



Lessons Learned from the Wind Power Production Incentive Program

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Centennial Wind Farm, Rushlake, SK



Outline

- Current Status of Projects
- Performance of Projects
- Elements of Discussion
- Status of Program



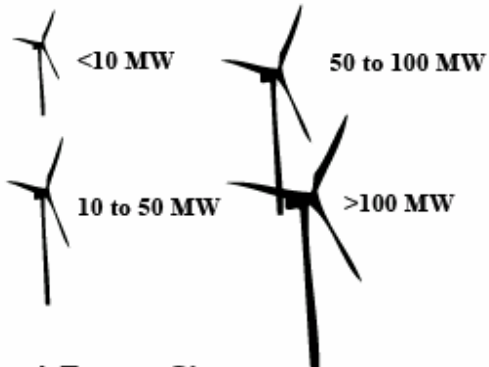
Mont Copper Wind Farm, Murdochville, QC



Current Status of Projects under WPPI

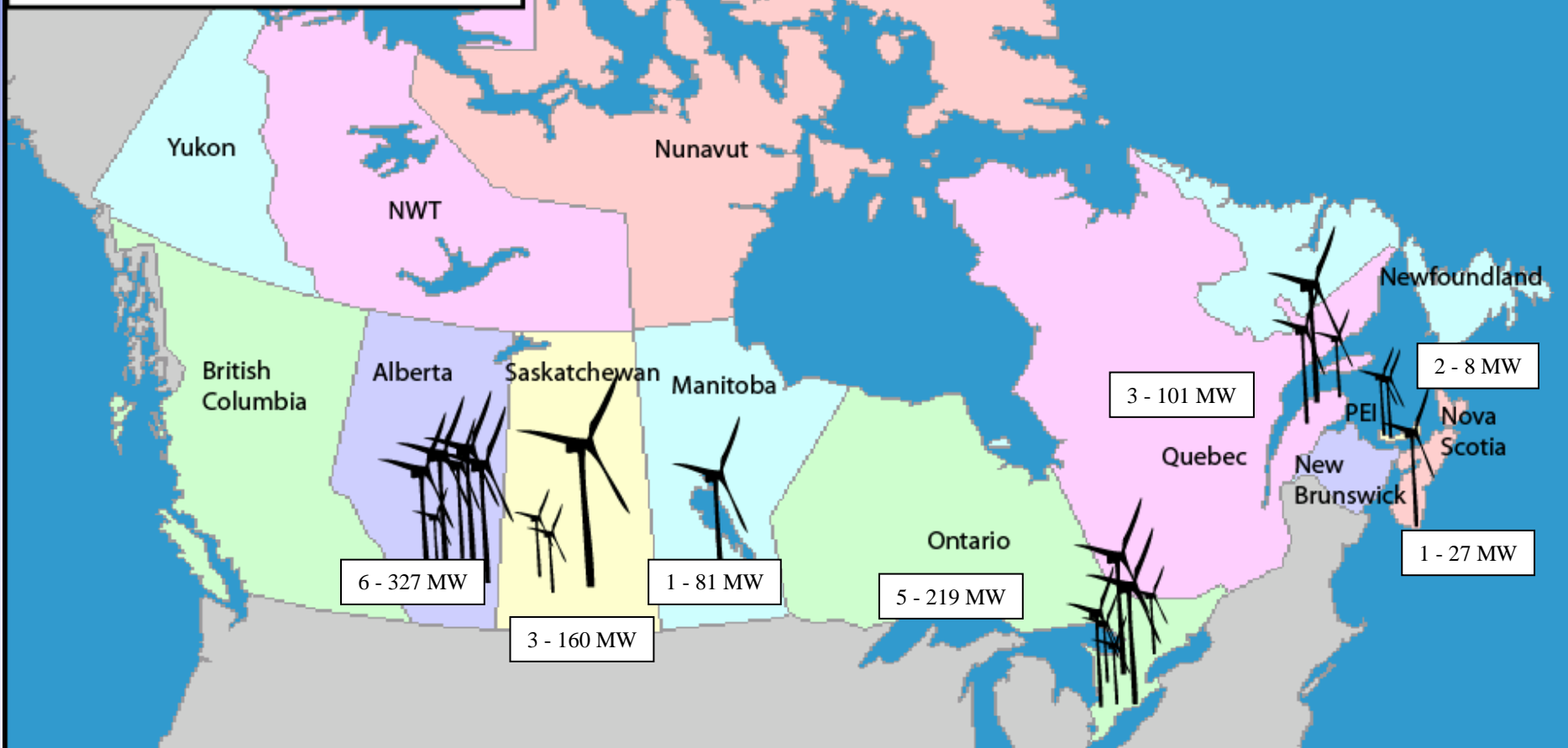
- 22 projects with agreements: 924 MW
 - 20 projects commissioned: 839 MW
 - 2 projects in construction: 85 MW
- WPPI funds committed: 300 M\$
- Capacity of Wind Farms
 - 0.75 MW to 149 MW (1 to 114 turbines)
- Size of turbines: 660 kW to 3 MW
- Average Size of Wind Farms: 42 MW
- Expected Average Capacity Factor: 38%
- Expected GHG Reduction:
 - 2.4 MtCO₂/yr using Proponents' average of 784 tCO₂/GWh
 - 1.1 MtCO₂/yr using NRCan's average of 357 tCO₂/GWh

