

# Federation of Community Power Co-operatives

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## Climate Change Discussion Paper EBR Submission Draft 15 March 2015

Ontario's Climate Change Discussion Paper provides an excellent framing of the challenge facing Ontario, both environmentally and economically. We wholeheartedly agree that we must take "bold action" to address climate change. We also agree that there can be a large economic upside to taking action to reduce our climate destabilizing emissions. As a large net importer of fossil fuels, Ontario can save billions of dollars by improving efficiency and replacing fossil fuels with zero emission alternatives, such as solar and wind power or with carbon-neutral alternatives such as biogas.

As the paper suggests, there is also significant economic development potential in continuing to grow Ontario's renewable power industry and in technological innovation associated with producing, managing and deploying such energy.

As the discussion paper points out, phasing out coal-fired electricity has dramatically reduced greenhouse gas emissions from the electricity generation sector. However, as the province's Climate Change Update illustrates, electricity sector emissions are expected to begin rising again in 2018 and ramp up quickly after 2020 as demand increases and nuclear plants become smaller contributors to supply due to permanent shutdown (Pickering) or the need for a lengthy rebuilding process (Darlington and Bruce).

This rise in emissions can be avoided by continued rapid deployment of renewable energy sources. Instead of curbing deployment of renewable energy post 2018, as is currently envisioned in the province's Long Term Energy Plan, we should continue to build out renewable energy in keeping with our province's large untapped potential and the falling costs of these technologies. With wind, solar and biogas still only at a fraction of their potential in Ontario, it makes little sense to turn to climate destabilizing natural gas generation to meet our electricity needs post 2018.

Renewable energy projects have the advantage of being quick to build and of adding climate resilience to communities, by embedding generation in local distribution networks and helping us to create a more dynamic distributed electricity system better suited to our changing world and changing energy demand patterns.

In just five years, Ontario has added approximately 2,000 megawatts of solar capacity, which equals an actual greenhouse gas reduction of roughly one megatonne (compared to natural gas). We can easily double this installed amount before 2020 given advances in sectoral capacity, financing, and improvements in technology. Similarly, as of late 2014, Ontario had installed roughly 2,500 megawatts of wind generation capacity. With wind power now well below the cost of new nuclear and increasingly competitive with coal and gas, we should be looking to continue to deploy this technology and continue to build the province's associated manufacturing capacity.

Ontarians are deeply worried about the impact of climate change, especially for their children and grandchildren. They increasingly understand the high costs of inaction – especially after widespread flooding and damaging ice storms – and are ready for solutions like widespread use of renewable power. However, there is no question that community ownership of renewable power assets increases acceptance and support significantly. It should be a goal of Ontario's climate change planning to use the

community power model to engage the public in action to address climate change and to increase support for effective solutions, such as zero emission wind and solar power.

By making community owned power a central element of our climate change mitigation efforts, we can help citizens make a difference where they live and open up a larger conversation about issues like increasing energy efficiency and building more sustainable communities.

The discussion paper's focus on innovation is also very important, especially when it comes to renewable power. There is huge potential to use renewable energy much more widely than simply as an electricity source. In fact, in addressing the most challenging areas described in the paper – building and transportation sector emissions – renewable energy can play a critical role.

As part of any climate plan, we should be exploring the role that can be played by renewable heating and cooling technologies, whether it is solar water heating or green-powered heat pumps. Absorption chilling, solar air heating, biogas co-generation, and geo-exchange systems are all examples of renewable technologies that should be a focus of our innovation and deployment efforts. These technologies can play a huge role, particularly when combined with improved efficiency efforts, in reducing emissions from our homes and buildings.

Similarly, there is no question that we need to “de-carbonize” transportation. We can try to do this with large centralized generation feeding an increasingly electrified but highly dispersed transportation sector or we can do it more efficiently by providing “fuel” onsite through renewable power generation. By using electric vehicle technology as both a transportation and an energy storage technology, we can build a highly efficient and locally resilient integrated energy and transport system.

Supporting such efforts through a price on carbon makes good sense. We must stop using our atmosphere as a free dumping ground for pollutants and start to recognize the very real costs that come with dumping greenhouse gases and associated pollutants into our atmosphere. A well-designed carbon price will have wide economic coverage (not just targeting large emitters), provide a strong financial signal, either through an impactful market price or full auctioning of credits, and include measures to protect low-income citizens.

Hewing to a strictly “revenue neutral” price in our view will undermine the effectiveness of carbon pricing compared to a blended model where a significant emphasis is put on using these new revenues to fund innovations that can both grow our economy and reduce our emissions.

In choosing the energy technologies to support, Ontario should demonstrate a clear preference for options with a low environmental footprint, large growth potential, and a high benefit-to-cost ratio. Nuclear energy does not fit any of these criteria as it is a stagnant, high-cost technology that is falling out of favour worldwide; risky to use, with a major nuclear accident happening roughly once every decade worldwide; and slow to deploy, with no nuclear project ever having been completed on time or on budget in Ontario.

It makes little sense to continue to focus on cumbersome and costly nuclear technology as a low-carbon solution when much faster to deploy renewable technology offers a variety of safer and cheaper solutions. It is important to remember that it was the failure of the province's nuclear fleet (seven reactors shutdown) in the late 1990s-early 2000s that led to a huge increase in the use of coal fired electricity generation in Ontario and a huge accompanying increase in greenhouse gas emissions. The risk of long

delays in completing refurbishments, the fact that these refurbishments are unlikely to pass a rigorous cost-effectiveness test, and the inflexibility of nuclear power makes it a poor choice for combating climate change.

