

# Huron County Renewable Energy Manufacturing Sector Development Summary Report April 2010

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**Report Focus** - **Attract renewable energy manufacturing opportunities to Huron**  
- **Make local manufacturers aware of opportunities in renewable energy**

**Objectives** Attract and align OEM supply chain opportunities with existing manufacturing  
Identify opportunity size by market sector  
Coordinate with Green jobs strategy to identify and develop industry clusters  
Grow sales of existing manufacturing companies in Huron  
Diversification of markets / client base  
Create and implement a sales and marketing plan for the attraction of  
renewable energy manufacturing opportunities

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## Executive Summary

The direction of the power generation in Ontario is clear in that the province wants to increase the percentage of renewable energy resources in the power mix and train citizens to use less energy (conserve). At the end of 2009, 95% of electrical energy was produced by 3 fuel sources with coal to be eliminated by 2014.

Nuclear	50 %
Hydroelectric	25 %
Coal	20 %

All other fuels combined make up the remaining 5%. By 2014, coal as a fuel source will be replaced with a combination of 1. Conservation / efficiency improvement methods and 2. New power plants. The new plants will be natural gas plants located near population centers and additional renewable sources located in rural areas where the required space and natural resources are mainly located.

The 2 main renewable resources will be new hydroelectric and wind power. Hydroelectric projects are mainly in Northern Ontario and wind projects mainly in rural Southern Ontario with a few projects in Northern Ontario. Other sources of new renewable power include solar, biomass, biogas and geothermal. Below is the Ontario Power Generation summary plan by date and region for new renewable energy sources.

	<b>Stage 1 2010 - 2015</b>			<b>Stage 2 2016 - 2019</b>			<b>Stage3 2020 and Beyond</b>			
<b>Region</b>	South	Northeast	Northwest	South	Northeast	Northwest	South	Northeast	Northwest	<b>Subtotal</b>
<b>Resource</b>										
Hydro	120	560	190	0	320	30	0	1610	70	2900
Wind	1700	0	80	360	200	0	0	300	0	2640
Bioenergy	150	60	20	140	30	20	0	40	0	460
Solar	260	40	0	0	0	0	0	0	0	300
										6300

Over the last 3 months the Huron Manufacturers Association Renewable Energy Networking Group looked at the renewable energy markets of wind, solar hot water, solar photovoltaic, biomass and biogas to identify opportunities for local manufacturers to supply systems or part / service to the renewable energy sector. Additionally we want to attract sustainable foreign direct investment into Huron County to replace manufacturing jobs lost recently in the county.

## Mission

A group of industry member interested in supporting and developing the sustainable renewable energy industry in Huron County to develop green jobs for our area, through networking and mutual support.

## Vision

Bring green jobs to Huron County by attracting employers, developing existing manufacturers and aligning opportunities with existing manufactures.

## Keys to Success

Alignment of limited resources

## Actions – What needs to be done to attract new business?

1. Have policy that welcomes new manufacturing and distributed power such as wind power. Assigning a specific contact person to walk a company through the process of setting up in Huron County is suggested.
2. Publicize that Huron County is looking to attract business to targets both external and internal. This may need to start with the Huron Manufacturing Association telling County Council they want new business to come to the area.

Internal examples – meet with local, Ontario and Federal politicians and providing the message that Huron County is looking to attract new manufacturing businesses.

External promotion to the countries that have the leading renewable energy expertise / technology advantage. External example - tell Ontario trade representatives and Canadian Consulate representatives Huron County wants business

3. Create a budget. Assign resources to attract targeted companies to Huron County. This will direct the extent of activities and establish County priorities compared to other demands for funding. Budget number to attend one event is \$ 2,500 regardless if the event is in Toronto, Texas or Taiwan.
4. Show up. Participate in selected industry events and shows with local businesses in leading market sectors. This should be a combination of events in Canada and in markets with selected expertise.

Example Events	Canadian Wind Energy Association	American Wind Energy Association
	Association of Power Producers of Ontario	European Wind energy Association
	Canadian Bioenergy Association	Canadian Solar Industry Association

5. Align efforts (materials, events, funding) of County Economic Development to regional and provincial economic development efforts such as the Green Jobs Strategy and Southern Ontario Development Program. As a minimum this requires a new level of openness, effort and co-operation. A start point would be knowing the names of provincial level counterparts and key people at industry associations.

## What should be said to promote Huron County to interested companies?

Promote the natural advantages of Huron County to the renewable energy sector.

1. wind - first major wind farm in Ontario - show map of wind resources
2. available, affordable industrial space – that could be used to manufacture energy conservation or energy generation items
3. agriculture land of high quality
  - high yield soils compared to other regions quality land and livestock managers (aka farmers)
4. University of Guelph connection with crop research, educational center and testing

**Actions - Near term (Today –2 years)** The time to act is now, when the investor are looking.

Message - Huron County has existing, active, renewable energy resources.

- Wind Experts - Europe (Germany, Denmark, Spain) Asia (China, India) , USA
- Solar Experts - Europe (Germany, Spain) Asia - Japan, USA

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## Examples

March 5, 2010 Daewoo of Korea to set up wind turbine an blade plant in Trenton, Nova Scotia

<http://www.cbc.ca/canada/nova-scotia/story/2010/03/05/ns-trenton-jobs.html>

Spanish solar panel manufacturer and a group in SS Marie, Ontario that have got together to bring a solar module plant to their area of Ontario.

<http://www.northernontariobusiness.com/Around-the-North/100318/Sault-solar-panel-manufacturer-will-have-Spanish-connection982.aspx>

## **Action Medium to longer term (Today - 10 years)**

- Biomass                      Experts - Europe (Austria, Sweden, USA)

As part of the power generation plan to remove coal from the energy supply mix, selected existing power plants will burn biomass. Initial test have been completed in northern Ontario and the first operations are planned is at 201 MW Atikokan plant in 2012.

Work with the Ontario Ministry of agriculture, University of Guelph and local experts such as Don Knott concerning growing energy crops to be used as a fuel source.

