

COMFIT Review

January to July 2015

Introduction

The Community Feed-in Tariff (COMFIT) program has met its objectives, successfully bringing more renewable electricity online in Nova Scotia, and promoting community ownership of our renewable electricity resources.

The program has far exceeded initial expectations. It is now creating upward pressure on power rates for Nova Scotians. It has been identified that we do not require additional electricity generation until 2030. As a result of these findings and following a seven month program review, the Minister of Energy announced in August 2015 that the program would come to an end.

This report provides an overview of the key findings and lessons learned from the COMFIT program review that led to the decision to end the program.

Program Objectives

In an effort to encourage a range of renewable electricity projects disbursed throughout the province, the Renewable Electricity Plan established the Community Feed-In Tariff program in 2010. The intent was to bring online 100 megawatts (MW) of renewable electricity connected to the grid at the distribution level. The plan introduced COMFIT as a way to encourage development of local renewable energy projects by municipalities, First Nations, co-operatives and non-profit groups.

The purpose of the COMFIT program was to encourage and support the development of renewable electricity projects by community-based groups including municipalities, First Nations, co-operatives, and not-for-profit groups

among others. It was also felt that implementing COMFIT would have the potential to produce a wide variety of positive environmental, economic, and social benefits.

The primary goal of the program was to produce 50 MW of renewable energy in Nova Scotia by 2015, with the ultimate aim of 100 MW of COMFIT electricity.

Additional objectives were also identified:

1. Provide opportunities to increase growth of renewable and sustainable technologies
2. Provide opportunities: engage interest and move from interest to action in the development of renewable electricity
3. Establish regulatory and legislative frameworks to support COMFIT
4. Developing an administrative framework to support COMFIT

Background

Prior to the program accepting applications in September 2011, the Utility and Review Board set rates for specific eligible technologies. The hearing process was open to input from interveners. Based on previous experience in small scale renewable development in the province, rates were set on assumptions that projects would be structured with 50% equity and 50% debt. Experience from similarly structured projects, including the 2008 Nova Scotia Power RFP for small scale, independent power production was used to inform the COMFIT process.

Traditionally, small-scale renewables have been seen as high-risk projects requiring significant equity contributions. Many of the assumptions of the program and rate structure were based on this reality. It was assumed that the need for 50% equity contributions by eligible entities would act as a natural limit to COMFIT capacity, as historically, public offerings¹ by all community economic development funds (CEDIF) had been approximately \$1–2 million per year. In most cases, that amount would be required per project under this scenario.

¹ The public offering process is a streamlined way for small community economic development funds to seek investment within the province.

At that time, it was also assumed that voting control would equate to equity contributions; to ensure voting control, COMFIT eligible entities would also have to contribute at least half of the project equity. However, as projects began entering into partnership agreements and financing arrangements, a surprising number of partners were willing to concede voting control to eligible entities without matched equity funds.

The Energy Department developed Directive 007 which required 20 per cent of equity (or equivalent financial return) to come from eligible entities. This was predicated on the understanding that there would be at least 40 per cent equity requirements by project lenders and thus half of the equity contributed would come from eligible entities. Ultimately, projects were able to be financed contributing as little as 20 per cent of the projects equity contribution.

Initial technical consultation proposed there would be approximately 200 MW of distribution level capacity (minimum load) available for the program. Voltage issues, siting requirements and distance to the substation meant that only about half of all available capacity would be accessible to the program. As the program progressed, however, it became clear that the limitations on capacity were not at the level originally envisioned.

The program was reviewed in 2013–14 for administrative processes. More information on this review can be found on the Department of Energy website.

2015 COMFIT Review: Summary

In January 2015, government announced a pause in accepting new applications for the COMFIT program to allow for review of the programs key outcomes and progress, and to make determinations about its continued use as a driver for renewable electricity generation in the province.

