

**RENEWABLE ENERGY, CARBON ENVIRONMENTAL  
ATTRIBUTES**

**A PRESENTATION BY**

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**TO**

**CAP-AND-TRADE FORUM**

**TORONTO  
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ONTARIO POWER AUTHORITY

**April 12<sup>th</sup>, 2010**



## Cap-and-Trade Forum

**JoAnne Butler**  
Vice President, Electricity Resources  
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Thank you for this wonderful invitation. It's great to see some familiar faces and to become acquainted with new ones.

I'm especially pleased to have been asked to participate in this forum. It's as much a learning opportunity for me as it is a chance to explain what we're doing at the Ontario Power Authority. In fact, learning is a big part of what we do every day at the OPA, and I know that I will have much to learn from all of you throughout the day.

Today, I'd like to talk to you about what we are doing at the OPA regarding moving towards a reduced carbon environment and what carbon policies, such as a cap-and-trade regime, might mean for the Power Authority.

For those of you who may not know, Ontario has already staked its claim as a world leader in greenhouse gas reductions.

In fact, we're well on our way to reducing the carbon footprint of our electricity system by 75 percent.

This is largely being driven by a government decision to reduce and eliminate coal-fired generation. Coal will be gone from our electricity supply by 2014. This represents the single largest climate-change initiative in North America.

But that's not all we're doing. To say it's been busy over the last several months would be an understatement. In fact, it's been a watershed 12 months.

Last spring, as you know, the government passed the Green Energy Act. It's a groundbreaking piece of legislation that is changing the face of the electricity sector in Ontario.

It's certainly put Ontario on the map. I'm not exaggerating when I say the world is watching us very closely, and we get calls and emails and meeting requests every day.

The Act not only positions Ontario as a global leader in both conservation and renewable energy, it's expected to encourage billions of dollars of investment in Ontario's electricity sector in the next few years.

It's also expected to create 50,000 green collar jobs in its first three years. And serve as a catalyst for greening other parts of the economy such as transit and vehicles.

The Act essentially allows us to contract green and clean energy in ways that simply weren't possible before. The cornerstone of the new legislation is our Feed-in Tariff Program. It's the first and most comprehensive of its kind in North America. And it's already proven extraordinarily successful.

So, this morning, I'll start by telling you more about our Feed-in Tariff and conservation programs and how we are bringing new, renewable sources of energy on to the grid.

I'd also like to give you the Ontario Power Authority's perspective on what carbon policies likely mean for the OPA, for electricity suppliers and for the ratepayers of Ontario.

In other words, I'd like to tell you about the principles, the benefits and obligations attached to OPA supply contracts.

And finally I'd like to share with you what we are doing to keep on top of carbon policies and regimes as they evolve.

# The Ontario Power Authority

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- Mandate is to ensure reliable, sustainable electricity supply for Ontario
- Functional areas:
  - Planning
  - Supply Procurement
  - Conservation
  - Sector Evolution

## Slide 2: OPA

First off, just a few words about the OPA. For those of you who may not be familiar with us, our mandate is to ensure a sustainable and reliable electricity system for Ontario's citizens. We plan for the medium term as well as the future. We also coordinate conservation efforts. We procure much-needed generation. And we support the continued evolution of the sector, and this is where we are looking at carbon policy.

Conservation will always be our first priority.

The good news is that we're already well on our way to meeting our target of reducing peak demand by 6,300 MW by 2025. That's the equivalent of taking one in five households off the grid. In fact, we're already one-quarter of the way there.

As I said, we're the first jurisdiction in the world that is getting out of coal completely. At one time, it represented 20 percent of our supply mix. Clearly, we had to find something to replace it with. And that's where our renewable energy program comes in.

We currently have more than 35,000 MW of installed capacity in Ontario. Our supply mix breaks down this way: about half is from nuclear; 25 percent from hydroelectric power and the rest is primarily from natural gas and coal.

But a growing portion of our power is coming from green sources.

Over the next few years, we're expecting to add about three to four thousand megawatts of renewable energy to our supply. Some of this is already in the pipeline, and some of that we're contracting under our FIT Program, about which I can give some results a little later.