1. Source of funding for biomass <http://www.omafra.gov.on.ca/english/engineer/biomass/funding.htm>

## Background Information

– Where is Huron County, Ontario in Canada



Huron County,  
Ontario, Canada

## Huron County Qualities

Location, Location, Location and Quality of Life.

Quality infrastructure – roads, power, water, clean air.

Quality – available industrial space and room to grow, affordable rates.

Quality + Value = High Quality of life

## Action

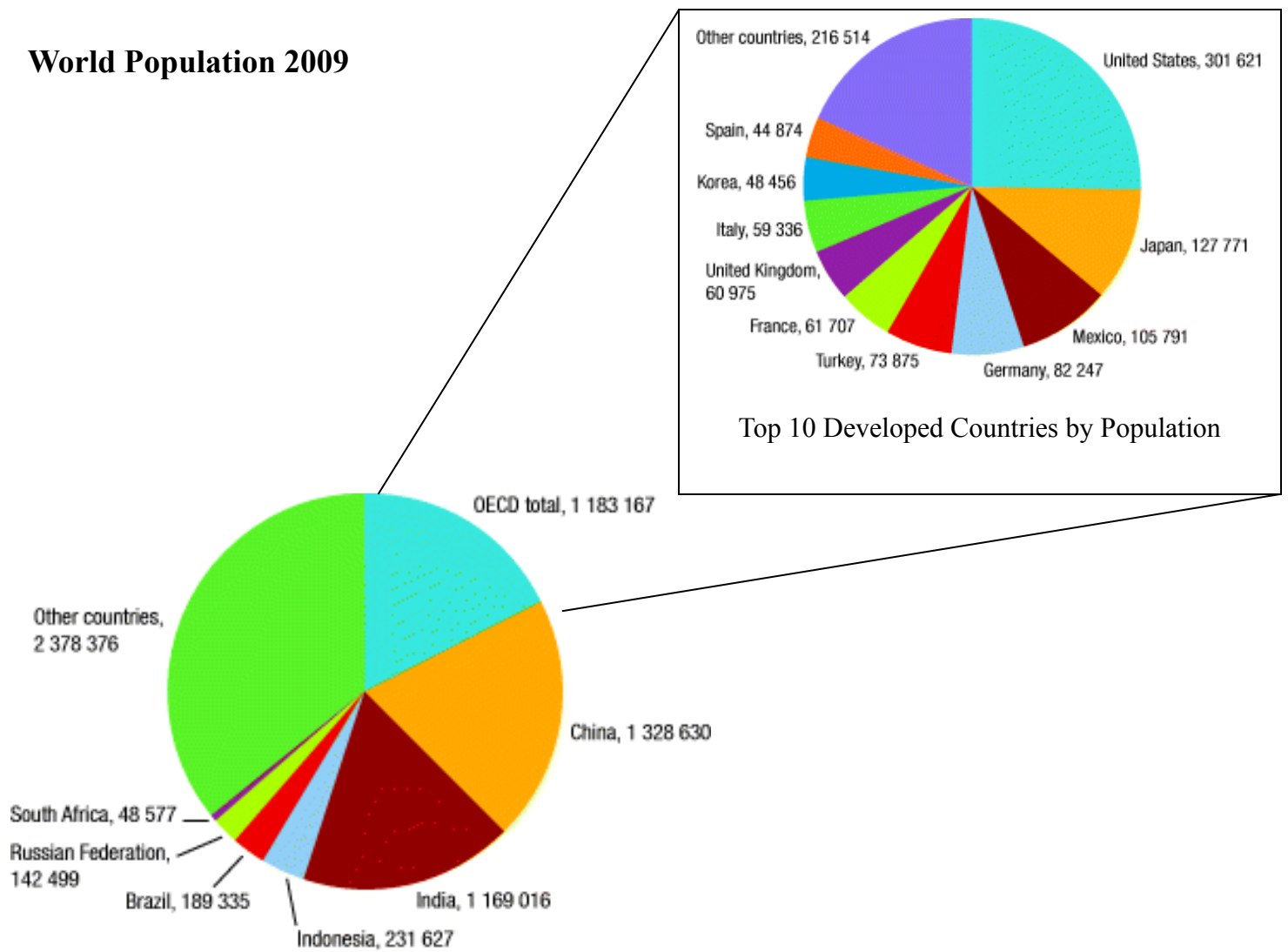
– Modify existing material to have a separate single page brochure with wind and biomass energy focus.

## Major Global Trends

### Major Trends of the Global market

- explosion of world population
- environment awareness
- more awareness of energy efficiency
- communication and information moves much more rapidly with available technology
- air travel for people much more common
- growth regions shifting to developing areas such as Asia, Latin America and Eastern Europe
- more use of electronics in technology devices such as computers, robotics and cell phones
- renewable energy sources a growing market as non renewable resources such as oil and coal plateau
- chemical market growth shifting from natural sources to man made
- consolidation within industries – a dozen or fewer large companies dominating each industrial sector

### World Population 2009



### Observation

- Canada is not a large target market relative to the world
- Canada is one of the smaller developed nations

