

Executive Summary

Ontario is the leading province in the growth of wind power generation and is expected to triple the amount of wind energy being generated over the next five years to 7,500 megawatts. Much of the industry's growth is a result of the feed-in-tariff program that provides multi-decade contracts to purchase energy. The useful life for a modern wind turbine is approximately 20 years, at which point, the facilities must be repowered or decommissioned if economic or social circumstances no longer support the project. While wind turbines themselves are highly recyclable, regulations must ensure that the site is adequately remediated after decommissioning.

In 2009, the province of Ontario introduced the Renewable Energy Approvals Regulation which requires a wind energy facility developer to complete a Decommissioning Plan Report (DPR) prior to approval. This report focuses on the DPRs from the largest segment of wind turbine development in Ontario, which are developer-owned turbines on leased private and crown land.

The objective of this research report is to determine the quality of decommissioning plans for wind turbines in Ontario and whether their regulating policy may be improved by looking at international examples. A second outcome of the report includes conceptually linking decommissioning to broader planning for wind energy development and land use regulatory frameworks. The report also develops a set of criteria for evaluating wind turbine DPRs in Ontario to assess their effectiveness.

The eight criteria are developed from a document review of existing wind energy planning ordinances in forty-two states and municipalities in both the United States and Canada. In addition to being current best practices, each of the eight evaluation criteria is supported by academic literature. The topics of the evaluation criteria are: removal of infrastructure, foundation removal, site remediation, abandonment, financial assurance, depiction of facility lifespan, and repairing damage caused during decommissioning.

Based on the results of applying the evaluation criteria to four DPRs, this report provides the following recommendations for improving the process of planning for decommissioning wind energy facilities.

1. Integrate the provincial Renewable Energy Approvals process with municipal planning approval
2. Require that the Decommissioning Plan Report be revisited should the facility be repowered
3. Require that financial assurance for decommissioning be posted prior to approval.
4. Have a minimum standard to which soil and vegetation in agricultural areas be remediated
5. Consider the impact of decommissioning activities on archeological resources

Wind energy can be a very environmentally, economically, and socially sustainable source of energy when careful decommissioning planning is undertaken to ensure that the costs and benefits are shared equitably and that there are no lasting impacts on the physical and cultural landscape.