

March 17th, 2011

CanWEA Submission to Nova Scotia UARB Recommendations on COMFIT Program

CanWEA is pleased to have this opportunity to submit written comments to the UARB in response to Synapse's recommended FIT rates for Community wind projects. CanWEA wishes to express its strong support for the COMFIT program and applauds the government's leadership in setting two COMFIT rates for wind energy systems. In brief this submission provides input on Synapse's final recommended wind COMFIT rates for wind turbines <50 kW and >50 kW. We feel that, if implemented, our recommendations will help to increase effectiveness and usefulness of the FIT program for wind.

Although we understand that the scope of the UARB is limited in setting the FIT rates, CanWEA feels that current restrictions around who can qualify for a community wind project will significantly restrict and hinder the uptake of such projects. As a result, we strongly urge the Government of Nova Scotia and the UARB to broaden the community wind Feed-in-tariff to include individual residents of Nova Scotia. Synapse does note this restriction in its submission, and CanWEA feels strongly that individual residents should be allowed to participate. We also wish to stress that the UARB and government of Nova Scotia should include a third FIT tranche for wind turbines 51-300 kW as the current FIT structure will significantly penalize the mid-size turbine market, and restricts the choice of communities. Details on our recommendations are provided below.

Comments on proposed small wind (<50 kW) COMFIT of 459.90\$/MWh

CanWEA supports Synapse's proposed small wind FIT rate of 459.90\$/MWh as we feel such a rate is within range of providing a 13% IRR for a 50 kW turbine. This rate would allow small wind to compete with other technologies in the COMFIT that are also receiving a 13% IRR. CanWEA does note that this rate is a decrease from Synapse's previously proposed rate of 479.50\$/MWh, and we would like to stress that further lowering of the rate would make a growing number of small wind projects increasingly difficult to implement.

CanWEA is pleased to see the current installed cost of small wind turbines at \$6,427/kW, up from the \$5,507/kW that was previously proposed by Synapse. However, CanWEA would like to request additional information on the \$13,300 interconnection fee. While the total costs of the small wind projects and resulting tariff appear accurate, the interconnection costs and the supporting evidence of what is included in these fees needs to be clear. Currently it appears that the interconnection costs are new or unknown costs which could impact the rate conclusions.

Synapse's use of 23% capacity factor is higher than that recommended by CanWEA for small wind systems. Given the greater proximity of small wind systems to buildings, as well as their lower tower heights, it is more realistic to assume a 20% capacity factor for small wind systems. Using a higher capacity factor could limit the feasibility of a greater number of locations for small wind systems.

Debt Financing and Debt Equity for small wind projects:

Although Synapse does note the difficulty in obtaining debt financing for small wind projects due to size, they nevertheless assume debt financing for small wind projects over 10 years. CanWEA small wind members indicate that to date they have not been able to find any financing other than a 5 year lease term available for projects. This is similar regarding construction loans. Synapse notes the difficulty in obtaining construction loans yet still assumes they are available. Past experience of CanWEA's small wind members shows that construction loans are not available and it falls to the wind turbine OEM to provide payment terms to developers to accommodate cash flows during construction.

The implementation of the COMFIT could help to bring in financial institutions to finance such projects, however a great deal of uncertainty around financing of small community projects remains. Therefore, CanWEA would like to see greater evidence provided by Synapse that financial institutions are interested in financing COMFIT projects and that they would provide the debt financing modeled in Synapse's submission. Financing community wind projects has proven to be a challenge in several jurisdictions. Therefore, greater assurance that financing will be available for such projects is required.

Additional recommendations to ensure success of the Small wind (<50 kW) COMFIT:

CanWEA also recommends that turbine qualification criteria and siting guidelines be implemented with this program to ensure "good turbines in good places":

- **Turbine Qualification Criteria.** In order to ensure that turbines are safe and that they "perform as advertised", CanWEA recommends that Nova Scotia should only offer a FIT price for turbines that are proven and qualified.

The Small Wind Certification Council (SWCC) which is a certifying authority in North America certifies turbines to the American Wind Energy Association (AWEA) small wind turbine standard. It is expected that by late 2011 a number of certified turbines will be commercially available: <http://www.smallwindcertification.org/>

It must also be noted that a number of commercially available turbines on the market today are excluded from the SWCC certification criteria, due to the size of their "swept area" being larger than 200m².

- CanWEA recommends that the Government of Nova Scotia use a vendor list to qualify small wind turbines under its FIT, similar to the New York State Energy Research and Development Authority (NYSERDA) which has published a list of turbines which qualify for their small wind incentives. http://www.powernaturally.org/programs/wind/eligible_wind.asp
- For turbines with a "swept area" 200m² or less, the Government of Nova Scotia should require certification to the IEC 61400-2 or the American Wind Energy Association Small Wind Turbine Performance Standard (AWEA 9,1 -2009) from an independent certification body such as the Small Wind Certification Council (SWCC) **once a reasonable number of these turbines become certified**¹.

