



A Just Transition for Energy Sector Workers

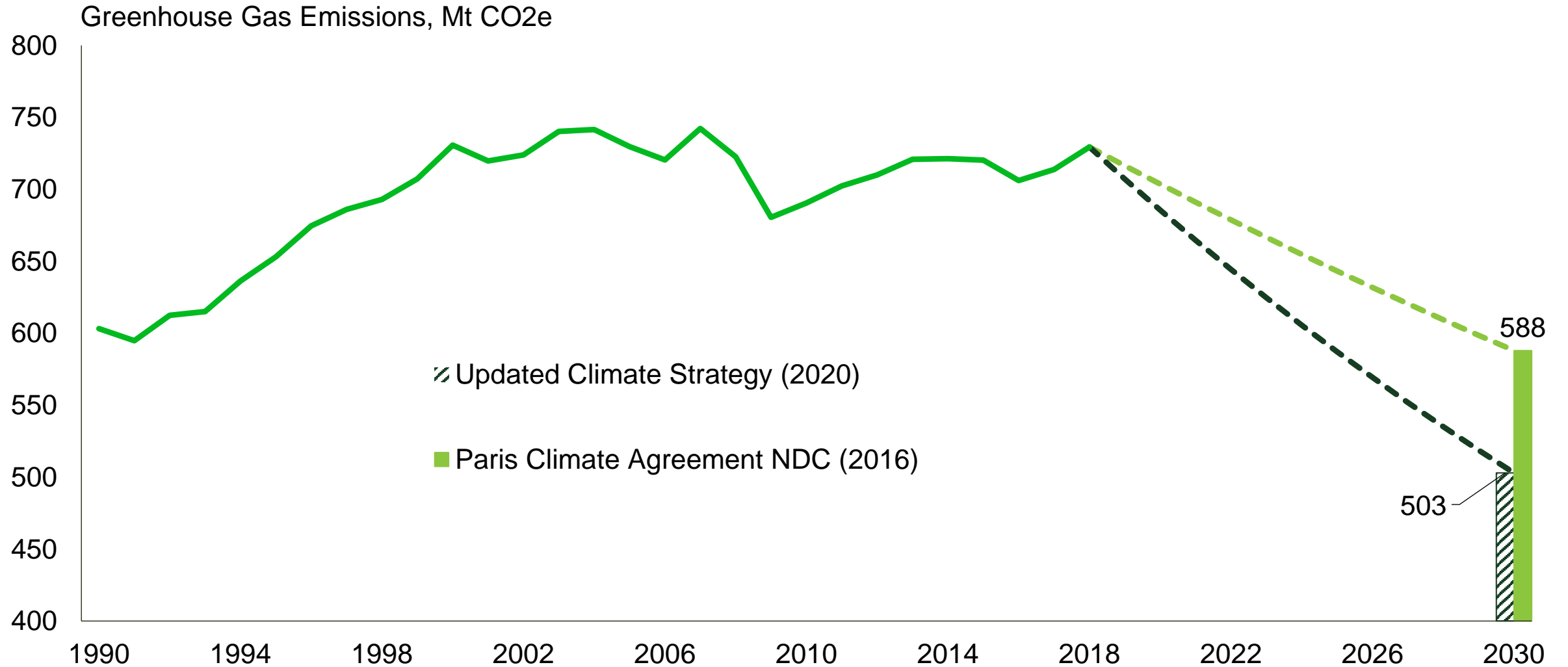
TD Economics

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More Ambitious Interim Reduction Target For Canadian GHG Emissions Since April Climate Summit & COP26

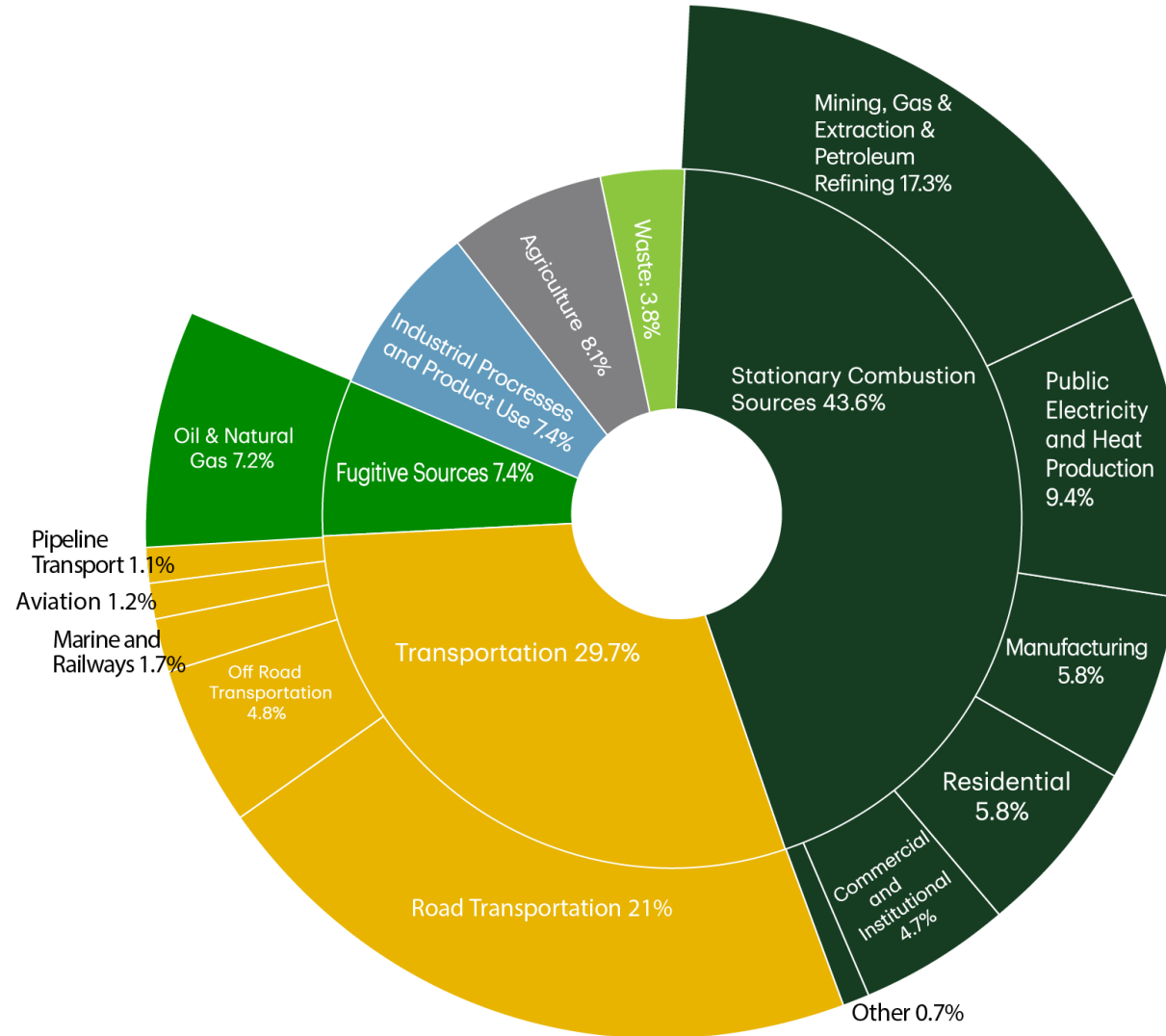


Source: Environment and Climate Change Canada, TD Economics.

