DEP Noise Regulations ; if BOH determines complaints to be reasonable, WEF owner shall be required to have an independent acoustical engineer study measure the sound levels and demonstrate compliance. Applicant shall conduct Operational Noise Analysis for first 90 days during which turbine can not be operated between 7pm and 7am unless a live attendant is present and conducting sound assessments. Two permanently mounted sound meters, with data loggers must be placed at the property line of two most impacted abutters.	http://fairhaven-ma.gov/pages/FairhavenMA_BOS/2013%20Warrant%20Booklet.pdf	Noise	Municipal Zoning Ordinance		660 kW
MA	Town of Fairhaven	2013	Article 19 - Amendment to Zoning Bylaws (Wind Turbine)	1.1 times blade tip height from principal structures, infrastructure (e.g. power lines, natural gas or distribution pipes); 4 times BTH from the nearest off-site residential or commercial structure or public way ; 1.5 BTH from the nearest non-participating property lines and private ways that are not part of the WEF ; waiver can be granted if all non-participating property owners within required setback areas provide affidavit supporting alternative setback, sound, shadow flicker impacts. Waiver to be recorded in Registry of Deeds.	http://fairhaven-ma.gov/pages/FairhavenMA_BOS/2013%20Warrant%20Booklet.pdf	Setbacks	Municipal Zoning Ordinance		660 kW

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
ME	ME State Planning Office	2010	ME State Planning Office Model [for Municipalities] Wind Energy Facility Ordinance	Wind Turbines shall be set back a horizontal distance equivalent to 150% of the Turbine Height from property boundaries, public and private rights-of-way and overhead utility lines that are not part of the proposed Generating Facility except that the entity responsible for review and approval of the application may allow a reduced setback if the Applicant submits, in writing: 1) a waiver of the property boundary setback signed by the pertinent abutting landowner or; 2) evidence, such as operating protocols, safety programs, or recommendations from the manufacturer or a licensed professional engineer with appropriate expertise and experience with Wind Turbines, that demonstrates that the reduced setback proposed by the Applicant is appropriate.	http://www.maine.gov/doc/commissioner/landuse/docs/draft_windenergyfacilityorguidebook_feb2010.pdf	Setbacks			
ME	Town of Dixfield	2012	Wind Energy Facility Ordinance for the Town of Dixfield	No WEF shall be located so as to generate postconstruction sound levels that exceed 42 dBA at night (8:30 p.m. to 6:00 a.m. or 55 dBA during the day (6:00 a.m to 8:30 p.m.) Property owners may waive these sound restrictions with a written Mitigation Waiver agreement. Starting within 12 months after the date when the WEF is operating, a postconstruction sound study shall be performed. Post-construction sound measurements shall be repeated every three (3) years throughout the life of the facility. The applicant may seek a waiver from the Town of all but the first post-construction measurements if no valid noise complaints are received during the previous 3 year period.	http://www.dixfield.org/assets/documents/2010/Windmillfacility%20ordinanceDixfieldTownvote-cmc-10-15-10.pdf	Noise	Municipal Zoning Ordinance	0.1	n/a

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ME	Town of Dixfield	2012	Wind Energy Facility Ordinance for the Town of Dixfield	All WEF shall be set back a horizontal distance of four thousand 4,000 feet from any occupied building except that the Board may allow a reduced set back if the Applicant submits in writing: 1) a waiver of the Occupied Building setback signed by the pertinent abutting landowner or; 2) evidence such as operating protocols, safety programs, or recommendations from the manufacturer or a licensed professional engineer with appropriate expertise demonstrating that the reduced set back proposed will not cause the WEF to violate any other approval standards of this Ordinance.	http://www.dixfield.org/assets/documents/2010/Windmillfacilities%20ordinanceDixfieldTownvote-cmc-10-15-10.pdf	Setbacks	Municipal Zoning Ordinance	0.1	n/a
ME	Town of Freedom	2012	Town of Freedom Maine Wind Turbine Ordinance	Audible noise levels (dB A) due to wind turbine operation shall not exceed either of the following two conditions: 1. The pre-construction ambient noise level by more than 5dBA as measured at any property line. Pre-construction ambient noise studies shall be conducted, by the applicant, for all properties located within 2 times the setback of proposed wind turbine site. 2. 40 dBA during the day or 35 dBA during the night. Low frequency noise (not defined) levels (dBC) due to wind turbine operation as measured inside an occupied building or at any property line will not exceed: (1) 20 decibels (measured as dBC) above the pre-construction ambient noise level or, (2) 50 dBC total. Very detailed noise measurements standards and procedures in Appendix A.	http://www.freedom.me.org/Ordins/Wind.pdf	Noise	Municipal Zoning Ordinance	0.01	n/a

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ME	Town of Freedom	2012	Town of Freedom Maine Wind Turbine Ordinance	Turbines shall be set back from the property line of any non-participating land owner a distance of no less than 13 times the turbine blade tip height Nonparticipating property owners may waive this setback with a written Mitigation Waiver; setback from public roads no less than 4 times blade tip height; 2500 foot setback required for "scenic or special resources of state or national significance"	http://www.freedomme.org/Ordins/Wind.pdf	Setbacks	Municipal Zoning Ordinance	0.01	n/a
