



**Oral Presentation**

**Exposé oral**

**Submission from the  
Toronto Region Board of Trade**

**Mémoire du  
Toronto Region Board of Trade**

In the Matter of

À l'égard de

**Ontario Power Generation Inc.,  
Pickering Nuclear Generating Station**

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**Ontario Power Generation Inc.,  
centrale nucléaire de Pickering**

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Request for a ten-year renewal of its Nuclear Power Reactor Operating Licence for the Pickering Nuclear Generating Station

Demande de renouvellement, pour une période de dix ans, de son permis d'exploitation d'un réacteur nucléaire de puissance à la centrale nucléaire de Pickering

**Commission Public Hearing – Part 2**

**Audience publique de la Commission –  
Partie 2**

**June 2018**

**Juin 2018**





Photo credit: H4vok\_13 via Foter.com



# TORONTO REGION BOARD OF TRADE

PICKERING NUCLEAR LICENCE  
RENEWAL

CANADIAN NUCLEAR SAFETY COMMISSION

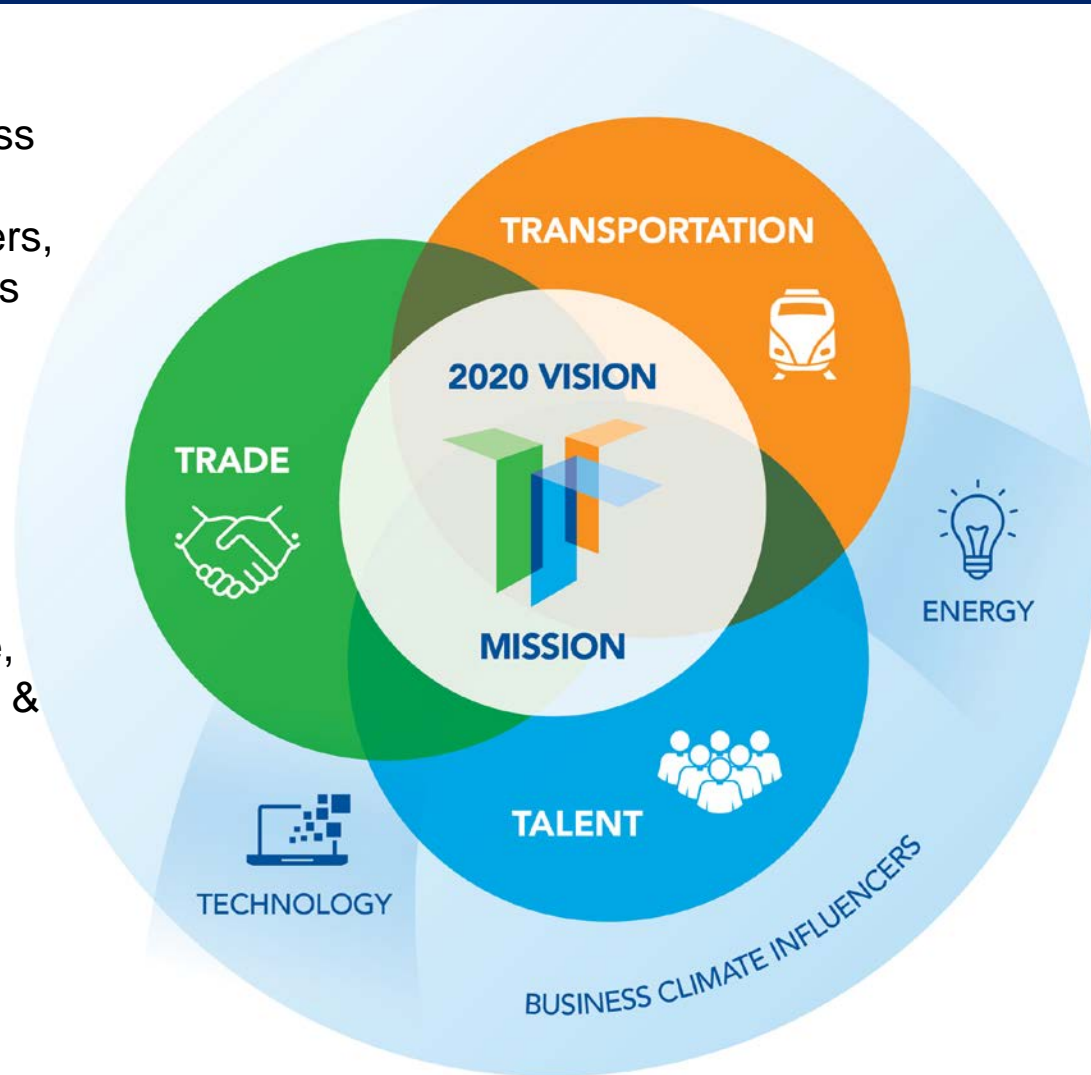
