

# Wind Energy Project Development Cycle

Saskatchewan Renewable  
IPP and Supplier Day  
2016

November 17, 2016



**canwea**

CANADIAN WIND  
ENERGY ASSOCIATION

ASSOCIATION CANADIENNE  
DE L'ÉNERGIE ÉOLIENNE

# Presentation Overview

- Who is CanWEA?
- Wind in Saskatchewan
- Project Phases
- Generic Wind Farm Schedule



POWERING CANADA'S FUTURE  
LA PUISSANCE DE DEMAIN



# Canadian Wind Energy Association

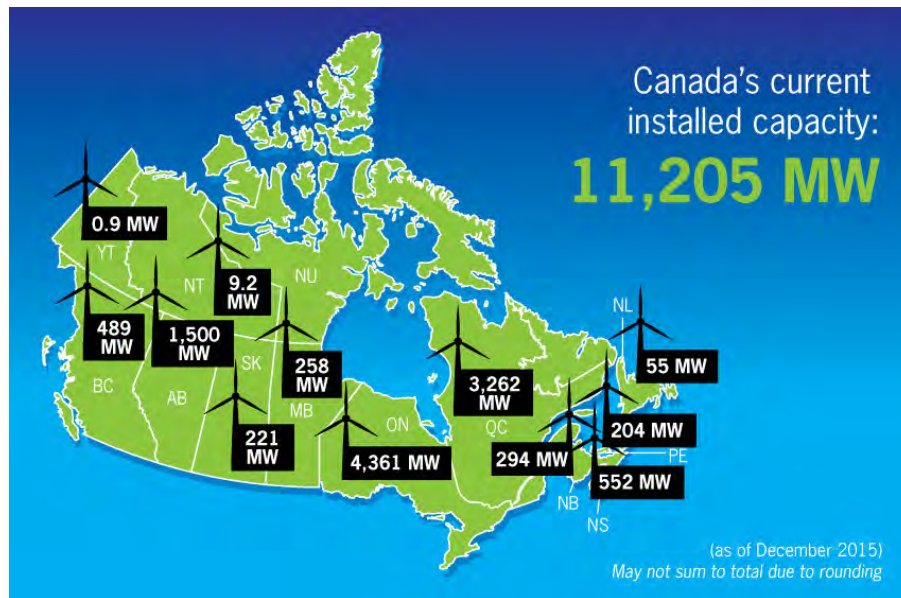
- CanWEA is the voice of Canada's wind energy industry, promoting the responsible growth of wind energy.
- We are a national organization representing over 200 member companies, including wind project developers, turbine manufacturers and service providers.
- Our mission is to promote the responsible and sustainable growth of the wind energy industry in Canada



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# Wind Energy in Canada

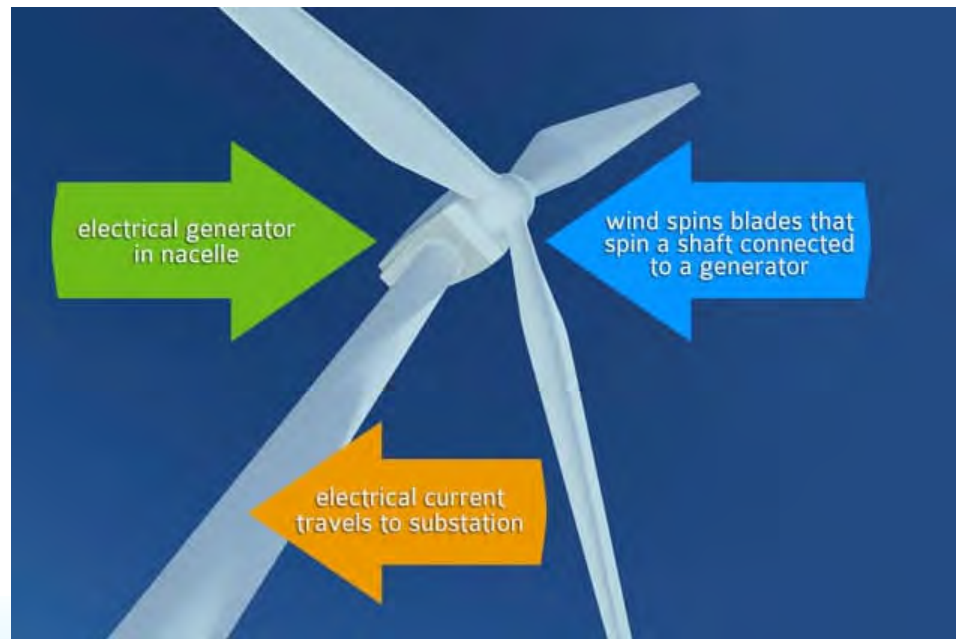


Stats for Saskatchewan:

