

# **Canada's path forward – energy policies in the context of low oil prices and the clean energy transition**

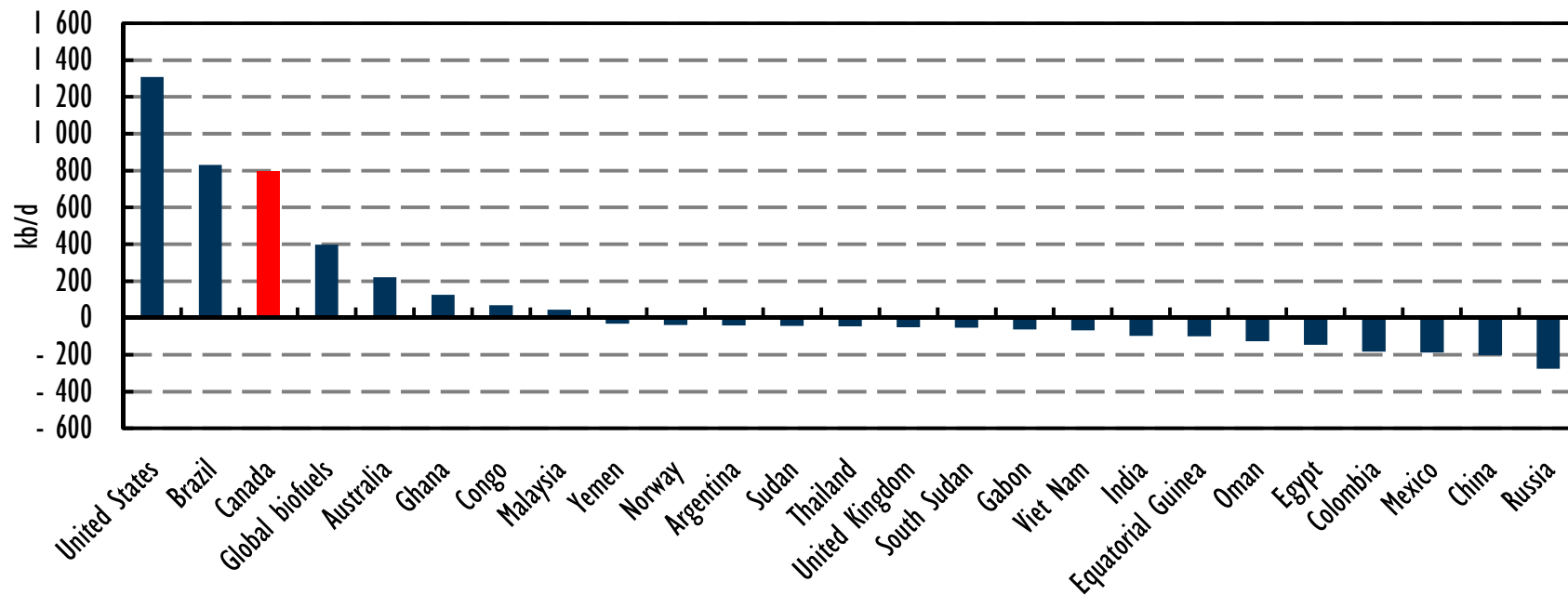


**Dr. Fatih Birol**  
**Executive Director, International Energy Agency**  
**Ottawa, 25 February 2016**

- Period of low fossil fuel prices continues into 2016
- COP21 is a historic milestone that can stimulate energy sector innovation
  - *Pledges of 180+ countries account for 95% of emissions*
- The balance is shifting towards low-carbon technologies driven by policy preferences & cost reductions
  - *Renewables contributed almost half of the world's new power generation capacity in 2014*
- Multiple signs of change, but are they moving the energy system in the right direction?

