

# OCC ENERGY POLICIES



2011 - 2012



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# AGENDA

- 1 Introduction**
- 1 Long Term Planning: Affordable, Reliable and Abundant Energy Supply**
- 2 Electricity Market Development and Pricing**
- 2 Diversified Energy Supply Mix**
- 3 Nuclear Options for Supply of Electrical Power**
- 3 Energy from Waste**
- 4 Energy as a Development Tool**
- 4 Conclusion**
- 5 Appendix: Policy Resolutions**



## OCC ENERGY POLICIES: 2011-2012

### INTRODUCTION

Ontario's future economic growth and prosperity will depend on our ability to remain competitive in an increasingly global energy marketplace. A stable, abundant and affordable energy supply is fundamental to Ontario's competitiveness.

Modernizing Ontario's energy sector is essential for the overall economic renewal of the province. The Ontario Chamber of Commerce (OCC) has developed a number of strategic policies that, implemented together, will help the provincial government efficiently reform the energy sector and keep Ontario's businesses competitive in the global marketplace. The OCC urges the Government of Ontario to focus on several key areas:

- Providing long-term planning for supply
- Promoting competition in the electricity market to ensure pricing that reflects true cost and fosters conservation
- Maintaining a predictable and stable regulatory framework
- Promoting investment in new energy infrastructure
- Undertaking continuous efforts to diversify energy sources to ensure affordable pricing

### LONG TERM PLANNING: AFFORDABLE, RELIABLE AND ABUNDANT ENERGY SUPPLY

Ontario's economic well-being and prosperity depends on continued access to abundant, reliable and affordable energy supplies. The cost and availability of electricity have become important concerns for Ontario's businesses and residents.

Electricity demand will continue to grow in the coming years but currently, there is limited additional capacity scheduled to come online. This has given rise to concerns in the business community that inadequate supply may lead to blackouts and brownouts in the near future, disrupting business, diminishing productivity and reducing economic output.

To address these serious concerns, the Ontario government must move decisively to ensure that the province's electricity supply can readily meet projected demand increases while keeping prices stable and affordable for all consumers. Energy costs are an important part of business operational costs. This is especially true for energy intensive industries, such as forestry and mining, which are particularly vulnerable to rising electricity prices.

Jurisdictions around the world use industrial electricity rates as an important economic development tool to promote investment, foster job creation and stimulate economic growth. In past decades, Ontario's economy has benefitted from the province's ability to attract significant foreign investment due, in part, to its reputation as a jurisdiction with abundant and affordable electricity. The Government of Ontario must act to ensure that the province's reputation as a place with a reliable, abundant and affordable supply of energy continues to be a competitive edge and source of economic growth.

## **ELECTRICITY MARKET DEVELOPMENT AND PRICING**

In order to keep businesses in Ontario competitive, Ontario's electricity policy must support and encourage new investment, promote efficiency, ensure adequate capacity and foster conservation.

Ontario, like many other jurisdictions, currently has a hybrid electricity system, embracing both private and public market players, and an independent regulatory body. Ontario's electricity sector is composed of a vast array of actors, each with a specific role in ensuring the distribution and supply of electricity to consumers.

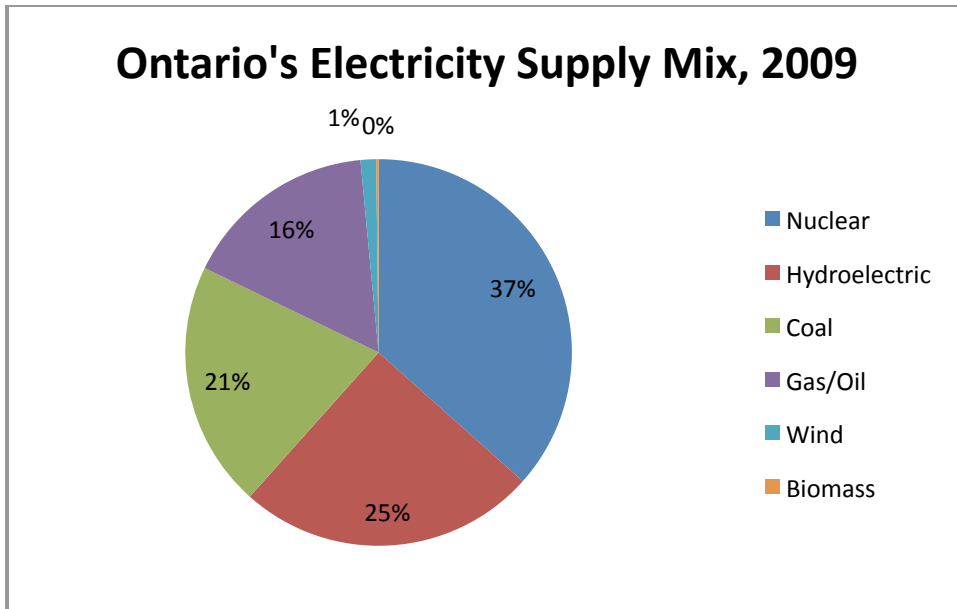
Since the deregulation of the electricity market in 1998, the number of players involved in the system has increased dramatically. Prior to deregulation, the electricity sector was primarily owned and operated by a crown corporation, Ontario Hydro, which was responsible for all aspects of electricity generation, transmission and distribution. By the late 1990s, a combination of cost over-runs on large-scale projects, ballooning debt, and pressure from customers wanting the opportunity to choose suppliers, led to the restructuring of the system. The Energy Competition Act, 1998 effectively opened up the system to new actors.