ME	Town of Rumford	2011	Town Of Rumford Chapter 33-D Wind Energy	50 dB(A) daytime limit at the property line; 40 dB(A) nighttime (7:00 pm - 7:00 am) except for participating parcels subject to a mitigation waiver which specifies different sound limits.Post-construction Low Frequency Background sound level minus the Pre-construction low frequency sound level must be less than twenty (20) dB outside of any occupied structure property line.Post-construction low frequency sound level shall not exceed fifty (50) dBC, without contribution from other ambient sounds, for properties located one (1) mile or more away from state highways or other major roads, and it may not exceed fifty-five (55) dBC for properties closer than one (1) mile from a state highway or other major road.	http://www.rumfordmaine.net/download/s/Town%20of%20Rumford%20Wind%20Energy%20Facility%20Ord%20ADOPTED%2011%2008%202011.pdf	Noise	Municipal Zoning Ordinance	n/a	n/a
ME	Town of Rumford	2011	Town Of Rumford Chapter 33-D Wind Energy	Each turbine shall be set back at least 4,000 feet from the property line of any Non-Participating Parcel. Property owners may waive this setback with a written Mitigation Waiver agreement.. Turbines shall have a safety set back distance equivalent to one hundred-fifty per cent (150%) of the turbine height from public and private rights-of-way, and any above-ground electric power line or telephone line that are not part of the proposed generating facility except that a lesser setback shall be permitted if the utility agrees, in writing, and this agreement is approved by the Planning Board. All trubines must be set back a minimum of 3,000 feet from any Scenic or Special Resource	http://www.rumfordmaine.net/download/s/Town%20of%20Rumford%20Wind%20Energy%20Facility%20Ord%20ADOPTED%2011%2008%202011.pdf	Setbacks	Municipal Zoning Ordinance	n/a	n/a

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
MI	Energy Office, Dept. of Labor and Economic Growth	2005	Siting Guidelines for Wind Energy Systems	For On Site Use, WEFs shall not exceed 55 dB(A) except for short-term events at the property line closest to the WEF, without the written consent of the property owner. If ambient sound pressure exceeds 55 dB(A), the standard shall be ambient dB(A) plus 5 dB(A). Utility Grid Wind Energy Systems have a similar requirement, but their requirement spells out that sound pressure cannot exceed 55 dB(A) for more than 3 minutes in any hour of the day. Also, after the project is installed, operator must hire a third party to do verification measurements. Modeling and analysis shall conform to IEC 61400 and ISO 9613. After installation of the Utility Grid wind energy system, sound pressure level measurements shall be done by a third party , qualified professional according to the procedures in the most current version of ANSI S12.18 . All sound pressure levels shall be measured with a sound meter that meets or exceeds the most current version of ANSI S1.4 specifications for a Type II sound meter.	http://www.ewashtenaw.org/government/departments/planning/environment/planning/wind_power/Michigan%20Siting%20Guidelines%20for%20Wind%20Energy%20Systems	Noise	Model By-Law for Local Government	0.002	N/A
MI	Energy Office, Dept. of Labor and Economic Growth	2005	Siting Guidelines for Wind Energy Systems	For On Site Use, the WEF must be at least 1.5 times from the height of the blade to the nearest property line without written consent from the property owner. For Utility Grid Wind Energy Systems, the setback is only 1 times the height of the blade. Exceptions with the written consent of the property owner are still possible.	http://www.ewashtenaw.org/government/departments/planning/environment/planning/wind_power/Michigan%20Siting%20Guidelines%20for%20Wind%20Energy%20Systems	Setbacks	Model By-Law for Local Government	0.002	N/A
MN	Minnesota Public Utilities Commission	2009	Chapter 7854 Public Utilities Commission Site Permit; Large Wind Energy System	An applicant for a site permit shall include with the application an analysis of the potential impacts of the project, proposed mitigative measures, and any adverse environmental effects that cannot be avoided for noise.	https://www.revisor.mn.gov/rules/?id=7854&format=pdf	Noise	State Regulation	5	N/A
MN	Minnesota Public Utilities Commission	2009	Chapter 7854 Public Utilities Commission Site Permit; Large Wind Energy System	The PUC rules do not appear to mention set backs although Minnesota Statue Chapter 216F mandates that the PUC create property set back regulations.	https://www.revisor.mn.gov/rules/?id=7854&format=pdf	Setbacks	State Regulation	5	N/A
MN	Minnesota Public Utilities Commission	2008	Order Establishing General Wind Permit Standards	The project must meet Minnesota Noise Standards , Minnesota Rules Chapter 7030, at all residential receivers (homes). Minnesota classifies land into three noise area classifications (NAC 1, 2, and 3). The residential noise standard for NAC 1, L50 60 dBA during the day and L₅₀ 50 dBA during overnight hours. Setback distance is calculated based on site layout and turbine for each residential receiver. Bret Eknes of the MN PUC states that applicants have more recently been proposing setbacks of 1,000 ft. or greater for residences in their applications (by email 2/28/13).	http://mn.gov/commerce/energyfacilities/documents/19302/PUOrder%20Standards%20and%20Setbacks.pdf	Noise	Model By-Law for Local Government	5	25