Simply by integrating a growing made-in-Ontario renewable power sector with water power storage in Quebec, we can make zero emission energy available 24/7 in Ontario. The recent agreement between Ontario and Quebec to exchange up to 500 MW of power annually makes this a highly feasible and effective approach to “firming” Ontario renewable power.

Putting renewable energy front-and-centre in our province’s climate plan is the only way we are going to meet our 2050 greenhouse gas reduction targets. While we can and should dramatically increase our energy efficiency, we are still going to be left with large energy demands that must be met with zero emission sources. Ontario has demonstrated great leadership in developing and deploying renewable energy through its passage of the Green Energy and Economy Act, continued enhancement of the Feed-in Tariff program, and development of smart-grid technologies. With the climate crisis steadily worsening, this would be a terrible time to slow progress on this front.

While the discussion paper asks many pertinent questions, we have chosen to focus on those where our insights will be most valuable:

### **What industry sectors**

While all sectors must contribute, there is immediate potential to reduce emissions from the electricity sector by rapidly deploying renewable energy technology. All industries should be encouraged to explore on-site or local generation of renewable energy to meet their needs. With the costs of renewable energy falling rapidly, this will be an increasingly attractive option for many businesses.

### **Transportation**

Electrification of transportation is obviously a key way to reduce emissions from this sector. But to maximize the benefits of electrification, we should ensure a robust supply of renewable energy through a smart grid that also facilitates energy storage functions via electric vehicles. With the cost of renewable power falling rapidly, using such power sources will make electric vehicles highly attractive in the very near term.

### **How could emissions from existing building stock be reduced sufficiently to ensure Ontario meets its targets?**

Renewable energy technologies, including solar PV and solar thermal, can play a significant role in meeting the energy demands of existing buildings with zero emissions. As well, renewable energy can be used in combination with air-to-air or ground source heat pumps to provide zero emission heating and cooling. Solar absorption chilling or deep-lake water-cooling are additional ways to provide cooling with zero emissions. We need to ensure that financing programs for building retrofits, including property tax increment financing and on-bill utility financing, include coverage for renewable energy technologies. This is particularly important for older existing structures where lowering energy demands is going to be more challenging.

### **What changes are needed to building codes and planning processes?**

A key change is requiring new homes to be “solar ready” as a transitional step toward requiring that all new buildings be constructed to “net zero” energy standards. Ensuring that the building code is supportive of renewable technologies, such as building integrated solar, geo-exchange, and solar thermal

is key to reducing the emissions associated with new building construction. In planning, we must give greater consideration to community energy planning and the need for more locally embedded generation to increase climate resiliency.

### **What more could be done to ensure more Ontarians have the capacity to invest in low-carbon buildings and technologies?**

The community power model is a powerful and proven way to allow average citizens to invest in low-carbon solutions. Community cooperatives keep more of these investment dollars in the local economy and produce more jobs for each dollar invested. By allowing average citizens to invest in renewable energy projects with often-modest financial commitments, the community power community has pioneered an effective approach for low-carbon development. This model should be strengthened and expanded by providing simpler investment rules and greater FIT program certainty.

The community power model, as applied to renewable energy cop-ops in Ontario, can be adapted to facilitate citizen investment in a variety of low-carbon initiatives, provided the returns can be predicted up front. A price on carbon, properly designed, can ensure that such returns are calculable, thus creating the stability needed for the success of community power models. The Feed-In Tariff program provided such stability for renewable energy co-ops and a carefully designed price on carbon can do the same for a wide variety of low-carbon technologies.

### **Risk assessment**

Any risk assessment should take into account the vulnerability of energy supplies. Our current highly centralized electricity system, for example, is at high risk for climate disruption. The entire City of Toronto receives almost all of its electricity through two major high-voltage, long distance transmission lines. The vulnerability of this system is being demonstrated more frequently as the frequency of major weather systems increases. We need to build more resilient local power sources; local municipalities and citizens will be a key part in this planning process.

### **Carbon price**

Any carbon pricing system must level the playing field between zero emission renewable power and conventional fossil fuel sources by reflecting the true costs of polluting emissions. Similarly, credits should not be issued for sources that have other significant environmental externalities, such as producing radioactive waste.

To send strong market signals to a cross-section of polluters, a carbon price needs to be designed for simple implementation and administration. A revenue neutral carbon tax, as introduced in British Columbia in 2008, provides a valuable template; the BC model has contributed to a significant reduction in fossil fuel use per capita without compromising economic activity and has enabled BC to have the lowest income tax rates in Canada.(see the full assessment here - <http://www.sustainableprosperity.ca/dl1026&display>).

From the perspective of the community power sector, such a broad reaching pricing mechanism is the only way to ensure transformative changes to technologies, infrastructure and processes. At the same time, a well designed pricing mechanism that allows for calculable returns will play a pivotal role in innovative new financing trends, including social financing where citizens and citizen-groups become the drivers behind (and direct beneficiaries of) low carbon-technology investments. We would be happy to share our experiences with the community power model which has been applied to community-investing

in renewable energy. The scope of possibilities is vast, but is dependent on strong price signals such as a well-designed carbon-tax.

**About the Federation of Community Power Co-operatives (FCPC)– <http://fcpcoops.ca/>**

The FCPC is a province-wide umbrella organization for community power co-ops in Ontario that are developing grid-tied renewable energy projects. We exist to unite, represent and serve the community power co-op community across the province.

The FCPC was created by co-ops for co-ops to enable co-operation and mutual support within the sector and to expand the opportunity of individuals and communities to benefit from Ontario's growing renewable energy sector.

It is our goal to increase the number of renewable energy co-ops developed at the highest possible standards by establishing best practices and sharing resources.

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