However, due to several factors, the electricity market is rather limited and dysfunctional. There is significant and ongoing debate about how to achieve a reliable and affordable competitive market for electricity that will bring real benefits for consumers.

In light of the increasing cost and future uncertainty of electricity supply in Ontario, it is imperative that the provincial government encourage private sector investment and foster competition in Ontario's electricity market. We recognize that the government has recently implemented some incentives for private investors through the 2009 Green Energy Act (GEA), such as allowing "clean renewable" energy companies easier access to the grid. Notably, the GEA has mitigated the risk associated with developing renewable energy sources through the creation of a "Feed-in Tariff" system and by guaranteeing producers a predetermined rate for all electricity generated. However, Ontario needs to do more to promote a significant role for the private sector in building capacity to meet the province's long term needs. Creating an environment of regulatory certainty and policy stability would go a long way to encourage private investment. Business needs a stable policy and regulatory environment for investment, especially in the electricity sector where many investments have high capital costs and long lead times. Furthermore, electricity prices must reflect the true cost of electricity in order to motivate consumers to conserve energy and incent businesses to invest in new generation (see *Electricity Pricing, Supply and Market Development*, Appendix).

## **DIVERSIFIED ENERGY SUPPLY MIX**

While ensuring that the province's supply keeps up with energy demand must be one of the Ontario's chief energy policy priorities, ensuring that the supply is affordable is equally important. Although concerns related to protecting our environment and reducing carbon emissions are driving a shift towards energy from renewable sources, Ontario needs a balanced energy portfolio from a diverse range of sources. As the figure *Ontario's Electricity Supply Mix* below shows, Ontario relies on a diverse mix of sources to generate its current electricity demands and it would prove very difficult to meet the province's growing electricity demand if one or more significant sources were substantially reduced or eliminated. To ensure that Ontario's energy demands are met, the Ontario government must consider and include all supply options when developing a long term, stable regulatory framework (see *Diversifying Fossil Fuel Supply Mix in Ontario*, Appendix).



## NUCLEAR OPTIONS FOR SUPPLY OF ELECTRICAL POWER

The nuclear industry is an important source of electricity for Ontario, accounting for over one-third of the province's total electricity supply (see figure *Ontario's Electricity Supply Mix* above). Ontario consumers stand to benefit from maintaining and expanding the industry's role in the province's supply mix because it is uniquely situated to provide large amounts of reliable, uninterrupted and affordable power without negatively impacting air quality. However, the nuclear industry needs a stable and predictable planning and regulatory regime to remain viable. This could best be accomplished by developing a nuclear energy strategy in conjunction with the federal government and other stakeholders.

Ontario must become a leader in helping to create a national nuclear energy strategy that will benefit Ontario's and Canada's economies. Since the last nuclear power plants were built in Ontario, the domestic manufacturing base, which is necessary to produce nuclear grade equipment, has significantly diminished. Rebuilding the domestic manufacturing base will create tens of thousands of new jobs and ensure that the supply chain does not become a constraint on the deployment of new nuclear power plants.

Furthermore, more advanced nuclear generating technologies, like high-temperature reactors that can produce nuclear process heat as well as electricity, are necessary to prepare for the long-term viability of nuclear energy and must continue to be developed. Additionally, the provincial government must continue to work with the nuclear industry to study the effects of aging on our existing fleet of reactors to determine if they can be safely operated beyond 60 years (see *National Nuclear Energy Strategy*, Appendix).

