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# **Opportunities and Challenges in Ontario's Energy Sector**

***It's Ultimately All About People  
and Human Resources!***

**Shane T. Pospisil  
President and CEO  
Ontario Energy Association**



***Ontario Energy  
Association***

# Ontario Energy Association

*The 170-member Ontario Energy Association (OEA) is Ontario's premier energy trade organization. The OEA represents:*

- (1) firms involved in the transmission, distribution and marketing of natural gas; and*
- (2) firms involved in the generation, transmission, distribution and marketing of electricity.*

*OEA members together employ about 32,000 Ontarians and last year accounted for about \$34 billion in market revenues.*



**Ontario Energy  
Association**

# **Expansion Demand Growth and Demographics are Big Issues Across all OEA Membership Classes**

- Energy Utility/Storage/Transmission/Distribution
- Energy Production
- Energy Marketers and Retailers
- Manufacturers/Contractors/Service Providers
- Consultants

# **Environmental Scan 2007: What are the big issues for OEA members?**

- tight labour markets for technical and other skilled workers, an aging workforce and the emergence of the “Alberta Tiger”
- overall investment and business climate predictability and ROE
- regulatory costs/regulatory predictability
- environmental footprint and more informed consumers
- NIMBYism and NIMTOism and associated project delays
- industrial competitiveness - ratepayers/taxpayers ultimately have to pay the bills!

# Ontario's Electricity Supply/Demand Challenge - Reliability and Affordability Key

**Ontario Population:**  
**12,550,000 / 155 TWh (2005)**

Residential - 30%  
Commercial - 40%  
Industrial - 30%

**Toronto Population:**  
**5,300,000 (CMA)**

Note: Average Toronto homeowner uses about 900 kWh/month.



# Ontario is Part of the North American Industrial Heartland

U.S. states included in this region represent:

- 44% of U.S. population (135 million consumers within 800 miles of Toronto)
- 47% of U.S. GDP
- 48% of U.S. Personal Income (US\$2.7 trillion)

