Changes in Wind Turbine Setbacks
Note that Setbacks can have both Physical Safety Rationale for Reasons of Protection from Injury
And Noise Rationale for Reasons of Annoyance and Health Effects

| Location / Nation | Original Setback and Basis | Revised Setback and Basis |
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| United Kingdom | Derek Taylor -1991 "How to Plan the Nuisance Out of Wind Energy" suggested setback from wind turbines with a 30 metre rotor to roadways and lot lines, of 50 metres adequate to a lightly traveled road, 100 metres to a heavily traveled road, and 120 to 170 metres to a home. | UK Noise Association – 2006 states, "It would be prudent that no wind turbine should be sited closer than 1 mile (1600 metres) from the nearest dwellings … Wind farms should only be located in areas where the "swish, swish, swish" of the turbines will not cause noise problems for people." |
| United Kingdom – Scotland | From the limits identified above … | Scottish Planning Policy SPP6 – Renewable Energy (2007) http://www.scotland.gov.uk/Publications/2007/03/22084213/20 … PAN 45 confirms that development up to 2 km is likely to be a prominent feature in an open landscape. The Scottish Ministers would support this as a separation distance between turbines and the edge of cities, towns and villages … |
| France | From no limits for safety setbacks …<br><br>Original setbacks were that noise at night should not exceed 3 dBA above background sound at night (background may be 25 to 30 dBA at night in rural areas) | Court of Appeal – Lyon, April 2006, determined a "zone of protection of 500 metres" from wind turbines to areas where people can be.<br><br>Academy of Medicine, March 2006 recommended a setback of 1500 metres from wind turbines to homes until an epidemiological study could be carried out to determine health effects. |
| Nova Scotia | Pubnico Point Wind Farm – No standard – resulted in setback from turbine to home of 370 metres, and sound up to 13 dbA above the Ontario limit of 40 dBA. | Glen Dhu NS Wind Farm – October 2008, established setbacks of 1200 metres from homes of participating residents, and 1440 metres from non-participating residences. |
| The Netherlands / Denmark | The Netherlands in 2000 used sound limits with a rising limit as ground level wind speed rose. Limit was 40 dBA at 1 m/s and increased to 50 dBA at 12m/s. *(Ontario used this as a model to develop its sound limits, allowing 53 dBA at 12m/s. Ontario guidelines continue to allow 51 dBA at 11 m/s, but Oct 2008 revision of MOE Wind Farm Guidelines recognized "possible" impact of wind profile change at night and requires it to be considered. This effectively made the Ontario limit 40 dBA in Class 3 areas and 45 dBA in towns. GEA Regulations imposed a setback to lot lines and roads = blade length + 10m (about 60m max), and to homes of 550 metres (~ 4 x turbine height.)* | 2007, Netherlands changed to a fixed upper limit for wind turbine sound of 40 dBA – recognizing the change in wind profile at night. Currently investigating a monitoring method based on Lden. This is a rating of community noise exposure that differentiates between daytime, evening and nighttime noise exposure, and penalizes nighttime noise.<br><br>In Denmark, minimum turbine setback to homes is specified as 4 x total height, but if it is less than 6 x total height, the home may apply to be paid (by the developer) for the loss in home value. Typically homes are at greater setbacks and few homes are within 4 x height of turbine. |

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| Germany | Rural noise from wind turbines is limited to 35 dBA at night. | *Compare Ontario's 51 dBA nighttime limit and Germany's 35 dBA limit - note that every 6 dBA (e.g. 35 vs 41 dBA) difference means the turbines in Germany will be twice as far away as in Ontario – a 12 dBA difference (e,g, 35 vs 47 dBA) means they are 4 times further away in Germany than Ontario.* |
| Sweden | Limits noise to 35 dBA in recreational areas in evening and at night, and to 40 dBA in residential areas at night. The measurement must be done with 10 metre wind speeds of 8 m/s. *Ontario regulations permit 45 dBA at 8 m/sec.* | |
| European Union | | Within the European Union the Commission has made a proposal for common noise immission level descriptions and evaluation methods. It is primarily intended for traffic noise but can be expanded to include other areas, such as wind power noise. It suggests an equivalent annual average sound level (Lden) where the night level has a penalty of 10 dBA and the evening level of 5 dBA. The day is in this case is 12 hours, the evening 4 hours and the night 8 hours. |
| New Zealand | NTS6808:1998 "The Assessment and Measurement of Sound From Wind Turbines" requires the calculation of a background noise level prior to construction of a wind farm. NTS68001:1991 limits sound from all activity except wind turbines to 35 dBA from 8:00 PM to 7:00 AM. NTS6808 limits sound from wind turbines to 40 dBA or 5dBA over background sound. Sounds with a "special audible characteristic" (clearly audible tones, impulses, or modulation of sound level) shall have a 5 dBA penalty. | The Environmental Court of New Zealand issued a decision July 20, 2007, that required that when the background sound conditions are at 25 dBA or less, the noise from a wind farm shall not exceed 35 dBA at any dwelling as an absolute limit.<br><br>*Sound levels in rural Ontario are typically less than 35 dBA at night. Yet, Ontario continues to have guidelines that allow up to 51 dBA, and rejects applying a penalty for cyclic noise as New Zealand does.* |
| Hydro One-System Networks | 2005 to Dec 2007 – setback of overall height of turbine (tower plus blade radius) to edge of right of way.<br><br>Dec 2007 to July 2008 – increased setback to greater of 150 metres or overall height of turbine. | As of July 2008 increased setbacks to edge of right of way for 500 kV assets (critical assets) of 500 metres, to 230 kV (redundant assets) of 250 metres, and to 115 kV assets (for which loss tends to be an inconvenience but not a significant one) of 150 metres. |
| CanWEA – Proposed By-Laws for Rural Municipalities in Ontario | Recommends setbacks to lot lines of non-participating property, road right of ways, or non residential buildings on a participating property need not exceed blade length plus 10 metres (typically 5 to 60 metres total)<br>Recommends setbacks to residential buildings should not be less than 200 metres (or as required to meet MOE CofA requirements) | *Interesting to compare the 60 metres that CanWEA reconnnds to protect the lives of people, compared to the 500 metre safety setback that Hydro One calls for to protect its critical assets.*<br><br>*From this should one conclude that the lives of people do not matter as much as a hydro line?* |

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