## ENERGY FROM WASTE

Ontario is missing the untapped value and potential of Energy from Waste (EFW) technologies, which use residential and commercial waste to generate electricity and reduce the amount of waste sent to landfill sites. As part of an integrated waste management system, EFW is a viable alternative to landfills.

A number of well-established technologies are available for generating heat or power from waste: combustion with energy recovery, thermal technologies, gasification, pyrolysis, anaerobic digestion, pelletization, thermal

cracking etc. The carbon dioxide, sulfur dioxide and nitrogen dioxide emissions from EFW plants are significantly cleaner than those that use fossil fuels.

Canada in general and Ontario in particular has lagged behind both Europe and the United States in the development of EFW sites. Historically, Ontario has enjoyed relatively low energy costs and ample room to locate landfill sites and did not have any incentives to develop EFW facilities. However, with growing concerns regarding the environment, rising energy costs and concerns regarding the sufficiency of supply, the time has come for Ontario to give greater priority to an integrated waste management system, including recycling and EFW facilities.

Given the potential of EFW to help the province meet rising demand for energy and its environmental benefits, the Government of Ontario must assess increasing the share of EFW generation technology in Ontario's supply mix and develop an integrated waste management plan by the end of 2011. Ontario's review should begin with a review of the experience in other jurisdictions and the development of estimates regarding which EFW technologies would provide the greatest benefits to Ontarians for the province's investment in EFW facilities. The provincial government must take the lead in promoting the building of EFW facilities in Ontario as part of a viable and responsible solution to our energy needs by incenting municipalities and engaging the private sector (see *Energy from Waste*, Appendix).

## **ENERGY AS A DEVELOPMENT TOOL**

Energy is a key input for many businesses, particularly those in the "heavy industry" and natural resources sector. As resource companies consume large amounts of energy in their production processes, the cost of energy has a significant impact on their profitability and is a key driver of business and operational decisions. Businesses have expressed growing concerns about provincial power rates and numerous resource companies have cited current power rates as a factor in their decision to locate facilities outside Ontario. As many resource companies are located in northern communities and are often the foundation of local economies, the departure of one or more of these businesses could have a particularly damaging impact. A number of northern communities believe that the Province should allow the North to utilize its abundant natural energy sources and relatively inexpensively-generated electricity, priced at a level commensurate with its costs, to support their local economies by attracting and retaining business (see *Energy as a Development Tool*, Appendix).

## **CONCLUSION**

Ontario's economic well-being and prosperity depends on continued access to abundant, reliable and affordable energy supplies. The Government of Ontario must ensure that a plan is in place to meet projected demand growth and encourage private sector investment in the building of energy infrastructure and new supply capacity through a predictable and stable regulatory framework. The government should also promote competition in the electricity market and include a diversity of sources in Ontario's supply mix to ensure affordable pricing that reflects the true cost of electricity and fosters conservation. Ontario's energy policy can and should be used as an economic development tool to promote investment, foster job creation and stimulate economic growth.



## **APPENDIX: POLICY RESOLUTIONS**

### ***Diversifying Fossil Fuel Supply Mix in Ontario***

(approved May 1, 2010)

#### **ISSUE**

The high volatility of conventional fossil fuel drives up the cost of doing business in Ontario. Not any different from industrialized economies across the world, Ontario's economy, including public transportation, business, and industry, depends heavily on conventional fuels, and more than any – on petroleum derivatives. Arguably, the cost of crude oil, coal, and gas is imbedded in the price of every good and service in the province.

Our policy makers can do more to create an environment that promotes diversification of fuel supply, fosters conservation and fuel demand management policies. Tax incentives coupled with R&D investment in energy efficient technologies and the availability of competitive alternative transportation fuels in our daily lives could make a difference for Ontario's economy.

#### **BACKGROUND**

Ontario's energy consumption relies heavily on conventional fuels and, as the population grows, so will the demand for fuel. Almost three quarters of our total energy supply comes from fossil fuel: crude oil, coal and natural gas. Both society and government have to recognize that this trend should be propelling us to diversify our sources and conserve fuel and transportation energy going forward.