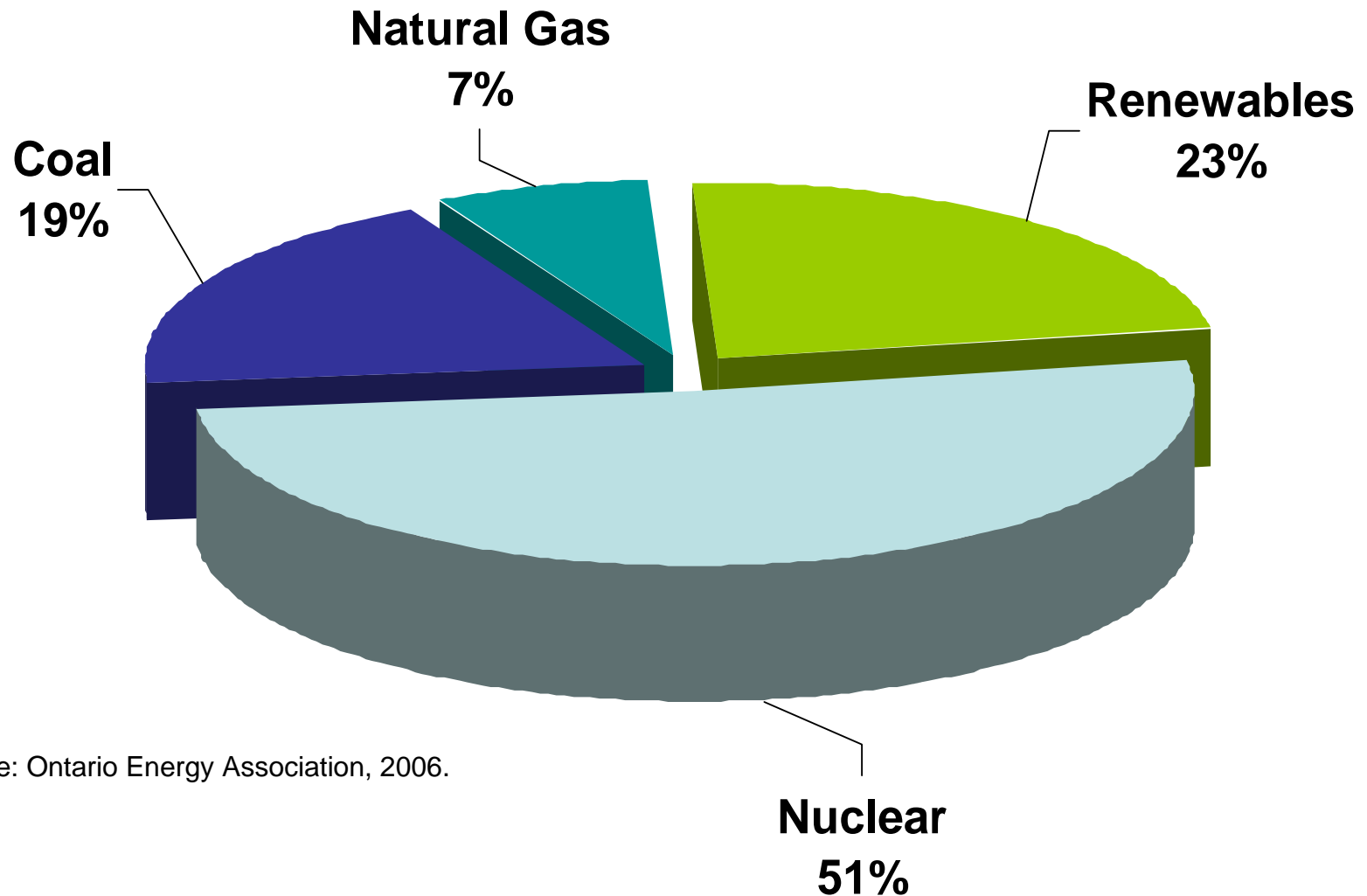


# Energy and Industrial Competitiveness

## ➤ Ontario is Canada's industrial heartland:

- ❑ 40% of Canadian GDP; 52% of Canadian manufacturing shipments
- ❑ 40% of total Canadian employment, with relatively high employment levels in natural resource extraction/processing, manufacturing and financial and business services
- ❑ Ontario leads all G-7 nations in exports as a share of GDP (68.5%, compared with Germany at 41.5% and the U.S. at 10%)
- ❑ merchandise exports generate almost \$200 billion a year, with the U.S. receiving almost 90% of the province's 2005 exports

# Ontario's Electricity Supply Mix (2005)



Source: Ontario Energy Association, 2006.



# Ontario's Electricity Supply/Demand Challenge - Supply Issues?

- High Per Capita Consumption and Strong Growth in Peak Demand
- Replacing Coal-Fired Generation and Aging Nuclear Plants
- Upgrading Transmission and Distribution Infrastructure
- Renewable Portfolio Standard
- A Political Commitment to Paying the True Costs of Generation
- A Reduced Environmental Footprint

# Ontario's Electricity Supply/Demand Challenge - Conservation Issues?

- Short Term Economy-Wide Conservation Target: 5% Reduction from Forecast Peak Demand by 2007 (1,350 MW)
- Short Term Government-Wide Conservation Target: At Least 10% from Broader Public Sector Operations
- Empowering Consumers - A Focus on Information/Awareness, Technology and Differentiated Pricing
- Government's Smart Meter Targets and Ontario Energy Board's "Smart Price Plan"
- Preliminary Aggregate Efficiency Indicators: 2005/2025 Reductions in Electricity Consumption/Person (4.5%), Electricity Consumption/Household (15.5%) and Electricity Consumption/\$ of Real GDP (31.25%)

# Ontario's Electricity Supply/Demand Challenge - Summary

- The combination of generation retirements and continued demand growth points to a notional or planning “supply gap” of roughly 24,000 megawatts by 2025. This represents more than 80% of Ontario's current installed generating capacity of just over 30,000 megawatts, and includes:

- ☐ the still-promised replacement of all coal-fired plants
- ☐ the potential retirement of nuclear plants
- ☐ load growth (current annual growth at 0.9%; peak at 1.3%)

- Three fundamental challenges facing the province:

