

This a courtesy translation of the noise relevant sections for wind turbines from the Dutch Environmental Control Law as from 1-1-2011. A word of caution: the noise regulation for wind turbines is embedded in a large legislative framework which applies to almost all industrial facilities. The general sections that apply to all industrial facilities are not translated but may be relevant in some cases. The basic philosophy is that industrial facilities can established without prior - environmental -consent, but have to respect the general rules. Normal land use permits and building regulations apply however. Although considerable effort has been put into producing a faithful translation, the author declines any responsibility for errors or interpretations.

Decision on Environmental protection demands for facilities.

Chapter 1 General

Section 1.1 Definitions, scope and general rules

§ 1.1.1 Definitions

Article 1.1

1. This decision and the ensuing provisions shall apply:

operating time correction: correction as defined in the Manual measuring and calculating industrial noise, ie the logarithmic ratio between the time that the sound source during the time in operation, and the duration of that period;

industrial area: cluster contiguous plots with predominantly commercial uses, within a land use area designated as industrial, not including a noise zoned industry;

equivalent noise level: equivalent noise level referred to in Article 1 of the Noise Abatement Act;

noise sensitive area: noise sensitive premises referred to in Article 1 of the Noise Abatement Act;

noise level: noise level in dB (A) referred to in Article 1 of the Noise Abatement Act;

wall: facade as defined in Article 1b in conjunction with Article 1, fifth paragraph, of the Noise Abatement Act;

sensitive buildings, homes and buildings under Article 1 of the Noise Abatement Act shall be regarded as other noise sensitive buildings, except those buildings associated with the facility concerned;

sensitive objects: sensitive buildings and sensitive areas;

sensitive areas: land pursuant to Article 1 of the Noise Abatement Act be regarded as noise sensitive areas, except those on land belonging to the facility;

zoned industrial area: industrial zone as defined in Article 1 of the Noise Abatement Act;

ISO: International Organization for Standardization published standard;

L_{den}: the noise indicator as described in Article 3, f, of Directive No. 2002/49/EC of the European Parliament and the Council of the European Union of 25 June 2002, on the assessment and management of environmental noise;

L_{night} : the noise indicator as described in Article 3, Section I of Directive No. 2002/49/EC

of the European Parliament and the Council of the European Union of 25 June 2002, on the assessment and management of environmental noise;

Agricultural facility: facility referred to in Article 2 of the Decree on agricultural environmental management;

long-time average rating level: ($L_{Ar,LT}$) the average of the varying levels of locally acting noise, measured in a certain period and determined and assessed according to the manual measuring and calculating industrial noise;

maximum noise level (L_{Amax}) maximum noise level measured in the meter reading "F" or "fast", as identified and evaluated according to the manual measuring and calculating industrial noise;

wind turbine: a device for generating electrical or thermal power from wind;

dwelling: a building or a portion of a building for residential use or intended purpose;

3. An amendment to Article 3, f and i, of Directive No. 2002/49/EC of the European Parliament and the Council of the European Union of 25 June 2002, on the assessment and management of environmental noise, applies to the definition of L_{den} or L_{night} as in the first paragraph from the date on which the relevant amendment Directive is implemented, except when by ministerial decree, which is published in the Gazette, a different date is fixed.

Article 1.10

1. Whoever establishes a facility, shall report this at least four weeks before for the date of creation to the Authority.
2. The first paragraph shall also apply with respect to changing a facility and changing its operation. This notification is not required if previously reported under this article and by this change no deviation occurs in the information provided in this notification and under Articles 1.11, 1.12, 1.13 and 1.14 no other data should be provided.
3. In the report the following information will be provided:
 - a. the address and number of the Chamber of Commerce of the device;
 - b. the name and address of the facility establishes or modifies or changes its operation and, if different, the person operating the facility or going to operate the facility;
 - c. when the system or the change of the system will be brought into force, or the change in its operation will be achieved;
 - d. the nature and scope of activities and processes in the facility;
 - e. the layout and performance of the device, whereby the boundaries of the land of the facility, location and layout of buildings, the function of the different spaces and the location of the industrial sewer and the location of the discharge points are indicated, and
 - f. a situation sketch, with a minimum scale of 1:10,000 indicating the location of the facility in the surrounding area and equipped with a north arrow.
4. The administrative body that receives a message for which another authority is

competent, will promptly send a copy of the message to that other authority. The message is regarded as made by the other competent authority.

Article 1.11

3 The report as mentioned in article 1.10 is accompanied by an acoustic study if the facility contains one or more wind turbines

12. The acoustic study is carried out in accordance with the Manual measuring and calculating industrial noise.

13. By derogation to paragraph 12 the acoustic survey for wind turbines is carried out by ministerial regulation requirements.

Section 2.9. Vibration Nuisance

Article 2.23

1. Vibrations caused by installations or equipment belonging to the facility as well as the operations or other activities attributable to the facility, will not exceed the level of vibration Listed in Table 2 of the Measurement and Assessment Method Part B "Hinder in gebouwen voor personen" of the Foundation for Building Research Rotterdam, for the residential building function in noise sensitive rooms, except for noise sensitive rooms and living quarters located in a zoned industrial area.

