“FIT for the Agricultural Sector”

A presentation by

JoAnne Butler

Vice-President, Electricity Resources, Ontario Power Authority

to

the Ontario Federation of Agriculture

2009 Convention

November 23, 2009

Toronto, Ontario

CHECK AGAINST DELIVERY

ONTARIO POWER AUTHORITY

November 23, 2009

FIT for the Agricultural Sector

A presentation by
JoAnne Butler, Vice-President of Electricity Resources,
Ontario Power Authority

(Slide 1 – Title slide)

Good afternoon everyone. Thank you very much to the organizers of this conference for the opportunity to speak with you today. I'm delighted to be here and delighted to speak to you about a topic near and dear to my heart – the newly announced and launched Feed-in Tariff Program and how it applies to the agricultural sector. This program offers excellent opportunities for many sectors to become involved in renewable energy generation, but none more so than the agricultural community.

While I now work in Toronto, I'm really a country girl at heart. I was born and raised in the Ottawa Valley. While my parents were not farmers themselves, they owned the country store that served the farming community. So we would see our neighbours, who were farmers, regularly as they came to the store pick up their milk, bread and newspapers.

While I generally have happy memories of my childhood in the country, one not-so-happy memory is still quite vivid in my mind. While spending some time with one of our neighbours, at the tender age of about five years old, I somehow managed to fall off the manure spreader, right into a pile of – you guessed it – manure! I ran home crying and stinking, of course, and I'm sure I provided our neighbour with an afternoon's entertainment and a good story to share.

All this to say that I have the greatest respect for farmers, having grown up in a farming community. And Ontario farmers have the land, access to the natural resources and the business acumen to develop renewable energy projects. I am fortunate to have an engineering degree but believe me, some of the best hands-on engineers that I have ever met in my life are farmers. They can fix anything with anything and have great mechanical and electrical knowledge. Through the Green Energy Act and Feed-in Tariff Program, the provincial government and the Ontario Power Authority are providing the framework to encourage you to develop these projects, so that both you and all Ontarians can benefit.

Green Energy and Green Economy Act, 2009

- Recent legislation creates a new electricity paradigm for renewable energy:
  - Streamlined permitting and approvals process
  - Priority connection – “Right to Connect”
  - Fixed price contracts for power production
  - Ownership opportunities for private sector, municipalities, utilities, aboriginal and community groups

- Creates lots of opportunities for the agricultural sector

(Slide 2 – The Green Energy Act)

You have probably heard about the Green Energy and Green Economy Act, which has created for us a new electricity paradigm for renewable energy. It has streamlined the permitting and approvals process, incorporated a right to connect, included fixed price contracts for power generation, and offered ownership opportunities for the private sector, municipalities, utilities, Aboriginal and community groups. Of most interest to you, however, is that it has also created an abundance of opportunities for the agricultural sector.

FIT Program Key Features

- Open to various renewable energy supply technologies
  - Bio-energy technologies
  - Solar PV
  - Waterpower
  - Wind
- Different prices for different technologies and project sizes
- Long-term contracts
- Prices that aim to cover total project costs and provide a reasonable rate of return over the contract term

(Slide 3 – Key Features)

The FIT Program is open to various renewable energy supply technologies, offers different prices for different technologies and project sizes, and includes long-term contracts at prices that aim to cover total project costs and provide a reasonable rate of return over the contract term.

Green Energy Benefits to the Agricultural Community

- Reduces emissions that contribute to climate change
- Increases renewable energy supply as coal is eliminated from the supply mix
- Creates new green industries through new investment and job creation
- Generates income through the FIT Program
- Diversifies your market by growing energy crops

(Slide 4 – Benefits)

Green energy benefits Ontario in many ways – it reduces emissions; it helps increase the energy supply while the province works to shut down coal-fired generation; it helps foster new green industries through new investment and create jobs. But how does it benefit you personally?

Well, you can make money by selling the electricity you generate. And should you choose to grow energy crops, you're diversifying your markets, creating a hedge against fluctuating prices. All good reasons to think about investing in renewable energy.

FIT and microFIT Program

- The FIT Program is divided into two streams – FIT and microFIT

FIT Program stream	microFIT Program stream
Small, medium and large renewable energy projects Generating over 10 kW of electricity.	Very small renewable projects such as home or a small business installations Generating 10 kW or less.

- The microFIT program is highly simplified and the contract issuance process is different from the FIT program

(Slide 5 – Two Streams)

The FIT Program is divided into two streams – FIT and microFIT. FIT is for small, medium and large renewable energy projects that will generate over 10 kilowatts of electricity. MicroFIT is for very small projects such as a home or a small business installation generating 10 kilowatts or less. The microFIT Program is much simpler and straightforward to encourage more people to participate.