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MN	Minnesota Public Utilities Commission	2008	Order Establishing General Wind Permit Standards	The wind turbine towers of the WEF shall not be placed less than 5 rotor diameters (RD) from all boundaries of developer's site control area on the predominant wind axis (usually north-south) and 3 RDs on the secondary wind access diameter. For a 300 foot RD, this would mean 1500 feet and 900 feet. The same setback requirements apply for internal turbine spacing. WEFs must be 500 feet from homes and a sufficient distance to meet state noise standards (Bret Eknes says permittees have been submitting projects at least 1,000 feet from homes recently). WEFs must also be 250 feet from the edge of public road rights-of-way. WEFs cannot be built in native prairie or wetlands, but there are no setback requirements.	http://mn.gov/commerce/energyfacilities/documents/19302/PUc%20Order%20Standards%20and%20Setbacks.pdf	Setbacks	Model By-Law for Local Government	5	25
MO	City of Gladstone	2009	Code of Ordinances: Zoning and Planning Ordinance: Chapter 167: Small Wind Energy Conversion System--Allowed use.	There is no state-wide noise regulations in Missouri. Under the Gladstone zoning ordinance, large/utility scale projects (>100 kW) must have a qualified professional prepare a noise study that demonstrates that the WEF shall not produce noise in excess of 55dBA at the property lines. The noise study must include a description and map of the noise sensitive environment, including any noise sensitive receptors within 1000 feet. The study must also include a description of the project's proposed noise control features. Small WEFs (<100 kW) do not require any noise study, but sound produced by the turbine under normal operating conditions, as measured at the property line, shall not exceed the definition of nuisance noise. The Gladstone noise ordinance does not include specific dBA thresholds, but lists certain types of activities that are prohibited at certain times.	http://library.municode.com/index.aspx?clientId=13447	Noise	Municipal Zoning Ordinance	N/A	N/A
MO	City of Gladstone	2009	Code of Ordinances: Zoning and Planning Ordinance: Chapter 167: Small Wind Energy Conversion System--Allowed use.	Small WEFs (<100 kW) are permitted in all zoning districts if they meet a series of requirements, including that that the base of the tower shall be set back from all property lines, structures, public right-of-ways, and public utility lines a distance equal to the total extended height, not to exceed two times the maximum allowable height restrictions in all zoning districts. Only one wind turbine shall be allowed per lot in either a residential or commercially zoned property. For roof mounted turbines, the maximum height shall be equal to half the height of the building be utilized for support and the minimum setback shall be equal to twice the height of the tower from all property lines and any buildings. Projects greater than 100 kW must apply for a special permit, so while no setback is specified, presumably setback would be an important consideration.	http://library.municode.com/index.aspx?clientId=13447	Setbacks	Municipal Zoning Ordinance	N/A	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
ND	North Dakota Public Service Commission	2013 (Note: PSC Siting regulations updated in 2013 with regards to wind)	Energy Conversion and Transmission Facility Siting	A WEF site must not include an area where the operation of the facility would cause sound levels within 100 feet of an inhabited residence or community building to exceed 50 dBA. This requirement can be waived in writing by the owner of the occupied residence or community building.	http://www.legis.nd.gov/information/acd/ata/html/69-06.html	Noise	State Regulation	0.5	N/A
ND	North Dakota Public Service Commission	2013 (Note: PSC Siting regulations updated in 2013 with regards to wind)	Energy Conversion and Transmission Facility Siting	No energy facilities can be built within 1200 feet of an intercontinental ballistic missile launch or launch control facility. All kinds of energy conversion facilities should avoid the hundred-year flood plain. Additional exclusion areas for wind are as follows: 1.1 times the turbine height from an interstate or state roadway ROW, 1.1 plus 75 feet from the centerline of a county or township road. 1.1 times the turbine height from a railroad ROW, 1.1 times the turbine height from a transmission line at least 115 kV, and 1.1 times the height of the turbine from a nonparticipating owner (with a variance possible if the landowner agrees).	http://www.legis.nd.gov/information/acd/ata/html/69-06.html	Setbacks	State Regulation	0.5	N/A
NE	The Nebraska Wind and Wildlife Working Group	2011	Guidelines for Wind Energy and Wildlife Resource Management in Nebraska	Noise is only mentioned in one sentence at the end of the guideline as another issue to be considered working with the Nebraska Department of Environmental Quality and others. There does not appear to be a state-wide noise standard.	http://outdoornebraska.ne.gov/wildlife/pdfs/newwguidelines.pdf	Noise	Guidelines	0	N/A
NE	The Nebraska Wind and Wildlife Working Group	2011	Guidelines for Wind Energy and Wildlife Resource Management in Nebraska	These guidelines focus on setbacks from habitat. For bird and bat concentration areas or migration pathways, the guidelines suggest a separation distance of at least one mile. The guidelines suggest placing turbines at least three miles away from know leks (courtship display areas) of prairie grouse. A one mile buffer is recommended around all state owned and managed wildlife and recreation properties.	http://outdoornebraska.ne.gov/wildlife/pdfs/newwguidelines.pdf	Setbacks	Guidelines	0	N/A