# FIT Program Key Features

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- Open to various renewable energy supply technologies
  - Bio-energy technologies 
  - Solar PV 
  - Waterpower 
  - Wind 
- Different prices for different technologies and project sizes
  - Prices cover development costs and provide a reasonable rate of return
  - Prices derived using recent market data, OPA experience with previous renewable energy contracts and experience other jurisdiction
- Long-term contracts (20 years, 40 years for Waterpower contracts)
- Opportunities for promoting Community and Aboriginal projects
- Provisions for Domestic Content
- FIT Program review every two years or specific changes may be made by Ministerial Directives or Government Regulations

### Slide 3: FIT Program

As I said, the response to our Feed-in Tariff Program has been overwhelming.

FIT essentially allows us to contract with our suppliers in ways that simply weren't possible before. It offers attractive incentives to developers – whether they are for on- or offshore wind, solar PV, biogas, water or landfill gas projects. Our FIT Program also offers stability with long-term contracts, opportunities for promoting community and aboriginal projects and, to grow a viable and healthy sector, provisions for domestic content.

The launch of the FIT Program has exceeded all of our expectations. Since launching on October 1st, we've received applications for nearly 10,000 projects representing more than 11,000 MW of renewable energy.

This includes about 8,400 applications for the microFIT Program – projects of 10 kilowatts and less, the rooftop version. And about 30 percent of those applications have already been given conditional offers to the tune of 25 megawatts.

And last month, more than 500 projects under the FIT Program's capacity allocation exempt category were approved. The projects – most of which are solar power installations – range from 10 kilowatts to 500 kilowatts, or the larger rooftop version, and have a total generating capacity of 112 megawatts. And last Thursday we announced another 184 contract offers in the over 500 kilowatt range for another 2500 MW, essentially filling up all remaining distribution and transmission capacity in the province.

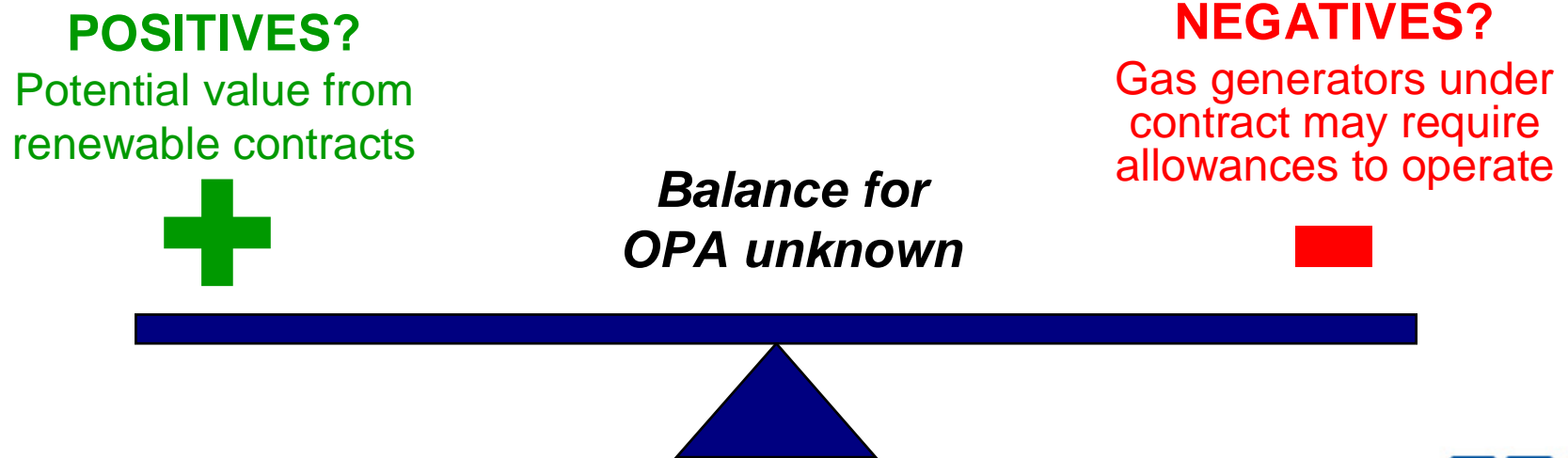
Together, these projects will produce enough energy each year to power more than 600,000 homes.

