

# How Ontario Can Profit From Green Jobs and Greenhouse Gas Reduction through Biogas

*Recommendations from a Toronto-Based Renewable Energy Firm*

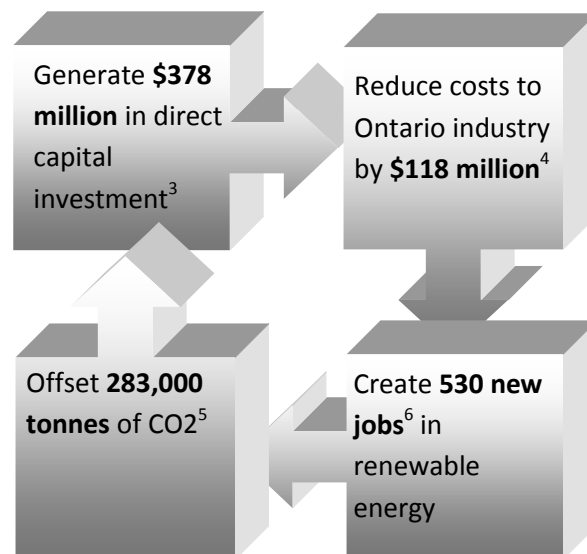
*Current as of April 8, 2009*

## Background

As a result of the Green Energy Act, Ontario has the potential to emerge as a major player in the cleantech and renewable energy industries, resulting in both a healthier environment and new jobs. The competitive landscape is fierce however, as a number of US states in particular are adopting this very strategy. The province is already home to the largest biogas company in the world in terms of funds available for investment: Toronto-based StormFisher Biogas was founded in 2006 and is funded to build a portfolio of biogas projects totalling \$350 million. The company has assembled this analysis and these recommendations at the suggestion of several Ontario policy makers in an effort to improve the province's competitiveness in this area.

## Opportunity

A 2008 OMAFRA report<sup>1</sup> concluded that the opportunity to convert Ontario's organic by-product streams into energy through anaerobic digestion results in cost savings to the food industry of \$118 million<sup>2</sup> and could offset 389 gigawatt hours per year of traditional electricity, like coal. This means the province could be home to 53 megawatts of installed biogas plants. An industry of this size with associated manufacturing of equipment like glass-coated steel tanks would bring about the following economic and environmental benefits:



<sup>1</sup> *Food Byproducts for Energy: What's out there, who has it and where is it going now?* April 3, 2008. Phil Dick, Business Development Branch, OMAFRA

<sup>2</sup> The mid-point was taken from all numerical ranges in the report for the purposes of arriving at totals

<sup>3</sup> StormFisher calculations, accounting for the capital cost of its biogas plants

<sup>4</sup> Reductions to food industry only—cost reductions in agriculture and other industries possible

<sup>5</sup> CO<sub>2</sub> and CO<sub>2</sub> equivalent. Each 2.8 MW plant is estimated to offset 15,000 tonnes of CO<sub>2</sub>e

<sup>6</sup> Jobs in engineering and development, manufacturing and plant operations. 10 jobs created per MW; assumes mixing and storage tanks are manufactured in Ontario

## Barriers to Market Development

Certain key changes in the province would help to bring this opportunity closer to reality. Until recently, developers of renewable energy projects had been leaving Ontario as it was viewed as an unstable regulatory environment for small developers, particularly following the freezing of the Renewable Energy Standard Offer Program (RESOP) and extension of the 'Orange Zones' in which no new grid connections were possible. With the introduction of the Green Energy Act, developers are looking at Ontario in a new light, but whether or not developers will favour the province over other regions—particularly US states, as the Obama administration provides support through the \$112.3 billion green stimulus funding<sup>7</sup>—will depend largely on how this Act is translated into regulation.

We have identified a number of actions, from the perspective of a biogas developer, which would position Ontario as a renewable energy-friendly jurisdiction that could capitalize on these economic and environmental opportunities. Following are our recommendations:

***Do Not Punish First Movers:*** At present, there are a handful of biogas plants in the province that have obtained a RESOP contract at \$0.119/kWh—some of these plants are built and some are not yet. The new feed-in tariff, which pays \$0.147/kWh for electricity produced from biogas, puts these first movers at a disadvantage as tipping fees for feedstock are part of a competitive market, and new developments would *de facto* be able to accept feedstock at a lower rate than those plants operational under the RESOP. This is a challenge distinct to biogas and biomass projects as the wind, sun and water will not blow, shine and flow to different windmills, solar panels and water turbines based on price. To provide a level playing ground and not put early movers at risk, the new Feed-In Tariff must extend elevated new pricing to the small number of biogas plants signed on to RESOP.