In reviewing the initial program purpose and intent, it was found that the program had exceeded its objectives and expectations. By the end of 2015, there will be more than 125MW of renewable, community based electricity in-service in Nova Scotia.

Additionally, the Department's 2014 Electricity System Review found that the province will likely meet its electricity requirements to 2030 without adding new sources for generation. Further, the review found that Nova Scotians want government to focus on stabilizing electricity rates, strengthening accountability for the utility, and fostering innovation.

Together, these factors led to the decision to close the program.

In announcing the close of the program, the Minister also committed to ensuring that all outstanding Ministerial decisions were made within a 60 day time frame. The regulatory process to plan fuel costs for 2016–18 had begun, and some certainty was required regarding the status of projects, particularly those that were not likely to meet in-service timelines.

The minister met this commitment in fall 2015, issuing decisions relating to extension requests, applications for COMFIT approval and incomplete applications. A number of other administrative issues were resolved as well. For example, through a competitive decision-making process, projects that were competing for distribution capacity had entered into partnership agreements to allow some projects to move forward and others to take second priority. The Energy Department completed an assessment of the likelihood that any of these projects would move forward, and notified applicants. This brought to a close to all remaining COMFIT applications.

In total, 49 decisions were issued relating to new project approvals and extension requests. The minister approved 8 requests for extension and one new application. A further 14 extensions/applications were not approved, and 24 projects awaiting potential distribution capacity were not approved.

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1.0 Progress to date

As of August 2015, more than 121 project approvals have been issued, representing approximately 220 MW of COMFIT capacity. At the end of 2015, the department anticipates approximately 65 projects totalling more than 125MW will be online. This far exceeds initial program expectations

of 100 MW. For the most part, CEDIFs have been successful in raising community equity for their projects, contributing almost \$35 million to date.

The vast majority of COMFIT approvals have been wind projects. The minister has issued 98 COMFIT approvals for wind, totalling 185 MW of capacity. This is almost 85% of the COMFIT portfolio.

A significant number of COMFIT projects have come online. The department expects detailed information regarding capital expenditures and return on community investment by the end of the year. However, informal reports from developers suggest approximately 30% of project expenditures for large wind projects stay within the local community (municipality) where the project is located. The only major expenditures not made within the province relate to the purchase of turbines and, in most cases, towers.

Preliminary estimates show that more than \$40 million has been invested by Nova Scotians to date for the projects expected to be online by the end of the year. Furthermore, more than \$100 million has been spent in local communities on project-related costs not including the ongoing operations and maintenance of infrastructure, which will bring long-term jobs in these areas.

Once projects are generating power, the department will track the returns to community investors, electricity production and how much of the ongoing, life-cycle costs are spent within local communities. Many COMFIT projects have also set up discretionary community funds to support local communities. These funds may be used to support local infrastructure such as fire halls and rinks, supporting junior sports teams and/or scholarships. The department will begin tracking and reporting on this in late 2016.

2.0 Key Policy Issues

2.1 Rate impacts

When the program was first created, it was expected that the impact on electricity ratepayers of all renewable electricity projects (NSP, Independent Power Producers and COMFIT) would be 1–2% each year between 2010 and 2015, or a total of 5–10% overall. However, with the

program overachieving in terms of capacity, it is expected that COMFIT projects alone will create a rate pressure of approximately 4% in 2016.

The joint NSP-IPP projects (South Canoe and Guysborough) also represent new renewable electricity supply. While they have a lower cost per MW than COMFIT projects, they also place pressure on fuel costs in the order of 2%.

The department began assessing the overall impacts of the program in the fall of 2014 following the results of an administrative review. In January 2015, the program was paused to allow the Department to fully understand impacts of the program in the context of the electricity review. It was believed that the size and number of projects would likely push COMFIT costs beyond what was originally envisioned. This has been confirmed by the Fuel Adjustment Mechanism process (FAM) through the UARB, which showed COMFIT to be an added rate pressure of about 4%.