# Canada remains one of the drivers of global oil supply growth

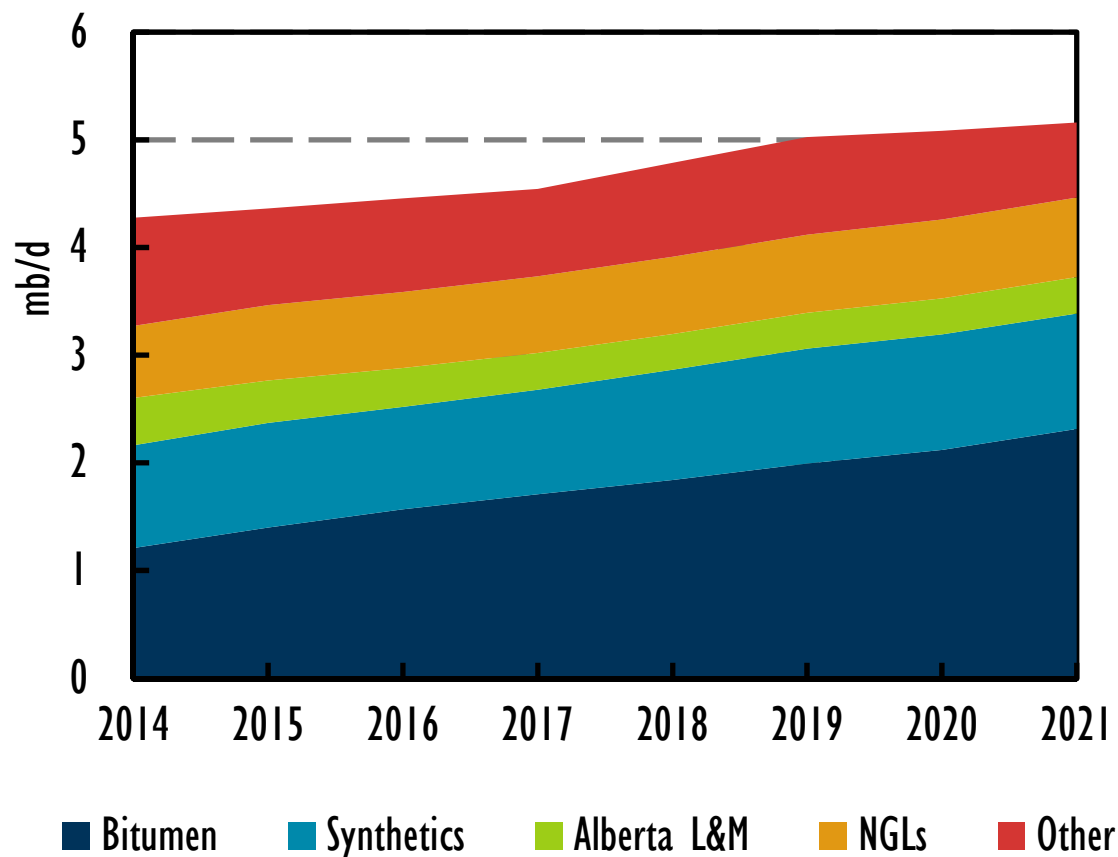
Selected sources of non-OPEC supply change 2015-21



