

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

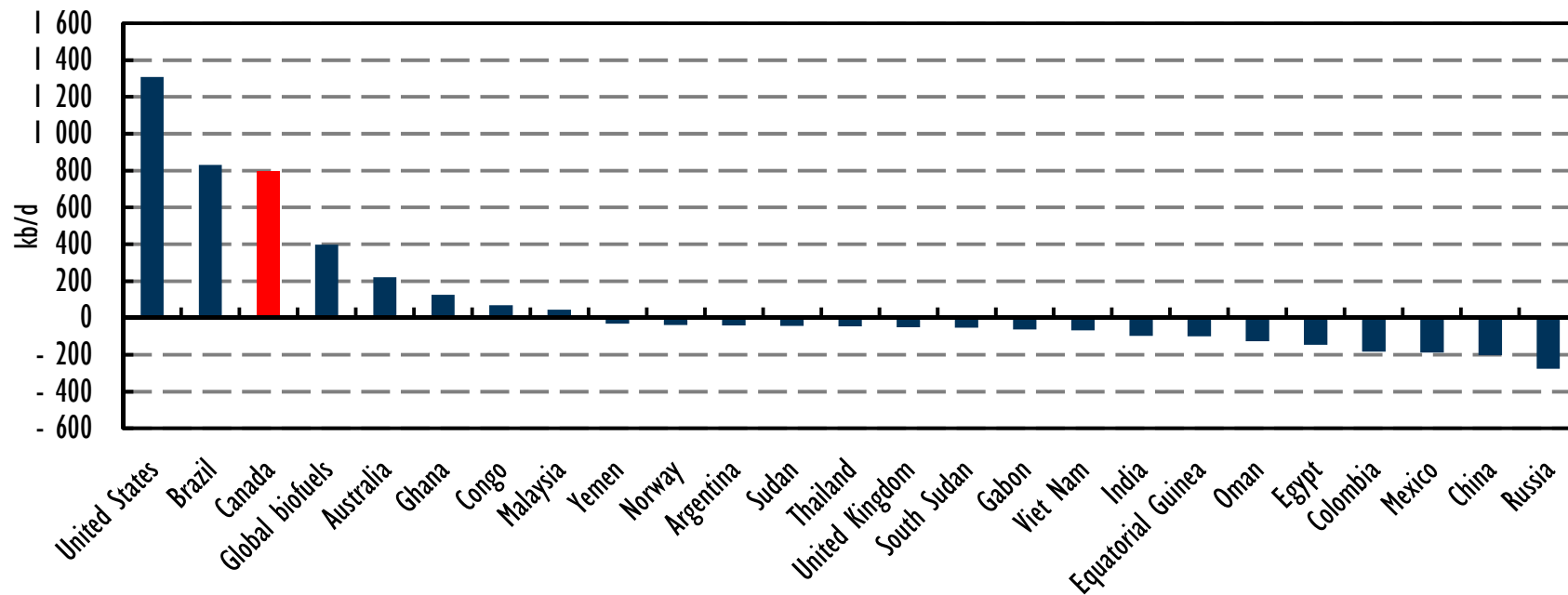


Dr. Fatih Birol
Executive Director, International Energy Agency
Ottawa, 25 February 2016