May 2, 2018

# Presentation Overview

- 1. About the Toronto Region Board of Trade**
- 2. The Need for Reliable, Low-Cost Power**
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# About the Toronto Region Board of Trade

- Serving the Toronto Region business community for **+170 years** .
- We collaborate with business leaders, government, educational institutions & community builders.
- Our membership is diverse: **+12,000** business professionals & influencers from established corporations to emerging start-ups.
- The Board offers: podium of choice, policy & advocacy, B2B networking & professional development.



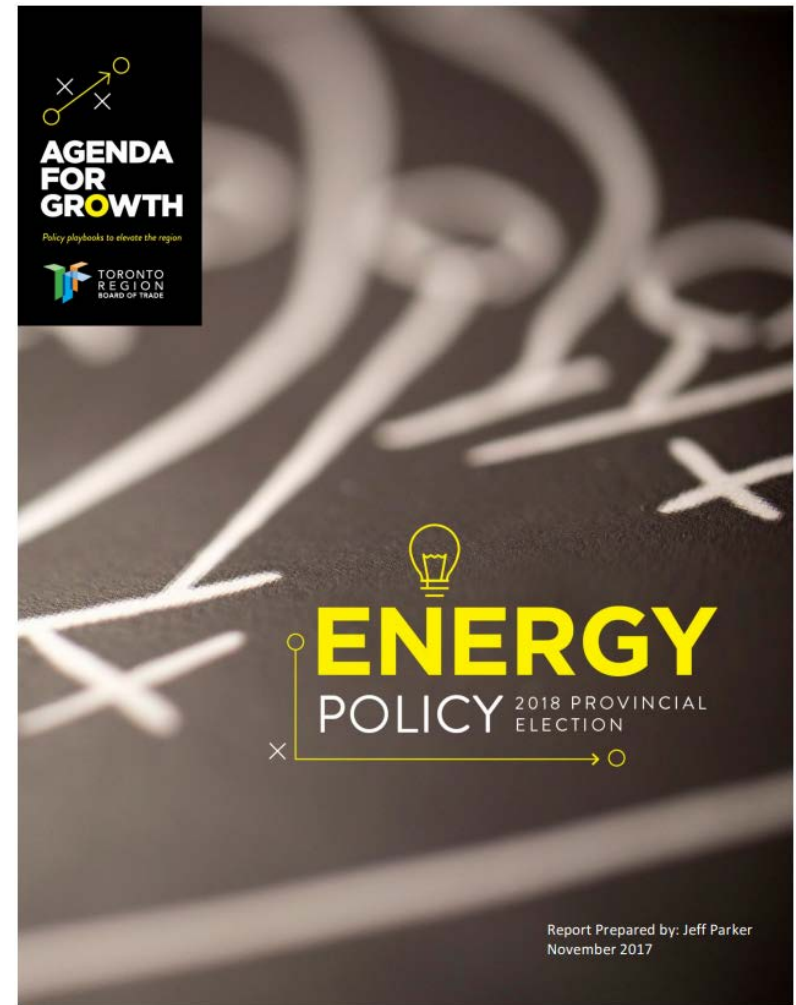
# Energy Policy at the Board of Trade

Sound energy policy is founded on balancing three objectives:

- **Affordability**
- **Reliability**
- **Sustainability**

Energy is a priority area for the Board and we advocate to all three levels of government to make smart energy decisions.

Nuclear power is the rare technology that can achieve all three objectives.