*Gains in the US, Brazil and Canada; drops in Russia, China and Mexico*

# Lower oil prices curb oil sands growth in the medium term

## Canada oil production



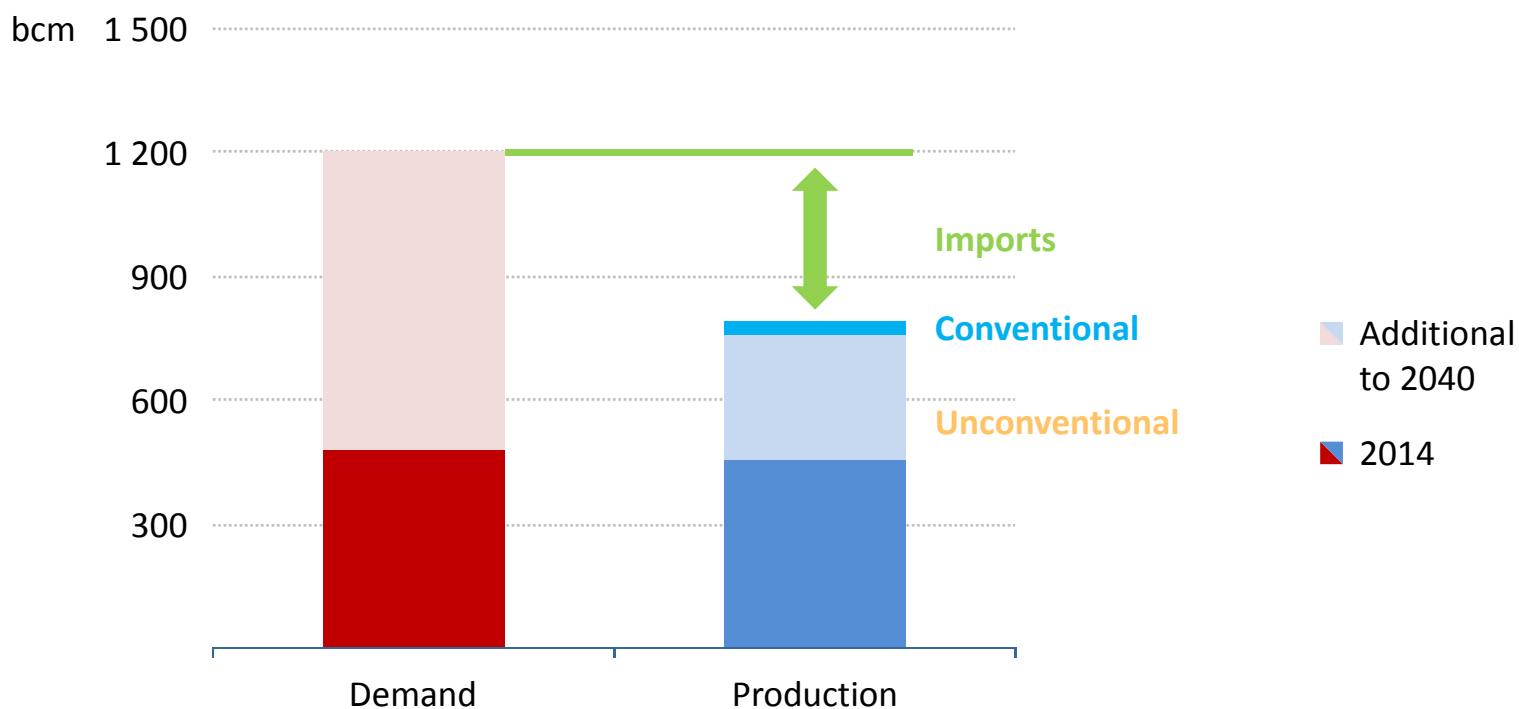
**By 2021, Canadian oil output is forecast to reach 5.2 mb/d, of which bitumen from Alberta (incl. synthetic crude) accounts for 3.4 mb/d**

# Changing natural gas outlook

- Low gas prices in North American reflect ample supply following the shale gas revolution
- Over the past decade, US shale gas has displaced Canada's natural gas in the US market
- NAFTA markets represent an attractive opportunity for Canada to grow its gas exports & to reach global markets
- Almost 30 new LNG export projects are proposed in Canada
- After 2020, Canadian LNG is expected to serve global markets thanks to unconventional gas production