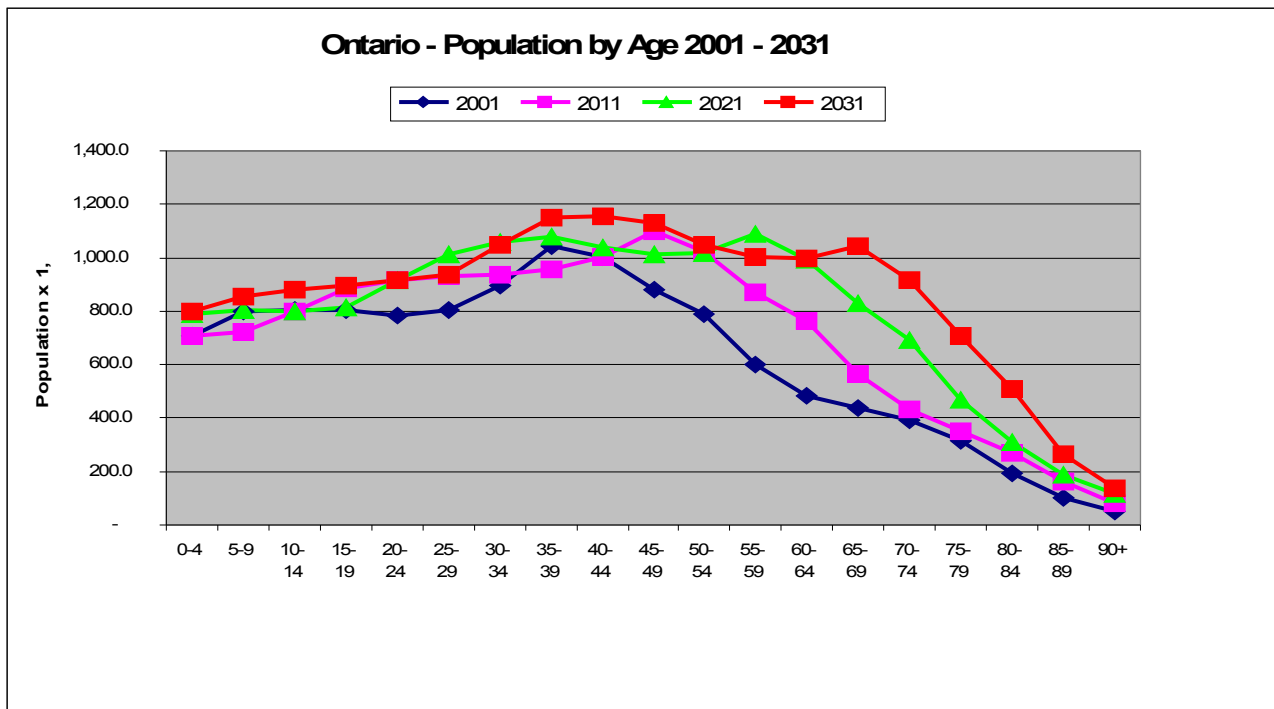
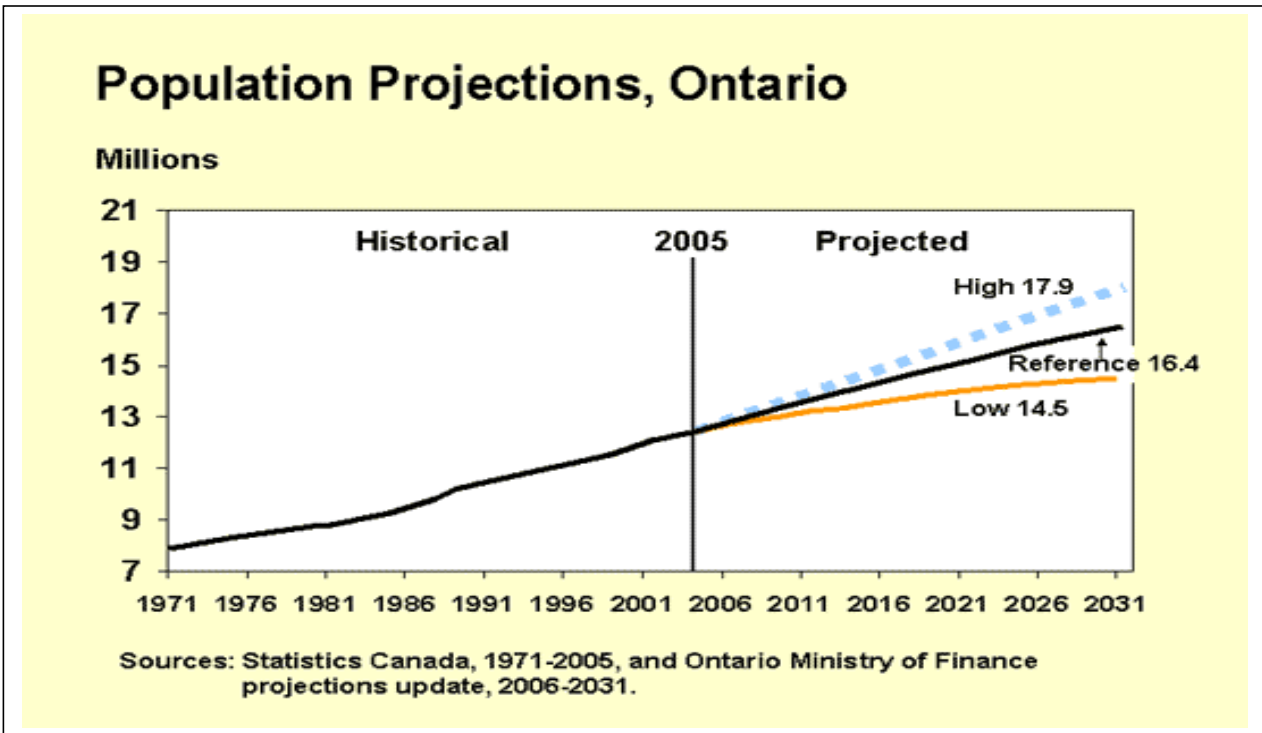
### Actions

- market to the regions with technology you want
- market to the regions that are looking for qualities you have