# The Need for Reliable, Low-Cost Power

Since 1971, Pickering Nuclear has been providing reliable, low-cost power to Ontario. This is crucial to consumers, including our members. In a time of rapidly rising energy prices, nuclear power continues to provide strong value-for-money.

Our nuclear power plants also provide the foundation for a robust domestic nuclear industry, ensuring that Canada can remain a leader in the peaceful deployment of nuclear technology. In a period of global uncertainty, a strong Canadian nuclear industry, including Pickering, is important to supporting international development and treaty commitments.

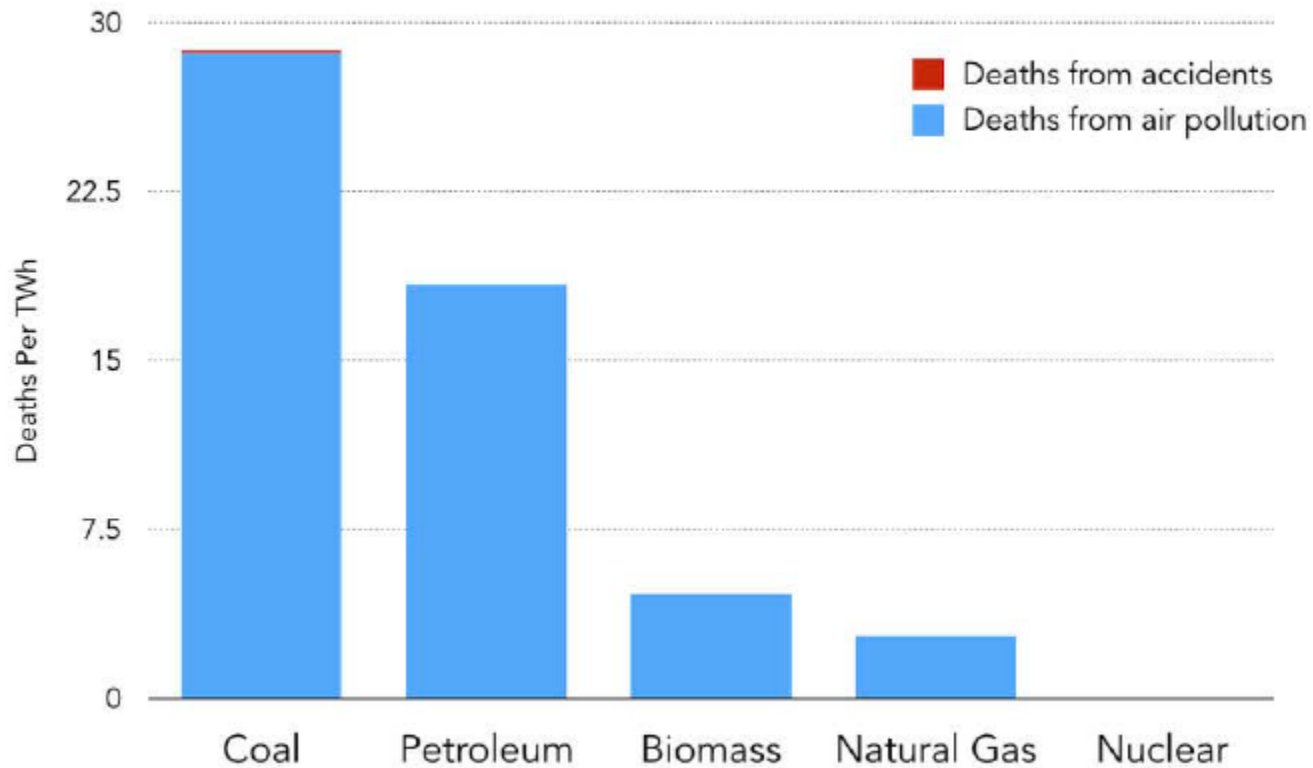
## Total Electricity Supply Cost, 2017

	% of Total Supply	% of Total Global Adjustment	Total Unit Cost (Cents/kWh)
<b>Nuclear</b>	60%	40%	6.9
<b>Hydro</b>	24%	12%	5.8
<b>Gas</b>	6%	15%	20.5
<b>Wind</b>	8%	18%	17.3
<b>Solar</b>	2%	14%	48.0
<b>Bio Energy</b>	0%	0%	13.1

Source: [Ontario Energy Board](#)

# A Laudable Safety Record

Nuclear is already the safest way to make reliable electricity.