- 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

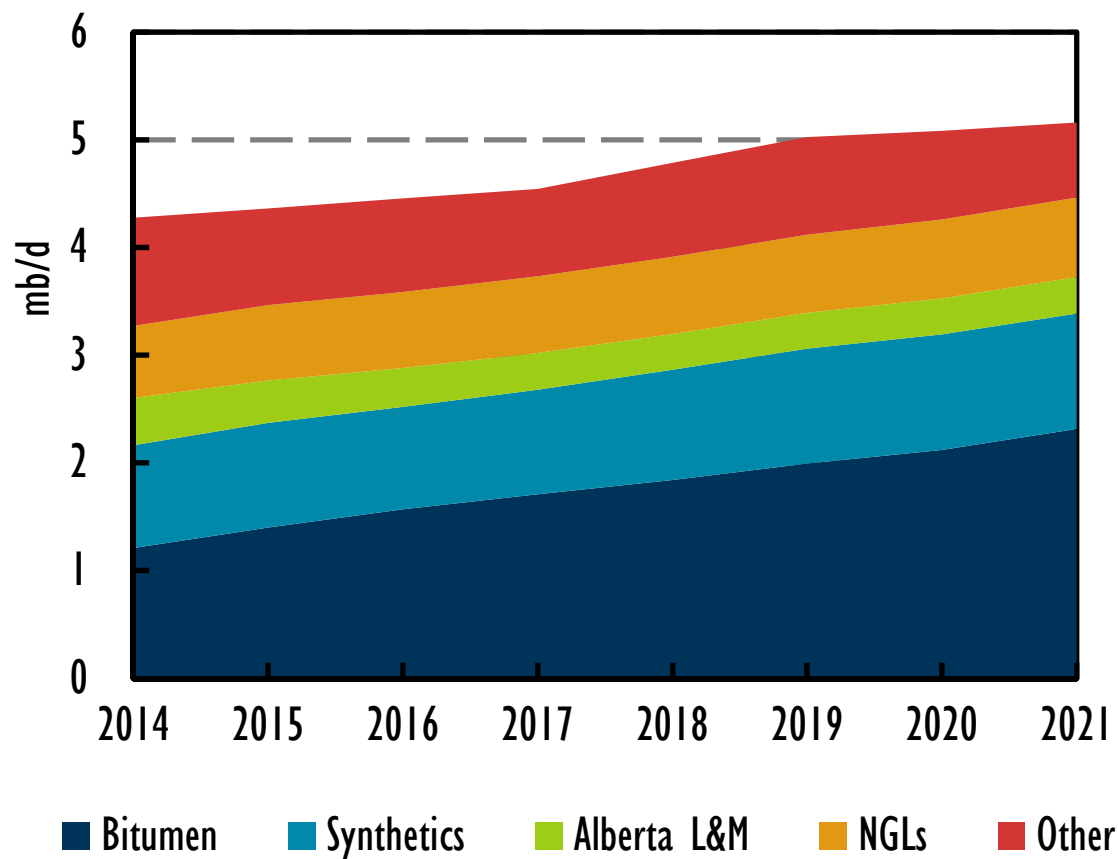
Selected sources of non-OPEC supply change 2015-21