# Huron County Renewable Energy Manufacturing Sector Development Summary Report April 2010

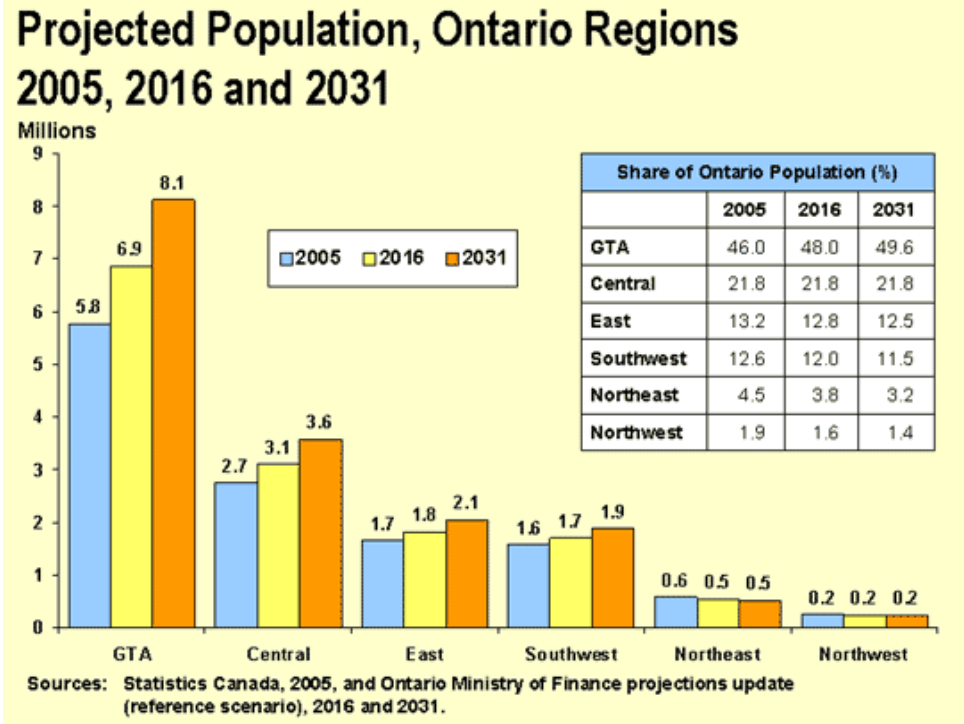
## Major Trends in the Ontario market

- less than 1% population growth rate. Ontario population at end of 2009 approx. 13,000,000
- aging population
- largest cities are expected to grow the most in the future
- aging infrastructure
  - transportation (roads, airports, rail, pipelines)
  - power generating stations
  - hospitals, schools
- privatization of formerly government only sectors – one example is electricity production

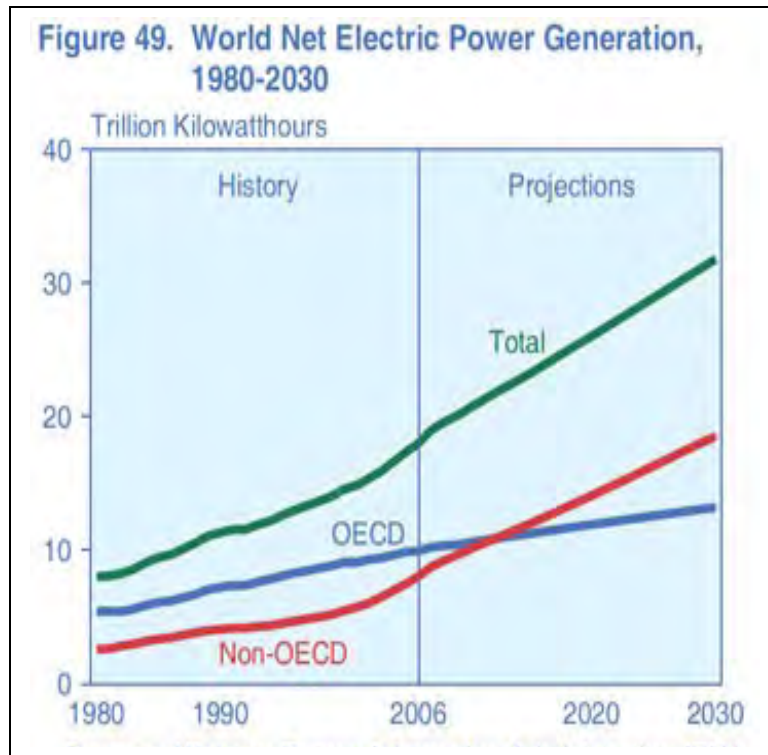


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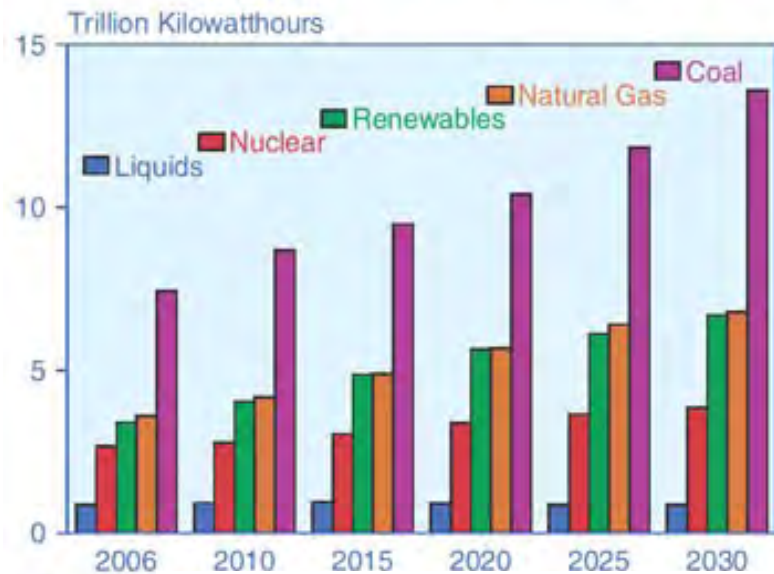
- Greater Toronto Area and the area around it called the Central area, expected to grow the most.
- Minimal population growth expected in Eastern and Southwestern Ontario
- Lowest populated areas continue to be in northern Ontario. Northern areas expected to shrink in population.