Now, I'd like to turn my attention to what many of you are anxious to hear about: our principles and approaches incorporated in the OPA's supply contracts with respect to carbon policies.

# Environmental Attributes and OPA Contracts

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- EAs relate to environmental impacts associated with facilities under OPA contract and have no set value
- EA definition varies by contract, but generally: all rights to any fungible or non-fungible attributes relating to the nature of the energy source
- Carbon allowances and credits/offsets fall under this definition but in some contracts are specifically broken out



#### Slide 4: Environmental attributes and OPA contracts

In all of our contracts, we have language relating to EAs – the environmental impacts associated with facilities and have no set value. The language and definitions vary by contract, but generally all rights to any fungible or non-fungible attributes relating to the nature of the energy source.

We straddle two different positions depending upon the type of contract. On the one hand, the OPA is potentially the holder of environmental benefits from renewable contracts. On the other, we may have an obligation to ensure continued operation of our contracted facilities, such as gas-fired facilities under a carbon regime.

## OPA's EA Policy

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- OPA retains the rights to all EAs (and Carbon Credits) in supply contracts
  - Originally difficult for Suppliers to recover the value of EAs in the non-existent market
- OPA indemnifies NG-fired facilities for any Contract Facility Operation, that is deemed dispatch operation, implications arising from future regimes/policies that address GHG
- Historically, OPA has not sold EAs for numerous reasons including:
  - Maintained EAs for provincial policy targets and goals
  - Uncertainty around potential future value in a cap-and-trade system
  - Potential to apply against possible future liabilities

## Slide 5: OPA EA policy

Under OPA supply contracts, the Power Authority retains the rights to all environmental attributes associated with the project, or in the case of conservation projects, the environmental attributes associated with the electricity savings. And, as discussed earlier, we indemnify natural gas-fired facilities for any contract facility operational implications arising from future regimes/policies that address GHG. In other words, under our contracts for natural gas generation, we've said that if there is a carbon tax or a carbon trading system, we'll either buy the credits or provide the funding needed to operate as a deemed dispatch facility.

The OPA's rationale for retaining the EAs can be explained.

These decisions are not solely made by the OPA. The OPA works closely with the Ministry of Energy and Infrastructure to ensure that the treatment of environmental attributes does not conflict with provincial policy targets and goals. The OPA and the province would like to ensure that environmental attributes are not used for projects that do not share the same environmental goals as Ontario, including reduction of greenhouse gasses and other pollutants such as NO<sub>x</sub> and SO<sub>x</sub>.

There is a recognition that the OPA has paid for green energy and therefore, if a market does evolve, any value associated with green attributes should flow back to the Ontario ratepayers who facilitated those investments. There is also a recognition that it has been difficult for suppliers and buyers to determine the value of environmental attributes in a market that didn't previously exist and is still in its infancy. As well, they can potentially be applied against possible future liabilities.

So, at a high level, those are our obligations under OPA contracts with respect to greenhouse gas emissions and environmental attributes in general.

But, from our perspective, there are a number of other important factors to consider in any carbon regime.

# Ontario Climate Change Activities

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- Potentially enabling cap and trade legislation
- Working with WCI and RGGI observer to ensure:
  - a liquid carbon market and broad access to emissions trading
  - trade and competitiveness
- Ontario is a world leader in reducing GHG emissions: phasing out coal, very ambitious Green Energy Plan & FIT...
- Electricity sector will aid in fulfilling GHG regulations under Cap and Trade regulations
- Ontario is seeking input on potential means of recognizing early action in the electricity sector



Slide 6: Ontario climate-change activities

I will just touch on the Ontario perspective, since others more literate on this subject will talk on it later. As you know, Ontario has already passed legislation so that if a regional or North American cap-and-trade regime does come into place, we can get up and running quickly. The province is also a member of the Western Climate Initiative that is working toward forming a regional regime and an observer on RGGI, a U.S.-based regional regime, to ensure a liquid carbon market and broad access to emissions trading to promote trade and competitiveness. I talked earlier about how Ontario is a world leader with its coal phase-out and Green Energy Act, and the electricity sector has, and will continue to be, a big part of any negotiations, especially with regard to recognizing early action.