While a number of other “offsets” will ultimately balance this pressure and minimize the impact on ratepayers, continuing to approve new COMFIT projects would create more pressure on electricity rates over the long-term.

2.2 Biomass

When COMFIT was first created, it was anticipated that the biomass rate would be used primarily to support existing saw mills to make better use of waste wood, supplemented with a small supply of primary forest biomass. This, however, was not the case. Only one sawmill applied to the program (Hefler Lumber).

In addition, there are increasing public concerns about the use of primary forest biomass as a fuel source for electricity production as there are a number of other higher value uses for wood products. Biomass has both a high COMFIT rate and a high capacity factor. This means that 1 MW of biomass costs ratepayers the same amount as almost 4 MW of wind.

For these reasons, government is reconsidering how biomass is used for electricity.

2.3 Community ownership

One of the fundamental underpinnings of the program was the concept that Nova Scotians should own and invest in renewable electricity projects in their communities. The Renewable Electricity Regulations require at least 51% eligible entity ownership, and program directives dictated at least 20% of the project equity would come from the community.

There has been significant variation between projects in terms of the application of community investment. Smaller projects, such as the CCWF project in Tatamagouche, is owned entirely by the community economic development fund, and all project equity was contributed by that group.

However, larger projects tended to enter into partnership agreements with private entities and have lower community contributions while still maintaining 51% control through voting arrangements. In general, most projects had upwards of 30–40% community equity, exceeding minimum requirements and thus ensuring communities will receive a significant portion of financial returns. In some cases, eligible entities sought to borrow their community contributions from the private partner. This practice can undermine the ability of the community owner to truly control the project. Furthermore, it may signal that community investment has been exhausted for these types of projects if there is a need to borrow project equity.

2.4 Saturation of large wind projects

The major source of COMFIT applications and capacity have been large wind (greater than 50 kilowatts) projects. While there has been significant success in executing these projects, the electricity review technical studies have shown that the province has likely reached the point where integrating variable sources of renewable electricity cannot be managed without significant upgrades and backups. It is likely that the cost of integrating new wind projects into Nova Scotia's electricity grid will become increasingly expensive as the capacity level increases.

3.0 Lessons Learned

While there are several lessons already learned from the COMFIT process, another review of outcomes should be conducted once all projects are online, investors are seeing returns and all major capital spending has been completed. The results of this analysis will help inform future electricity and community investment/ownership policies.

Feed-In Tariffs (FITs)

FITs are a highly successful model used to encourage rapid take up of new electricity production. They are often used when the objective is to bring new sources into production when you are seeking new investment in generation assets (not the utility) and additional capacity is needed that would not displace existing assets, such as replacing a coal plant.

The Renewable Electricity Plan introduced a FIT structure as an opportunity for small-scale producers to access the electricity market. In general, small-scale producers cannot normally compete against larger producers in a competitive bidding process. FITs have been frequently used in Europe and other jurisdictions where rapid change is desired, but rarely used in North America until Ontario adopted the model in 2010.

COMFIT was designed to be a true feed-in tariff model and thus was wide open to any eligible applicant using eligible technology in an area where capacity was available. By design, government was expected to approve all projects that met the program criteria. This meant it was difficult to change direction quickly once it became apparent there was more generation potential available than originally expected.

Program Limitations

Despite the open nature of feed-in tariffs, the COMFIT program model used in Nova Scotia was designed to be self-limiting in all respects, as all connections had to be made at the distribution level to avoid costs on the transmission system. In addition, there were clear caps on small wind projects where the cumulative capacity to be approved was limited to 5 MW. Finally, as a new program at a small scale, it was expected that not all projects would be financed or executed. Nevertheless, some of

the limitations proved to be less effective than anticipated, and several lessons have been learned.