**Electrical Power Generation – Global, Nation, Regional**



**Figure 51. World Electricity Generation by Fuel, 2006-2030**



**Figure 17. World Renewable Electricity Generation by Source, 2006-2030**

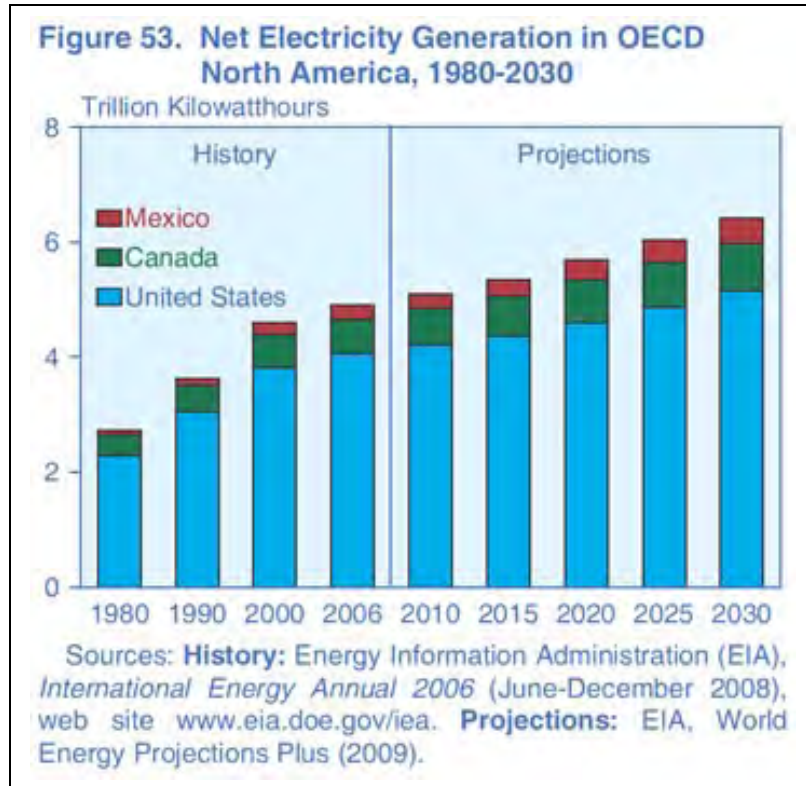


**Observations**

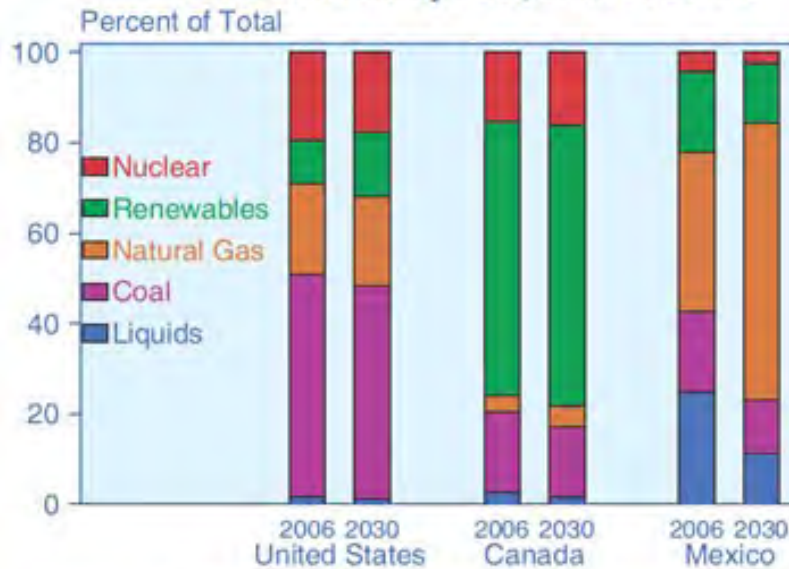
- World energy production is growing to meet demand
- Developed countries have majority of power plants today.
- Largest growths in developing nations as their economies grow.
- Coal is by far the largest fuel source for generating electricity
- # 2 fuel source is Natural Gas, # 3 is renewable sources
- Hydro electric is largest renewable source, wind is the # 2 largest renewable energy
- Annual wind energy growth is expected to in the 15 % to 20% range