Ontario has begun, but could do more to take advantage of novel fuel efficient technologies and competitive alternative fuels. In 2007, the province diversified transportation energy supply by introducing a 5 percent bio-ethanol standard for gasoline. Further promotion, production and use of alternative fuels like hydrogen and biofuels (ethanol, pure vegetable oils, diesel, etc.) could contribute to a reduction in energy import dependency and in emissions of greenhouse gases. In addition, competitive biofuels, in pure form or as a blend, may in principle be used in existing motor vehicles and use the current motor vehicle fuel distribution system.

Tax incentives promoting development of fuel efficient technologies, demand management policies for fuel consumption, R&D investment and political leadership from the top will be paramount in making larger use of economically competitive alternative fuels and transportation energy technologies a reality in the near future. Detailed analysis of the environmental, economic, and social impact should be part of the process in order to promote only competitive conventional fuels.

Provisions should be made for the possibility of adapting rapidly the list of biofuels, the percentage of renewable contents, and the schedule for introducing biofuels in the transport fuel market, to technical progress and to the results of an environmental impact assessment of the first phase of introduction.

Mindsets and economies will not change overnight. However, Ontario should continue with its position on promoting alternative fuels and energy efficient transportation technology and assume a more active role in building a diversified fuel mix portfolio, encourage conservation, and develop consumer demand management policies for fuel.

## RECOMMENDATIONS

The Ontario Chamber of Commerce urges the Government of Ontario to:

1. Develop a long-term plan to diversify fuel supply mix, promote fuel conservation and energy efficient technologies, and foster consumer demand management for fuels
2. Undertake analysis of the environmental, economic, and social impact in order to decide whether it is advisable to increase the proportion of bio-fuels in relation to conventional fuels
3. Promote and invest in research and development oriented towards vehicles using alternative fuels (e.g. hydrogen cells, electrical cars, biodiesel, biogas, bio-ethanol, bio-methanol, pure vegetable oil, etc.)
4. Develop effective demand management policies for high density urban centers by encouraging commuters to use oil efficient mass transportation systems – buses, trains, car pooling; consider developing “low hydrocarbon diet” standards and versatile, oil efficient engines for public transportation systems, etc.
5. Educate the public on:
  - a. What is at stake and why these types of investments are needed
  - b. The advantages and importance of fuel diversification within their own communities and businesses
  - c. The advantages for the environment and the sustainability of the economy
6. Secure a more predictable and less single fuel source (crude oil) dependent economy/society
7. Undertake steps to increase the refining capacity in the province
8. Work with the federal government to immediately establish incentives to secure a diverse and adequate supply of fuel capable of stimulating the domestic economy

## ***Electricity Pricing, Supply and Market Development***

(approved May 1, 2010)

### **ISSUE**

Electricity pricing, supply and market development are key to maintaining the economic competitiveness of Ontario businesses.

### **BACKGROUND**

A reliable and affordable electricity system is essential to Ontario's economic prosperity and the competitiveness of Ontario businesses. Policies that enhance affordability and reliability can contribute to the province's economic strength and help to maintain and create jobs.

Government policy choices can keep Ontario's electricity price affordable. At the same time, Ontario needs to ensure that electricity prices reflect the true cost. The recent passage of the Green Energy Act in Ontario will help encourage new investment in electricity. However, the government must also ensure that Ontario's electricity supply, promotes efficiency, ensures adequate capacity, and fosters conservation.

Business needs a stable policy and regulatory environment to grow and prosper. This is especially true in the electricity sector in which investments often have a high capital cost and require long lead times.

Regulatory requirements and NIMBY (not-in-my-backyard) concerns can play a role in unnecessarily delaying needed projects. Government policy needs to ensure adequate regulatory review and oversight, but should also ensure no undue delay to necessary electricity system investments. The government has endeavoured to address NIMBY concerns through the Green Energy Act by introducing a single new Renewable Energy approval process that replaces several approvals currently required under the Environmental Protection Act. However, the Environmental Assessment (EA) Act has not been amended therefore, the EA regimes for renewable energy projects under the Electricity Projects Regulation still remains in place.

In ensuring adequate electricity supply to meet the needs of business, Ontario should adopt a diverse electricity supply mix. All energy options have strengths and weaknesses. A portfolio of energy supply choices provides the best insurance toward a reliable and affordable electricity system.

Sound environmental policy should be a key component of electricity policy, resulting in an environmentally sustainable system. All economic energy efficiency and conservation investments should be encouraged.