Distribution of WPPI Projects



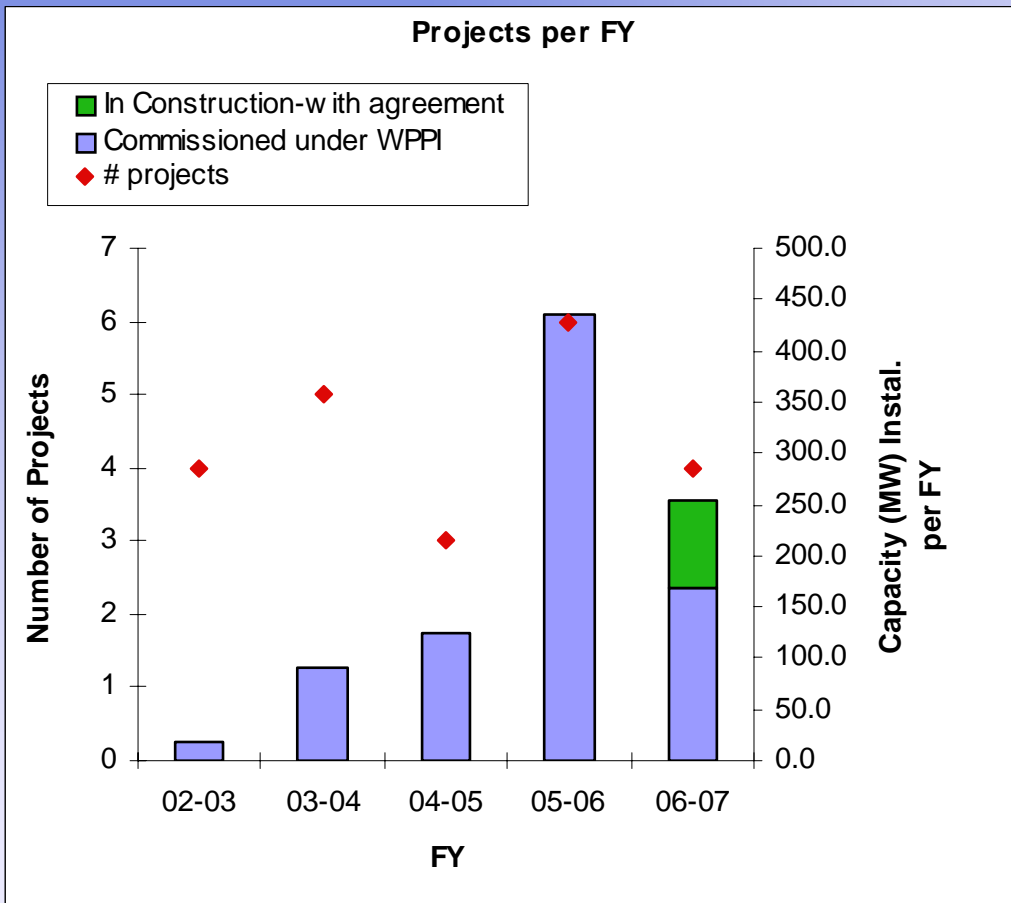
➤ **Total Capacity: 924 MW**

➤ **Total Expected Annual Production: 3074 GWh**



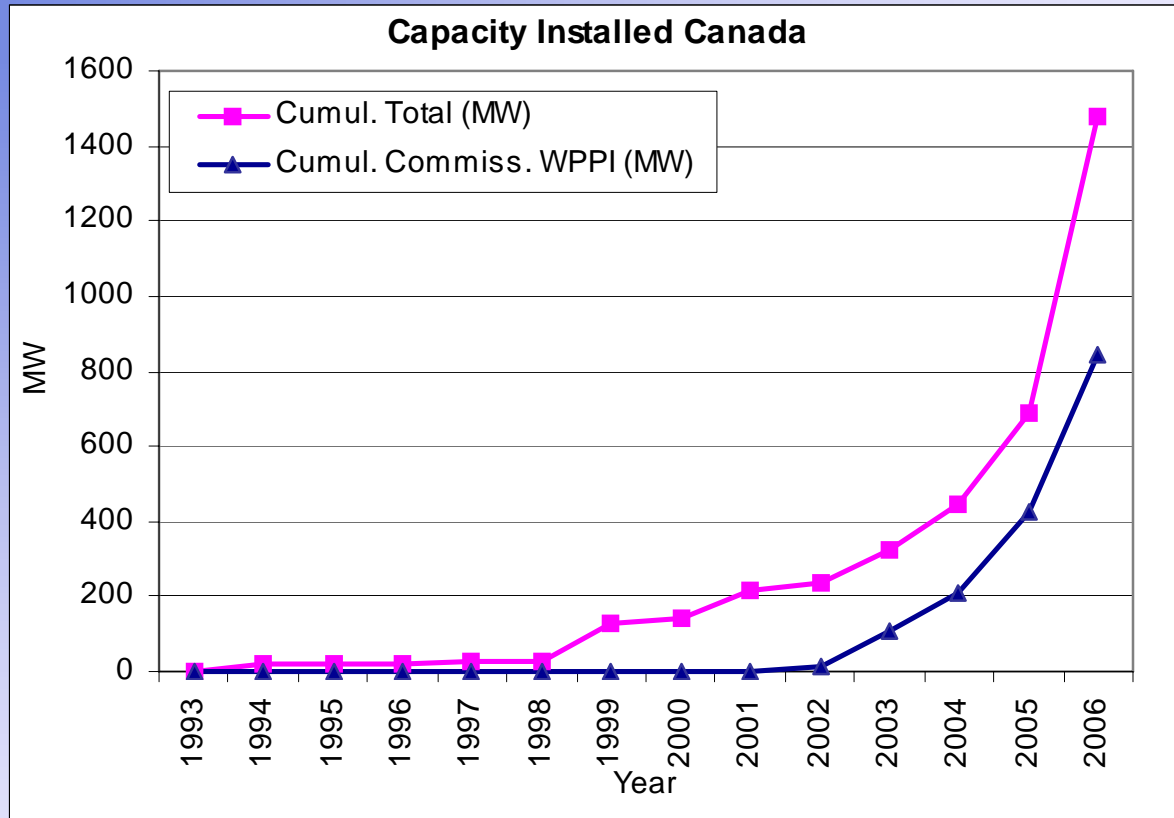
WPPI Projects

Projects per FY



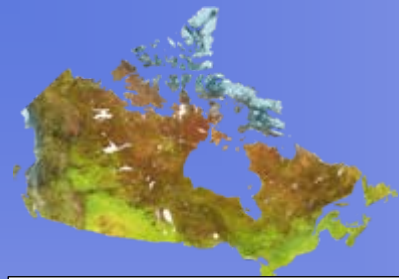
- Total of 924 MW of which 254 MW are to be commissioned during FY 2006-2007
- **Current FY projects represent 27% of total WPPI capacity**
- Additional projects are currently in construction without WPPI funding