NH	Wind Energy Facility Siting Guidelines Working Group	2007	Proposed Wind Power Siting Guidelines	Noise regulation falls with jurisdiction of municipalities, however SECs rules require that applications address the issue of noise. However, the issue of noise and wind facilities is technically complex and involves considerable uncertainty at present. There was no consensus with Working Group on how to resolve this issue.	http://www.nhsec.nh.gov/documents/siting_guidelines.pdf	Noise		30	N/A
NH	Wind Energy Facility Siting Guidelines Working Group	2007	Proposed Wind Power Siting Guidelines	No specific provisions related to setbacks	http://www.nhsec.nh.gov/documents/siting_guidelines.pdf	Setbacks		30	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
NM	NM Department of Game and Fish	2012	Conservation Habitat Handbook	In consultation with NM DGF, buffer distances of turbines from raptor nests to avoid disturbance. Establish setback distance of wind turbine developments from riparian zones to prevent degradation of aquatic habitat. Use NRCS Revised Universal Soil Loss Equation or similar to determine setback distance from water bodies, including intermittent and ephemeral streams.	http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/WindEnergyGuidelines.htm	Setbacks	State Recommendation	300	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
NY	New York State Dept of Env'l Conservation	2001	Assessing and Mitigating Noise Impacts		http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf	Noise	Guidelines	N/A	N/A
NY	New York State Energy and Research Development Authority	2009	Wind Energy Toolkit	For both NYSDEC & NYSERDA: The goal for any permitted operation should be to minimize increases in sound pressure levels above ambient level at the chosen point of sound reception. 0 -3 dB should have no appreciable effect on receptors. 3 - 6 dB may have potential for adverse noise impact only where the most sensitive receptors are present; more than 6 dB may require a closer analysis of impact potential depending on existing SPLs and surrounding land use and receptors. 10 dB deserves consideration of avoidance and mitigation in most cases. In non-industrial settings the SPL should probably not exceed ambient noise by more than 6dB(A) at the receptor. Any additional noise source should not raise ambient noise above a maximum of 65dB(A) [Town of Westfield chose 50 dBA	Wind Energy Toolkit - NYSERDA	Noise	Guidelines	N/A	N/A
NY	Town of Cape Vincent	2012	Town of Cape Vincent Zoning Law	The equivalent noise level (LEQ) generated by a noise source (including a wind turbine) shall not exceed the following limits when measured at the property line: Leq 45 dB(A) 7 am - 7 pm; 40 dB(A) 7pm - 10 pm; 35 dB(A) 10 pm - 7 am.	http://townofcapevincent.org/docs/download/101-final-town-of-cape-vincent-zoning-law-august-1-2012.html	Noise	Municipal Zoning Ordinance	0.05	1.6

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
NY	Town of Cape Vincent	2012	Town of Cape Vincent Zoning Law	6 times blade tip height setback from adjacent property line; road or residence; 1.25 mile setback from any school and other "exclusion map" areas.	http://townofcapevincent.org/docs/download/101-final-town-of-cape-vincent-zoning-law-august-1-2012.html	Setbacks	Municipal Zoning Ordinance	0.05	1.6
OH	Power Siting Board		Ohio Revised Code 4906-20	Minimum 750 feet laterally from closest blade tip to exterior of residential structures located on adjacent property at the time of the application. Also, turbines must be located at least 1.1 times its total height, to top of blade, from the wind facility's property line. SCOPE: These rules only apply to a wind farm exceeding 5 MW.	http://codes.ohio.gov/orc/4906.20	Setbacks	State Regulation		
OH	Ohio Power Siting Board	2009	Chapter 4906-17: Application Filing Requirements for Wind-Powered Electric Generation Facilities	The applicant shall describe the construction noise levels expected at the nearest property boundary. The description shall address: dynamiting activities, operation of earth moving equipment, driving of piles, erection of structures, truck traffic, and installation of equipment. The applicant shall also, for each turbine, evaluate and describe the operational noise levels expected at the property boundary closest to that turbine, under both day and nighttime conditions. Evaluate and describe the cumulative operational noise levels for the wind facility at each property boundary for each property adjacent to the project area, under both day and nighttime operations. The applicant shall use generally accepted computer modeling software (developed for wind turbine noise measurement) or similar wind turbine noise methodology, including consideration of broadband, tonal, and low-frequency noise levels. Additionally, the applicant shall indicate the location of any noise-sensitive areas within one mile of the proposed facility. Finally, the applicant shall describe equipment and procedures to mitigate the effects of noise emissions from the proposed facility during construction and operation.	http://codes.ohio.gov/oac/4906-17	Noise	State Regulation	5	N/A
OK				None		Noise			

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