Fossil Fuels Production Plays A Big Role In Canadian Emissions



Canadian Greenhouse Gas Emissions, by Source, 2019

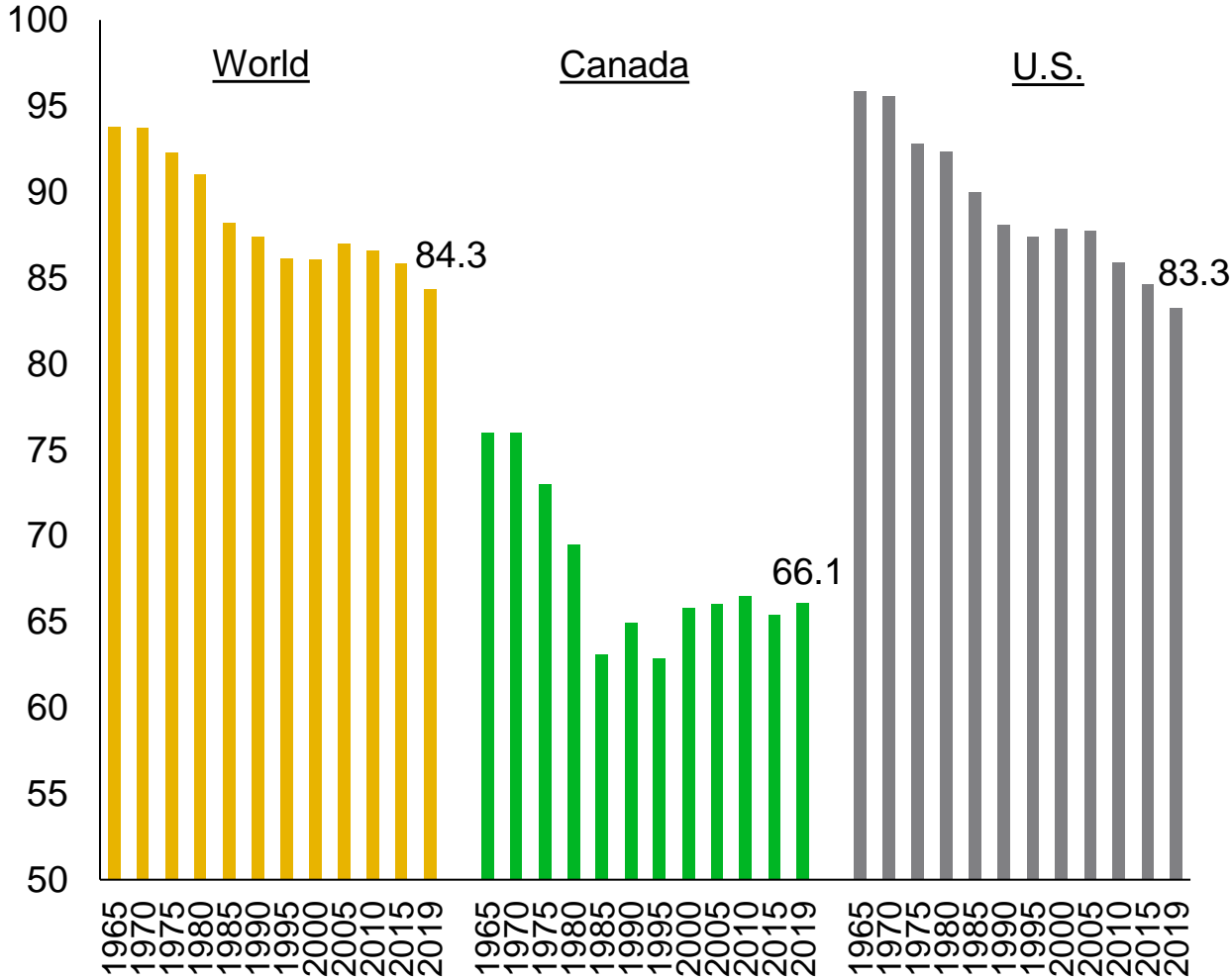


Source: Environment and Climate Change Canada

They Also Play A Significant Role In End-Use Services

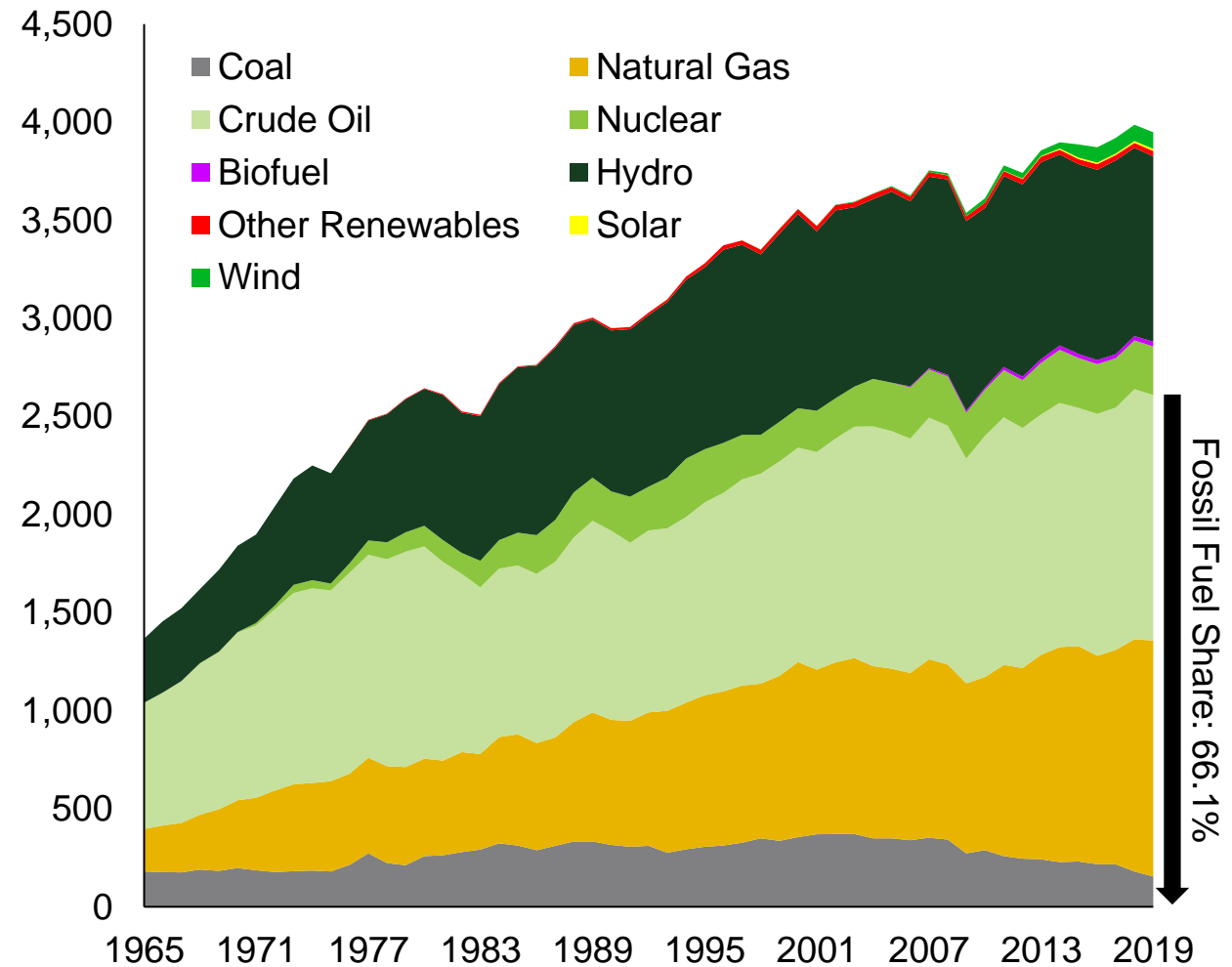


Fossil Fuel Share of Primary Energy Consumption, %



Source: BP Statistical Review of World Energy.

Primary Energy Consumption in Canada, Terawatt Hours

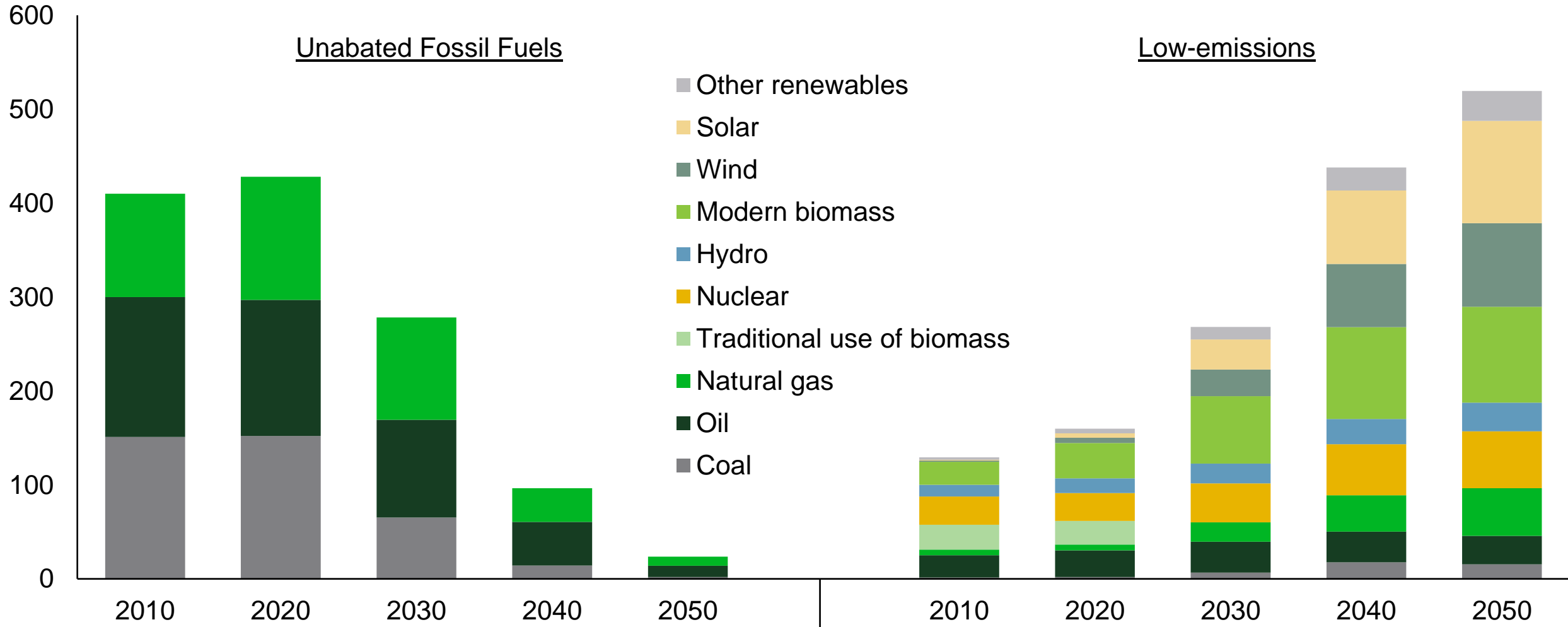


Source: Our World In Data, BP Statistical Review of World Energy.