Program Caps

As noted, the only legislative cap on program outputs was on small wind. Ironically, interest in this sector was less than expected and uptake was far less than the cap (33 projects for 1.65 MW versus the allowed cap of 100 projects for 5 MW). Nevertheless, when designing such programs in the future, specific program caps (such as allocation of MW to eligible entity types) and geographic distribution should be considered.

Furthermore, one of the key lessons learned is that the nature of technology is quickly evolving – technologies become more efficient overnight. To ensure that ratepayers are protected, but that programs can accommodate advances in technology, MWH caps should be considered as well as MW name plate capacity. In this way we can limit the size of the technologies installed, but also be flexible to accommodate advancements without creating more impact on rates than was initially anticipated.

Natural Barriers

The COMFIT program made a number of assumptions with regard to how the program would be naturally capped. It was initially believed there was approximately 200 MW of capacity on the distribution system and only half would be accessible. The other half was believed to be either inaccessible (too remote) or too accessible (in urban areas not suitable for renewable development (wind or biomass)). Therefore, the program expected a maximum uptake of approximately 100 MW.

However, actual capacity available far exceeded what was anticipated. As a result, distribution capacity did not serve as a brake on project development to the extent expected.

For the future, the department intends to incorporate more specific parameters on electricity programs. While still providing flexibility to adjust to program and applicant needs, more specific requirements and limits will be considered to ensure that future programs do not cause additional and undue pressure on rates.

Financing

It was found that financing small-scale community projects proved to be both more challenging and more accessible than initially anticipated.

COMFIT project applicants with multiple project awards have been able to “bundle” projects to increase their attractiveness to commercial lenders. Anecdotally, most lending institutions see investment less than \$10–15 million (below 4 MW) to be high-risk. The amount of work required to assess viability is significant, and a one to two turbine site is highly risky since a single turbine out of commission will highly impact the revenue stream.

However, COMFIT applicants have been able to package projects together and raise capital and debt financing for several projects. This de-risks the project, first, for investors who are now invested in a number of locations throughout the province and are not entirely tied to one or two turbines, and second, for lending institutions that now have a much more attractive capital project (\$20–30 million) to finance. This resulted in financing becoming less of a barrier than expected for larger-scale projects.

Conversely, a number of small-scale projects (less than 50kw) have had difficulty securing financing for their projects. The equity contribution required by most lending institutions (50%) to consider financing is far beyond what many eligible entities, such as not-for-profits, can manage. A small wind project would generally cost about \$400,000 and require \$200,000 in equity.

For future consideration, it is noted that financing remains an issue for small- and medium-sized projects. Raising \$200,000 to \$300,000 remains a significant barrier for smaller organizations.

Future Participants

Although the number of projects under COMFIT is widely distributed geographically and there is participation from all forms of eligible entities (CEDIFs, not-for-profits, First Nations, municipalities), it is also recognized that the bulk of the capacity was allocated to for-profit CEDIFs.

Unless directed otherwise, FIT programs favor those with knowledge and expertise and are therefore more prepared at the initial application stage. Less savvy entities may need to take more time to gain some experience and partner with other projects before they take on their own.

However, in not capping the number of applications and amount of capacity that can be applied for by one eligible entity, all opportunities may be quickly taken by those already involved in these types of projects.

Future Reviews

With the bulk of the projects only coming online in 2015, clear outcomes on community energy benefits, the value of the CEDIF model, and uses of the community revenues cannot be properly measured for several years. Thus, a further review of program costs and benefits will be undertaken when the data is available in 2017 or 2018.

However, it is also noted that a complete accounting of the program won't be possible until it truly comes to a complete end. That won't take place until 2035, or in some cases a few years after that.

Nevertheless, a review in the 2020–2030 period will be useful as much of the infrastructure (roads and power lines) – and even the towers and turbines, in many cases – have an economic life beyond the 20 years of their power purchase agreements. As part of planning for Nova Scotia's electricity needs beyond 2030, this infrastructure should be considered. Community entities may wish to competitively bid to renew their projects when their power purchase agreements come to a close.



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