

Maintenance issues and research opportunities in the operation of a 12-year-old 10 MW wind R&D park

Marianne Rodgers

Wind Energy Institute of Canada, Summerside, Canada

*marianne.rodgers@weican.ca

ABSTRACT

The Wind Energy Institute of Canada (WEICan) is a research institute that has owned and operated a heavily instrumented 10 MW wind farm for more than 12 years. WEICan's wind farm is in a high wind / high capacity factor environment that sees extreme weather events. As a research organization, we are interested in collaborating with likeminded organizations to advance the industry's knowledge in asset management, service life estimation/investment decisions, and grid integration of renewable energy.

This presentation will outline some issues we have had with our turbines, including with blades, gearboxes, and generators; and note how we addressed the issues and the research opportunities that have developed as a result of the issues.

We will also outline our projections into future performance and availability, considering the impact of factors including inflation on the original business model; no original equipment manufacturer (OEM) to provide support; component OEMs no longer making the major components we use; high capacity factor on the turbines, component by component; extreme weather events; and revision of maintenance practices.