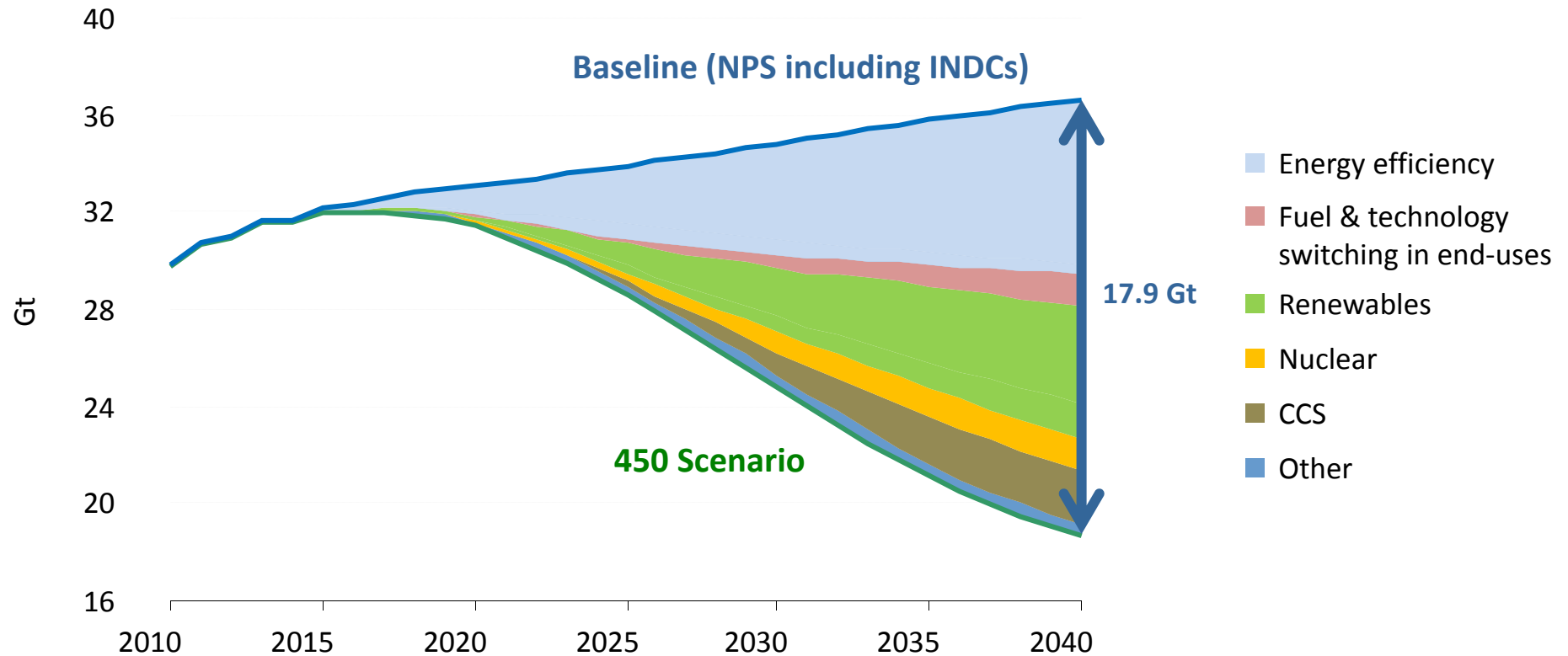
# Global long-term outlook for natural gas: Opportunities & uncertainties are in Asia

## Natural gas demand and supply in developing Asia (2014-2040)



***Developing Asia accounts for almost half of the rise in global gas demand to 2040;  
Canadian LNG exports will serve Asia, Europe and other markets***