Source: Markandya, A., & Wilkinson, P. 2007. Electricity generation and health. *The Lancet*, 370(9591), 979-990.



# A Laudable Safety Record

## CANADIAN NPP SAFETY PERFORMANCE RATINGS FOR 2016

Safety and control area	Bruce A	Bruce B	Darlington	Pickering	Point Lepreau	Industry average*
Management system	SA	SA	SA	SA	SA	SA
Human performance management	SA	SA	SA	SA	SA	SA
Operating performance	FS	FS	FS	FS	SA	FS
Safety analysis	FS	FS	FS	FS	FS	FS
Physical design	SA	SA	SA	SA	SA	SA
Fitness for service	SA	SA	SA	SA	SA	SA
Radiation protection	FS	FS	FS	SA	SA	SA
Conventional health and safety	FS	SA	SA	FS	FS	FS
Environmental protection	SA	SA	SA	SA	SA	SA
Emergency management and fire protection	SA	SA	SA	SA	SA	SA
Waste management	FS	FS	FS	FS	SA	FS
Security	SA	SA	SA	SA	SA	SA
Safeguards and non-proliferation	SA	SA	SA	SA	SA	SA
Packaging and transport	SA	SA	SA	SA	SA	SA
Integrated plant rating	FS	SA	FS	FS	SA	SA

FS Fully satisfactory SA Satisfactory BE Below expectations

## A Laudable Safety Record

The CNSC's own assessment indicates that Pickering continues to meet or exceed nuclear industry safety standards.

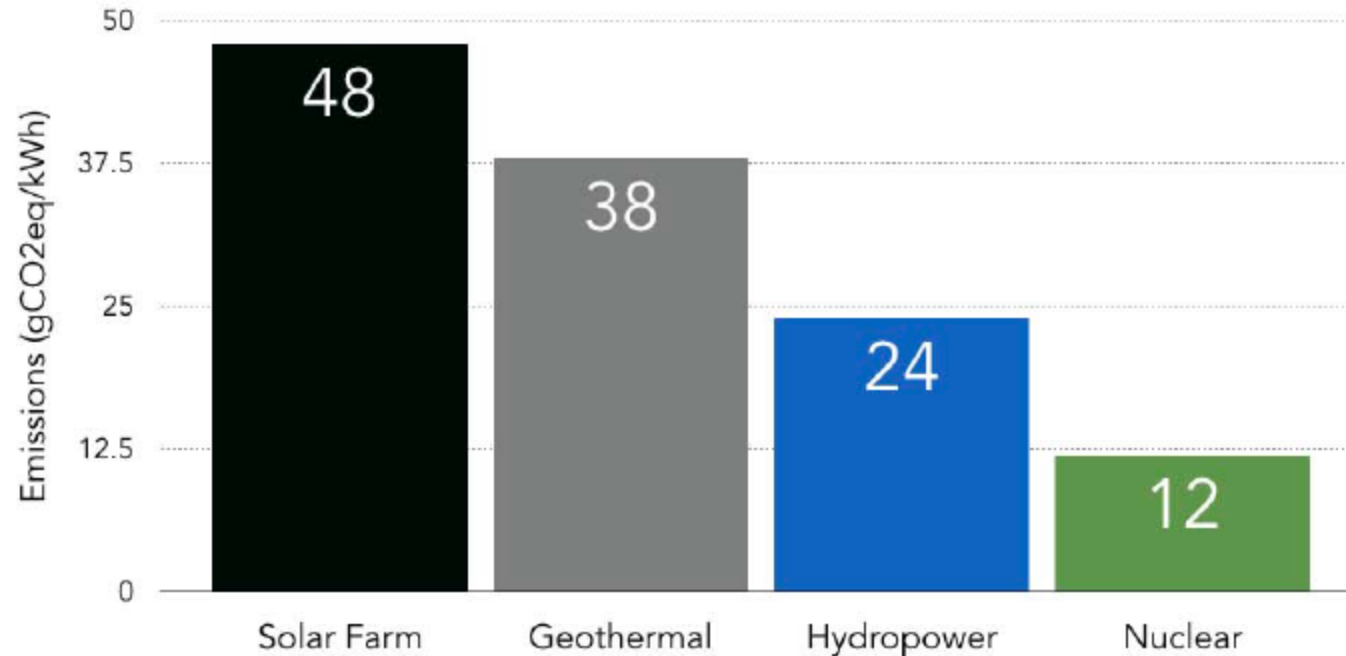
Pickering's worker safety record is particularly laudable with only 0.06 injuries per 200,000 hours worked. This established culture of safety continues to produce world-leading results for workers and the community.