- 221 MW of wind capacity
- 7 projects
- 143 turbines
- 5% of capacity
- 3% of generation (2015)



# Introduction to Fuel Type



# Wind Energy Basics

- Five requirements that **must** be met for any wind energy project are:
  - Availability of a sufficient wind resource to justify the investment;
  - Access to land to host the proposed wind energy development;
  - Broad support within the host community;
  - Access to transmission capacity that will carry the power to the energy market; and
  - A customer for the power produced.



# Development Phases

- Project Origination (2 – 3 months)
  - Determine wind resource, interconnection ability, financing availability, stakeholder identification, and environmental evaluation
- Feasibility and Preliminary Design (2 - 3 years)
  - Iterative process with detailed wind resource assessment and turbine selection, with layout and site plan defined
- Permitting Phase (1 – 2 years)
  - This includes site permitting and one to two years of environmental study requirements
- Land Access (3 – 6 months)
  - Working with communities and land owners to secure access to necessary lands for construction of the project



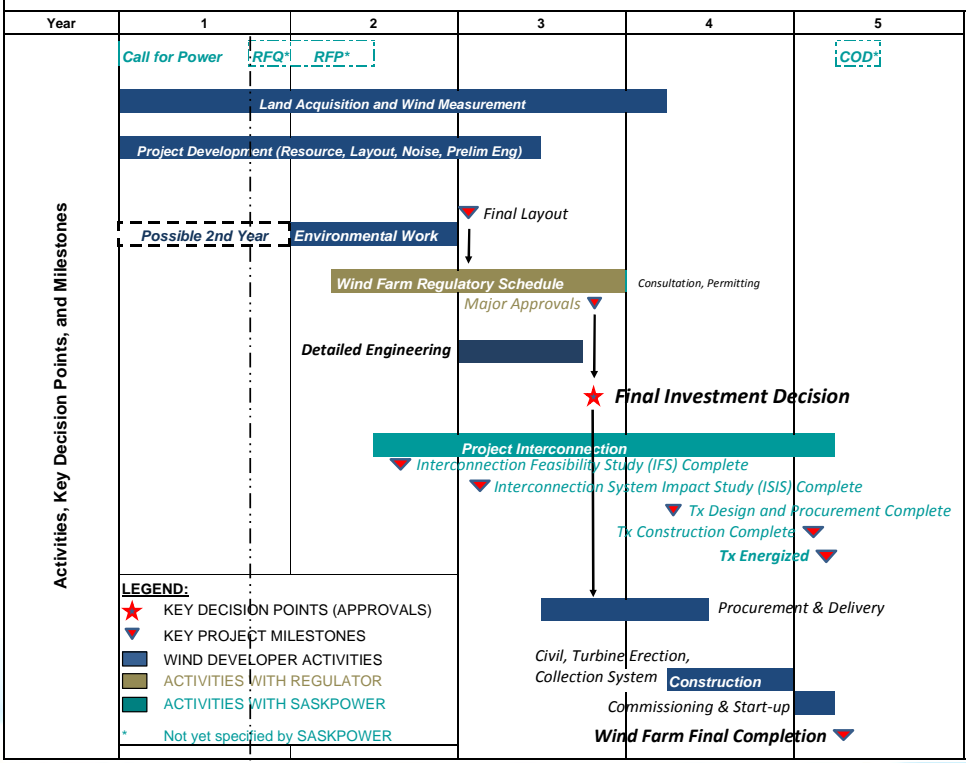
# Development Phases

- Contracting and Off-Take
  - During this phase, developers work to secure a Power Purchase Agreement (PPA)
  - All other phases are held up until contract is secured
- Detail Design (6 months)
  - Major equipment contract and financial are finalized and in place, with completion of detailed of engineering specs
- Procurement and Construction (~2 years for large scale projects)
  - Electrical work on site is completed, turbine foundations are completed and turbines are erected using cranes, so that project may be tested and commissioned
- Operations (20 – 25 years)
  - Ongoing operations and maintenance





# Generic Wind Farm Schedule



Source: Solas Energy Consulting



# Thank You

- Thank you for the opportunity to present
- If you have any questions, please contact me at
  - [evanwilson@canwea.ca](mailto:evanwilson@canwea.ca) or (403) 891 8640



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