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



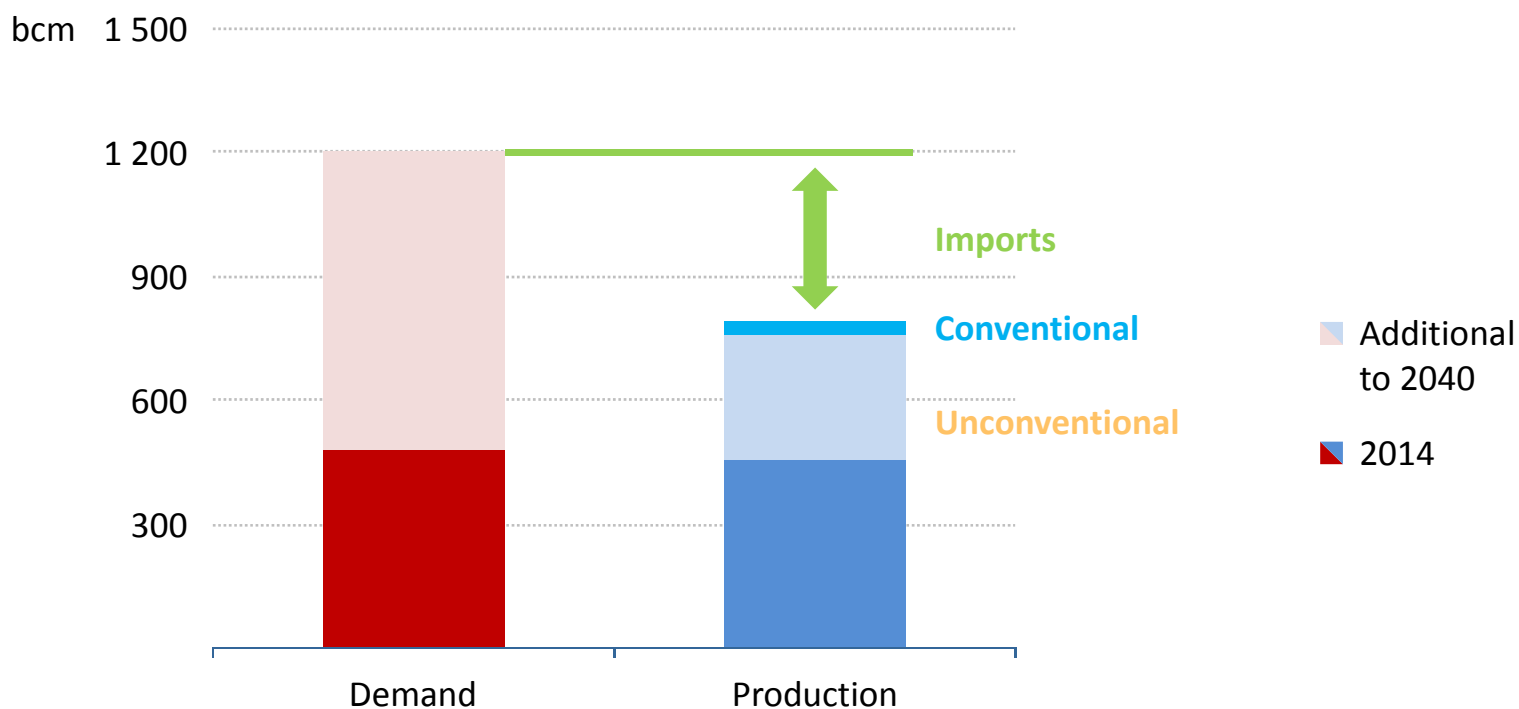
By 2021, Canadian oil output is forecast to reach 5.2 mb/d, of which bitumen from Alberta (incl. synthetic crude) accounts for 3.4 mb/d

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

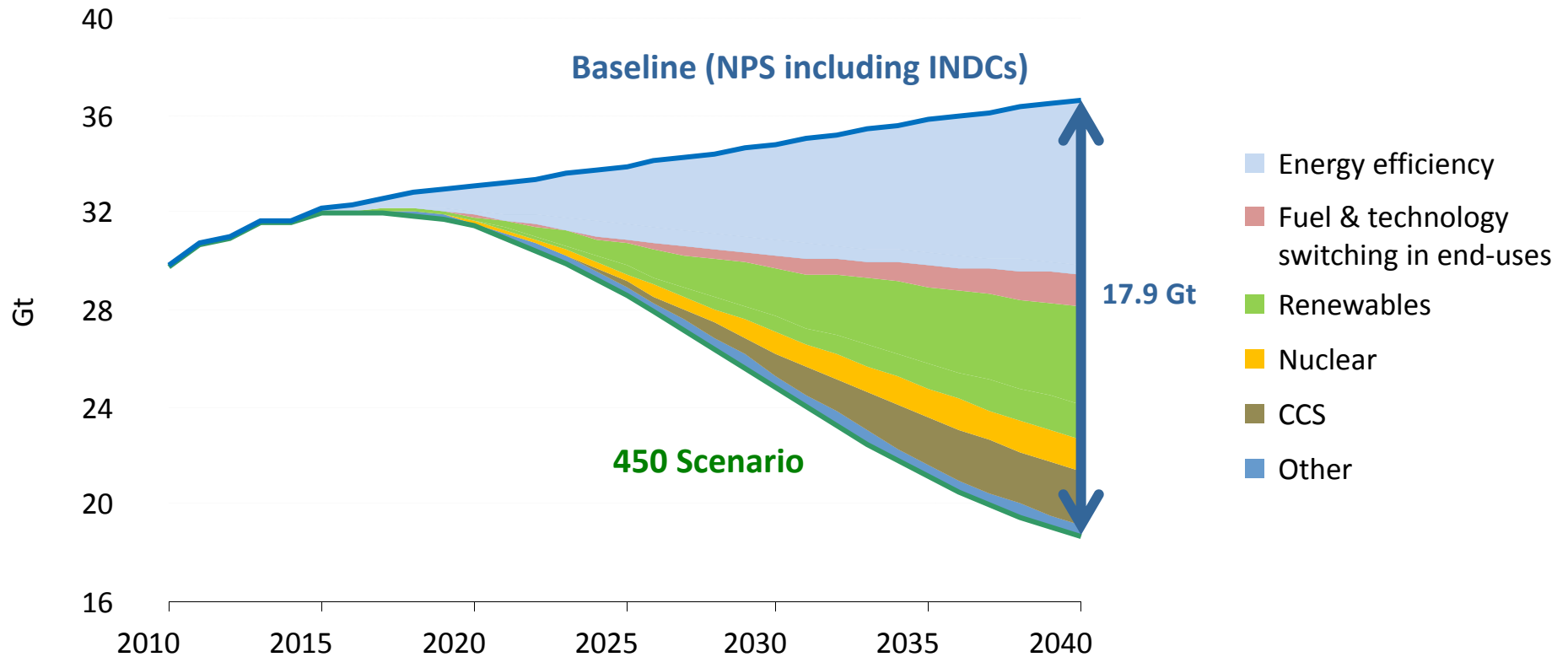
Global long-term outlook for natural gas: Opportunities & uncertainties are in Asia