## **1) 24,000 megawatts / \$70 billion in total investment\***

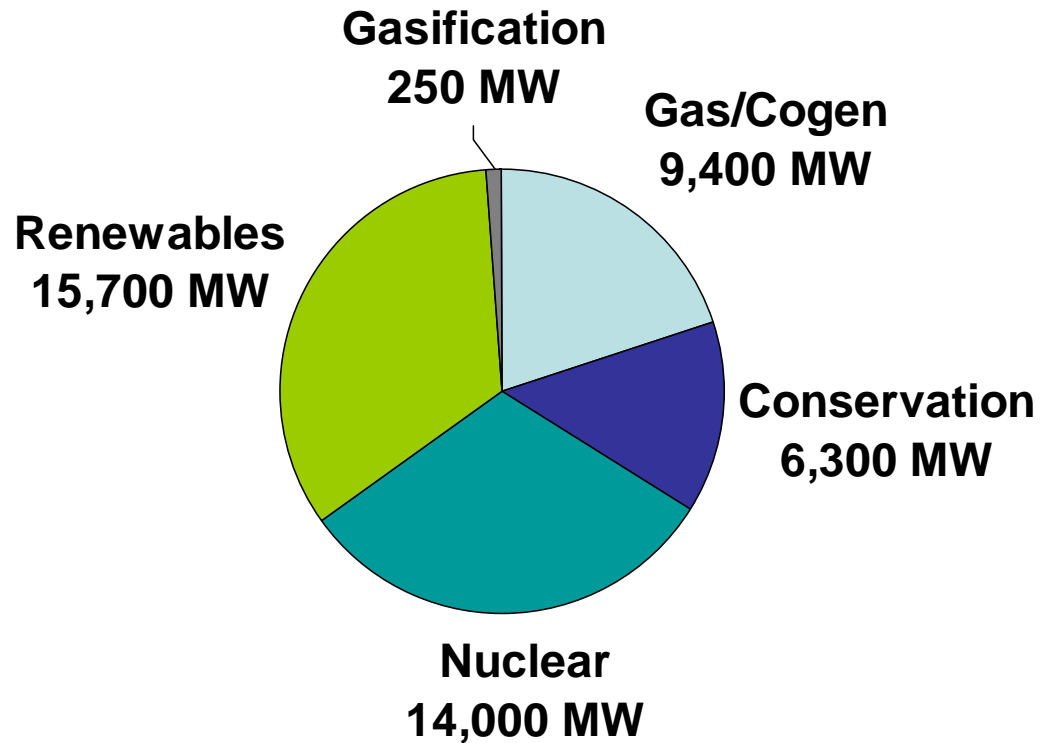
\*Ontario Power Authority forecast, 2005.

Note: Total of all electricity bills in Ontario is \$12.5 billion/year.

## **2) industrial competitiveness, economic growth and jobs**

## **3) innovation challenge - conservation, energy efficiency and reducing the environmental footprint of generation**

# Ontario's Electricity Supply/Demand Challenge - Government's Current Plan for 2025 Supply Mix



# HR Implications: Opportunities and Challenges

- ❑ In the past, the relative strengths of national and regional economies often derived from their endowment of natural resources. Today, however, it is increasingly evident that competitive advantage can now be leveraged through human resource and life-long learning strategies.
- ❑ ***“It’s Ultimately All About People and Human Resources”*** is not just a catchy phrase, it is one of the cornerstones upon which we will build our future economic competitiveness and prosperity.
- ❑ Simply reacting to change will no longer be good enough! As organizations and individuals, we must all anticipate change and proactively position ourselves relative to new and emerging opportunities and challenges.

# HR Implications: Opportunities and Challenges

What do the numbers/surveys tell us?

- ❑ The national unemployment rate dropped to a 30-year low of 6.1% in December 2006.
- ❑ Employment grew by 2.1% (+345,000) in 2006, the highest growth rate since 2002 and the 14<sup>th</sup> consecutive year of employment growth in Canada.
- ❑ There was strong employment growth across a number of industries in Canada in 2006, including 7%+ increases in certain segments and higher-skilled occupational classifications within the energy sector.

# HR Implications: Opportunities and Challenges

- ❑ With over \$100 billion in oil sands projects underway or planned over the next decade, it is not surprising that Alberta saw its largest employment growth rate in 26 years, at 6%, while Ontario's annual growth rate came in at a still respectable 1.8%.
- ❑ In the engineering and related technician and technologist occupations, it is estimated that over 25% of the workforce is now over the age of 50. ***Note: Bruce Power will see 30% of its current workforce eligible to retire within the next five years.***
- ❑ Combined with the need for new recruitment to meet projected expansion demand growth, this pending surge in retirement levels will further challenge our ability to manage and (hopefully) avoid any future critical skill set shortages/bottlenecks.

# **HR Implications: Opportunities and Challenges**

2006 Energy and Resources Talent Pulse Survey (Deloitte Consulting/Energy Council of Canada):

- 67% of industry respondents cited difficulties in attracting certain types of skilled labour
- 49% identified the retirement of the Baby Boom generation as a critical human resources issue
- 80% indicated that the “talent shortage” has limited productivity and efficiency
- 47% said the lack of skilled workers will affect their organization’s ability to innovate



# Concluding Remarks and Discussion

- ✓ Ontario's energy sector is looking for innovative new talent in the engineering and related technical occupations, in significant numbers, and will be for years to come.
- ✓ At the same time, other jurisdictions will not be shy in pursuing Ontario talent.
- ✓ The school-to-work transition is a challenging one. Be proactive, ask lots of questions (that's what we're here for!), build networks and be disciplined in your initial job search and throughout your careers.

# Concluding Remarks and Discussion

And remember:

- ✓ Your education will not end with graduation.
- ✓ Life-long learning and multi-disciplinary “acclimatization” will become increasingly important to stay relevant and advance through corporate hierarchies.
- ✓ Seek out individual and corporate mentors over your career and make sure you return the favour to those who follow.