Getting To Net Zero Means Coming To Terms With That Dependence

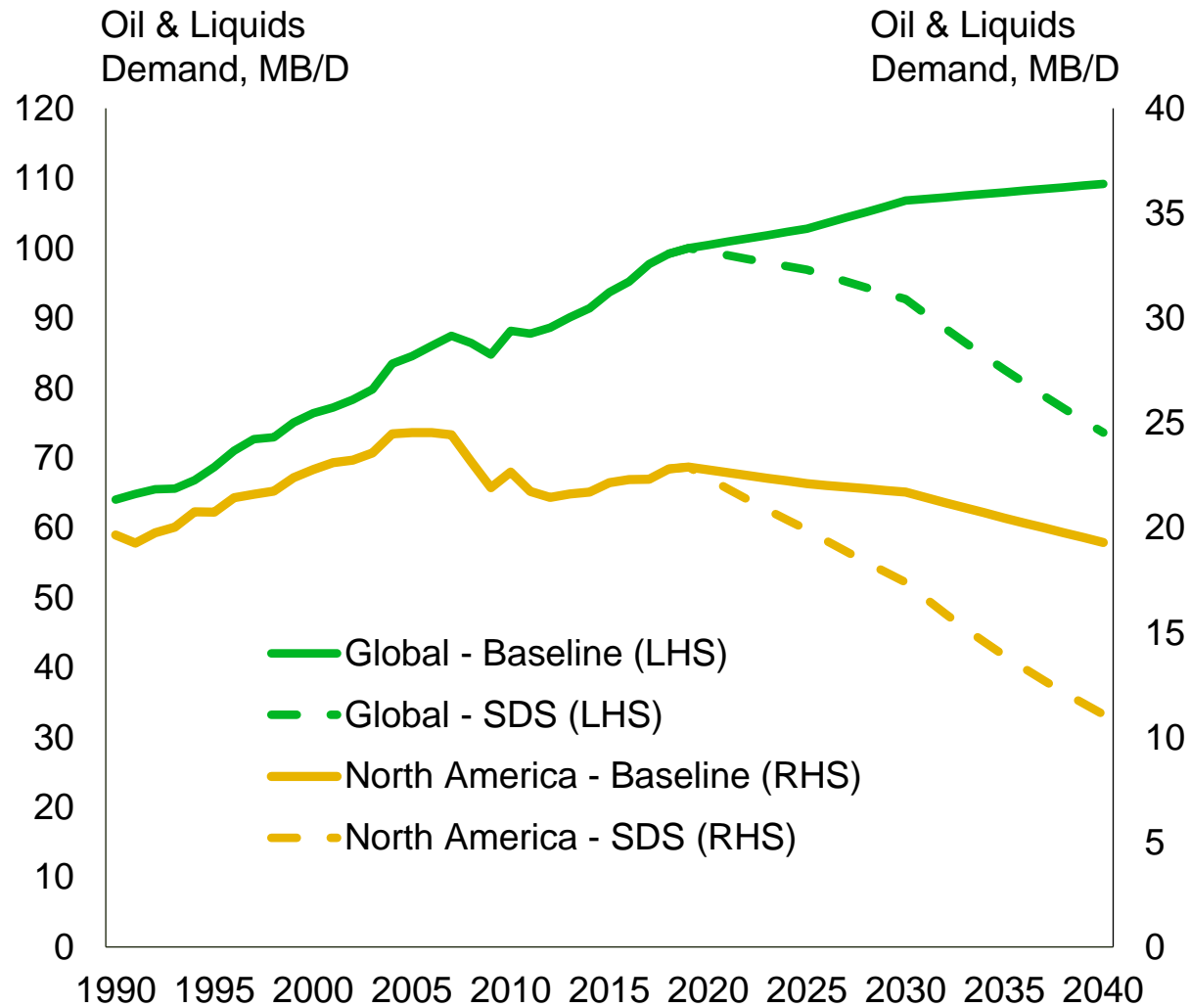


Energy Supply in the Net Zero Scenario, Exajoules

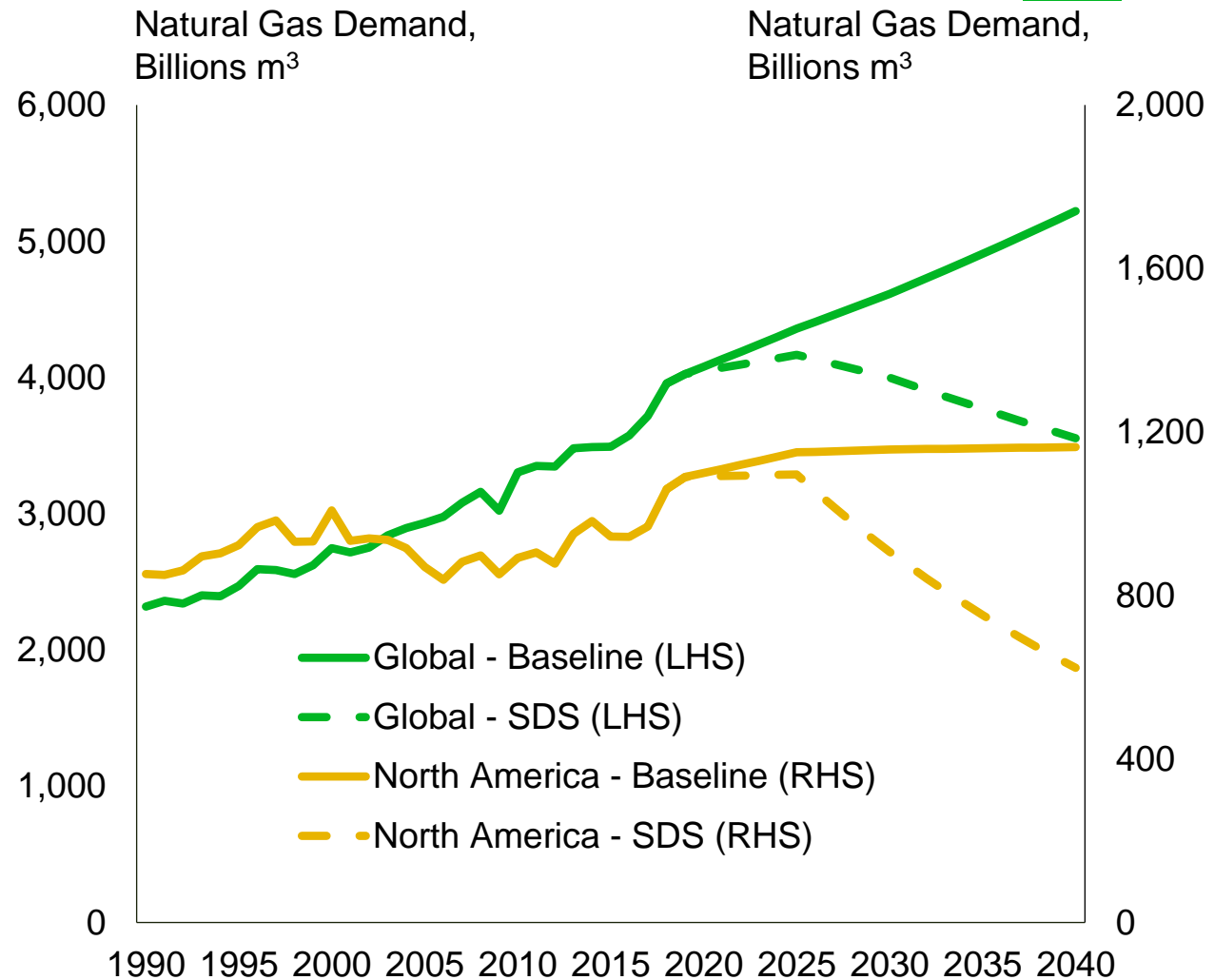


Source: International Energy Agency, TD Economics.

