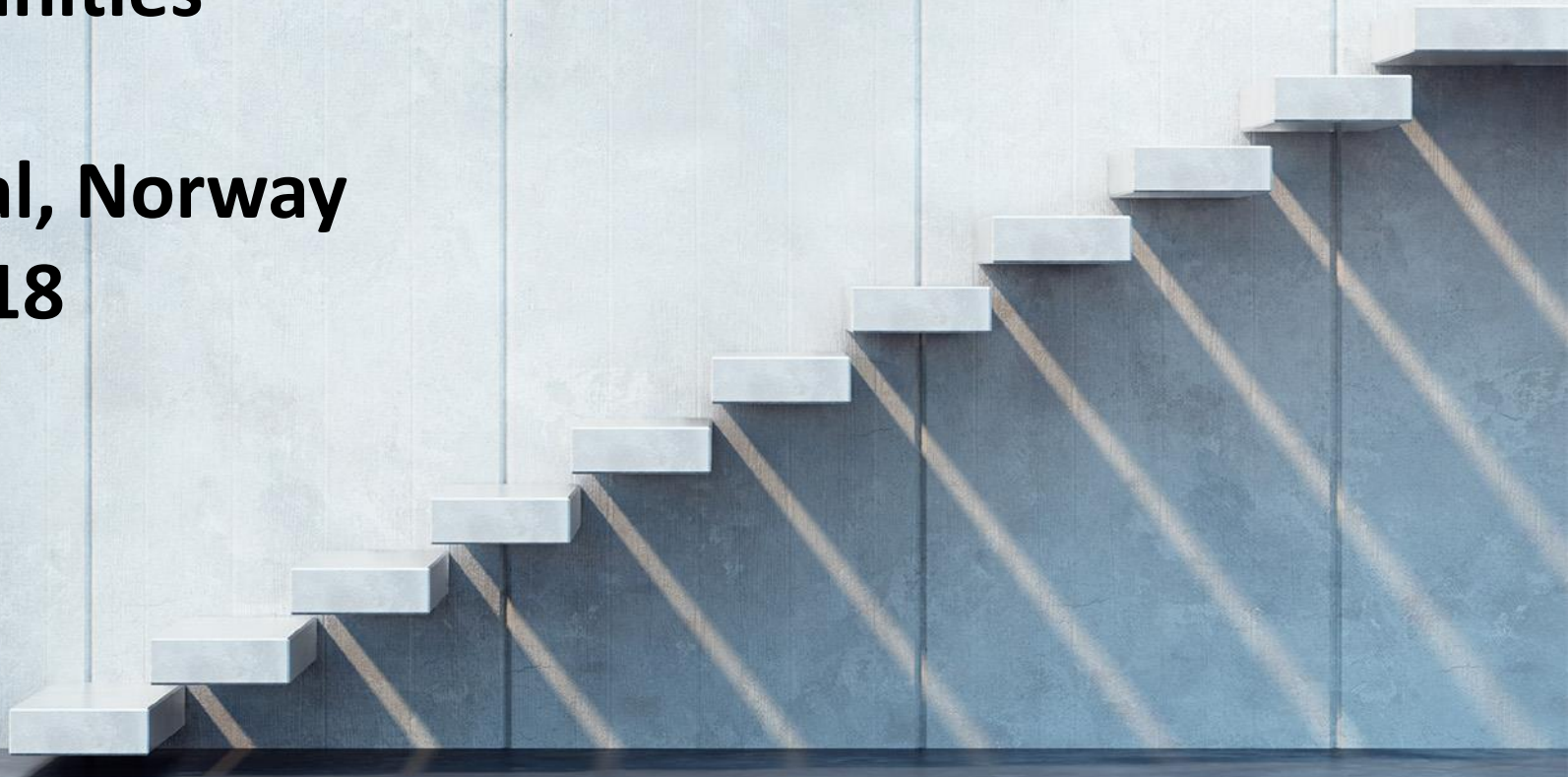




Canada: Maritime Cleantech Opportunities

Rosendal, Norway
June 2018
















The Canadian Economy

- Standard bearer of good business
- Secure financial system ranked extremely sound by World Economic Forum
- Stock exchange is one of the largest capital pools in the world (2nd in listing by number of companies)