¹ Energy Trust of Oregon has established January 1st, 2012 as the date by which turbines must meet certification criteria in order to remain on the vendor list of qualified turbines

- For turbines outside the scope of the standards specified above and which are not eligible for certification due to their size, CanWEA recommends that the Nova Scotia Government continue to use a vendor list to qualify these turbines under the COMFIT. While NYSERDA is viewed as one of the most stringent vendor lists, Nova Scotia can establish such a vendor list by requiring that manufacturers provide technical information and specifications of the wind turbine model for review and provide evidence demonstrating reliability. CanWEA looks forward to working with the Government of Nova Scotia and the UARB in establishing such criteria.
- **Siting and zoning guidelines.** CanWEA has developed siting guidelines to ensure small wind turbines are suitably sited from a safety, sound level and performance perspective. CanWEA recommends that municipalities in Nova Scotia adopt CanWEA's model zoning guidelines for small wind systems to ensure successful siting of turbines.

Recommended FIT Price for Community Wind (> 50 kW)

CanWEA would like to reiterate the position of our initial submission on November 29th 2011. CanWEA believes that large community wind projects can contribute significantly to achieving the targets under the COMFIT. However, to ensure that the program is successful and that communities reap the full benefits, it is critical that the FIT price reflects the current wind development market. **CanWEA recommends that the price paid under the COMFIT for projects greater than 50 kW be at least 12.5 cents per kWh, indexed at 100% of CPI starting on year one or its equivalent.**

This figure is based on a 2008 study by Helimax that examined an appropriate price structure for community-based projects up to 25 MW in Québec. The input assumptions for that analysis are provided below. Note that this analysis was reflected in the Quebec Government's community wind policy, which not only set a ceiling price of 12.5 cents per kWh but also allowed indexing at 100% of CPI. In Ontario, under the Government's new Feed-In Tariff program, community wind projects are given a price of 14.5 cents per kWh, indexed at 20% of CPI.

Parameter		
Total project cost	\$2.8 M / MW	Helimax review of turbine pricing for small projects
O & M costs	2,7 ¢/kWh	Values based on input from CanWEA members
Capacity factor	33%	Based on a sensitivity study made by Helimax
Project duration (FIT contract)	20 years	
Base year of construction	2011	
Inflation rate (CPI)	2 %	
Debt/equity	70/30	
Interest rate	7.5 %	Assumption from CanWEA members directly involved in project financing

The above assumptions are based on the experience and expertise of CanWEA's members with projects up to 25 MW and we believe that 12.5 cents/kWh, indexed at 100%, represents a minimum

price that the UARB should consider for the relatively small (6 MW) COMFIT projects. The UARB should consider that the size of COMFIT projects, limited to 6 MW and with an average of 1.5 MW, won't permit the same economy of scale as community projects in Quebec (25 MW limit) and Ontario (no limit). Hence, the O & M price, \$/MW and other assumptions for 6 MW projects might be even higher than those indicated above.

CanWEA believes that the average price of 13.9 cents/kWh is still too low and does not reflect the unique nature and the risks associated with a single turbine wind energy project. Moreover, even with an appropriately priced FIT, challenges still remain in the areas of ownership structure and financing.

More specifically, CanWEA would like to comment on the Synapse Exhibit J Large Wind 3-2-11. Some assumptions made within the large wind spreadsheet require further investigation and clarification.

1. Within the Assumptions Sheet of the Spreadsheet, Cells **E44** and **E45** include a simple formula used to introduce major maintenance costs into the cash flow, defined by *cost* and *frequency*. However, Cell **F45** (maintenance costs) is set to \$0 and so, by definition, the cash flow excludes these unexpected costs. Although it is acknowledged that there are Operations and Maintenance costs seen within the Cash Flow Sheet, it is unclear whether such costs cover all unforeseen maintenance eventualities.
2. Related to the above, the Equipment and Installation costs defined within the Assumptions Sheet (Cell **B6**) appears to be extremely low. Experience and the market would suggest that these costs of \$1.71M/MW as seen within the model are insufficient.

The model provided by Synapse is extremely sensitive when modelling the above scenarios, and as such additional clarification is required in order to ensure the assumptions used within the spreadsheet are truly representative and applicable to COMFIT projects. Put simply, changing the 'Equipment and Installation' costs noted in #2 (above), the After-Tax IRR (Cell **F32** of the Assumptions Sheet) is reduced from 12.98% to 6.47%. The threshold established by Synapse was 13%.

Identifying the right FIT price is a major and a very crucial step, but it remains the first step of a longer and challenging process, especially in the financing area. For these reasons, CanWEA advises that the UARB should consider the experience of the industry in Nova Scotia and in other Canadian provinces.

Conclusion

CanWEA is confident that wind energy will play a major role in Nova Scotia's renewable electricity plan going forward. Allowing Nova Scotia communities, businesses, farmers, residents and institutions to develop wind energy projects through a fair price on small wind turbines and community projects will be a significant factor in ensuring acceptability of wind energy in Nova Scotia, which will foster a favourable environment and capability for all models of wind development, both large and small. The success of the FIT for wind will in large part depend on establishing the right price adjusted to the size of the project sizes, and who can qualify for such projects, and CanWEA looks forward to working with the UARB and Synapse to ensure the success of Nova Scotia's feed-in-tariff for small wind and community wind projects.