Canadian Wind Projects

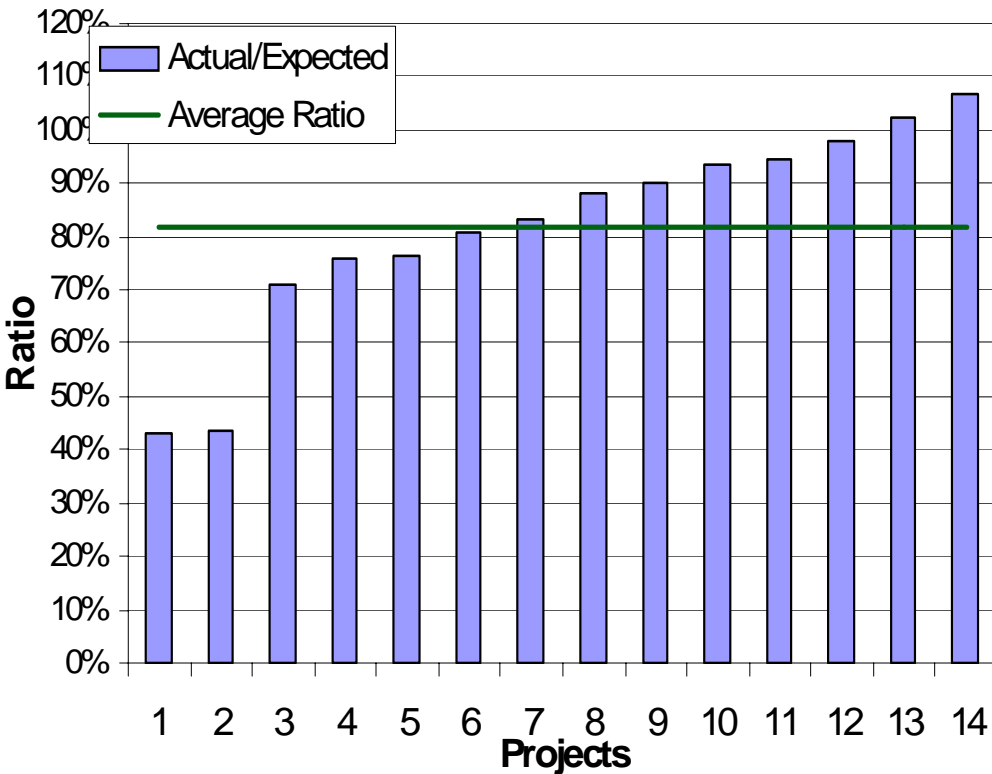


- By end of December 2006, Canada will have more than 1470 MW total capacity, out of which 839 MW will be WPPI funded.
- WPPI program accelerated introduction of wind capacity in Canada