Ontario, like many jurisdictions, currently has a hybrid electricity system. There is significant and ongoing debate about how to achieve a reliable and affordable competitive market for electricity that will bring real benefits for consumers. The Chamber believes that the private sector should play a significant role in the electricity system and that over the long term, Ontario should explore options for creating competitive markets for electricity that will benefit consumers.

## RECOMMENDATIONS

The Ontario Chamber of Commerce urges the Government of Ontario to:

1. Work towards establishing a competitive market for electricity in the long-term
2. Immediately start creating conditions for a competitive environment in the mid-term, including developing instruments to help facilitate market liquidity forward exchange, long-term contracting, and long-term price predictability
3. Promote a diverse supply mix as a way of ensuring that Ontario's electricity prices remain affordable over the long-term
4. Ensure an adequate, stable, and reliable supply of electricity in Ontario to meet the needs of Ontario businesses
5. Ensure that the price of electricity reflects the true costs
6. Ensure a significant role for the private sector in Ontario's electricity system
7. Promote environmental sustainability by ensuring that all economic energy efficiency and conservation investments are made
8. Work with Ontario large energy users to ensure that areas with frequent brownouts and drops in supply are upgraded to protect against loss of productivity and equipment damage
9. Share its analysis of the impacts of provincial energy legislation initiatives on large energy users' attraction and retention

## ***Energy as a Development Tool***

(approved May 7, 2011)

### **ISSUE**

The major industrial users in Ontario have long cited high energy costs as a deterrent for growth and retention of our manufacturing base. For example, the high cost of energy has been referenced as a critical factor in the location of a ferrochrome processor in Ontario.

Minerals and metals are designated as growth areas for the province and would be significant users of energy as the province develops "industrial cluster centers". Ontario must adopt strategic methods to develop new business around our resource base throughout the province.

### **BACKGROUND**

Mined ore, previously processed in Timmins, is to be transported out of Ontario to other provinces for processing, with high energy costs denoted as a key factor.

Due to production shutdowns at industrial facilities throughout the region, the Northwest is not using current generating capacity and at the same time could bring on more hydro projects. The current energy pricing actually penalizes energy users for the decreased energy usage in the province through the Global Adjustment.

Electrical generation, transmission, distribution and energy pricing all relate to our ability to grow our economy and contribute to the financial health of this province through the use of our own resources.

Minerals and metals are designated as growth areas for the province and would be significant users of energy as the province develops "industrial cluster centers".

The high cost of energy was specifically referenced in a February 3, 2011 media release by Cliffs Natural Resources in Cleveland, as a critical factor in its assessment of locating its ferrochrome processor in Ontario. The company's Senior Vice President, William Boor said, "At current provincial power rates, there isn't a location in Ontario that is economically viable for Cliffs to build the FPF. Despite this, we have named Sudbury as the 'base case' location, which we believe is representative of a technically feasible site. The viability of an Ontario-based FPF and final selection of the location are still being evaluated."

### **RECOMMENDATIONS**

The Ontario Chamber of Commerce urges the Government of Ontario to:

1. Address the use of resources located in Ontario, including energy, as a powerful and compelling investment attraction and retention tool for manufacturing
2. Allow the North to utilize its abundant natural energy sources and relatively inexpensively generated electricity, priced at a level commensurate with its costs and with the appropriate power transmission infrastructure
3. Create an environment where investment will come to Ontario to develop new business around our resource base throughout the province

## ***Energy from Waste***

(approved May 1, 2010)

### **ISSUE**

Ontario is missing the untapped value of Energy from Waste (EFW) technologies, which use residential and commercial waste to generate electricity and reduce the amount of waste sent to landfill sites. As part of an integrated waste management system, EFW is a viable alternative to landfills.

Only 5 percent of Canada's solid waste is processed to generate electricity, compared to 13 percent in the United States. It is time now for Ontario communities to start considering a solution.

### **BACKGROUND**

Energy recovery from waste describes the process in which energy is recovered from the combustion of waste and used to generate electricity, which is then fed back into the electricity grid, or provide both electricity and heat (combined heat and power) to nearby communities or other uses. Waste represents an increasingly important fuel source. Using wastes as fuel can have two fold benefits: maintaining a cleaner environment and providing an alternative energy source for the local economy.

Waste may be in the form of an individual waste stream, generally from a commercial or industrial activity, which is used in existing plant as a fuel; it may be the residue once recyclables are separated from a general waste stream; or it may be a specially produced refuse-derived fuel (RDF), which must meet certain standards to be burnt in certain plants, such as cement kilns, or potentially, power station furnaces.