***Renew the PST Exemption for Renewable Energy Developers:*** As of January 1, 2008, the PST exemption that had until that time been available to Ontario developers of renewable energy expired and was not renewed, severely affecting returns of new projects. At the same time, the US is providing sweeping tax relief to producers of renewable energy. In order to attract new renewable energy investment, renew the PST exemption for renewable energy projects.

***Provide Priority Grid Access to Base Load Power:*** The rationale for the implementation of the RESOP and now the FIT is in large part to encourage small-scale, distributed energy to buttress an electrical grid under strain. This goal is only accomplished through the addition of base load energy, as intermittent power such as that provided by wind and solar requires that far more grid capacity is allocated than is actually used during the normal course of operation. In recognition of the benefits to the electrical system provided by base load power, provide 'fast track' grid connection agreements to producers of base load power.

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<sup>7</sup> HSBC. Green Stimulus figures are approximate and generally include investments and incentives related to clean energy, water management, low carbon transport, and/or environmental protection.

***Include Biogas Alongside Ethanol and Biodiesel Feedstock Exemptions; Do Not Discriminate Against Centralized Biogas Plants:*** Under Part V, Regulation 347 of the *Environmental Protection Act (EPA)*, organic by-products used as a feedstock for ethanol and biodiesel are exempt from a Certificate of Approval for Waste requirement. Moreover, exemptions from a Certificate of Approval for Waste have been provided to farm-based biogas plants that receive up to 5,000 cubic metres per year of off-farm material, consisting of 25% or less of total volume of material digested. This exemption puts developers of centralized biogas plants, which may serve several farms' nutrient management needs but are not located on a farm and surpass this volumetric limit, at a disadvantage and is not in line with the economic reality that very few Ontario farms can economically support a biogas plant on-site. In order to achieve parity with other forms of bioenergy and on-farm biogas plants, extend the exemption from EPA Part V Reg. 347 to biogas feedstocks, regardless of the size or zoning of the plant.

***Provide Incentives for Ontario Renewable Energy Developments:*** Ontario has made strides in attracting and maintaining a cleantech and renewable energy workforce through programs like the *Next Generation of Jobs*. However, the reality is that, in the absence of major government-backed capital and tax support, Ontario is not competitive with the US given their programs like the Investment Tax Credit and the Production Tax Credit. More can be done to encourage development here, however. Possibilities include:

- Providing capital assistance, in the form of grants and tax-exempt bonds, for renewable energy projects that provide positive benefits to the province beyond just clean energy.
- Providing access to government land—especially brownfield sites—which can be developed as renewable energy sites.

### **Direct Beneficiaries of an Ontario Biogas Industry**

- ***Biotechnology:*** biogas companies will work in conjunction with biotechnology companies to conduct R&D and investigate how to improve the biological aspect of anaerobic digestion to achieve higher energy yields.
- ***Organic fertilizer:*** the development of a major biogas hub in Ontario would make the province a leader in organic fertilizer production—a premium product with massive demand across North America, in Asia and the Middle East.
- ***Universities:*** an Ontario biogas industry would provide excellent research opportunities to universities with agri-food, biology and biotechnology focuses. Biogas companies would provide financial support to universities to further research in the geographies in which they operate.
- ***Lab testing:*** opportunities exist to develop laboratory services which currently do not exist anywhere in the province for the purposes of providing needed analysis for a biogas industry.

## **Provincial Policy Objectives Satisfied through the Creation of a Biogas Industry**

- Green Energy Act (2009)
- Places to Grow Act (2004)
- Electricity Restructuring Act (2004)
- Clean Water Act (2006)
- Nutrient Management Act (2002)
- Environmental Protection Act (1990)
- Water Resources Act (1990)
- Waste Diversion Act (2002)
- Weed Control Act (1990)

## **Conclusion**

We believe that the Green Energy Act has the potential to make Ontario home to the most progressive jurisdiction in North America, where the needs of Ontario's citizens and developers of renewable energy projects are balanced to the benefit of human and environmental health. For this to become a reality, regulations and governmental support must be made conducive to new renewable energy development, otherwise we will see nearby jurisdictions, particularly in the US, gain advantage over Ontario with respect to the green economy.

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