Sources:  
 tration (EIA/  
 December 2  
 EIA, World I

**North American Electrical Power Market**



**Figure 54. Net Electricity Generation in OECD North America by Fuel, 2006 and 2030**

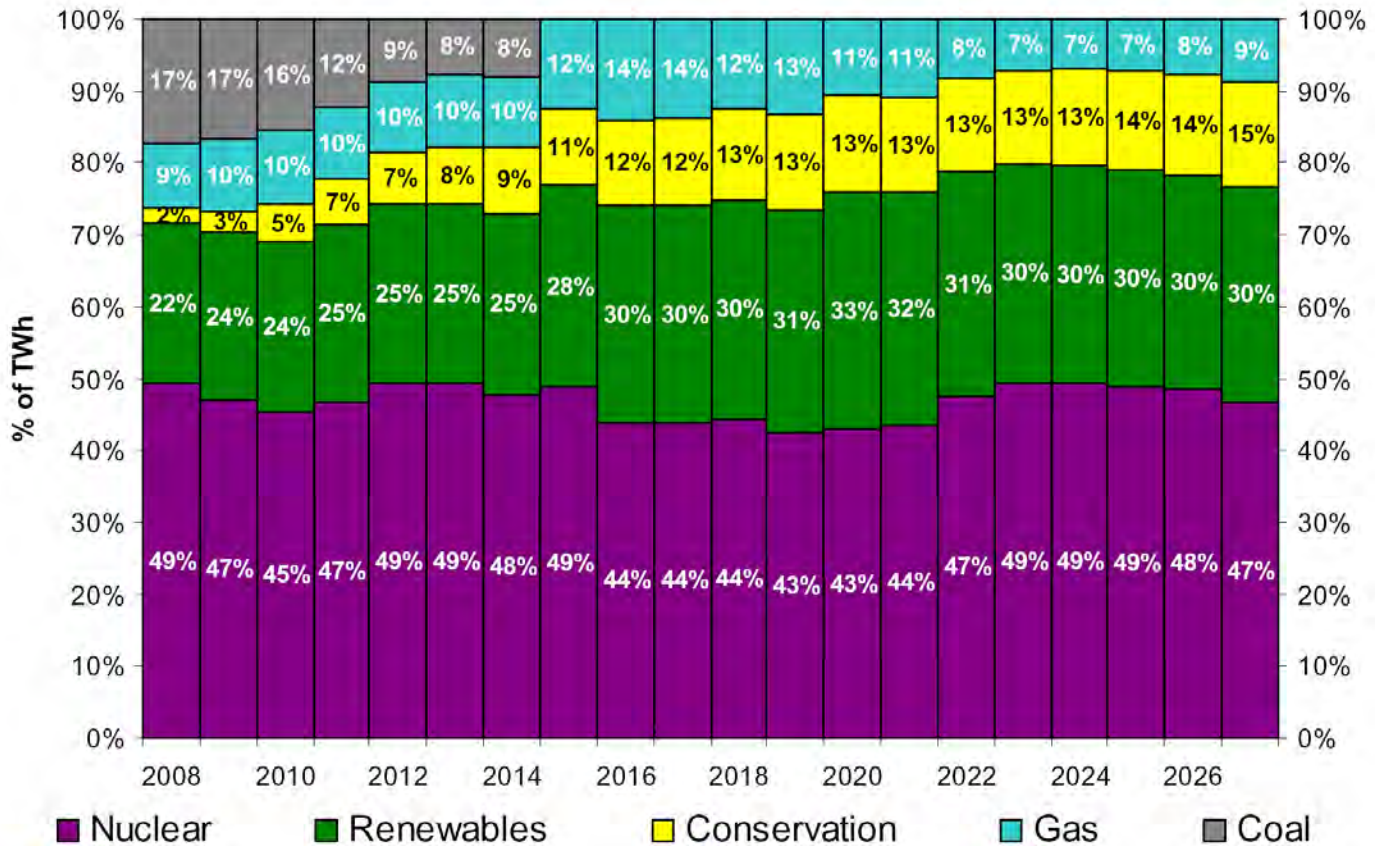


**Observations**

- The United States is by far the largest energy market in North America.
- The largest energy source in Canada is produced by water. Provinces that generate a large portion of their power from water include Ontario, Quebec and Manitoba.

**Ontario Electrical Power Plan**

**Energy Production (Percent of Total)**



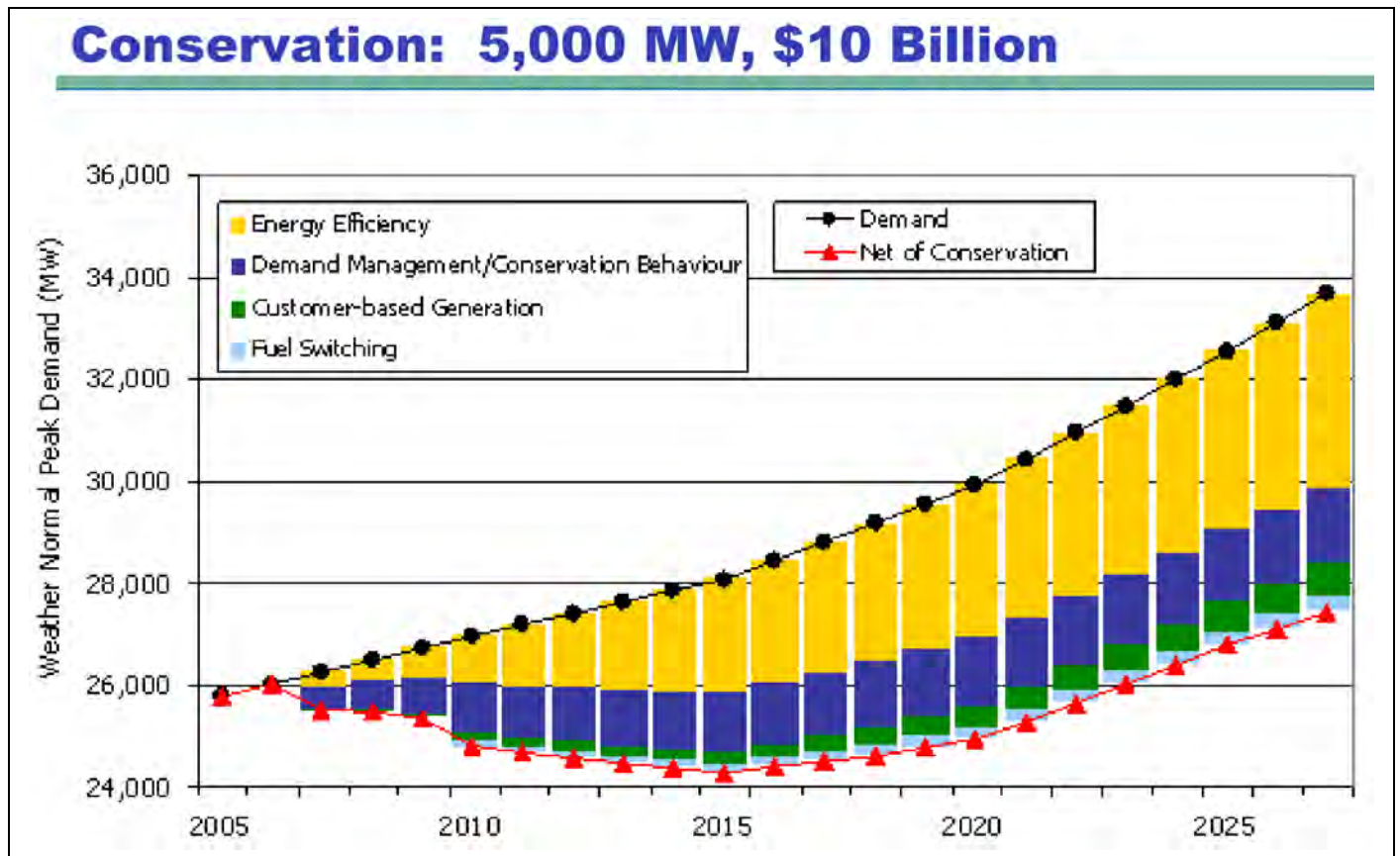
**Observations**

- Nuclear will supply about 50% of all energy supplied in Ontario out past 2026
- Renewables are expected to grow from 22% to just over 30% depending on the year.
- Conservation efforts will grow from 2% to 15%
- Coal as a fuel source is expected to be eliminated by 2014