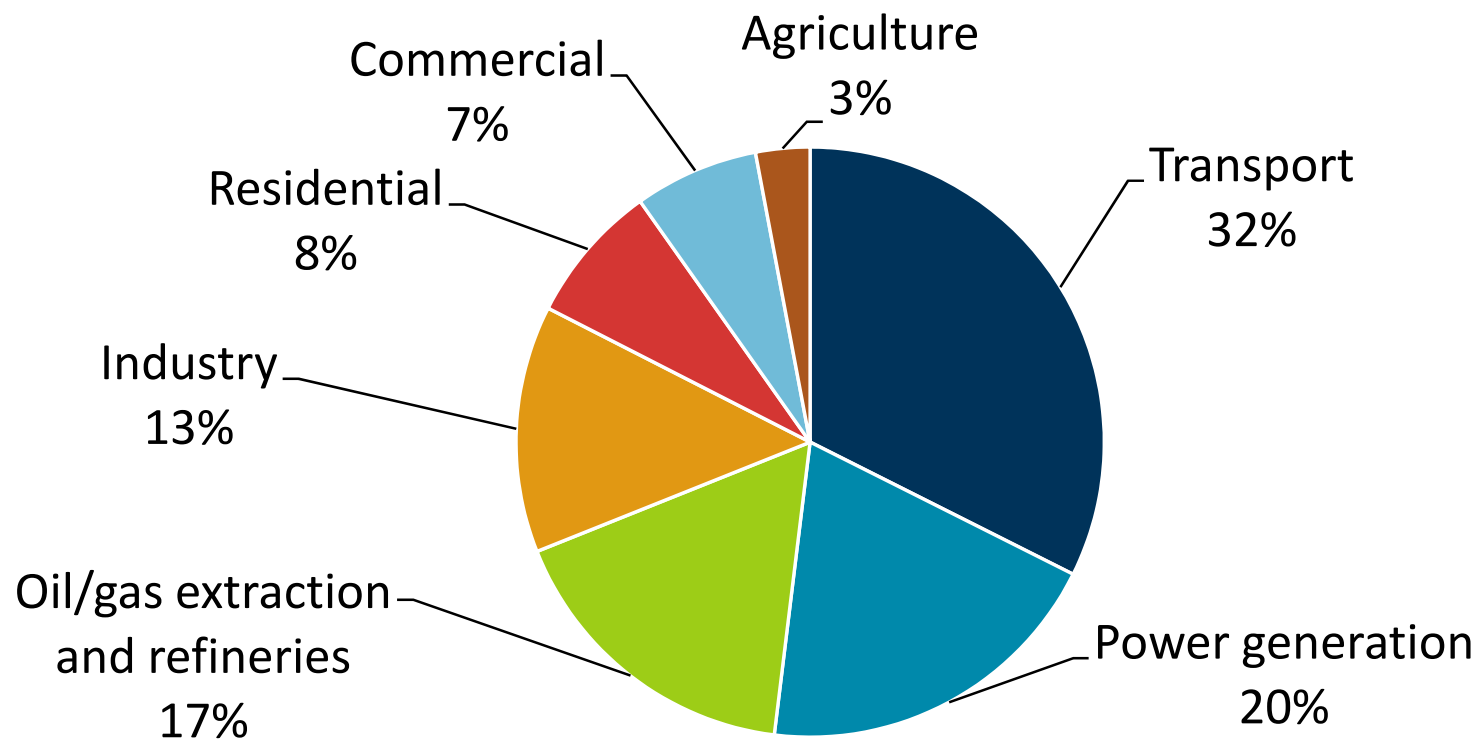
# A 2°C pathway requires efforts well beyond INDCs



***Energy efficiency & renewables account for the bulk of emission reductions required for a 2°C pathway, but all forms of clean energies are needed***

# Canada's COP21 pledge: Reduce GHG emissions by 30% below 2005 levels by 2030

Carbon dioxide emissions from fuel combustion by sector (2013)