# Ensuring a Sustainable Environment

- Nuclear power's environmental impact must be about more than site safety, radiation and waste management
- While these are important, and central to the CNSC's mandate, environmental considerations should also include nuclear power's role in combating climate change.
- Pickering supplies large amounts of virtually emission-free energy, which has been crucial to Ontario and Canada's efforts to meet international commitments, such as the Paris Agreement. The extension of operations to 2024 will provide low-carbon energy during the refurbishment of Darlington and Bruce.

# Ensuring a Sustainable Environment

## Nuclear produces four times less carbon pollution than solar farms



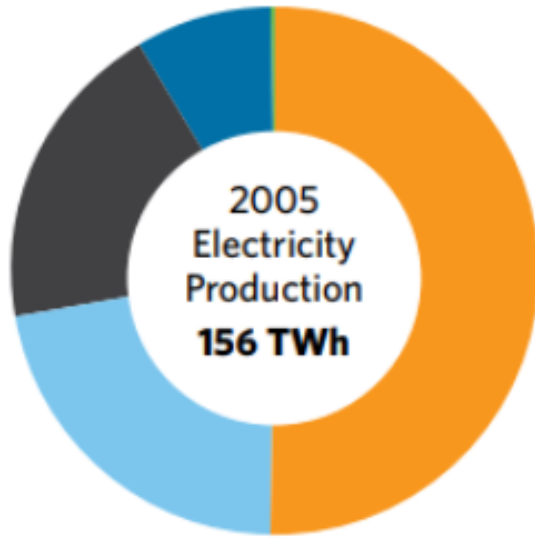
### Source: Intergovernmental Panel on Climate Change (IPCC) 2014

Annex III Table A III.2 :: Schlömer S., T. Bruckner, L. Fulton, E. Hertwich, A. McKinnon, D. Perczyk, J. Roy, R. Schaeffer, R. Sims, P. Smith, and R. Wiser, 2014. "Annex III: Technology-specific cost and performance parameters." In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

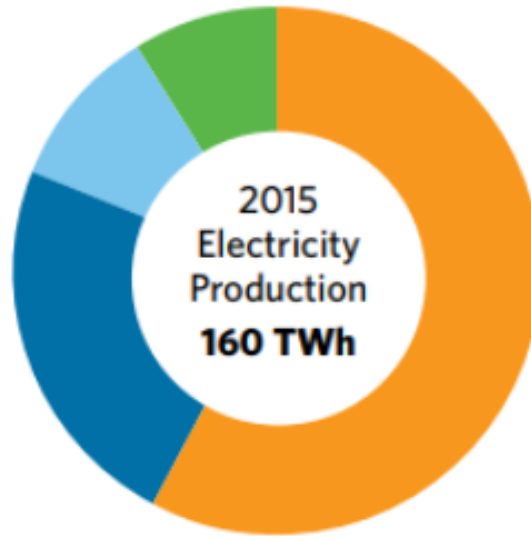


# Ensuring a Sustainable Environment

Ontario Electricity Production in 2005 and 2015



Nuclear	51%
Water	22%
Coal	19%
Natural Gas	8%
Solar/Wind/Bioenergy	<1%



Nuclear	58%
Water	23%
Natural Gas	10%
Solar/Wind/Bioenergy	9%

Ontario's landmark environmental achievement, eliminating coal, was only possible because of increased generation from nuclear power. Approximately half of the power from coal generation was replaced by nuclear.