Fossil Fuel Demand To Be Cut Significantly, Production To Follow

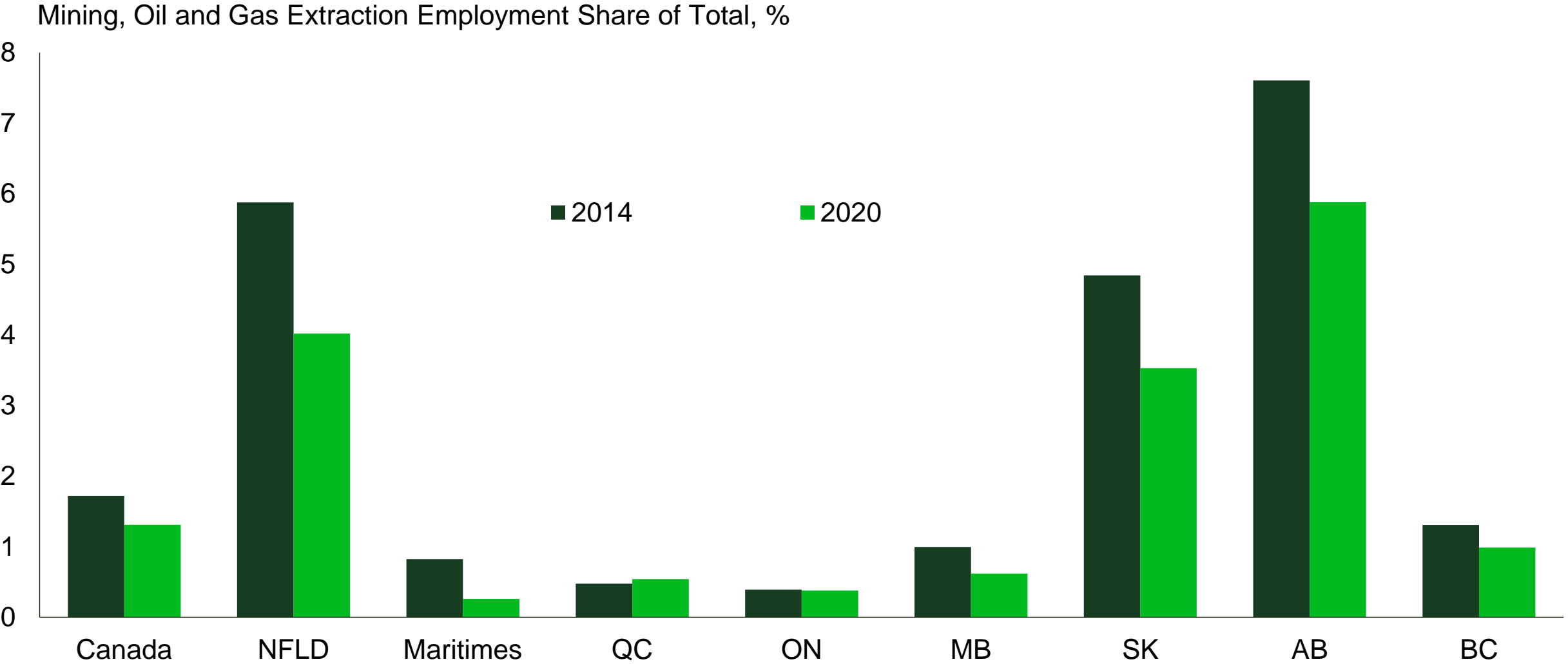


Source: International Energy Agency, TD Economics.



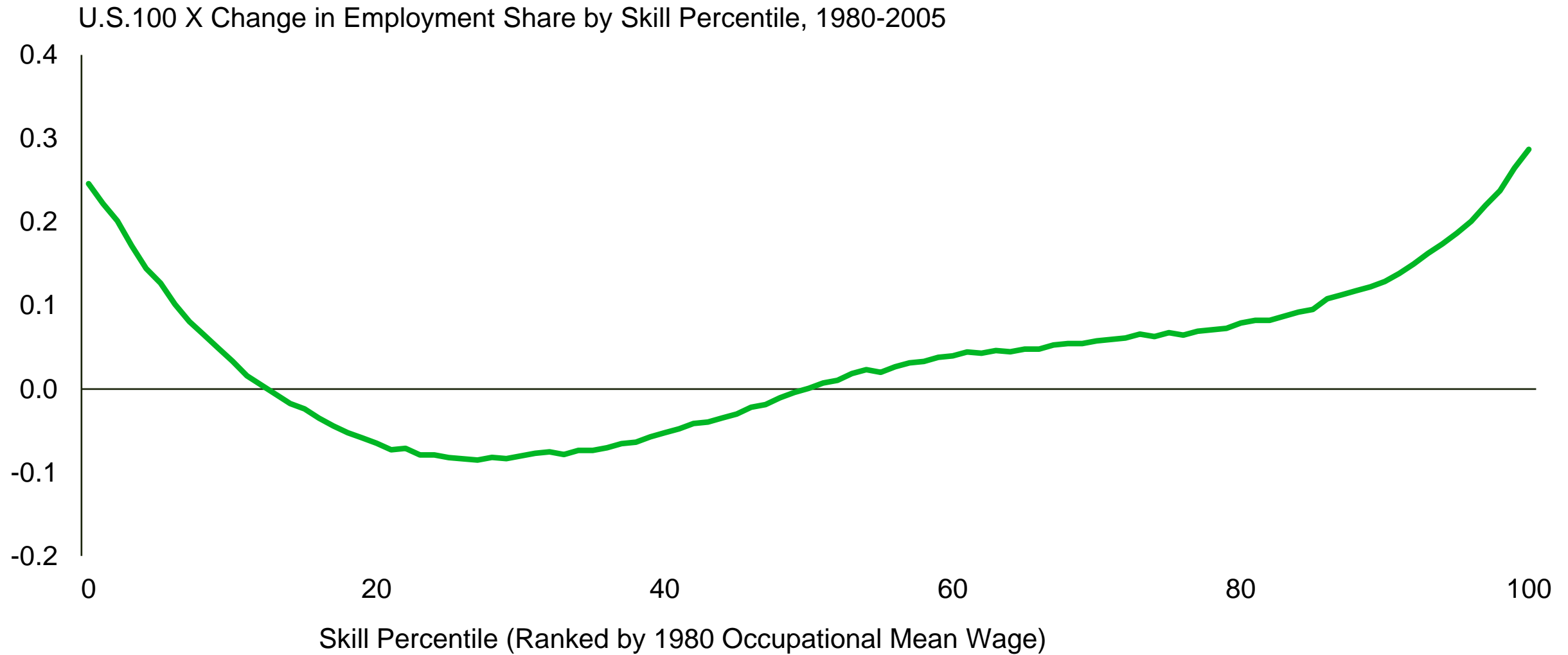
Source: International Energy Agency, TD Economics

Some Provinces More Exposed Than Others



Source: Statistics Canada, TD Economics.