# OPA Climate Change Activities and Status

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- Climate Change Committee
  - Working with MEI, MOE and other electricity stakeholders
- Policy & Analysis Group:
  - Identifying an approach for dealing with carbon mitigation policies, including what the OPA may have (in terms of EAs) or owe (in terms of allowances)
- Investigating possibility that OPA renewable energy activities could either sell RECs or qualify for Early Reduction Credits to balance liabilities
- Key concerns:
  - Electricity sector is a regulated and under some proposed cap and trade regimes “offsets” or “credits” can not be produced from regulated sectors, therefore chance that emission reductions from current renewable energy will not count as offsets / credits.

Slide 7: OPA climate-change activities and status

We're working hard to stay on top of climate-change developments – whether it's the Western Climate Initiative or those that are happening across North America and worldwide. The OPA has established an in-house climate-change committee involving multiple departments of our organization. We're also working closely with the MEI and the Ministry of Environment; in particular, the Ministry of the Environment's Electricity Stakeholder Working Group, as well as with other electricity stakeholders.

Within the policy and analysis group, which lies within my shop, we are working on identifying an approach for dealing with carbon mitigation policies as they relate to our contracts and investigating whether our renewable energy activities could either produce and sell RECs or qualify for early reduction credit to balance liabilities. There are still a lot of details that need to be defined, and there is always the possibility that regulated sectors like electricity may not be eligible for greenhouse gas offset credits. In other words, emission reductions from renewable energy may not produce offsets or value with respect to greenhouse gas regulations.

# Final Thoughts from OPA's Perspective

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- Goals for a cap and trade program:
  - Do not distort electricity market
  - Do not distort carbon market
  - Deemed facilities should receive allocations that they need
  - Least burdensome option for rate payers
  - Least admin burdensome option
- Renewable energy portfolio may not generate sufficient carbon credits to balance NG plant emissions, but future contracts (i.e. FIT, CHP) will play significant role in determining balance
- Potential exposure cannot be accurately determined until greater clarity is achieved on GHG legislation
- OPA continues to monitor emerging carbon legislation and work with MEI/MOE, including recommendations on where and how to price GHG
- Will need to determine how to acquire allowances (in house vs. contracting) if OPA is the dominant player in an electricity cap and trade program

Slide 8: Final thoughts from the OPA's perspective

So, just to conclude, we believe that the goals for a cap-and-trade regime would be most effective by not distorting the electricity or carbon markets. It needs to operate as a true market. Liquidity and price transparency are paramount in terms of credit supply, credit pricing and credit and allowance allocation. The market should involve a variety of sectors and not just the electricity sector. There would be more liquidity – and therefore possibly lower costs with the increased supply of credits – with the increased supply of credits, trading options and emission-reduction opportunities if we can trade across different sectors.

It will also be important to harmonize policies with our neighbouring jurisdictions, especially with those provinces and states that we import and export electricity to. This includes New York, Michigan, Manitoba and Quebec. This would help maintain Ontario's competitive electricity position and help to ensure leakage is prevented to other jurisdictions.

So, clearly there's much to be worked out – the future is uncertain. It's an extremely complex issue that encompasses all types of stakeholders, and that can't be easily resolved. We're studying it. We're talking to all of the key stakeholders to best prepare for what is to come.

We'll be principled and consistent in our objectives but we're going to have to learn as we go and adjust on the fly.

To define exactly what we're going to do and how we're ultimately going to do it – well, that's like trying to pick out furniture and wall-hangings for your new office before the architect is finished with the blueprints for the building.

I'm really looking forward to hearing from others participating in today's forum – to learn and take your thoughts, and all that I've learned here today, back to the OPA. And in trying to be environmentally responsible, I did not bring copies; however, my remarks and slides will be available on the OPA website in a couple of days and you can enter there and print off what you need.

Thank you very much for your attention.

# Questions???

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