Even a few more years of operating Pickering reduces the reliance upon emitting sources.

Source: [Ontario Planning Outlook](#)

# The Importance of Extending Pickering's Operations

- Nuclear power manages to achieve the three objectives of an ideal energy system by providing affordable, reliable and environmentally sustainable electricity
- Ontario's nuclear generating stations are central to current and future plans to combat climate change and create a more environmentally sustainable future
- Pickering's reactors also supply Cobalt-60, used in the sterilization of single-use medical devices.
- Operating Pickering Nuclear until 2024 will allow it to provide emissions-free, lower cost power to offset lower output due to refurbishment. This reduces pressure on other refurbishment projects.
- Extending Pickering's licence also provides a comfortable timetable to allow for plant operations to be wound down.

# The Importance of Extending Pickering's Operations

The CNSC has a successful track record in licensing continued operations to ensure the highest standards in safety, security and environmental protection. These standards should be applied to the current licence extension with confidence in the potential benefits it brings.



## For Further Information

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May 3, 2018

Canadian Nuclear Safety Commission  
280 Slater Street  
P.O. Box 1046, Station B  
Ottawa, ON K1P 5S9

Dear Members of the Canadian Nuclear Safety Commission,

I am writing to you to express the Toronto Region Board of Trade's desire to intervene in the public hearings regarding Ontario Power Generation's (OPG) licence renewal of the Pickering Nuclear Generating Station (Pickering NGS) on June 26-28, 2018. The Board supports OPG's application for a 10-year licence renewal of Pickering NGS and we request permission to present our position at the next available hearing.

The Board is one of the oldest and largest chambers of commerce in North America, serving the Toronto region's business community for the past 170 years. We have a diverse membership, with more than 12,000 members from across many sectors. We have a robust policy department that provides thought leadership and advocates to all levels of government for policies that encourage growth and prosperity.

In particular, we support sound energy policy founded on balancing the three objectives of affordability, reliability and environmental sustainability. Nuclear is the rare technology that fulfills all three criteria. Our 2017 energy policy, lays out a framework towards a better energy future in Ontario, which includes a strong role for nuclear power.

We argue that the CNSC should approve OPG's licence renewal for three reasons. First, the Pickering NGS provides reliable, low cost power which brings a significant benefit to Ontario's consumers, particularly businesses facing global competition. Pickering's contributions will be even more important given the refurbishment of the reactors at Bruce and Darlington over the next 15 years. In addition to providing low cost power Pickering's role as part of a robust domestic nuclear industry provides the foundation for Canada to remain a leader in the peaceful deployment of nuclear technology around the world. In a period of global uncertainty, Canada's leadership is more necessary than ever.

Second, nuclear power continues to have a strong safety record. Despite the oft-mentioned risks, nuclear power has led to far fewer deaths than competing reliable power sources, such as fossil fuels. In its own safety review, the CNSC has given Pickering NGS satisfactory and fully satisfactory grades in 2016, meeting or exceeding industry averages. Pickering's laudable record of worker safety, with only 0.06 injuries per 200,000 hours worked demonstrates a commitment to the well-being of workers and the community.

Finally, Pickering NGS provides significant environmental benefits, for Ontario and Canada. Ontario was only able to eliminate coal generation, and the harms that come from smog, by increased generation from its nuclear fleet. With other reactors unable to generate as they undergo refurbishment, operating Pickering NGS until 2024, will help bolster Ontario and Canada's efforts to meet international environmental commitments, including the Paris Agreement.



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Extending Pickering NGS' licence reduces the pressure on upcoming nuclear refurbishment projects by ensuring a reliable supply of nuclear power while other reactors are not operational. The extension also provides the needed timeframe to begin winding down Pickering's operations.

In closing, Pickering NGS serves a crucial role in the economic and environmental wellbeing of our province and our country. We are strongly supportive of their licence renewal and look forward to the opportunity to speak with you further about this.

Yours sincerely,

A handwritten signature in blue ink that reads 'J D Goold'.

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Douglas Goold, PhD  
Vice President, Policy  
Toronto Region Board of Trade