Projected Declines Reminiscent Of 1990s-2000s Manufacturing

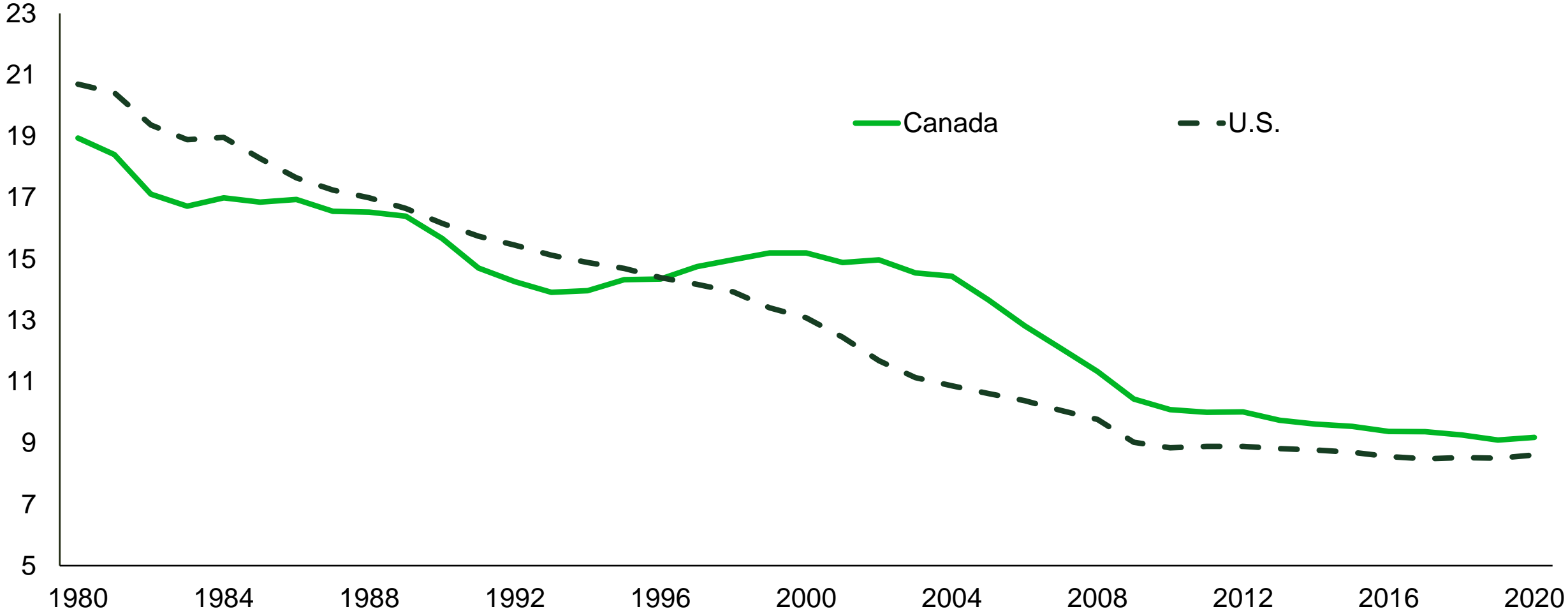


Source: Autor and Dorn, 2013, TD Economics.

Major Job Losses In High-Paying, Middle-Skilled Jobs Contributed To Widening Income Gaps, Region-Specific Economic Decline



Employment in Manufacturing as a Share of Total, %

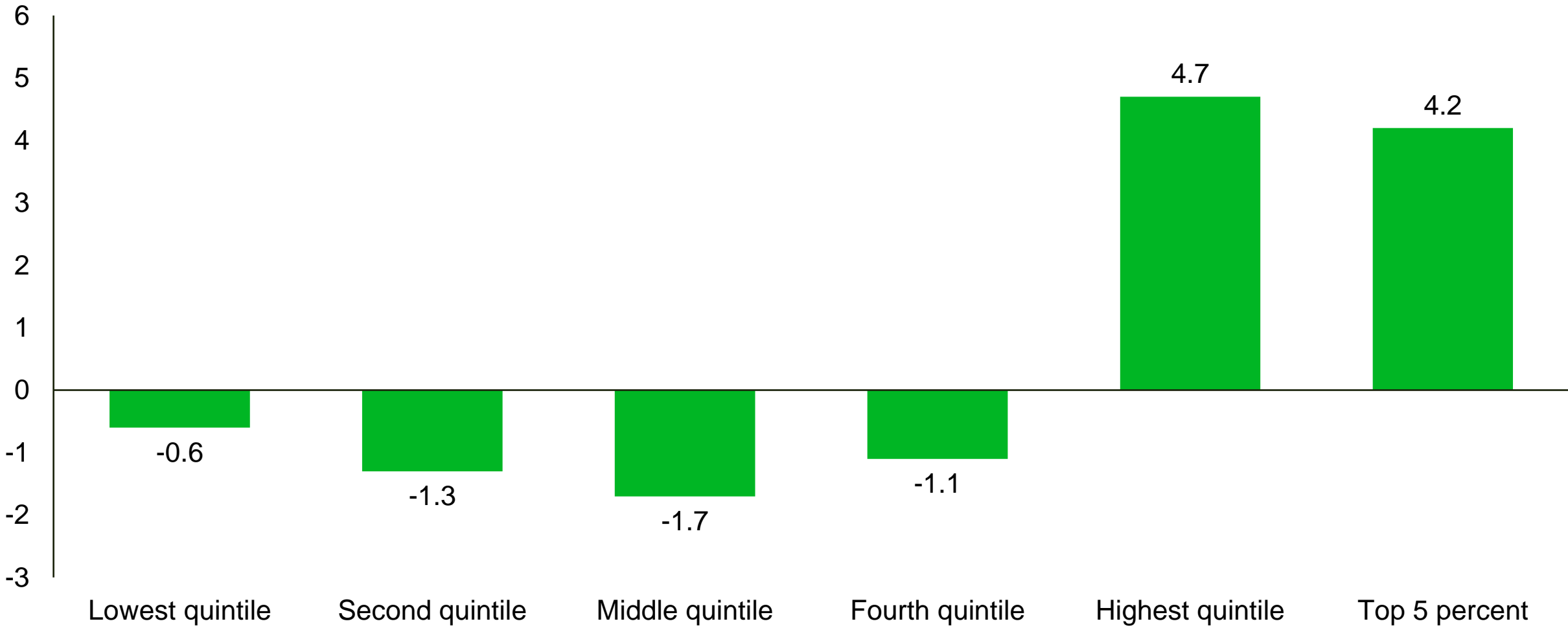


Source: BLS, Statistics Canada, TD Economics.

Inequality Has Grown As A Result



US Household Income Share by Income Quintile - 1980-2005, Percentage Point Change