Performance of Projects



Ratio Actual/Expected CF

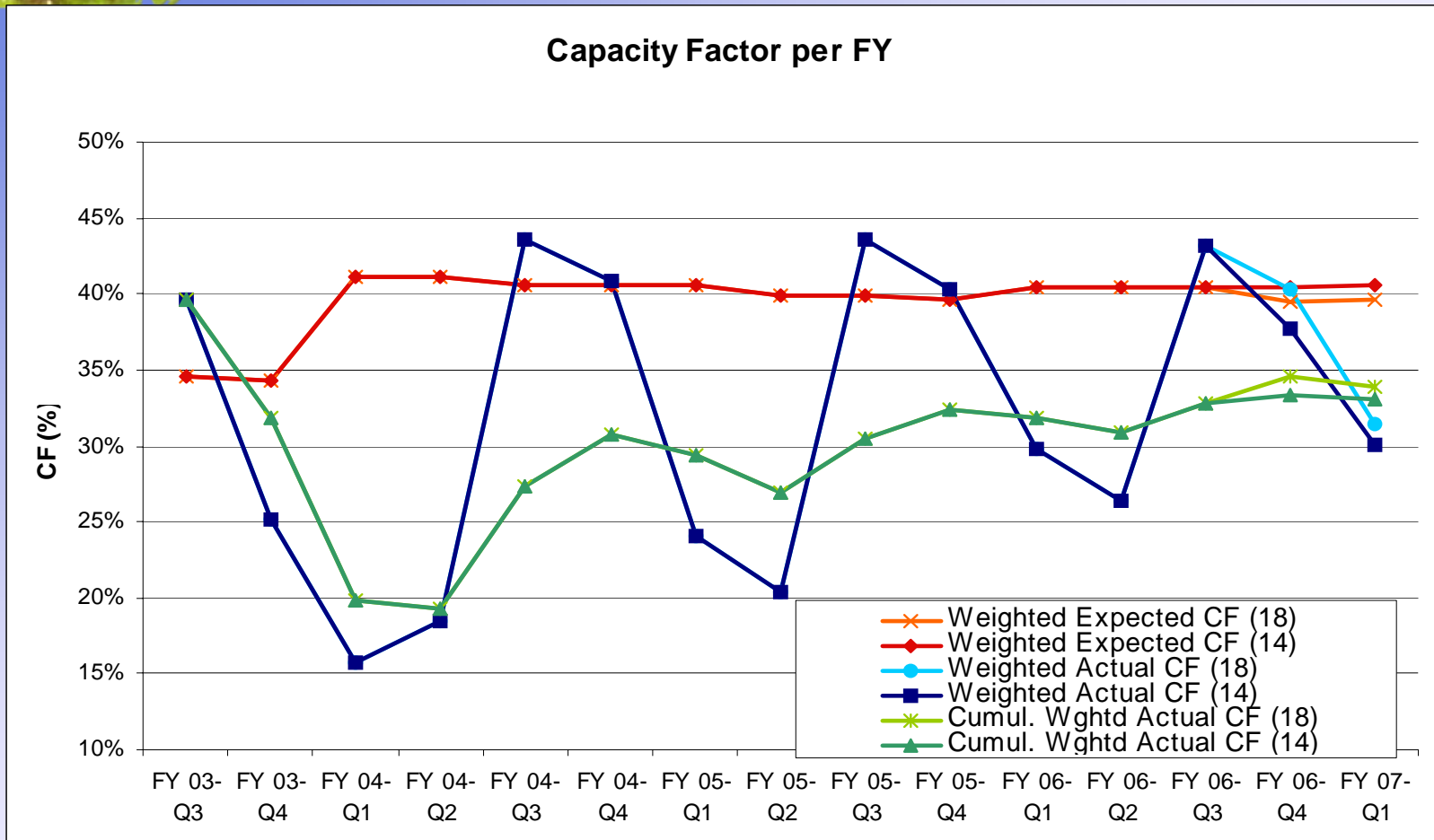


Note on graph:

- Trend based on 14 projects and 132 quarters (average of 2.3 years/projects).

- **CF for first 14 commissioned projects:**
 - Expected Weighted CF: 40.5 %
 - Actual Weighted Average CF: 33%
 - Average Ratio Actual/Expected: 82%
- **If this trend continues, 18% of WPPI funds would not be spent**
- **Seven projects expected CFs above 40%**
 - None has achieved this level on a yearly basis
 - Five projects are within 10% of expected
 - Only three projects have CFs above 35% and another three have CFs below 20%
- **To date, one proponent has renegotiated agreement based on revised production numbers. NRCan awaiting response from two other proponents.**

Performance of Projects



➤ Light colors are for 18 projects, dark colors for original 14 projects

➤ Cumulative CF for 18 projects tends towards 33% CF, well below expected 39%

Environmental Issues



Cypress Hill Wind Power Project, SK

➤ Environmental Assessments

- Long process
- Need to assess projects long before construction
- Quality EISs expedites review process

➤ Birds & Bats

- Environment Canada developed guidelines for pre and post monitoring
- Knowledge base is growing

➤ Noise

- Noise (inaudible and audible) from wind farms and transformer stations is surfacing as a public concern
- NRCan conducted noise assessment on wind farm (results are pending)
- Need for guidelines and set backs

➤ NIMBY

- Importance of transparency on projects
- Need to consult and work with First Nations, local residents and authorities early in process, the earlier the better



Bat monitoring,
McBride Wind Farm, AB





Status of Program

- New Government is developing its Made-in-Canada climate change plan.
- Government is considering a number of options in support of energy efficiency and renewable energy, including potential support for wind and other renewables and science and technology programs.
- Decisions likely to be made over coming months.

Additional Information

Visit our web site at:

- www.canren.gc.ca/wppi

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Magrath Wind Power Project, Magrath, AB