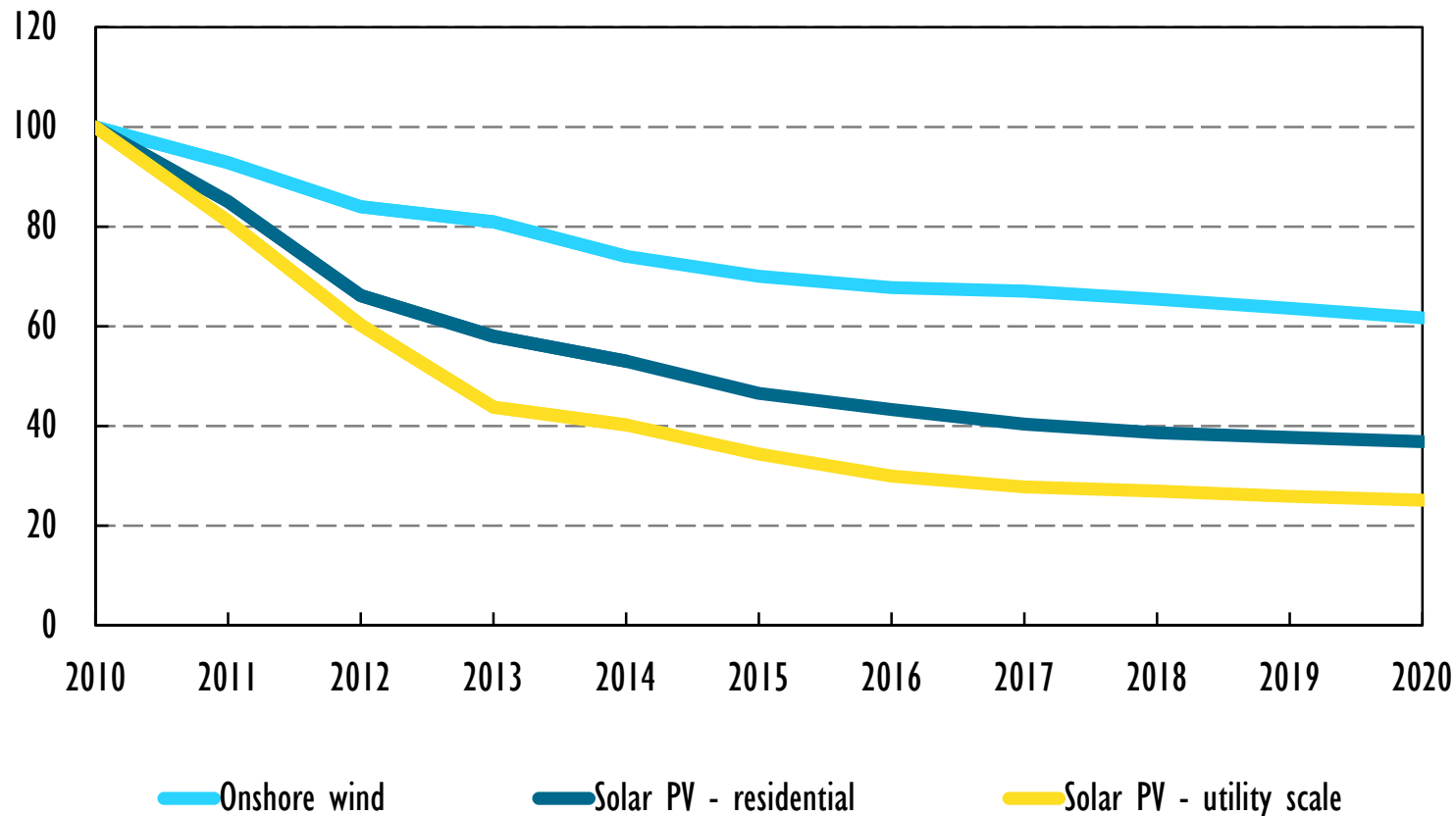


***Transport, power generation and energy production generate 70% of Canada's CO<sub>2</sub> emissions***



# Opportunities for renewable energy at home and abroad

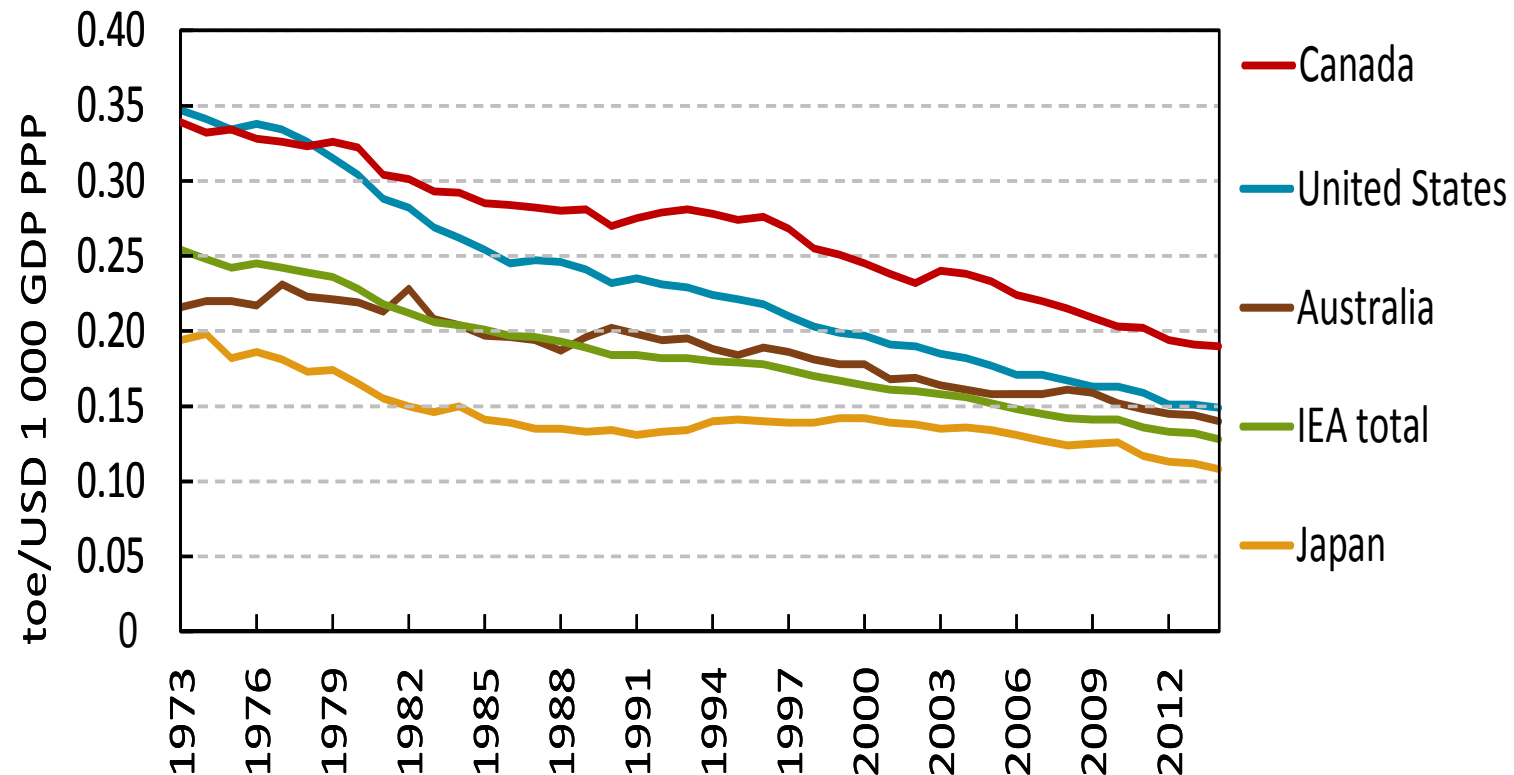
### Global indexed generation costs for renewables (2010=100)



***Renewable energy is set to grow, offsetting coal & nuclear retirements at home;  
Canada's hydropower exports can help the US meet its climate targets***