## Ontario Clean Energy Power Plan

1. Conservation
2. New Build – Nuclear, Gas and renewable energy

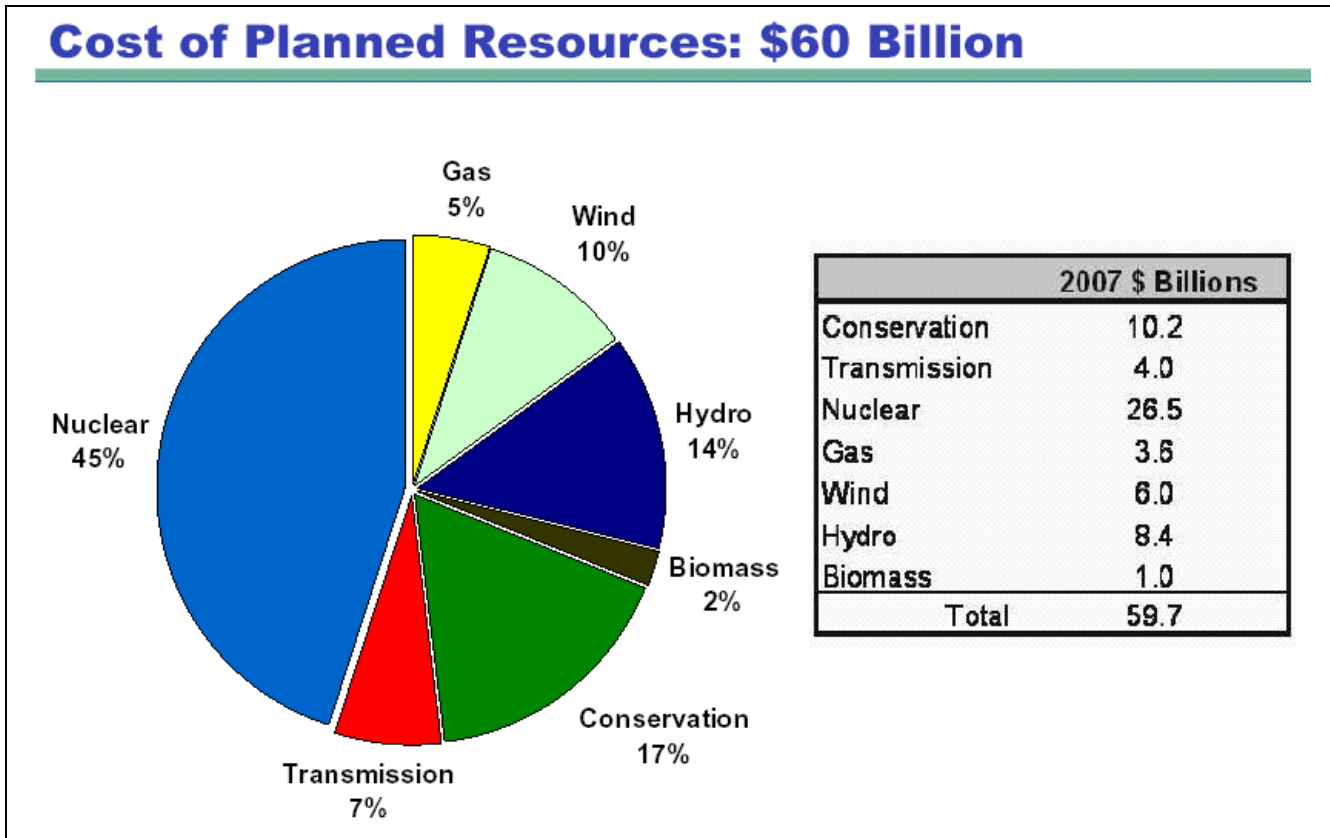
### 1. Conservation Plans



Summary of Ontario Electricity Market with Forecast

- Overall electricity demand will grow slow and steady (top - black line). Conservation plans expected to lower demand (red line)
- Major improvements in energy efficiency, timing of use by major users and conservation are expected to lead to less electricity use
- Electricity generation by major companies expected to be slow initially and grow as electricity prices rise
- Major work required at existing power plants due to age. Equivalent to replacing 60% of existing plants.

**New Build – Where the money is going to be spent**



Focusing on the area where Huron County companies can play a role with the resources in the county.

- conservation
- wind
- transmission
- biomass

**Suggestions**

Support conservation efforts of companies (internal and target external) in the following areas.

- improving energy efficiency
- improving power quality
- reducing power consumption

Support, create or attract companies that work in the wind industry

- Blade manufacturing
- Technical Training center
- Establish a wind test site for Ontario

**Action**

- target wind turbine blade manufacturing / service companies to create a cluster of expertise with companies such as Compostech and Goderich Aircraft.
- Attend large international show with intention of attracting manufacturing / assembly business
- Work with Local Electrical Distribution companies to lower energy consumption.