Ontario	Ministry of the Environment, Province of Ontario	2008	Noise Guidelines for Wind Farms	In 2008, the Ontario Ministry of the Environment developed noise regulations for wind farms with 2 MW. Proposed projects must build a noise model. The guidelines distinguish three noise zones (1-urban hum, 2-urban hum with quiet hours, and 3-rural area with acoustical environment dominated by natural sounds). Sound level limits vary based on wind speed. For class 3 zones, the sound level limit at the point of reception is 40 dBA up to 6 m/s wind speed and 51 dBA at 10 m/s wind speed. For class 1 and 2 zones, sound level limit is 45 dBA up to 6 m/s and 51 dBA at 10 m/s. If there is noise from a transformer substation, the proponent must add 5 dBA to the values predicted by the noise model, to account for the tonal characteristic of Transformer Substation Noise. Ontario also has a set of guidelines for doing field measurement on WEF noise	http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079435.pdf	Noise	Province Regulation	2	N/A
Ontario	Ministry of the Environment, Province of Ontario	2008	Compliance Protocol for Wind Turbine Noise: Guideline for Acoustic Assessment and Measurement	The guidelines for measurements outline protocols for qualitative screening; short-term attended acoustic measurements and/or acoustic recording; and detailed acoustic measurements.	http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_088931.pdf	Noise	Guidelines		

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
Ontario	Ministry of the Environment, Province of Ontario	2009	Development of Noise Setbacks for Wind Farms	In 2009, the Ontario Ministry of the Environment developed conservative setback requirements for land based wind power projects without transformer substation noise, in a noise class 3 (quietest zone) area. These setbacks were intended to facilitate the planning and review process of such projects while protecting human health and the environment. Wind turbines were classified based on the values of the Sound Power Level corresponding to 95% rated power output at 102, 104, 105, and 107 dBA. Three scenarios were considered: 5, 10, or 25 wind turbines. For a group of 5 102 dBA wind turbines, the minimum setback from the receptor location (center of dwelling) to the closest wind turbine is 550 meters(1800 feet). For a group of 25 107 dBA wind turbines the minimum setback is 1500 meters (4900 feet)	http://www.ene.gov.on.ca/stdprodconsu@resources/documents/resource/stdprod_080767.pdf	Setbacks	Province Regulation	0.05	N/A
Ontario	Ministry of the Environment, Province of Ontario	2009, amended in 2012	Guideline for Acoustic Assessment and Measurement	Building off of the Noise Guidelines for Wind Farms (2008) and the Development of Noise Setbacks for Wind Farms (2009), the siting guidelines for renewable energy incorporated minimum setbacks in order to be protective of noise. The setbacks were adopted from the Development of Noise Setbacks for Wind Farms (2009) document. Wind turbines were classified based on the values of the Sound Power Level corresponding to 95% rated power output at 102, 104, 105, and 107 dBA. Three scenarios were considered: 5, 10, or 25 wind turbines. For a group of 5 102 dBA wind turbines, the minimum setback from the receptor location (center of dwelling) to the closest wind turbine is 550 meters (1800 feet). For a group of 25 107 dBA wind turbines the minimum setback is 1500 meters (4900 feet). As an alternate compliance path, projects may choose to conduct a report prepared in accordance with the "Noise Guidelines for Wind Farms" (2008).	http://www.e-laws.gov.on.ca/html/reg/english/elaws_regs_090359_e.htm	Setbacks	Province Regulation		

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
OR	Energy Facility Siting Council	2012 (need to confirm)	Division 22 (General Standard for Siting Facilities) & Division 24 (Specific Standards for Siting Facilities)	There are no specific noise regulations in either Division 22 or 24 (wind specific regulation) of the siting regulation, but other state noise regulations are applicable. In order to comply with Oregon's noise standard from the Oregon Department of Environmental Quality, a development cannot increase the median background sound level by more than 10 dBA. The assumed background level is L ₅₀ 26 dBA, unless the developer measures a higher background noise. A wind turbine facility cannot increase outdoor hourly L ₅₀ levels at a receptor by more than 10 dBA (or above 36 dBA given the standard assumption). However, landowners have the option to waive this standard. In these cases, the wind energy facility can increase L ₅₀ level up to the maximum allowable noise levels for general industrial and commercial noise sources in Oregon: daytime (L ₅₀ of 55 dBA, L ₁₀ of 60 dBA, L ₁ of 75 dBA) and nighttime (L ₅₀ of 50 dBA, L ₁₀ of 55 dBA, L ₁ of 60 dBA). For noise levels generated by a new wind energy facility, or a new wind energy facility on a previously unused site, including wind turbines of any size and any associated equipment or machinery, see Division 35 (DEQ) 340-035-0035.	http://cms.oregon.gov.com/energy/Siting/Pages/rules.aspx	Noise	State Regulation	35	N/A
OR	Energy Facility Siting Council	2012 (need to confirm)	Division 22 (General Standard for Siting Facilities) & Division 24 (Specific Standards for Siting Facilities)	There are no specific setback regulations in either Division 22 or 24 (wind specific regulations). All energy facilities must meet the state's land use planning goals and cannot be built in protected areas, but there are no specific setback requirements.	http://cms.oregon.gov.com/energy/Siting/Pages/rules.aspx	Setbacks	State Regulation	35	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