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***

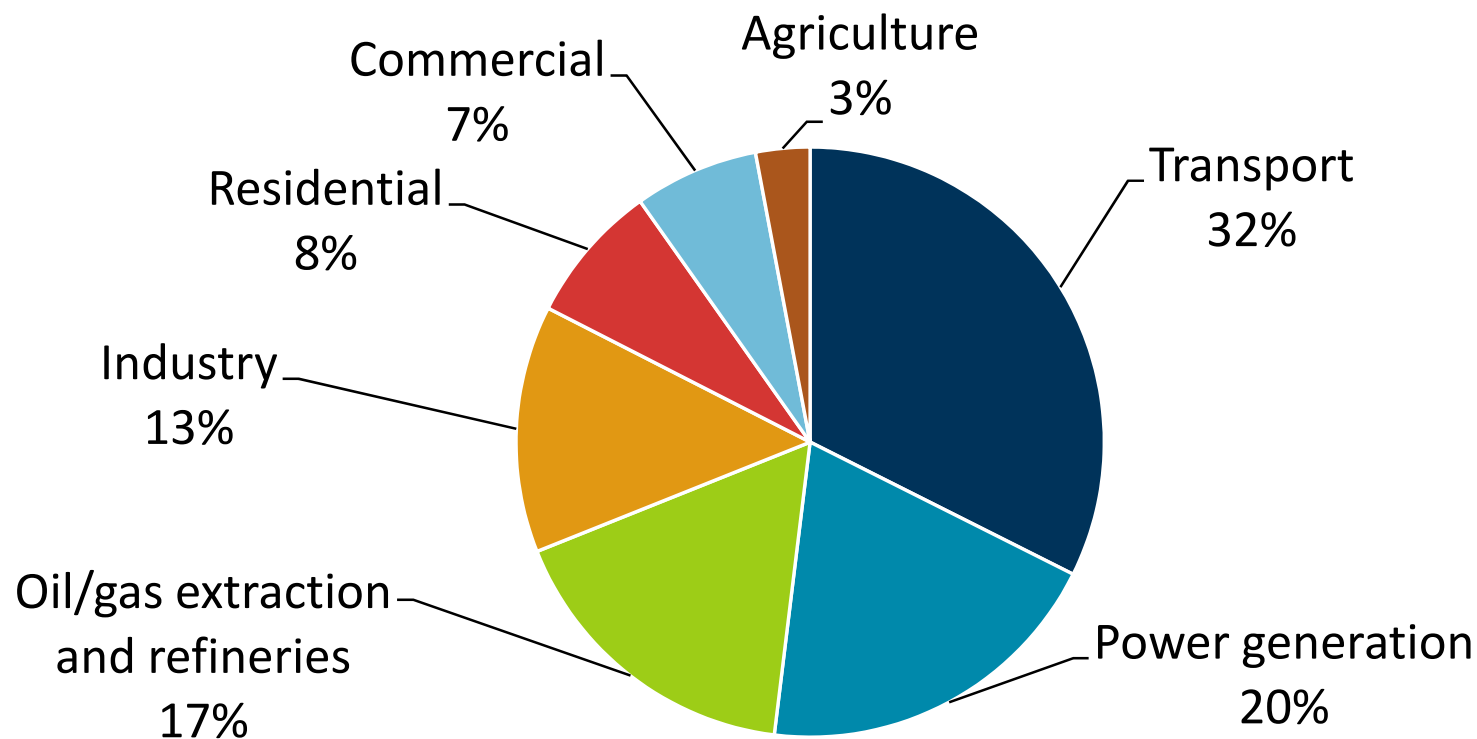
A 2°C pathway requires efforts well beyond INDCs