Today, some innovative technologies have been developed, which have the potential to increase the efficiency of energy recovery. Besides, ETW facilities can reduce the volume of a landfill site by 90 percent and reduce the weight of solid waste by 70 percent. Fly ash produced by a waste-to-energy (WTE) facility can be re-used for landfill cover, road-base, or other such construction materials.

The environmental benefit of EFW generation is that it can help reduce carbon monoxide emissions, through displacement of fossil fuels that are 23 times more damaging than carbon monoxide for global warming. If biodegradable waste is diverted from landfill, methane emissions can be avoided.

New energy-from-waste plants give off no odour, effectively dispose of garbage that would otherwise go to landfills, and generate considerable amounts of eco-friendly electricity and sometimes steam as a by-product. Although new technologies still generate some emissions, their level is substantially lower compared to older technologies.

A number of well-established technologies are available for generating heat or power from wastes: combustion with energy recovery, thermal technologies, gasification, pyrolysis, anaerobic digestion, pelletization, thermal cracking, etc. (See the box below).

## EXAMPLES OF EFW WASTE TECHNOLOGIES

### Combustion with energy recovery

Energy from combustion technology decreases the volume of the municipal waste and allows for recovery of metals and other potentially recyclable fractions. Plants that generate electricity can typically process between 20,000 and 600,000 tonnes of waste per year, generating from 1 to 40 MW of electricity. Power is produced from wastes by using the steam raised in the combustion process to drive a steam turbine to generate electricity, in a manner similar to a conventional coal fired power station. Any residue that is landfilled is biologically inactive and does not generate potentially harmful emissions. The heat recovered from these plants can be used to generate electricity, or can be used for industrial heat applications where there is a market for the heat.

### Advanced thermal technologies

Where the waste stream is of a uniform nature, for example, if it has been processed into a homogenous fuel, it is better suited to the more "advanced technologies", such as gasification or pyrolysis. Wastes that are not uniform in composition, for example, municipal wastes are less suited to treatment by advanced technology, although the technology is rapidly developing to handle more challenging wastes.

### Gasification

Gasification is a thermo-chemical process in which biomass is heated, in an oxygen deficient atmosphere to produce a low-energy gas containing hydrogen, carbon monoxide, and methane. The gas can then be used as a fuel in a turbine or combustion engine to generate electricity. Gasifiers fuelled by fossil sources such as coal have been operating successfully for many years, but they are now increasingly being developed to accept more mixed fuels, including wastes. New gas clean-up technology ensures that the resulting gas is suitable to be burnt in a variety of gas engines, with a very favourable emissions profile.

### Pyrolysis

Pyrolysis is an emerging technology, sharing many of the characteristics of gasification. With gasification partial oxidation of the waste occurs, whilst with pyrolysis the objective is to heat the waste in the complete absence of oxygen. The pyrolysis technology converts virtually all hydrocarbon waste streams (including tires, hospital waste, and carbon based waste) into highly purified virgin hydrocarbon and advanced material nanocarbons. Gas, olefin liquid and char are produced in various quantities. The gas and oil can be processed, stored and transported if necessary, and combusted in an engine, gas turbine, or boiler.

### Anaerobic digestion

The biological processes that take place in a landfill site can be harnessed in a specially designed vessel known as an anaerobic digester to accelerate the decomposition of wastes. Anaerobic digestion is typically used on wet wastes, such as sewage sludge or animal slurries but the biodegradable fraction of municipal wastes can be added to wetter wastes to increase the biogas output. The biogas can then be used in an engine or turbine for power generation, or used to provide heat for industrial processes situated near the landfill site, such as in brickworks.

### Pelletization

The technology allows processing of Municipal Solid Waste by selecting appropriate materials to mix with purchased high British Thermal Unit (BTU) materials in the production of a high BTU pellet that can be used either to replace coal or coke in industrial processes, or for use in an acceptable combined combustion/gasification and local energy recovery system the manufacture.

The air emissions from EFW plants as compared to traditional use of fossil fuels are also significantly cleaner. For example, the table below shows use of trash to generate one megawatt of power instead of coal.

