



NUCLEAR'S ROLE

In Ontario's Low-Carbon Economy

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Nuclear: More than Megawatts



Life-saving medical diagnostic and treatment technologies



Sterilization of medical supplies and consumer products



Safer food and drinking water



Stronger materials and engineering

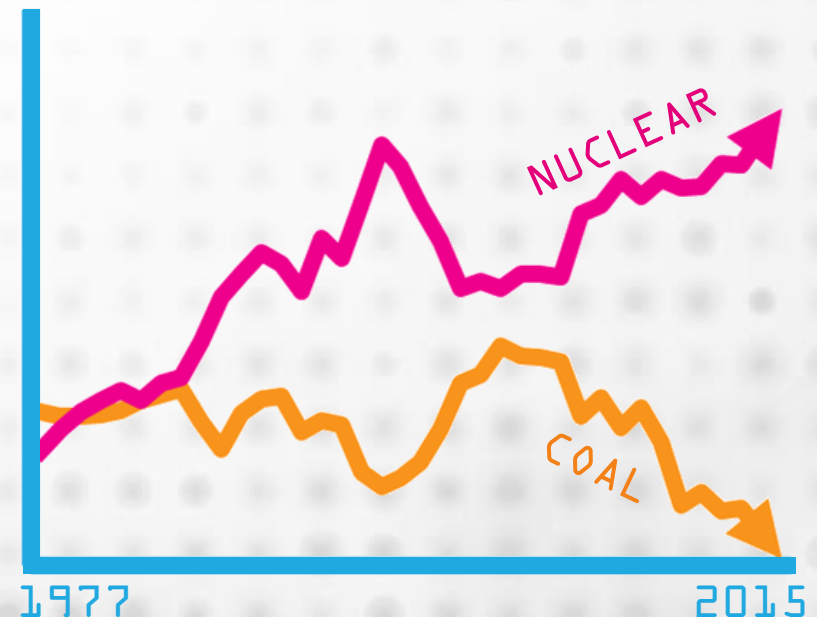


Nobel prize-winning discoveries



Nuclear Energy in Ontario

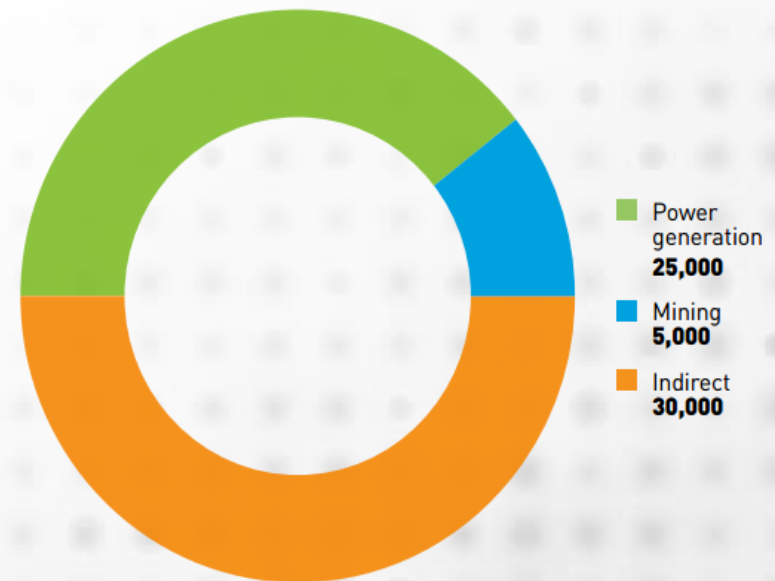
- Safe and reliable since 1962
- Surpassed hydro and coal in 1980s
- Helped province eliminate coal in 2014
- Today provides 60% of Ontario's power at below-market rates



Powering the Economy

- **\$25B in refurbishments: the largest clean energy investment in North America**
- **The engineering and supply chain are Canadian-grown (high economic benefit at home)**
- **Supports 60,000 Canadian jobs with high skills and longevity**
- **Low fuel cost means low exposure to commodity markets – for long term rate security**

JOBS SUPPORTED BY NUCLEAR IN CANADA



SOURCE: Canadian Manufacturers and Exporters¹⁵

The one fuel that DOESN'T have a waste problem

- **Low-GHGs, low SOX and NOX emissions**
- **Very small land footprint vs. power generated**
- **Waste is very small in volume; future reactors can greatly reduce this volume; cost of disposal priced into the power**
- **Very safe in surface storage, even better deep underground**
- **Spent fuel is a high-quality asset that can be re-mixed and re-burned.**



All human activity produces waste.

