Financing Models

Prepared by

Toby Couture and Yves Gagnon
K.C. Irving Chair in Sustainable Development
Université de Moncton

Currently, the cost of building a wind farm in Atlantic Canada varies between 1.6 million dollars per megawatt (cost of the 30 MW East Point Wind Farm, PEI) and 2 million dollars per megawatt (cost announced for large wind farms to be built by private developers in New Brunswick).

In terms of financial requirements, the development and the installation of a wind farm has three levels of financial needs:

1. Feasibility studies (between $50 000 and $200 000)
2. Initial capital (between 20 and 40% of the total cost of the wind farm)
3. Remaining capital (between 60 and 80% of the total cost of the wind farm)

Typically, the feasibility study is done using money invested by the developer. However, as presented below, some financial assistance can be provided depending on the type of venture to develop a wind farm. The initial capital is usually in the form of equity invested in the project, while the remaining funds are usually obtained through debt financing.

There are a number of different financing models available to promote and facilitate community wind power development. Here is a brief description of the most successful models, and those most likely to succeed here in New Brunswick:

1. Loan Guarantees
2. Low-Interest Loans
3. Revolving Fund
4. Community Investment Fund
5. Renewable Energy Fund
6. Tax Credits
7. Debt Financing

1. Loan Guarantees

Loan guarantees offer security on loans over a given period of time. For small community groups and municipalities, they can offer valuable financial security, and make it easier to access project

capital. With the low-risk investments of wind power in areas with a proven and competitive wind resource, a loan guarantee program can help significantly in providing communities with the financial resources they need to undertake investments in renewable energy technologies. The loans generally specify a maximum price range allowed for any one project, or any one loan applicant.

Loan guarantees are often used to leverage new capital investment in projects and technologies that demonstrate potential. They offer the borrower with added financial security and a ready access to capital to undertake particular projects. A loan guarantee program supported by a particular level of government is a proven tool to help in stimulating investment in particular sectors. For all of these reasons, they can play a very important part in the financing of community-owned wind power projects.

2. Low-Interest Loans

Low interest loans, as the name indicates, are a mechanism that offers below prime loans to loan applicants. When instated by government, they are usually to help promote projects with particular social or economic objectives.

For community wind energy development, a low-interest loan offers a more competitive interest rate for community-based developers of wind projects, and can help significantly in facilitating project financing and profitability. With more favorable terms and cheaper access to capital, community-owned wind power projects can develop with greater certainty and ensure a higher rate of profitability over the medium and long term.

In the State of Oregon, a low interest loan program has been in place since 1980 to promote the development of small-scale energy projects. The program is called the Small Energy Loan Program (SELP):

> *Low-interest, fixed-rate loans are available for individuals, businesses, schools, special districts, governments, public corporations, cooperatives, tribes and nonprofit organizations.*

The size of the loans can range from $20,000 up to $20 million, and the terms of the loans vary from five to twenty years. The fund is self-supporting in that those who borrow pay for the costs of administering the program, a task that is managed by the Department of Energy; but this could be managed by a volunteer-based public commission or a Foundation. This fund resembles in many ways to the concept of a Revolving Fund, but is targeted specifically at community-owned energy projects.

3. Revolving Fund

The idea of a Revolving Fund has proved itself to be a very successful means of driving small to medium scale renewable energy development. The idea is relatively simple: a fund is established, most often by government though sometimes through a ‘Systems Benefit Charge’ imposed on regional electricity customers, from which citizens, communities, and cooperatives can draw to finance renewable energy projects. Funds are drawn at an interest rate sufficient to track inflation, a feature that enables the fund to be fully replenished and sustained over time. An additional cost is generally added to cover the expenses of administering the fund. A separate entity is sometimes

created to fulfill this function and to ensure that funds are allocated efficiently, and in a non-discriminatory way.

In this way, communities can obtain their project financing from the Revolving Fund, and repay it over a period of five to fifteen years through the profits generated by the renewable electricity sold. The fund is therefore available in perpetuity for renewable energy project financing.

In Germany, a Revolving Fund program offers loan terms of up to 20 years for rates approximately 1% below prime. A provision is added that interest payments can be waived during the first three years of the loan.[1]

4. COMMUNITY INVESTMENT FUND

Applied to wind energy, a Community Investment Fund enables individual members of a given area, either a village, a city, or even a state or province, to invest in a collective fund, which then invests in community wind farms, and obtain a reasonable rate of return. The renewable electricity sold to the grid generates the profits for those investing in the fund. In the case of community wind power, members of a given area can collectively invest in a renewable energy project much as they invest in a Registered Retirement Savings Plan (RRSP), providing a secure place for their retirement funds while promoting the development of a renewable energy project in their area.

An example of a general Community Investment Fund is currently in place in Nova Scotia under the title Community Economic Development Investment Fund (CEDIF). The CEDIF is essentially a pool of capital that is formed from the sale of shares to members of a community, region, or province, with the purpose of promoting local economic development. Conditions of the fund are that projects be 'for-profit,' that is revenue-generating, and that they must comprise at least six elected members of the local community in which the project will be developed, who will act as local directors. Nova Scotia's CEDIFs can raise up to $3 million per offering, and be used to finance local economic development initiatives. Furthermore, investments in CEDIFs are eligible as RRSP contributions, as well as for 30% non-refundable Nova Scotia Equity Tax Credit against Nova Scotia income taxes payable, provided it is held for five years.