## Planned Renewable Resources by Region and Timeline

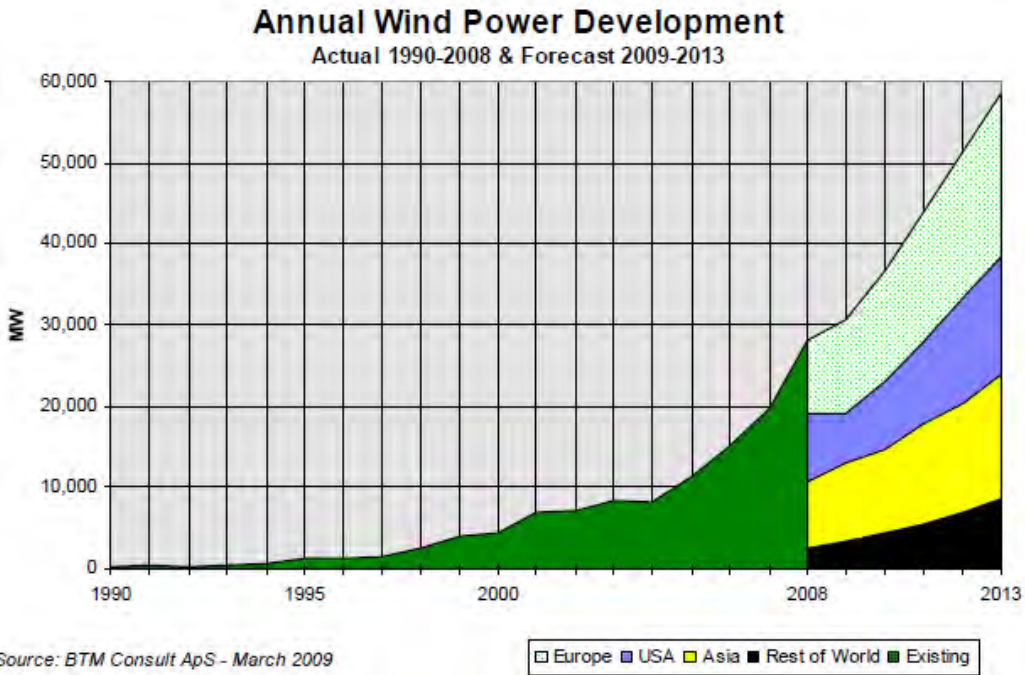
Below is a summary table of the planned development of renewable energy resources the Ontario Power Authority published in Sept 2008 covering the period from 2010 to 2020 and beyond. Since then, there have been additions but it still is a very good guide to the development plan for renewable resources in Ontario.

	<b>Stage 1</b> 2010 - 2015			<b>Stage 2</b> 2016 - 2019			<b>Stage3</b> 2020 and Beyond			
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## Observations

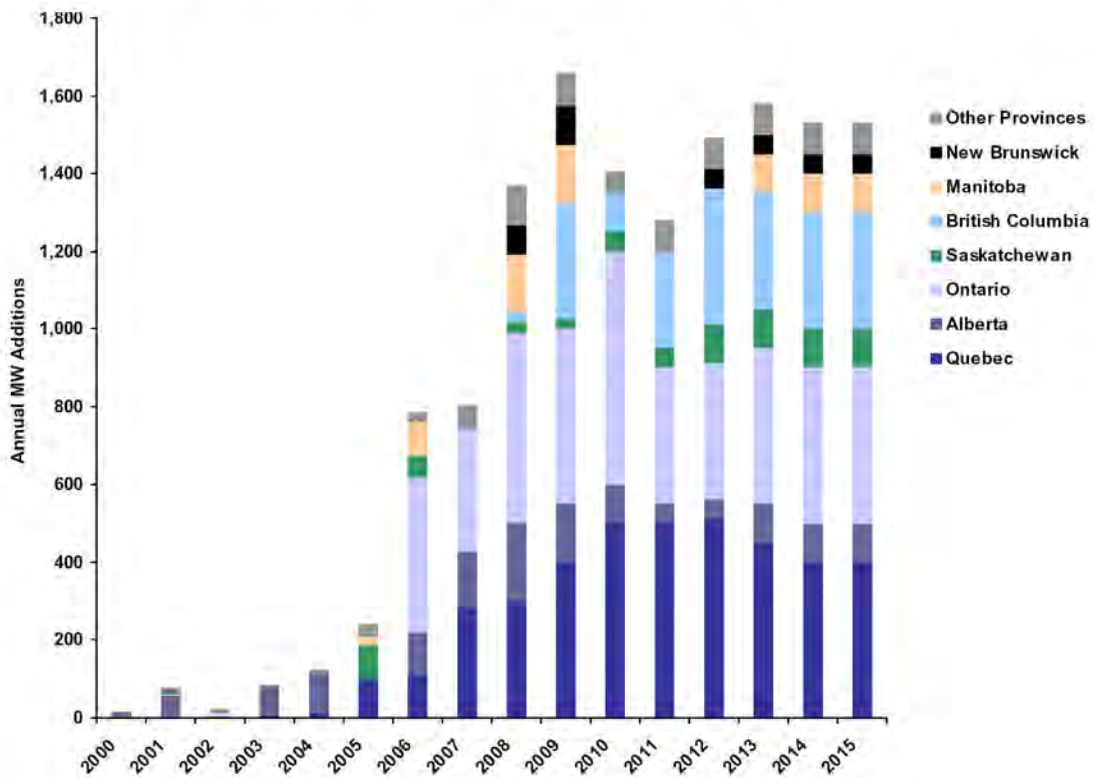
- Hydroelectric and wind energy are the dominant renewable energy sources planned for Ontario.
- Huron County has good wind resources especially along the shores of Lake Huron.
- Bioenergy opportunities exist and Ontario Power Generation would be the key target client

## Global Wind Energy Forecast



## Wind energy market forecast in Canada by Province

Exhibit: Annual Wind Power Capacity Additions by Province, 2000-2015 (MW)



Source: Emerging Energy Research

Rapid Growth Spurs Intense Competition

## **Countries with leading wind power installations in MW**

USA  
Germany  
Spain  
India  
China

## **Wind Technology Leaders – Germany, Denmark Spain**

With 19.7 % of the global installed capacity (21.164 turbines with a total capacity of 25.777 MW and covering 7.6% of the German electricity consumption, Germany is the second largest wind market, right after the USA and before Spain, India, China and Denmark. Moreover, the German wind industry produces the lion's share (29 %) of all systems and components used worldwide. German companies are therefore excellent partners for Canadian firms to offer proven and reliable wind technology.

## **Actions**

Visit markets that have the type of manufacturers Huron County is looking to attract.  
Attend events focused at the renewable energy sectors that Huron has a natural advantage

Suggest      Wind Market Events  
                 Biomass Market Events