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

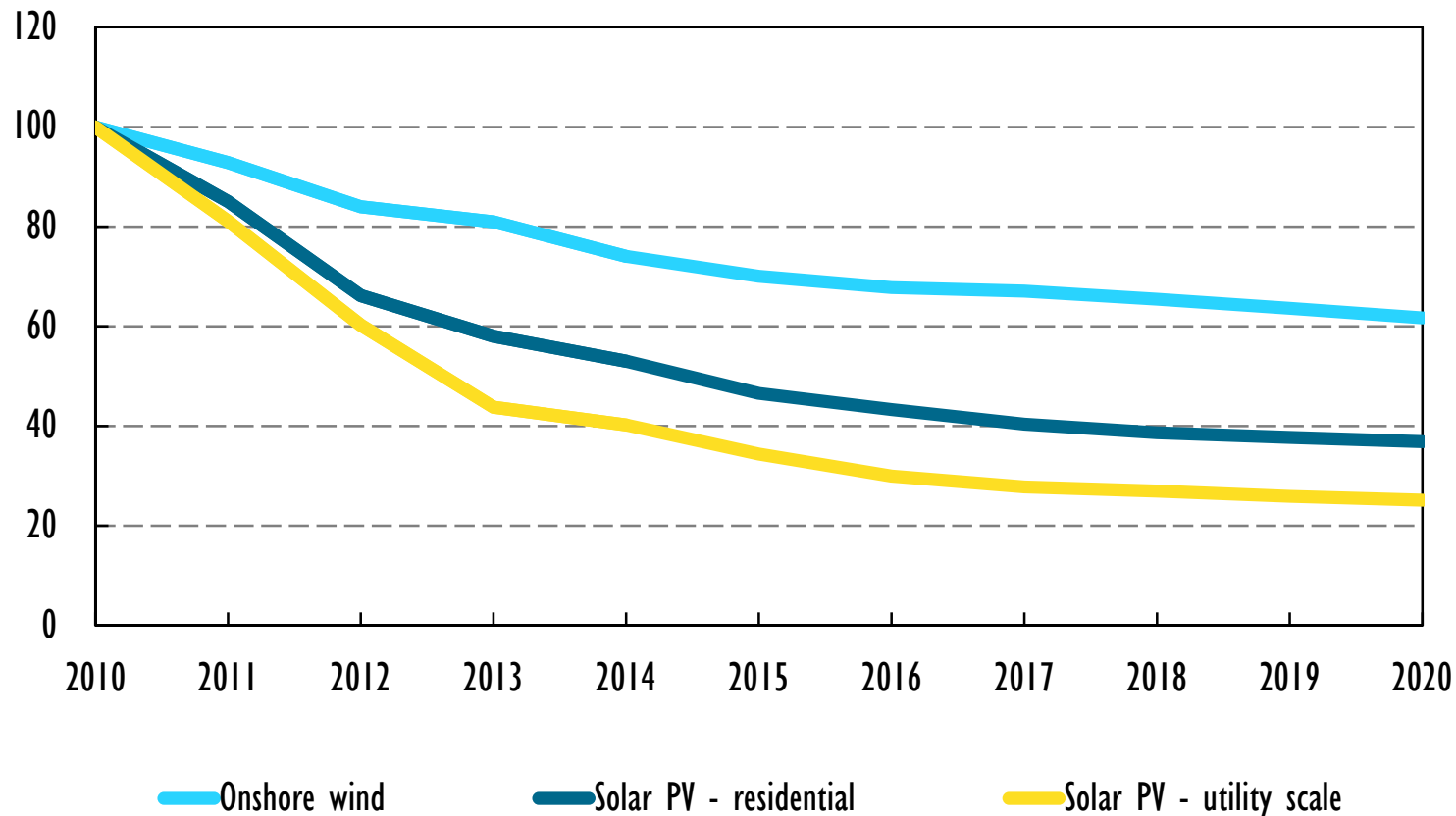
Carbon dioxide emissions from fuel combustion by sector (2013)