Best Countries For Business 2018

Forbes

Rank	Name	GDP Growth	GDP per Capita	Trade Balance/GDP	Population
 #1	United Kingdom	1.8%	\$39,900	-4.4%	64.8 M
 #2	New Zealand	3.6%	\$39,400	-2.8%	4.5 M
 #3	Netherlands	2.2%	\$45,300	8.5%	17.1 M
 #4	Sweden	3.2%	\$51,600	4.5%	10 M
 #5	Canada	1.5%	\$42,200	-3.3%	35.6 M
 #6	Hong Kong	2%	\$43,700	4.6%	7.2 M
 #7	Denmark	1.7%	\$53,400	7.9%	5.6 M
 #8	Ireland	5.1%	\$61,600	3.3%	5 M
 #9	Singapore	2%	\$53,000	19%	5.9 M





The Green Shift

National Energy Mix

80% of electricity generation is non-emitting

Renewable Energy

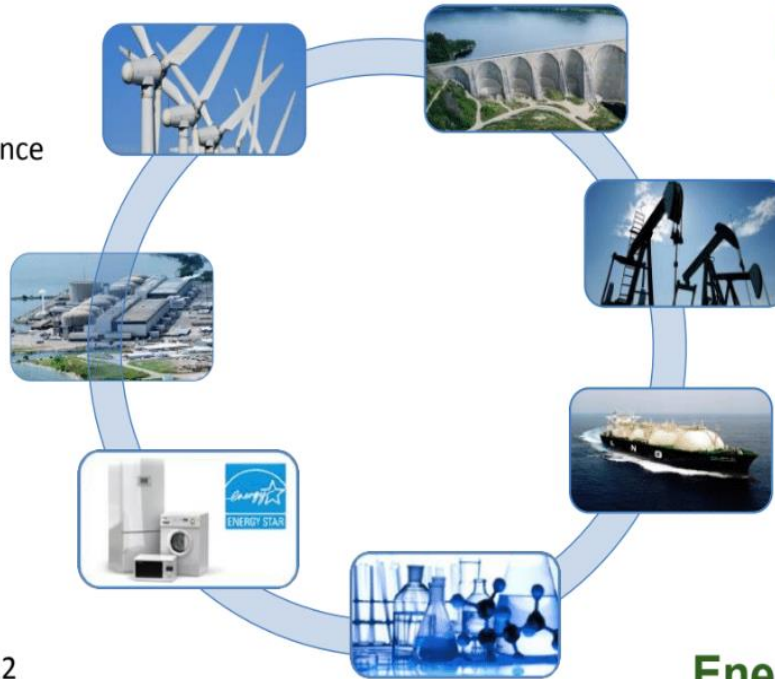
- 65% of electricity portfolio
- 7th in wind power capacity
- 555% growth in solar capacity since 2010

Nuclear

- 2nd largest uranium producer
- Own nuclear reactor technology (CANDU)

Energy Efficiency

- \$37B in energy costs saved in 2012
- GHG reductions equivalent to emissions of more than 27M cars



Hydro

- 2nd largest hydroelectricity producer

Crude Oil

- 5th largest producer
- 3rd largest proved reserves

Natural Gas

- 4th largest producer
- \$10.6B net exports

Energy Technology Innovation

- Significant investment in energy RD&D
- >55,000 employed in clean tech sector employs and is growing 4X faster than rest of economy

Decarbonizing Heavy Industry: The Low-Carbon Transition of Canada's Emission-Intensive and Trade-Exposed Industries