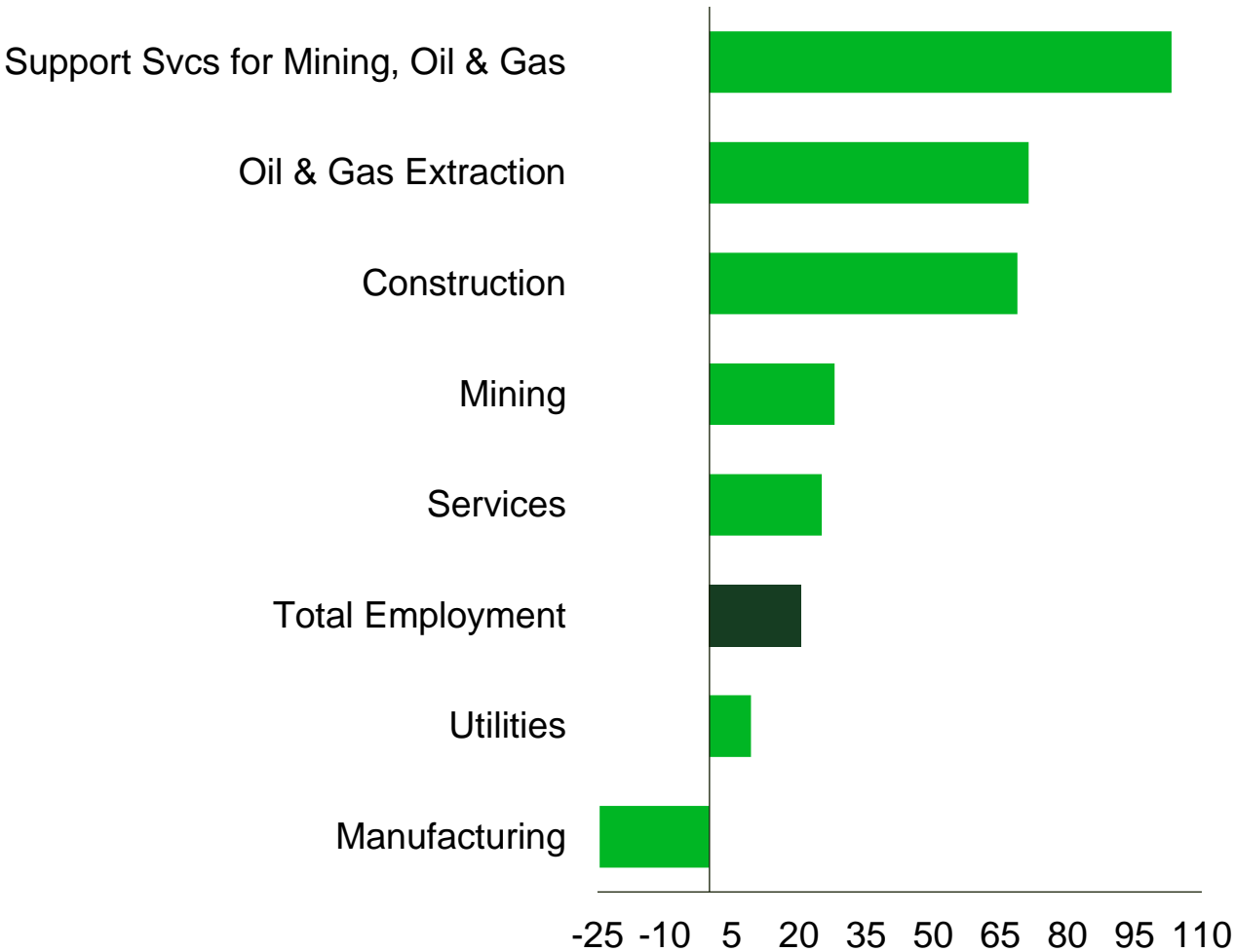


Source: U.S. Census Bureau, TD Economics.

Extractive Industries have Played a Critical Role in Keeping Middle-Skilled Jobs and Wages Aloft