<b>Air Emissions of Waste-to-Energy and Fossil Fuel Power Plants (pounds per megawatt hour)<sup>5</sup></b>			
<b>Facility Type</b>	<b>Carbon Dioxide</b>	<b>Sulfur Dioxide</b>	<b>Nitrogen Oxides</b>
Coal	2,249	13	6
Oil	1,672	12	4
Natural Gas	1,135	0.1	1.7
Waste-to-Energy	837	0.8	5.4

(Source: www.wte.org)

Canada, in general, and Ontario, in particular, has lagged behind both Europe and the United States in the development of ETW sites. Historically, Ontario has enjoyed relatively low energy costs and ample room to locate landfill sites, both factors being impediments to the development of ETW facilities. However, with growing concern over the environment, an integrated waste management system, including recycling and ETW facilities, should be given greater priority as a viable and responsible solution.

Canada has an installed EFW capacity of less than 800,000 tonnes per year spread across four facilities (Charlottetown, Quebec City, Peel Region, and Burnaby). But, interest is on the rise. Research from the Canadian Energy-From-Waste Coalition indicates that 83 percent of Canadians support energy recovery technologies, up from 67 percent only four years ago. These Canadians realize that EFW produces energy that can be used for heat and electricity, thereby saving natural resources.

In 2008, the Municipality of Durham and York Region announced plans to build a \$150-million EFW plant that will process approximately 200,000 tonnes of residual waste a year. A typical 2,000 tonnes per day EFW facility generates about 60 net megawatts of electricity, which is enough energy to power about 600,000 homes. Plasco Energy Group Inc. announced in March 2008 that it has begun accepting city garbage at its plasma gasification plant in Ottawa, breaking it down and converting it to a clean synthetic gas, or “syngas” used to generate electricity. Private investment in Plasco in the last three years has totaled \$90 million. The company received \$9.5 million in funding from Sustainable Development Technologies Canada and a \$4 million loan from the Ontario Ministry of Research and Innovation. For every tone of waste processed, enough energy is generated to power the facility and provide 1,150Kwh of electricity to Hydro Ottawa.

Other energy from waste initiatives underway in Canada includes the City of Edmonton, which is currently building a gasification facility that will use municipal waste residues as its main feedstock. The facility is expected to start up at the end of 2010. Metro Vancouver is also looking to add to its current EFW facility with up to three additional sites. The current facility began commercial operations in 1988 and currently processes 280,000 tonnes of waste per year.

Development of new EFW facilities is a burdensome and lengthy process. The approval process may take years. The EFW projects also require of companies to acquire permits, comply with environmental standards, make financial arrangements and deal with the NIMBY (not-in-my-backyard) concerns from residents. The process gets even more cumbersome, as future facilities must also acquire contracts with municipalities on waste supply and connect to the local power grid.

Acknowledging the challenge, the government approved in March 2007 a streamlined environmental assessment and waste management approval procedure (O. Reg. 101/07) for small energy to waste projects that could save municipalities up to 18 months.

In order to deal with the public concern over the location of EFW sites, EFW facilities should be located in existing landfill sites especially where an energy consumer is located in close proximity to the EFW facility or a grid connection is readily accessed.



EFW facilities should be constructed and financed under public private partnerships not unlike Infrastructure Ontario in order to achieve design, quality and cost consistencies across the Province.

Government policy consistency is crucial as the approval process for new EFW facilities may be carried over several government mandates. Larger EFW plants could cost as much as \$500 million. At the same time, government has recognized the benefits associated with these plants, considering the rising costs of shipping and disposing of waste, the pressure to diminish emissions to the environment and the untapped capacity of alternative electricity going into the grid.

Energy from Waste plants could play a limited, but increased role in generating electricity, providing heat to communities and as a practical waste disposal solution. With fossil fuel prices rising in recent years, the attractiveness of Energy from Waste component of the portfolio is likely to grow.

## **RECOMMENDATIONS**

The Ontario Chamber of Commerce urges the Government of Ontario to:

1. Review by 2011, the experience in other jurisdictions and, considering the environmental and economic efficiency, estimate what of the available Energy from Waste technologies (combustion with energy recovery, advanced thermal technologies, gasification, pyrolysis, anaerobic digestion, pelletization, etc.) have the highest rate of return for Ontario
2. Assess the costs of erecting EFW facilities and estimate the benefits for Ontario by considering the environmental effects, avoided waste disposal, land filling/development costs, and promotion of alternative energy generation
3. Pursue increasing the share of the efficient Energy from Waste generation technology in the supply mix and develop by 2011-2012 an integrated waste management plan, prioritizing on EFW
4. Educate the public on the importance of 5-Rs: (1) Reduce (waste, packaging etc); (2) Reuse (beer bottles, etc.); (3) Recycle (new product from waste, i.e.: sewer pipe from used car dashboards, etc.); (4) Recover (energy, oil); and (5) Retain (landfill issues). Also educate Ontarians about the importance and safety of advanced EFW technology for their communities
5. Commit to create a stable streamlined regulatory environment, an electricity market guided by prices reflecting true costs of power, and pursue consistent EFW policies
6. Stimulate municipalities to develop EFW facilities, where appropriate and strategically feasible at existing landfill sites
7. Engage private sector in the development, construction and financing of WTE facilities