2. The values do not apply if the user of the noise sensitive rooms or living quarters does not consent to carry out vibration measurements.

3. The competent authority may declare the first paragraph to be out of order by dedicated letter and set a different vibration strength permit. This vibration strength shall not be lower than the target values defined for the residential building function in the Measurement and Assessment Part B " Hinder in gebouwen voor personen " of the Foundation for Building Research Rotterdam.

Chapter 3 Provisions relating to activities in facilities, also applicable to facilities type c

Section 3.2

#

§ 3.2.3. Operating a wind turbine

#

Article 3.13

1. This section applies to a wind turbine or a combination of wind turbines.

2. Articles 2.17 to 2.22 shall not apply to a wind turbine or a combination of wind turbines.

Article 3.14

1. A wind turbine is rated at least once per calendar year on the necessary protections, maintenance and repairs by an expert in the field of wind turbines.
2. If it is found or if reasonable suspicion exists that a component or components of the wind turbine have a defect, so the safety of the environment is at stake, the wind turbine is immediately halted and the Authority will be informed. The wind turbine may only be put back in operation after all faults have been rectified.
3. If a wind turbine due to the activation of a security measure is stopped, it turns back into operation only after the cause of the decommissioning has been lifted.
4. When having a wind turbine in operation for the prevention or reduction of shadow and light glare the ministerial regulation will be applied.
5. A wind turbine meets for the prevention of risks to the environment and unusual incidents, or where that is impossible to minimize the risks to the environment and the likelihood of unusual events occur and their effects on the in ministerial regulation requirements.

Article 3.14a

1. A wind turbine or a combination of wind turbines shall for the purpose of preventing or limiting meet the noise the limit value of no more than 47 dB L_{den} and the limit value of no more than 41 dB L_{night} on the facade of sensitive buildings and in the case of sensitive areas on the border.
2. By derogation of the first paragraph, the competent authority may establish a lower limit value for one of the wind turbines or a combination of wind turbines to take into account the cumulation of sound resulting from another wind turbine or a combination of wind turbines
3. By derogation of the first paragraph, the authority may establish standards with a different value for specific local conditions.

Article 3.15

1. The measurements of noise emission to determine the source emission of a wind turbine or a combination of wind turbines are conducted in accordance with the requirements set by ministerial order.
2. The operator of the facility registers the data to be set by ministerial order for five calendar years after date to be preserved and kept available for inspection.

Article 3.15A

1. The local risk of a vulnerable object located outside the facility, caused by a wind turbine or a combination of wind turbines, does not exceed 10^{-6} per year.
2. The local risk of a restricted vulnerable object located outside the facility, caused by a wind turbine or a combination of wind turbines, does not exceed 10^{-5} per year.
3. For the purpose of determining the local risk referred to in the first and second paragraph minimal distances may be fixed by ministerial regulation between a wind turbine or a combination of wind turbines and a facility located outside the sensitive or restricted vulnerable object.
4. If on the basis of paragraph 3 distances are adopted, which are observed and the first and second paragraph shall not apply.
5. A ministerial order may lay down rules on the calculation of the local risk.

Chapter 6 Transitional and final provisions

§ 6.10a. Transitional requirements relating to the operation of a wind turbine

Article 6.21a

1. A wind turbine or combination of wind turbines for which either immediately prior to the effective date of Article 3.14a has a license in effect and is irrevocable or a reference was made pursuant to Article 1.10, by ministerial regulation measures may be prescribed to promote within a period to be determined by that procedure that the maximum value of 47 dB L_{den} and the maximum of 41 dB L_{night} on the facade of buildings, sensitive objects and on the border of sensitive areas are met in those cases where the acoustic research referred to in Section 1.11, ninth paragraph, indicate that the noise levels exceeds that value
2. For the application of Article 3.14a, paragraph 2, a wind turbine or a combination of windturbines belonging to another facility for which immediately prior to the effective date of that article a permit in force and irrevocable or a report was made pursuant to Article 1.10 shall not be taken into account.

Article 6.21 c

Article 3.15A does not apply to a wind turbine or a combination thereof, for which immediately prior to the date of commencement of Section 3.15A a permit is in force and irrevocable or a reference was made pursuant to Article 1.10 in respect of a vulnerable or partly vulnerable object, if the individual risk due to wind or a combination of wind for the appropriate vulnerable or fragile items is limited to the time prior to the date of commencement of Section 3.15A is greater than 10^{-6} or 10^{-5} per year.