Farmers are in the unique position of being able to develop projects that could fall into either stream – for example, solar panels on the roof of a house or barn that would be small enough for microFIT, or possibly wind or bioenergy projects that could fall under FIT.

FIT Price Schedule

Renewable Fuels	Capacity Range	Price (¢/kWh)
On Farm Biogas *	≤ 100 kW	19.5
On Farm Biogas *	> 100 kW ≤ 250 kW	18.5
Biogas *	≤ 500 kW	16.0
Biogas *	> 500kW ≤ 10 MW	14.7
Biogas *	> 10 MW	10.4
Biomass *	≤ 10 MW	13.8
Biomass *	> 10 MW	13.0
Landfill gas *	≤ 10 MW	11.1
Landfill gas *	> 10 MW	10.3
Rooftop or Ground Mounted Solar PV	≤ 10 kW	80.2
Rooftop Solar PV	> 10 kW ≤ 250 kW	71.3
Rooftop Solar PV	> 250 kW ≤ 500 kW	63.5
Rooftop Solar PV	> 500 kW	53.9
Ground Mounted Solar PV *	> 10 kW ≤ 10 MW	44.3
Waterpower *	≤ 10 MW	13.1**
Waterpower *	> 10 MW ≤ 50 MW	12.2**
Off-shore Wind *	Any size	19.0
On-shore Wind *	Any size	13.5

* Eligible for Aboriginal or Community Adder

** Contract term for water power extended to 40 years

Ontario Power Authority

(Slide 6 – Price Schedule)

Here is the price schedule for FIT and microFIT projects. You'll notice that there is a special category for farm-based biogas projects in recognition of their generally higher development costs. These prices would be for 20 years, 40 years for waterpower projects.

There is also a peak performance factor that applies to bioenergy and waterpower projects. This means you get a higher price if you can generate power during peak times.

If you have Aboriginal or community participation in the project for all technologies but solar rooftop, an adder would be included in the price and is on a sliding scale, depending on the level of participation.

FIT and Domestic Content

- Domestic Content
  - Wind projects: 25% on or before Dec 31, 2011 and 50% after
  - Solar PV projects: 50% on or before Dec 21, 2010 and 60% after
  - Solar PV microFIT: 40% on or before Dec 31, 2010 and 60% after
  - Domestic content requirements are FIT contract obligations

7

(Slide 7 – Domestic Content)

You may have heard that there are domestic content provisions under FIT. This means that developers will be required to have a certain percentage of their project costs come from Ontario goods and labour at the time they reach commercial operation.

The percentage requirements are assessed on the total project cost. If designated activities are done in Ontario, developers receive a qualifying percentage towards their domestic content requirement. Criteria for designated activities range from manufacturing certain components in Ontario to retaining labour and consulting services provided by Ontario residents.

Overview of FIT Program

- Provisions for program launch
  - Connection capacity awarded based on project readiness
- Eligibility criteria
  - renewable energy projects located in Ontario
- Fees and securities
  - application fee
    - $500 / MW of proposed contract capacity
  - application security
    - $10,000 / MW for wind, waterpower, biomass
    - $20,000 / MW for solar PV
    - $5,000 / MW for >50% community-based or Aboriginal projects
  - first and second completion and performance securities
    - Required after contract is offered

(Slide 8 – Overview)

So, I thought I'd talk a little bit about how the program actually works.

We've made special provisions for the program launch period, which began on October 1, when the OPA began accepting applications, and will run through to the end of November. For this period, connection capacity will be awarded based on project readiness. So if you've got a project that's ready or almost ready to go, get your application in before November 30. After the launch period, connection capacity will be awarded based on availability and when the application is received.

Unlike its predecessor, the RESOP, this program requires that the developers put some money on the table to indicate that they are serious about actually developing their project. While there is no application fee for microFIT, FIT requires an application fee that is based on the size of the project, application security that is based on the technology, and completion and performance securities. These securities are returned at various milestones along the process.

Connection Assessment

- Once the OPA has reviewed application for completeness and eligibility, the OPA will assess whether connection capacity is available

- Capacity allocation exempt projects
  - Proceed directly to contract

- Projects that require grid expansions will move through the following steps, as necessary:
  1. Transmission Availability Test (TAT) / Distribution Availability Test (DAT)
  2. Economic Connection Test (ECT)
  3. FIT Production Line
  4. FIT Reserve

(Slide 9 – Connection Assessment)

Once a FIT application has been reviewed for completeness and eligibility, the OPA will assess whether connection capacity is available, if the project is not capacity allocation exempt. Generally small projects under 500 kW connected to the distribution system can be exempt, and they proceed directly to contract.