OR	Oregon Environmental Quality Commission (EQC)	2013	Division 35: Noise Control Regulations for Industry and Commerce 340-035-0035 (Here: 1st half, WEF regs.)	(I) Increase in ambient statistical noise levels based on assumed background L50 ambient noise level of 26 dBA or actual ambient background level. Owner of the wind energy facility may conduct measurements to determine actual ambient L10 & L50 background level. (II) "Actual ambient background level" is measured noise level at the appropriate measurement point as specified in subsection (3)(b) of this rule using generally accepted noise engineering measurement practices. Background noise measurements shall be obtained at appropriate measurement point, synchronized with wind speed measurements of hub hgt conditions at nearest wind turbine location. "Actual ambient background level" does not include noise generated or caused by the wind energy facility. (III) Noise levels from a wind energy facility may increase ambient statistical noise levels L10 & L50 by more than 10 dBA if owner of the noise sensitive property executes legally effective easement or real covenant that benefits property on which wind energy facility is located. (IV) For purposes of determining whether a proposed wind energy facility wld satisfy the ambient noise standard where a landowner has not waived the standard, noise levels at appropriate measurement point are predicted assuming that all of the proposed wind facility's turbines are operating between cut-in speed and the wind speed corresponding to the max sound power level established by IEC 61400-11 (version 2002-12). Predictions must be compared to highest of either the assumed ambient noise level of 26 dBA or to actual ambient background L10 & L50 noise level, if measured. Facility complies with the noise ambient background standard if this comparison shows that the increase in noise is not more than 10 dBA over this entire range of wind speeds.	http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_035.html	Noise	State Regulation	35	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
OR	Oregon Environmental Quality Commission (EQC)	2013	Division 35: Noise Control Regulations for Industry and Commerce 340-035-0035 (Here: 2nd half, WEF regs.)	(V) For purposes of determining whether an operating wind energy facility complies with the ambient noise standard where a landowner has not waived the standard, noise levels at the appropriate measurement point are measured when the facility's nearest wind turbine is operating over the entire range of wind speeds between cut-in speed and the wind speed corresponding to the max sound power level and no turbine that could contribute to the noise level is disabled. The facility complies with the noise ambient background standard if the increase in noise over either the assumed ambient noise level of 26 dBA or to the actual ambient background L10 and L50 noise level, if measured, is not more than 10 dBA over this entire range of wind speeds. (VI) For purposes of determining whether a proposed wind energy facility would satisfy the Table 8 standards, noise levels at the appropriate measurement point are predicted by using the turbine's maximum sound power level following procedures established by IEC 61400-11 (version 2002-12), and assuming that all of the proposed wind facility's turbines are operating at the maximum sound power level. (VII) For purposes of determining whether an operating wind energy facility satisfies the Table 8 standards, noise generated by the energy facility is measured at the appropriate measurement point when the facility's nearest wind turbine is operating at the wind speed corresponding to the maximum sound power level and no turbine that could contribute to the noise level is disabled.	http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_035.html	Noise	State Regulation	35	N/A
OR	Oregon Health Authority	2012	Strategic Health Impact Assessment, Wind Energy Development in OR	Recommendations: (1) During the planning phase, consider site-specific factors that may influence sound propagation and perceived loudness of wind turbine sound, particularly factors that may influence actual or perceived sound levels at night. Continue to evaluate scientific evidence on how local conditions could change the propagation and character of wind turbine sound (e.g., effects of wind shear on amplitude modulation and sound generation at night). (2) The level of annoyance or disturbance experienced by those hearing wind turbine sound is influenced by individuals' perceptions of other aspects of wind energy facilities, such as turbine visibility, visual impacts, trust, fairness and equity, and the level of community engagement during the planning process. By explicitly and aggressively addressing these and other community concerns as part of the wind facility siting process, developer and planners may reduce the health impact from noise produced by wind turbines. (3) Ensure that residents living near wind energy facilities understand the potential risks and benefits associated with a development and are aware (and able) to report health issues and concerns if they choose.	http://public.health.oregon.gov/HealthyEnvironments/TrackingAssessment/HealthImpactAssessment/Documents/Oregon%20Wind%20Energy%20HIA%20Public%20Comment.pdf	Noise	Guidelines	N/A	N/A

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
PA	Game Commission	2007	Wind Energy Voluntary Cooperation Agreement	Not applicable to the Game Commission's voluntary agreement.	http://www.portal.state.pa.us/portal/server.pt?open=514&objid=613068&mode=2	Noise	Voluntary Agreement	0	N/A
PA	Game Commission	2007	Wind Energy Voluntary Cooperation Agreement	Not applicable	http://www.portal.state.pa.us/portal/server.pt?open=514&objid=613068&mode=2	Setbacks	Voluntary Agreement	0	N/A