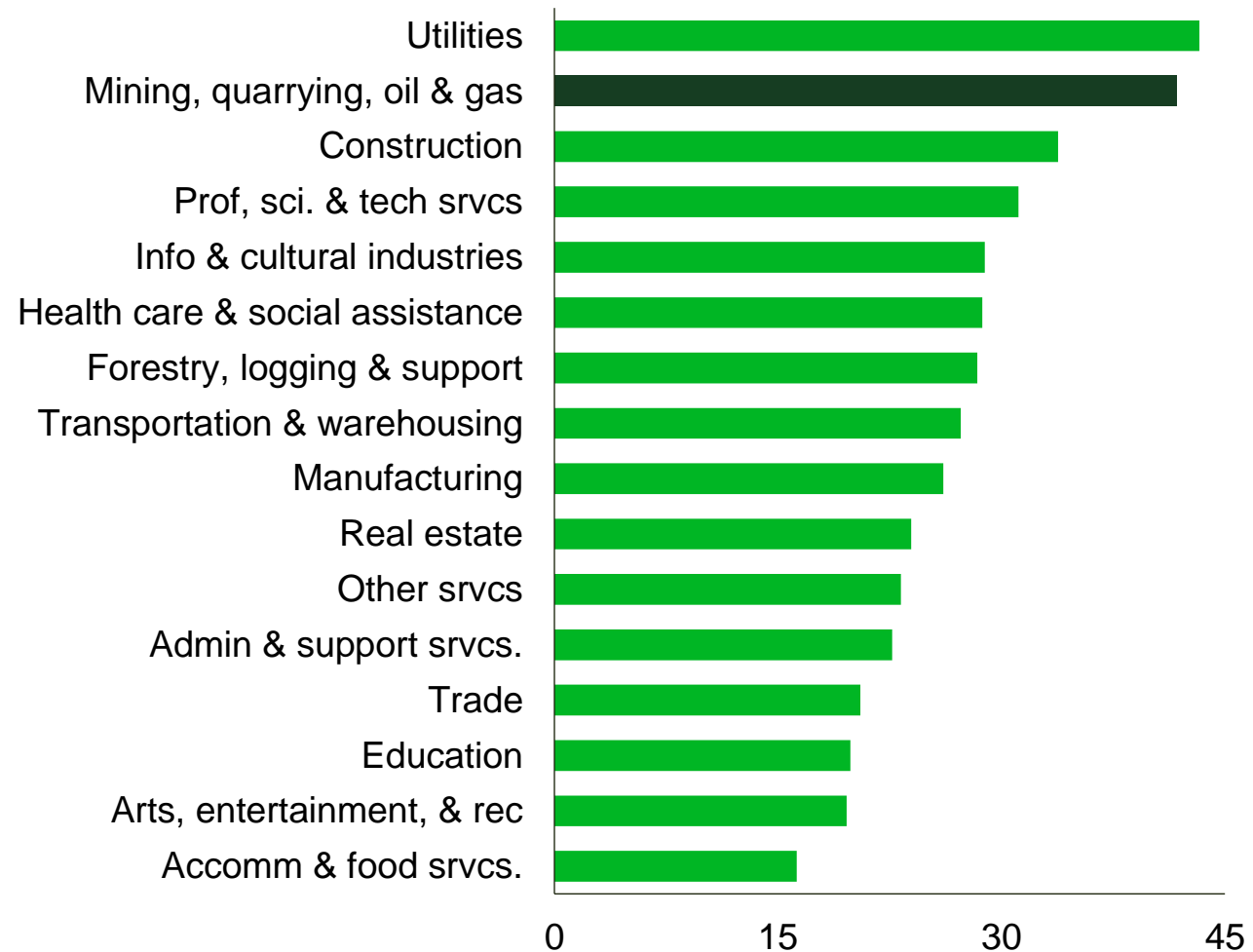


Canadian Employment Growth, 2001-2014 % Change



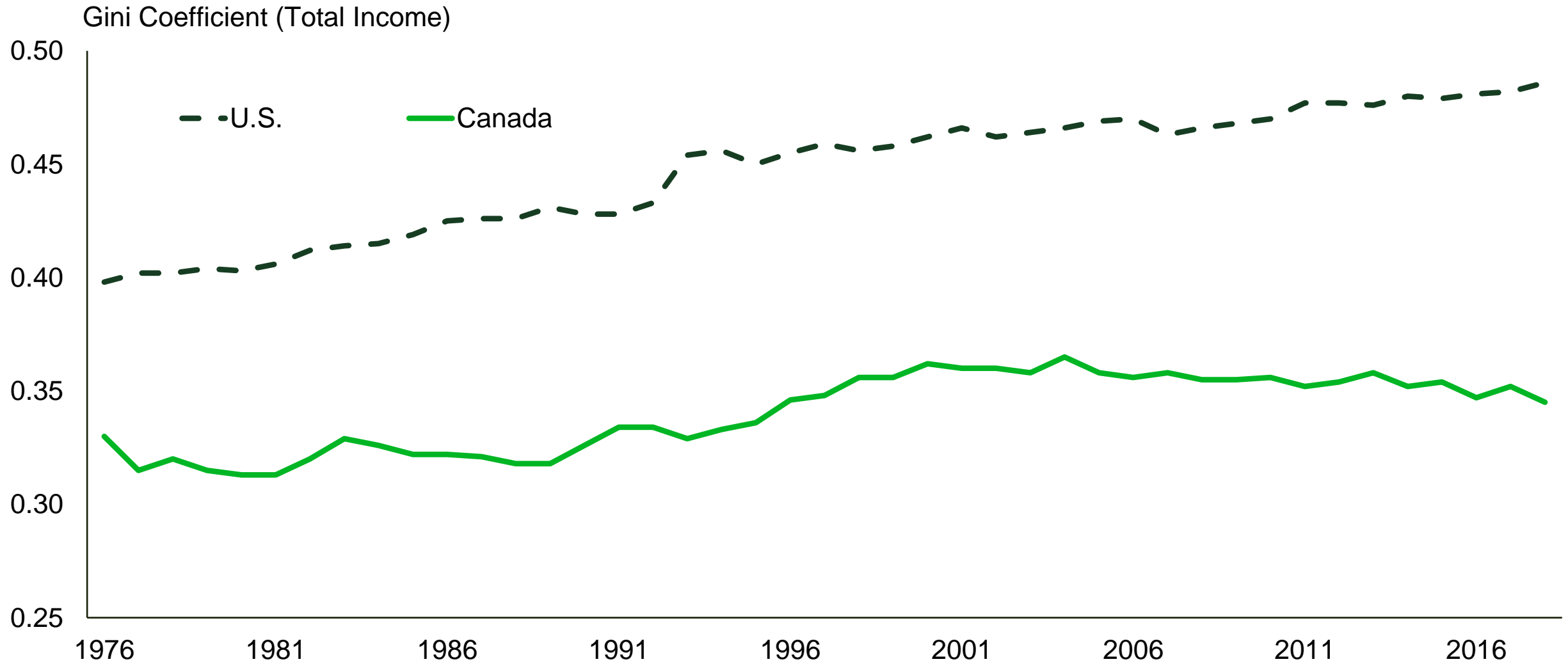
Source: Statistics Canada, TD Economics.

Canadian 2019 Average Hourly Wages, \$C/hr.



Source: Statistics Canada, TD

Canada Has Seen A More Modest Impact



Source: Statistics Canada, Census Bureau, TD Economics.

Displaced energy sector workers face an uncertain future.

Common Concerns

How do I know retraining or upskilling will help me find a new job?



How can I afford the cost of retraining/upskilling or the time off I would need to take?



What if clean energy jobs are not in my community? How can I leave if I have family and dependents?



Possible Solutions for Policymakers

Skills policy that works with stakeholders in developing a taxonomy of skills needed in the clean energy sector.

Broad-based income supports that can offset income losses from displacement that complement training benefits & credits.

Focus clean energy infrastructure and development in communities that will bear the brunt of the energy transition.