Transport, power generation and energy production generate 70% of Canada's CO₂ emissions

Opportunities for renewable energy at home and abroad

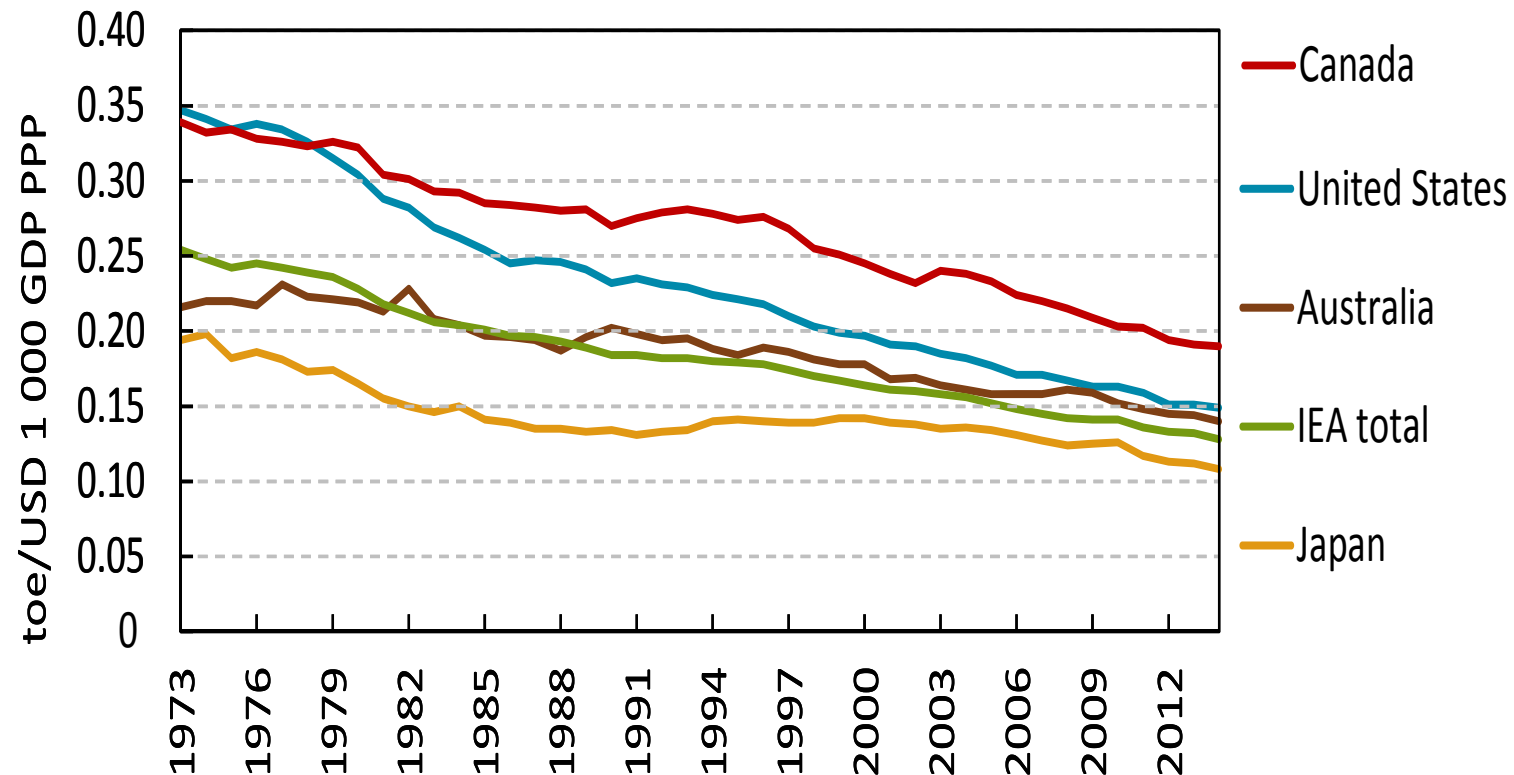
Global indexed generation costs for renewables (2010=100)