PA	work group of state, local, and private entities	2006	Model Ordinance for Wind Energy Facilities in PA	Audible sound from a WEFs cannot exceed 55 dBA at the exterior of any occupied building on a non-participating landowner's property. The municipality may grant a partial waiver.	http://www.pennfuture.org/UserFiles/ModelWindOrdinance_Final3_21_06.pdf	Noise	Model By-Law for Local Government	0.001	N/A
PA	work group of state, local, and private entities	2006	Model Ordinance for Wind Energy Facilities in PA	Setbacks can either be based on local zoning or else the model ordinance suggests 1.1 times the turbine height from the nearest occupied building, at least 5 times the hub height (not counting the blade) from the nearest non-participating occupied building, at least 1.1 times the turbine height from the nearest property line, and at least 1.1 times the turbine height from the nearest right-of-way. Waivers are possible, and the governing body may take into consideration the support or opposition of adjacent property owners in granting waivers of setback requirements.	http://www.pennfuture.org/UserFiles/ModelWindOrdinance_Final3_21_06.pdf	Setbacks	Model By-Law for Local Government	0.001	N/A
RI	Dept. of Admin., Div. of Planning,		Renewable Energy Siting Guidelines Part 1: Interim Siting Factors for Terrestrial Wind Energy System	Noise limits set for turbines should not exceed noise limits already in existing municipal ordinances. Acoustic study required: maximum of 5 dBA above ambient , calculated for both daytime and night time. If an absolute standard used , must vary based on existing land use and noise ordinances; i.e., higher standard in industrial areas, lower in residential or rural areas. Setbacks for noise are not recommended because they do not take individual site conditions into account. Manufacturers technical specifications should be used to determine noise propagation. Recommends that noise standards be in conformance with Community Noise Guidelines developed by WHO and ISO (and existing municipal standards) Consider and implement penalties for low-frequency noise, amplitude modulation or pure tones.	http://seagrant.gso.uri.edu/resp/pdfs/resp_volume_3.pdf	Noise			

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
RI	Dept. of Admin., Div. of Planning,		Renewable Energy Siting Guidelines Part 1: Interim Siting Factors for Terrestrial Wind Energy System	WEF shall be set back at least 2.0x the turbine height from residential property boundaries; 1.5x turbine height from all other property boundaries; 1.25x to 1.5x turbine height from all public roads and rights of ways. Municipalities may approve reduced setbacks if the applicant requests a waiver and submits a notarized letter signed by the affected abutting landowner(s) and 3rd property owner and other written evidence such as operating protocols, safety programs, manufacturer and engineering recommendations.	http://seagrant.gso.uri.edu/resp/pdfs/resp_volume_3.pdf	Setbacks			
Scotland	The Scottish Ministers, Energy Consents Unit	2013	House of Commons Library, Consents for Wind farms Onshore (SN/SC/5221)	Minimum separation between a wind turbine and housing is 2 km.	http://www.parliament.uk/briefing-papers/SN05221	Setbacks	National Regulation	N/A	N/A
Scotland	The Scottish Ministers, Energy Consents Unit	2013	House of Commons Library, Consents for Wind farms Onshore (SN/SC/5221)	A separation distance of up to 2km between areas of search and the edge of cities, towns and villages is recommended to guide developments to the most appropriate sites and to reduce visual impact, but decisions on individual developments should take into account specific local circumstances and geography. Development plans should recognize that the existence of these constraints on wind farm development does not impose a blanket restriction on development, and should be clear on the extent of constraints and the factors that should be satisfactorily addressed to enable development to take place. Planning authorities should not impose additional zones of protection around areas designated for their landscape or natural heritage value.	http://www.parliament.uk/briefing-papers/SN05221	Setbacks	National Regulation	N/A	N/A
SD	South Dakota Public Utilities Commission	2008	Draft Model Ordinance for Siting Wind Energy Systems	Noise level produced by the LWES shall not exceed 55 dBA, average A-weighted sound pressure at the perimeter of occupied residences existing at the time the permit application is filed, unless a signed waiver or easement is obtained from the owner of the residence.	http://www.puc.sd.gov/commission/twg/WindEnergyOrdinance.pdf	Noise	Model By-Law for County Government	> 75 foot tower	
SD	South Dakota Public Utilities Commission	2008	Draft Model Ordinance for Siting Wind Energy Systems	Facilities shall not exceed fifty-five (55) dBA , as measured at the closest neighboring inhabited dwelling. The level, however, may be exceeded during short-term events such as utility outages or wind storms.	http://www.puc.sd.gov/commission/twg/WindEnergyOrdinance.pdf	Noise	Model By-Law for County Government	<75 foot tower	

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Location	Entity	Year	Document Title	Description	URL	Category	Type of Document	Scale of WEF: Minimum (MW)	Scale of WEF: Maximum (MW)