Income Support Options Across a Wide Spectrum Could be Needed



Key concerns among those already impacted include:

- General income supports for displaced workers, such as bridge grants
- Funding for retraining/upskilling
- Moving expenses
- Pension supports/guarantees for older workers

The Race Is On To Develop Revamped Upskilling/Retraining Framework



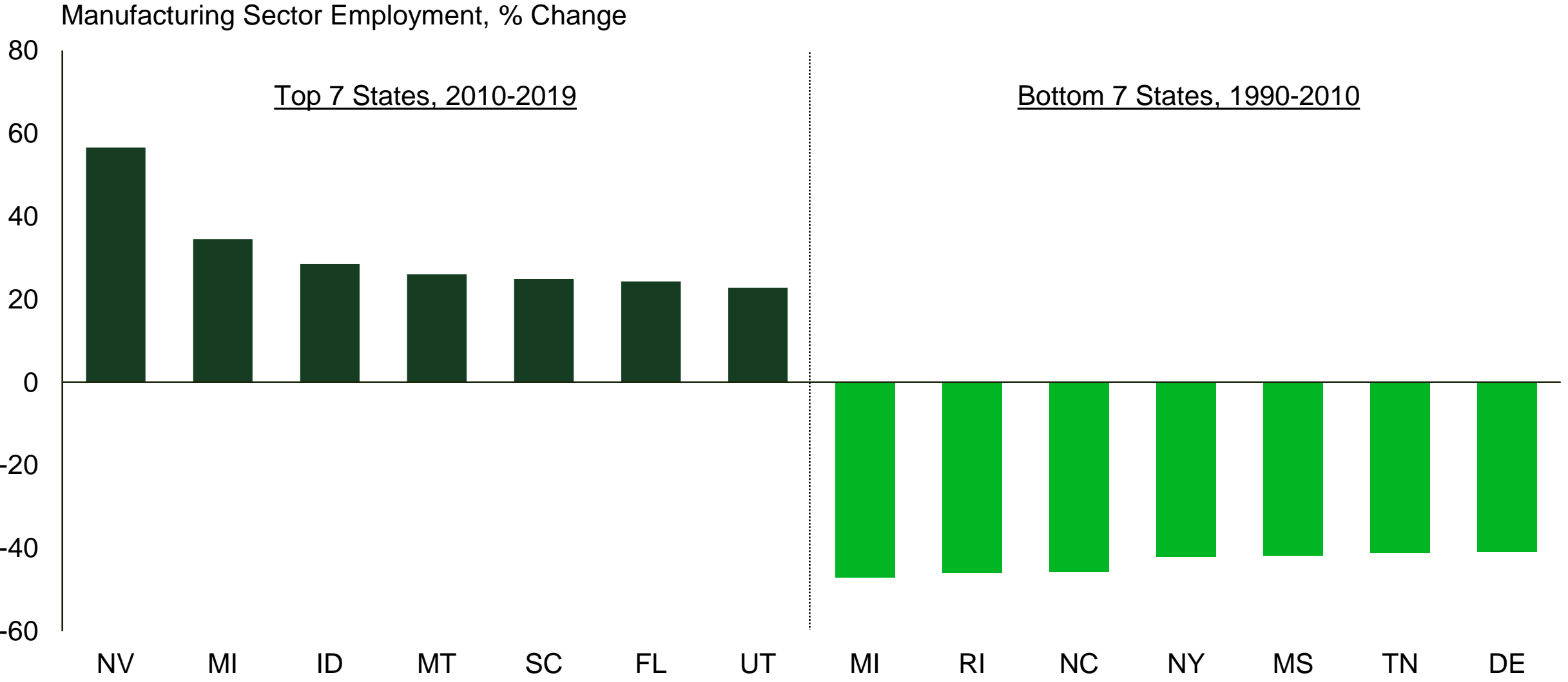
Canada is starting the important work in establishing skills/competencies framework

- ESDC skills & competencies taxonomy
- Linkage with NOCS to establish a Canadian-like O-net
- Work ongoing to connect taxonomy to service providers, particularly underserved communities that may be impacted most by the energy transition

International experience can help among those embracing lifelong learning

- Singapore SkillsFuture Framework
- Australian Core Skills Framework
- Key Competencies for Lifelong Learning: European Reference Framework

Where Jobs Have Been Lost May Not Be Where they Return



Source: Economy.com, TD Economics.