So the project undergoes tests to see if capacity is available. If it is, they get a contract. If it is not, they then undergo an economic test to see if it is worthwhile expanding the grid to accommodate them.

If the project passes the economic connection test, they go into the FIT production line, which means that the grid upgrades that will enable connection will be included in grid expansion plans. FIT production line projects get a contract when the grid can accommodate them. If it does not pass this economic test, the project will go into the FIT reserve and stay there until conditions change so that the costs to connect the project become reasonable. These projects serve as inputs to future planning.

Items of interest

- Wind turbine setback is 550 metres
  - 40 decibel noise level limit
- Prohibition on solar farms on Class 1 and 2 farmland
  - Cap on solar farms on Class 3 farmland at 500 MW
- FIT biomass regulations aligned with government
- Transmission buildout

(Slide 10 – Items of Interest)

There are a few items that I thought would be of particular interest that I wanted to highlight. The first is the wind turbine setback of 550 metres for one to five turbines, with setbacks increasing with the number and sound level rating of turbines. This has been set by the Ministry of the Environment and is the largest setback requirement in Canada, the United States and among eight European countries. The standards were set after public consultations, the most conservative modelling available, and a review of the experience in Ontario and other jurisdictions.

The next is the prohibition on solar farms on class 1 and 2 farm land. This is to balance the benefits of more renewable energy with the need to protect Ontario's prime agricultural land. There is also a cap on solar farms on class 3 farm lands at 500 MW, and this has been divided up among the regions of the province. More information on this is available on the FIT website.

Also, I wanted to mention that the FIT biomass regulations have had minor adjustments made to them recently to align them with government policy, but basically it is the same definition as we had for the RESOP.

And, in case you weren't aware, the government has recently directed Hydro One to immediately proceed with planning and implementing major transmission projects across Ontario, to the tune of $2.3 billion over the next three years. Six core transmission network upgrades are moving forward, primarily to enable the connection of renewable energy. That will help farmers and other developers across the province interested in connecting a project.

Participating in microFIT

- OPA expects that the microFIT Program will encourage the development of micro-generation installations
  - Mostly rooftop solar PV
  - Mostly residential, small commercial, institutional

- The program provides opportunities for a variety of business arrangements, for example:
  - Own your own project
  - Lease your roof
  - Lease project equipment
  - Community projects

(Slide 11 – Participating in microFIT)

I thought I'd say just a few things about the microFIT Program as well. We expect that it will encourage mostly rooftop solar PV on residences, and small commercial and institutional buildings.

The program provides opportunities for a variety of business arrangements, for example, you can own your own project, lease your roof or property to someone else, lease project equipment rather than buy it, and community projects are encouraged through additional incentive payments.

microFIT Program Overview

1. OPA microFIT application
   - Applicant is assigned a reference number for the project
2. Applicant submits a connection request to the LDC
   - Applicant must provide microFIT reference number
3. Applicant installs project and obtain necessary approvals
   - e.g. Electrical Safety Authority
4. Applicant and LDC complete connection of project
   - Sign Connection Agreement, pay connection costs, install meter
5. LDC informs OPA of connection details
   - Use of web-based interface
6. OPA prepares and offers microFIT Contract
   - Electronic contracting
7. OPA informs LDC to start settlement

12

(Slide 12 – microFIT Program Overview)

There are six key steps in the microFIT Program.

Step 1 – the proponent registers on the microFIT website.

Step 2 – then he submits a connection request to his local distribution company and discusses connection options with them.

Step 3 – the proponent will then install his project and obtain the necessary approvals from the Electrical Safety Authority.

Step 4 – the proponent and the local utility finalize the connection. The proponent must sign a connection agreement and pay connection costs. The utility is then responsible for installing the meter.

Step 5 – once connected, the utility will provide the OPA with important connection details that will be used to complete the contract.

Step 6 – the OPA will offer the contract electronically to the proponent. The proponent will accept the contract using established electronic contracting procedures.

Contact Us

microFIT and FIT: fit.powerauthority.on.ca/

Email: FIT@powerauthority.on.ca

(Slide 13 – contact us)

I've provided a high-level overview of the FIT and microFIT programs. I encourage you to visit the website for more information and further details on how to participate in the program.

I hope you'll agree that there has never been a better time for the agricultural community, or anyone for that matter, to consider investing in renewable energy in Ontario.

Thank you very much for your time and attention.