# Opportunities for energy efficiency

Energy intensity in Canada and in other selected IEA member countries

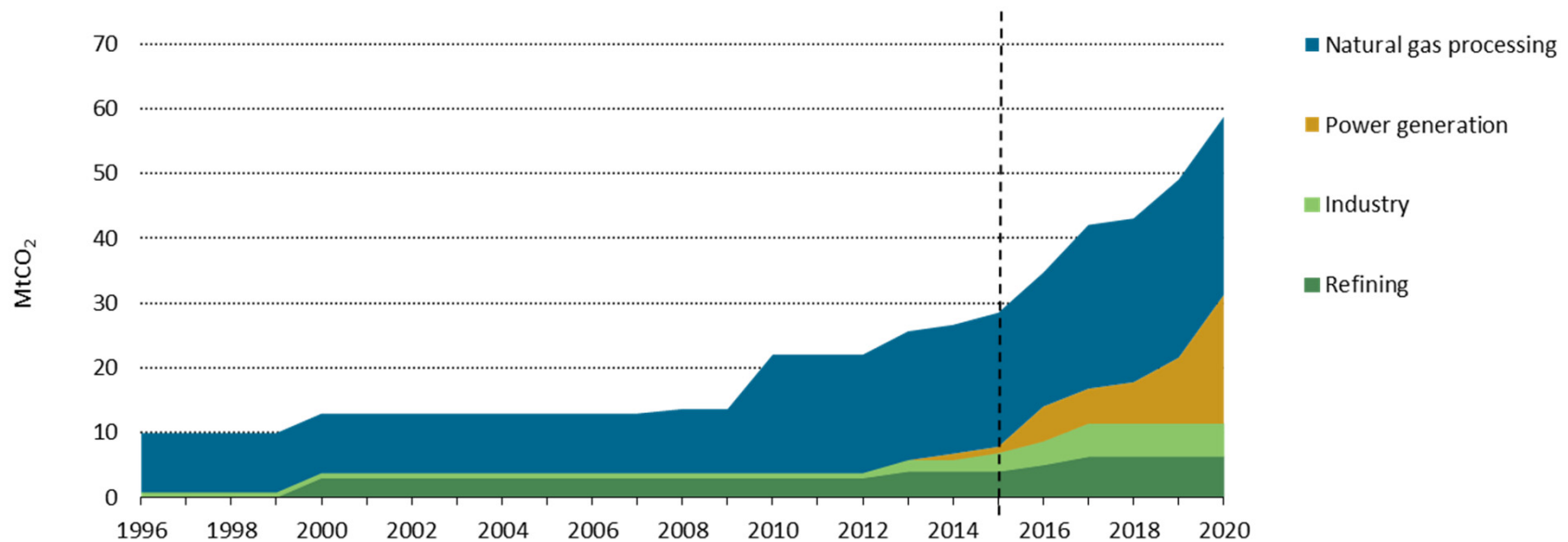


***Canada's energy intensity decreased by 20% since 2003, yet Canada still has the highest energy use per capita of all IEA countries***

# Early CCS deployment is starting – but progress must be accelerated



## Global CO<sub>2</sub> Capture Projects: Maximum Projected Capacity



**Canada is an early CCS leader (with 4 of 15 projects globally); more CCS is critical to drive costs down – Boundary Dam 2 would cost 25-30% less than the first**

# IEA key recommendations for Canada's energy transition

- Canada - a cornerstone of global energy markets & key contributor to energy security - is not immune to the current price downturn
  - *Yet longer-term prospects are promising, as Canadian oil & gas benefits from NAFTA integration and new markets in Asia*
- Canada's new era of "Federal / Provincial / Territorial" collaboration will be key to implementing its COP21 pledge
- Canada has big opportunities with energy efficiency & renewables by focusing on energy RD&D and stable long-term energy policies
- With looming energy security & environmental challenges, international co-operation on energy has never been more vital