***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

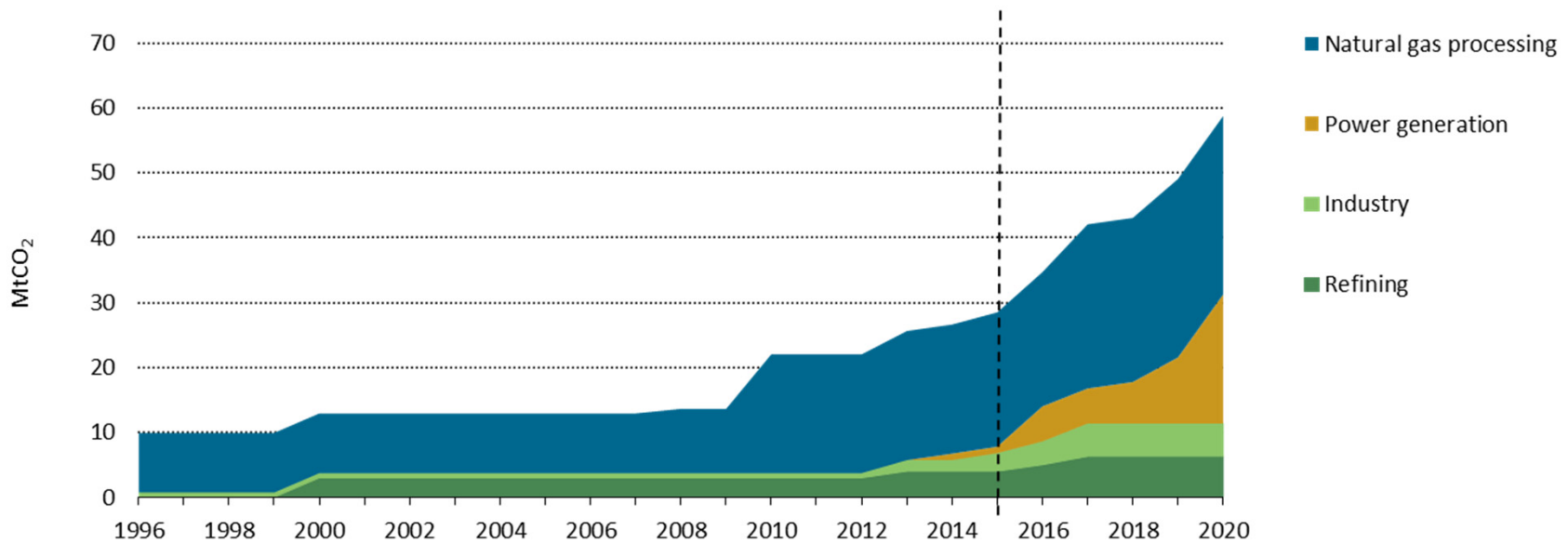


Canada's energy intensity decreased by 20% since 2003, yet Canada still has the highest energy use per capita of all IEA countries

Early CCS deployment is starting – but progress must be accelerated



Global CO₂ 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