## ***National Nuclear Energy Strategy***

(approved May 2, 2009)

### **ISSUE**

Ontario must become a leader in helping create a national nuclear energy strategy, one that will benefit Ontario and Canada's economy.

### **BACKGROUND**

The nuclear industry is in need of stable, predictable planning and regulatory regime to remain viable. A nuclear energy strategy is needed to ensure that the province has the energy it needs at affordable prices.

Maintaining and expanding nuclear energy as a power source will allow Ontario residents to continue to benefit from its ability to provide large amounts of reliable, uninterrupted power, while not impacting air quality. There is an urgent need to plan now and move quickly and decisively to implement such a strategy.

There are many benefits supporting the expansion of nuclear energy. Nuclear power produces zero emissions, is an ideal base-load power source, and produces economic spin-offs, both in construction and operation phases. Ontario's manufacturing sector has been hard hit over the last couple of years. Investing in a national nuclear strategy would assist in bringing new high paying jobs to the province, as well as creating significant tax revenues to both the federal and provincial governments.

Around the world we are seeing a nuclear renaissance as the many strengths of nuclear energy are being recognized. Billions of dollars will be spent on hundreds of new plants around the world over the next 10 to 20 years. The developing powerhouses of China and India are looking to new nuclear capacity to help secure the energy they will need to fuel their economic growth. In 2006, the United States implemented an Energy Policy Act encouraging construction of new nuclear plants as part of a diverse energy-production portfolio. Many other countries such as France, the United Kingdom, and Japan have also adopted nuclear energy in their public policy positions. It is imperative that Canada also develop a national nuclear strategy in order to remain globally competitive.

There are many opportunities that nuclear energy can provide to Canada and Ontario. Canada and Ontario's nuclear industry have a demonstrated track record of safety, innovation, and environmental stewardship. The Canadian innovative design and manufacture of nuclear reactors has proven to be competitive in world markets.

The government needs to look to the future opportunities that nuclear can provide Ontario and Canada. Nuclear is ideal for base-load and could also work well generating hydrogen off-peak for transportation (the largest human source of greenhouse gases) in the foreseeable future. For example, France's electricity capacity is 100 percent fossil free: 80 percent nuclear and 20 percent hydroelectric. France sells surplus power to its neighbours at a lower rate than they can generate it themselves – something Ontario once did to the benefit of its own citizens and neighbouring jurisdictions.

Uranium is the key ingredient for nuclear energy and Canada is the world's leading producer of uranium, accounting for over 30 percent of total production. The uranium mined in Canada contains more energy than does all of our annual oil and natural gas production combined. Ontario has only two large energy resources of its own: hydro-electric and nuclear energy, based on uranium.

Nuclear and hydroelectric currently form the backbone of Ontario's electric energy mix, providing three-quarters of our electricity. Hydro-electric has limited additional potential, whereas nuclear could be increased substantially to help support other energy needs, which up until now have depended on imported fossil fuels. Carbon-based fuels are subject to price swings based on events beyond the Province's control. These prices have a direct impact on the competitiveness of Ontario's industry. Expanding the usage of nuclear energy could, therefore, result in lower fuel prices while providing a reliable secure energy source.

## **RECOMMENDATIONS**

The Ontario Chamber of Commerce urges the Government of Ontario to:

1. In consultation with all stakeholders, including the Federal government (i.e. business, education and labour) ensure that Ontario and Canada has a Nuclear Energy Strategy that will continue to provide jobs, investment and economic strength for the Ontario and Canadian economy in the coming decades
2. Ensure the strategy framework is national in scope and encompasses but not be limited to:
  - Research and Development and commercialization of technology
  - Fiscal Policy
  - Skills Policy for the education of the Canadian workforce
  - Intellectual property rights
  - Innovation Policy
  - Trade and Infrastructure issues



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