According to the Department of Economic Development in Nova Scotia, there are currently over 40 CEDIFs in the province that now manage over $25 million in assets.

A Community Investment Fund (CIF) gives communities the ability to have a direct say in the management and investment of local funds, and are generally administered by people who have a demonstrated stake in the success of the projects and the future prosperity of the community. One of the great strengths of a Community Investment Fund is that they allow a region to choose areas of priority to them, and proceed in an open and participatory way toward the development of local projects, while encouraging investment directly in their communities.

A different example of a local investment model is found in nearby Prince Edward Island. PEI residents can now invest in the Eastern Kings Wind Farm through the purchase of PEI Energy Savings Bonds, through which they can earn an interest rate of 5% per year over five years. Islanders can purchase the bonds at any credit union in the province, beginning at a minimum of

[1] Paul Gipe, *Renewables Without Limits*, OSEA Standard Offer Program Review, 200 p.49

$500 and a maximum of $10,000 investment in any given year. In this way, residents of PEI can invest directly in the renewable energy projects taking place in their province.

5. Renewable Energy Fund

Investment funds are generally created in order to promote particular policy goals. The funds are made available to members of a given area, who can put forth proposals detailing how money from the fund will be used to the benefit of the community.

In September 2007, the province of Ontario has instated a Community Power Fund of $3 million to support community-owned renewable energy projects throughout the province. The Fund is available to farmers, First Nations and community groups, as well as other incorporated groups. The Fund's goal is to facilitate communities' access to project financing for renewable energy development, and to enable them to have access to financial resources at all stages of the project's development.

In particular, the fund offers a small grant program for initial feasibility studies and wind resource exploration of up to $25,000 as well as a large grant program up to $300,000. The fund is created as an endowment by the Ontario government to encourage community scale projects. Projects will include 80 MW of wind power from First Nations projects, as well as 50 MW from farmers in southwestern Ontario.

6. Tax Credits

Tax Credits are often used in conjunction with other financing mechanisms, although they have proven to be a vital part of encouraging large-scale wind development in Canada and in the US.

Production tax credits or subsidies provide a stable revenue stream to augment the price that utilities are willing to pay for electricity generated from a renewable energy source. They are mechanisms to stimulate the development of an emerging sector that does not have the full competitive advantage of other established participants in the economic sector, but that offer other advantages. Since production tax credits or subsidies are costly for governments, such programs are usually used in the early development phase of a sector, and thus have a sunset clause.

In the utility scale electricity sector, until recently, the wind energy sector did not offer the competitive price advantage as certain electricity sources such as coal, but it definitely had the advantage of being competitive compared to electricity generated from other fossil fuels, while being a clean, renewable source of electricity that does not have greenhouse gas emissions. In Canada, besides federal tax credits, the wind energy sector has benefited from the Wind Power Production Incentive (WPPI) program and the current ecoENERGY Renewable Power program of the federal government. Offering a production subsidy of $0.01 per kWh in their first 10 years of operation, the ecoENERGY Renewable Power program will support the development of 4 000 MW of renewable energy capacity in Canada. It is predicted that the $1.48 billion program will be allocated to fund eligible projects, mostly wind energy projects, to be constructed over the next four years.

In the US, wind energy developers have access to the federal Production Tax Credit (PTC). The PTC is an inflation-adjusted credit paid for every MWh of electricity from renewable energy

sources over the first 10 years of the project's operation. The PTC has varied widely, but tends to average $0.015-0.019/kWh. The surplus revenue enables profits from wind development to be markedly higher, and therefore more interesting for large investors. In States like Minnesota and Wisconsin, this has led to the Flip Model, where a large investor will own the project for the first ten years until the tax credit expires, and then flip the ownership of the project to the local community.

One of the weaknesses of the PTC is that it has been subject to political interference and has been removed and reinstated a number of times, creating an uncertain investment environment, and sporadic start and stop development. In the US, in years where the credit was available, the US saw record-breaking wind power development, only to be followed by virtually non-existent additions in years where the PTC was not available.

A further difficulty with the PTC is that there are a number of anti double-dipping provisions, whereby the credit is revoked if other kinds of assistance are provided, like low-interest loans. This among other things has made it very difficult for community-scale wind projects to benefit from the PTC.

However, some jurisdictions impose specific terms on projects seeking such tax credits. For instance, the state of Iowa in the US requires that at least 51% of the project is owned by Iowa residents in order for a project to qualify for their state-wide Renewable Energy Production Tax Credit.[2] The state of Minnesota also offered a similar Production Incentive that pays $10-15/MWh of generated renewable energy over 10 years for projects under 2 MW capacity. Minnesota also requires that the project be majority-owned by Minnesota residents.[3]

7. DEBT FINANCING

Debt financing is simply accessing funds through a loan at banks or other sources. The cost of loans is dependent on the interest rate and the term of the loan.

[2] *Community Wind: A Review of Select State and Federal Policy Incentives*, FLAG, p.11
[3] Ibid, p.13