

1. Executive Summary

The Canadian wind industry has witnessed rapid growth in recent years, with Ontario emerging as a leader in both current and projected installed capacity. However, future growth of wind in the province will depend largely on the existence of effective regulatory processes at the municipal level. Without appropriate municipal permitting processes, approvals processes and zoning bylaws, further wind development will be greatly impeded. A key issue at hand involves *setbacks* – or the distance between turbines and dwellings, property lines, roads and other human developments. CanWEA has developed this document to assist Ontario municipal authorities in developing appropriate regulations with respect to these setbacks.

Comprehensive setback guidelines for large-scale wind turbines should address a series of objectives including ensuring public safety, minimizing on and off-site impacts, and promoting good land use planning and practices while balancing the economics and viability of the wind project.

The definition of appropriate setbacks revolves around four main issues: a) ensuring public safety in the event of ice shedding or turbine failure, b) ensuring acceptable sound levels for surrounding receptors, c) ensuring minimum impact on radio, radar and telecommunications and c) ensuring minimal impact on sensitive environments. A review of existing guidelines, regulations and research provides the technical foundation for development of “Best Practices” in all four cases:

- Studies into ice shedding and blade failure conclude that risks to objects or individuals directly drop off significantly with increasing distance from the turbine itself. It is clear then that public safety can be ensured by establishing setbacks between turbines and non-inhabited areas (e.g. property lines and roads) on the basis of a set distance from the area immediately under the turbine. *CanWEA recommends a distance of blade length plus 10 metres from public roads, non-participating property lines and other developments.*
- Studies into sound indicate that propagation is a function of many factors (e.g. turbine model, topography, prevailing wind conditions) and can vary greatly from one site to another. Therefore, setbacks between turbines and dwellings should be set on the basis of sound levels at the receptor rather than on a set distance. *CanWEA recommends a sliding scale for acceptable sound, based on Ontario Ministry of Environment Sound Guidelines, starting at 40 dBa at 4 m/s, rising to 53 dBa at 11 m/s. Note that the setback may be less for participating landowners.*
- Setbacks from radio, telecommunication, radar and seismoacoustic systems should be based on a technical, collaborative review of potential cases of interference and appropriate mitigation measures. *CanWEA recommends following 2007 guidelines developed by the Radio Advisory Board of Canada (RABC) and CanWEA.*
- Environmental impacts are largely site-specific and addressed through the provincial and (if applicable) federal Environmental Assessment processes. *CanWEA recommends that setbacks in this case should be defined through a site-specific study as part of the Provincial or Federal Environmental Screening process and discussion with the local planning authority responsible for the feature in question.*