Crisis and Recovery Law

Section 1 Definitions

Article 1. In this decision the ensuing provisions shall apply:

annex: Annex to this Decree;

mini wind turbine: turbine with a rotor diameter of up to 5 meters and a rotor area not exceeding 20 m², with a horizontal or vertical rotor shaft, for electricity supply after the meter or a battery for their own use, with wind turbine certification According to IEC 61400-12 (2006) or certified according to the standards of the American Wind Energy Association and the British Wind Energy Association Small Wind label or on the basis of the Dutch small wind turbine assessment programs, and with a tip height of not more than ten meters, measured from the base of the wind turbine;

compressor-turbine combination: wind turbine with a rotor diameter of up to five meters and a rotor area not exceeding 20 m², with a horizontal or vertical rotor shaft with a height of not more than 25 meters, measured from the base of the wind turbine to the tip of the rotor, where the mechanical power of the rotor is used to drive a piston compressor having the function or purpose to generate ozone; air conditioning; ammonia reduction in dairy cattle farms; or to win drinking water from the air.

Section 3 Innovation

Article 3

1. This article applies to appointed areas by the mayor and aldermen within the territory of the municipalities:

- a. Amersfoort;
- b. Houten;
- c. Nieuwegein,
- d. Utrecht,
- e. Woerden.

2. The appointment shall be made within three months after the effective date of this decision.

3. Except in cases provided for in Article 4, first paragraph of the Decree permit free and light-permit-required projects, construction of a mini wind turbine for a period of ten years is considered a construction of limited consequence as defined in Article 43, first paragraph, c part of the Housing Act.

5. The mini wind turbine's noise level from the nearest noise sensitive façade of a destination is not greater than 47 db L_{den} as determined by rules pursuant to ministerial order.

General regulation for environmental management (calculating and measuring the noise of wind turbines)

Article 3.14a The report of an acoustic survey, referred to in Section 1.11, the third paragraph of the Decision on Environmental protection demands for facilities , contains the following information:

- a. the name of the sponsor of the study;
- b. The name of the body which carried out the study;
- c. the date of examination;
- d. the reason and purpose of the study;
- e. data demonstrating that the particular situation falls within the scope of the method used;
- f. If a method other than those included in this scheme is used, the necessity is indicated and the method described and justified;
- g. if a calculation is applied, all the input data and also consulted wind frequency data;
- h. one or more maps or drawings on a scale that a clear picture of existing or proposed wind turbines and sensitive buildings or sensitive areas where the acoustic investigations;
- i. The assessment points;
- j. The location, acoustically relevant dimensions and the nature of the calculated noise control or screening measures, both on maps and in the original form of the schematic computer input;
- k. location, acoustically relevant dimensions and the nature of the sound reflecting and shielding other objects or structures;
- l. the dividing line or dividing lines between hard and soft bottom acoustic areas, with an indication of the nature of the soil;
- m. in acoustically complex situations, a graphical representation of the geometry used in the calculation of input data;
- n. existing and future noise levels due to wind or a combination of wind turbines on the facade of a sensitive object or the boundary of a sensitive area for the situation where no action has been taken to reduce noise or to reduce noise transmission.

Article 3.14b

1. for the acoustic survey, referred to in Article 3.14a, to assess the noise level of a wind turbine or a combination of wind turbines the following shall be taken into account:
 - a. the energetic mean source emission over a calendar year calculated by the method referred to in Chapter 3 of Annex 4, and using the long-term average wind profile at hub height provided by KNMI , unless it is shown that data are available that provide a better representation of the noise the wind turbine or a combination of wind turbines;
 - b. The influence of the environment and meteorological conditions on the noise propagation from the wind turbine or a combination of wind turbines to point of immission.
2. If a determination of the noise due to a wind turbine or a combination of wind turbines takes place on the facade of a sensitive building, the point of immission is on the facade where the noise level is highest.
3. If a determination of the noise due to a wind turbine or a combination of wind turbines takes place on the border of a sensitive area, the point of immission at the point of the boundary where the noise level is highest.

4. If the noise of a wind turbine or a combination of wind turbines with other noise sources is calculated, the calculation method specified in Section 4 of Annex 4 shall apply.

Article 3.14c of the method, referred to in Chapter 3 of Annex 4, may be fully or partially waived if it is made plausible that the exemption to apply:

- a. results in significant time savings and cost savings in the situation and is almost as accurate;
- b. is important to describe in the situation accurately, or
- c. is sufficiently precise and the method referred to in Chapter 3 of Annex 4 in the particular situation does not lead to a sufficiently representative noise level.

Article 3.14d

1. If the data from the wind speed dependent sound power source of a wind turbine or a combination of wind turbines is not or not fully available, this is determined by the method referred to in Chapter 2 of Annex 4.2. If for the purpose of enforcement it has to be assessed whether the emission values match the values used in the acoustic study, the method referred to in paragraph 2.6 of Annex 4 applies

Article 3.14e The operator of the facility records the following information:

- a. the LE emission term specified in section 3.4.1 of Annex 4, based on the effective operation during the past calendar year, and
- b. for the duration of an enforcement measurement under paragraph 2.6 of Appendix 4 the information necessary to determine the wind speed at hub height.

The Annex to this scheme is attached as Annex 4 to the General regulation for environmental management.

MvdB

30-8-2011