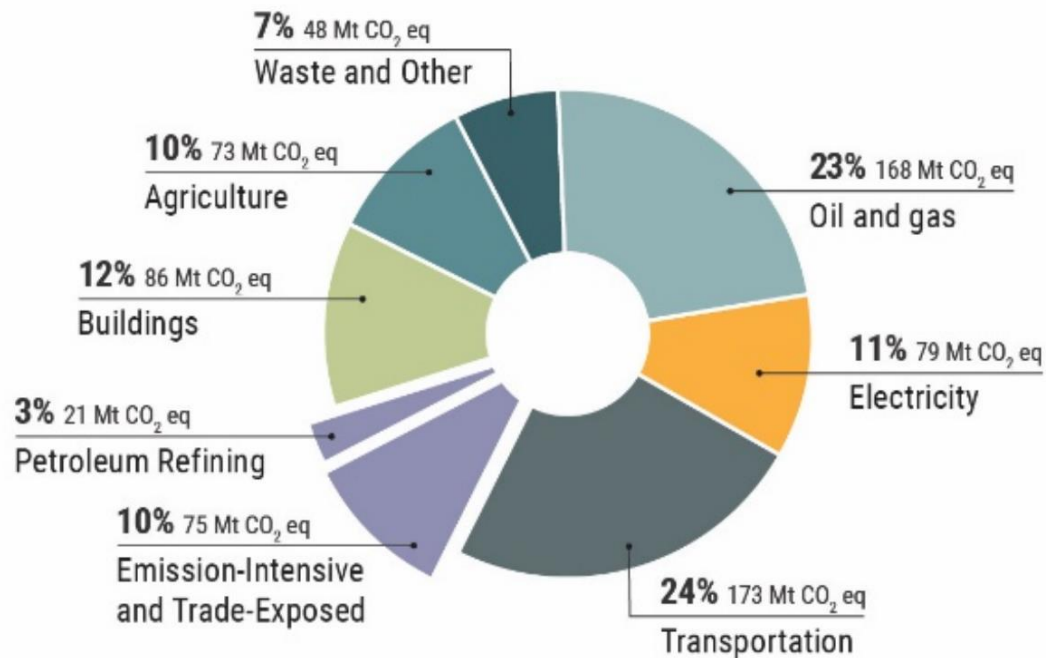
SENATE | SÉNAT
CANADA

Report of the Standing Senate Committee on Energy,
the Environment and Natural Resources

The Honourable Rosa Galvez, Chair
The Honourable Michael L. MacDonald, Deputy Chair

April 2018

Figure 2 – Breakdown of Canada's Greenhouse Gas Emissions by Sector, 2015 (Mt CO₂ eq)





Maritime Cleantech

Port of Vancouver: Gateway to Opportunity





- The 3rd greenest city in the world, and aiming to become the greenest by 2020
- Closest major port to Asia, one of the world's best natural deep-water harbours and a key international transportation hub
- Among the lowest energy rates in North America, primarily derived from clean energy
- Some of the fastest data speeds in North America

Vancouver now a leading international shipping centre: EU competitiveness report

Port among group of five that poses a growing threat to EU market share in shipping, according to Deloitte analysis

By Timothy Renshaw | March 3, 2017, 1:48pm





In 2017

\$713 million

of investment was initiated by industry and port tenants, towards projects on port authority land that will increase capacity, efficiency and safety of goods movement at the Port of Vancouver



Planning for the future

Trade in containers between Asia and Canada is growing, and the West Coast will run out of capacity by the mid-2020s. Our proposed Roberts Bank Terminal 2 Project would accommodate growing trade by creating 2.4 million TEUs (twenty-foot equivalent units) of container capacity. The project is currently undergoing a federal environmental assessment by an independent review panel.



Port of Vancouver-related activity per year generates

\$24.2 billion

in economic output

\$11.9 billion

in GDP

Strong future market for Norwegian LNG technology



- British Columbia is the only LNG exporting jurisdiction, aside from Norway, with a carbon tax in place.
- Safe gas transportation via pipelines for more than 60 years
- **BC Ferries has 3 LNG ferries under construction**
- Air temperature = increased efficiency and production by 25%
- Established regulatory certainty

Maritime Cleantech Fact Finding: January 2018



Meetings included Port of Vancouver, Ballard, BC Ferries (2nd largest ferry company in the world) and hydrogen and fuel cell cluster of companies

Vancouver: What we did

- Illustrated Norwegian Maritime Cleantech Cluster competence on green technologies for the maritime industry and green port operations
- We saw mutual benefits for cluster partners and Canadian companies
- The companies and organisations we visited in Canada showed great interest in what's currently happening within green shipping in Norway, especially when it comes to electrification
- Canadians have a lot of expertise within hydrogen technology that could prove interesting for Norway

Global Growth: Maritime Cleantech to Vancouver, British Columbia Q4 of 2018

- **Find opportunities**
- **Build your network**
- **Enjoy beautiful Vancouver**
- **Information to be distributed by September**

Thank You! Enjoy your lunch!

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