SD	South Dakota Public Utilities Commission	2008	Draft Model Ordinance for Siting Wind Energy Systems	Large wind energy systems (towers greater than 75 feet) shall meet the following minimum spacing requirements. (a) Distance from currently occupied off-site residences, business and public buildings shall be not less than one thousand (1,000) feet. Distance from the residence of the landowner on whose property the tower(s) are erected shall be not less than five hundred (500) feet or one point one (1.1) times the system height, whichever is greater. For the purposes of this section only, the term "business" does not include agricultural uses. (b) Distance from right-of-way (ROW) of public roads shall be not less than five hundred (500) feet or one point one (1.1) times the system height, whichever is greater. (c) Distance from any property line shall be not less than five hundred (500) feet or one point one (1.1) times the system height, whichever is greater, unless appropriate easement has been obtained from adjoining property owner.	http://www.puc.sd.gov/commission/twg/WindEnergyOrdinance.pdf	Setbacks	Model By-Law for County Government	> 75 foot tower	
SD	South Dakota Public Utilities Commission	2008	Draft Model Ordinance for Siting Wind Energy Systems	For small wind energy systems (< 75 foot tower), the minimum setback distance between each wind turbine tower and all surrounding property lines, overhead utility or transmission lines, other wind turbine towers, electrical substations, public roads and dwellings shall be equal to no less than one point one (1.1) times the system height, unless written permission is granted by each affected person.	http://www.puc.sd.gov/commission/twg/WindEnergyOrdinance.pdf	Setbacks	Model By-Law for County Government	<75 foot tower	
TX UK	Department of Trade and Industry	1996	ETSU-R-97 The Assessment and Rating of Noise from Wind Turbines	None During night hours (11 pm - 7 am on all days, the wind farm noise emission level shall not exceed 43 dB LA90, 10 min or a noise limit based on the measured LA90, 10 min background noise level plus 5 dBA, whichever is greater; at all other times, the wind farm emission level shall not exceed a level between 35 - 40 dB LA90, 10 min or the ETSU-R-97 derived "quiet waking hours" noise limit based on a the measured LA90, 10 min background noise level plus 5 dBA, whichever is greater.	http://www.nieuweru.stnoisewatch.org/wp-content/documents/ETSU-R-97_summary.pdf	Noise Noise	Advisory Panel Guidance	N/A	N/A
WA	Department of Ecology	1994	Maximum Environmental Noise Levels	Residential Receptor property boundary: 55 dBA (Res. Noise); 57 dBA (Commercial Noise B); 60 dBA (Industrial Noise) Between the hours of 10 p.m. and 7:00 a.m. the limitations (that is, noise levels allowed) are reduced by 10 dBA	Chapter 173-60 WAC: MAXIMUM ENVIRONMENTAL NOISE LEVELS	Noise	State Regulations	N/A	N/A

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WI	Public Service Commission		Wisconsin Administrative Code Chapter PSC 128 - Wind Energy Systems	Noise attributable to wind energy system cannot exceed 50 dBA during daytime hours (6am-10pm) and 45 dBA during nighttime hours (10pm-6am) at the nearest outside wall of a nonparticipating residence or occupied community building. In the event audible noise due to wind energy system operations contains a steady pure tone, the owner shall promptly take corrective action to permanently eliminate the noise. An owner of a nonparticipating residence or occupied community building may waive noise limit requirements.	http://docs.legis.wisconsin.gov/code/admincode/psc/128.pdf	Noise																							
WI	Public Service Commission		Wisconsin Administrative Code Chapter PSC 128 - Wind Energy Systems	Setback distance is 1.0 times the maximum blade tip height for the following: Occupied Community Buildings, Nonparticipating Residences, Nonparticipating Property Lines, Overhead Communication and Electric Transmission or Distribution Lines - Not including utility service lines to individual houses or outbuildings. There is no required setback distance for the following: Participating Residences [residence located on a "Participating property" defined as either: A turbine host property OR Property where the owner is compensated monetarily and has signed a waiver of requirement or right], Participating Property Lines, Public Right-of-Way, Overhead Utility Service Lines - Lines to individual houses or outbuildings. Waivers are possible.	http://docs.legis.wisconsin.gov/code/admincode/psc/128.pdf	Setbacks																							
WY				None		Noise																							
	ISO	1999	ISO 1996-1971 Recommendations for Community Noise Limits	The International Standards Organization (ISO) recommends setting a base limit of 35– 40 dB(A) and adjusting the limit by district type and time of day. <table border="1"> <thead> <tr> <th>District</th> <th>Day Limit</th> <th>Eve Limit (7-11pm)</th> <th>Night Limit (11pm-7am)</th> </tr> </thead> <tbody> <tr> <td>Rural</td> <td>40dB(A)</td> <td>35 dB(A)</td> <td>25 dB(A)</td> </tr> <tr> <td>Suburban</td> <td>40dB(A)</td> <td>35 dB(A)</td> <td>30 dB(A)</td> </tr> <tr> <td>Urban residential</td> <td>45 dB(A)</td> <td>40 dB(A)</td> <td>35 dB(A)</td> </tr> <tr> <td>Urban mixed</td> <td>50 dB(A)</td> <td>45 dB(A)</td> <td>40 dB(A)</td> </tr> </tbody> </table>	District	Day Limit	Eve Limit (7-11pm)	Night Limit (11pm-7am)	Rural	40dB(A)	35 dB(A)	25 dB(A)	Suburban	40dB(A)	35 dB(A)	30 dB(A)	Urban residential	45 dB(A)	40 dB(A)	35 dB(A)	Urban mixed	50 dB(A)	45 dB(A)	40 dB(A)	http://www.cohoctonfree.com/articles/Addressing%20Wind%20Turbine%20Noise%20-%20Alberts.pdf	Noise	International Standard		
District	Day Limit	Eve Limit (7-11pm)	Night Limit (11pm-7am)																										
Rural	40dB(A)	35 dB(A)	25 dB(A)																										
Suburban	40dB(A)	35 dB(A)	30 dB(A)																										
Urban residential	45 dB(A)	40 dB(A)	35 dB(A)																										
Urban mixed	50 dB(A)	45 dB(A)	40 dB(A)																										