Why tell the one industry that keeps, pays for, and manages its waste that it has a “waste problem?”

The GHG Challenge

- **Canada's GHG emissions projected to be 55% above previous targets by 2030**
- **Energy system hardware is heavy, durable, costly: it takes decades to replace**
- **Ambitious COP21 targets can only be met by starting the transformation now – with available technologies**



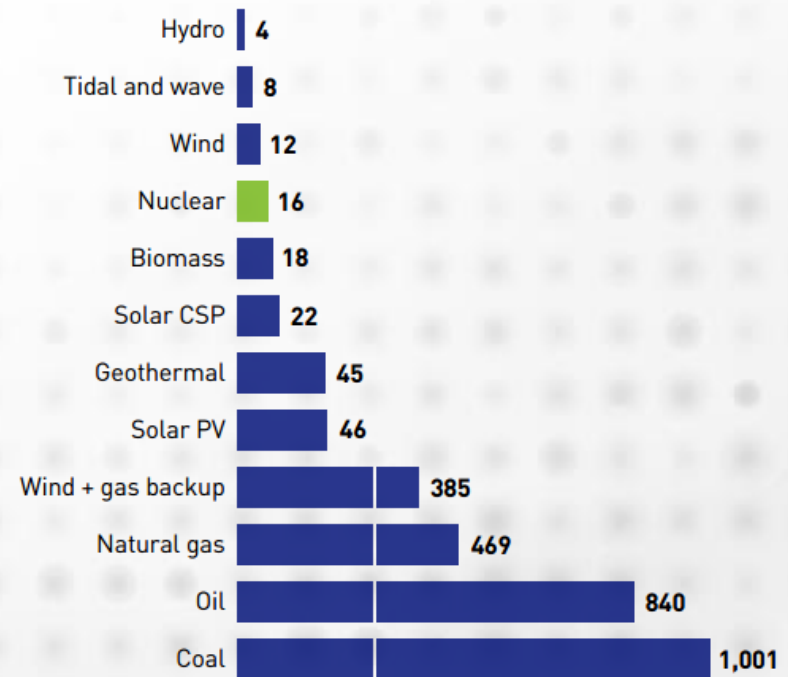
“More needs to be done to close the gap between where we are today and where we need to be.”

– The Honourable Catherine McKenna, Minister of Environment and Climate Change

Nuclear is a Climate Solution

- **Already proven safe, economic, reliable, and scaleable**
- **Comparable lifetime GHG emissions to renewables, with low cost & less land**
- **Base load – does not necessitate backup from high-carbon gas turbines**
- **Nuclear’s stable baseload power supports integration of renewable technologies & distributed generation**
- **Only energy technology that accounts for its own waste**

CO₂ EMISSIONS BY ENERGY SOURCE



Lifecycle Greenhouse Gas Emissions (g CO₂ equivalent/kWh)

SOURCE: Intergovernmental Panel on Climate Change.⁷

Stimulating Clean Innovation

- Nuclear is a central, home-grown part of our science, engineering and manufacturing strength
- Clean baseload power supports electrification of GHG-intensive sectors
- Small and advanced reactors promise much wider applications and big global opportunities



Decarbonizing the world

- **Apply very small modular reactors (VSMRs) to replace diesel in remote, northern and Aboriginal communities**
- **Continue mining Canadian uranium, which (by supplying the world's nuclear power plants) avoids GHGs in vast quantities**
- **Export proliferation-resistant nuclear energy technology to countries in need of low-emission electricity.**



What's needed

- **Emerging economies are choosing nuclear -- for clean air, low carbon, low land footprint, high skills and good jobs**
- **Canada needs financing backed by Canada Account to match other leading suppliers (Russia)**
- **A national Nuclear Innovation Council to set Canada's long-term science & technology agenda**



Looking Forward

- Recognize the important role of nuclear energy in meeting GHG emissions goals
- Include nuclear energy in the government's definition of clean energy technology
- Support nuclear energy as a key component of a Canadian Energy Strategy
- Create and support an intergovernmental Nuclear Innovation Council
- Develop a Nuclear Trade Council to identify opportunity in emerging markets



Thank You!

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