The Energy Sector That Enriches Canada

And the One That Does Not

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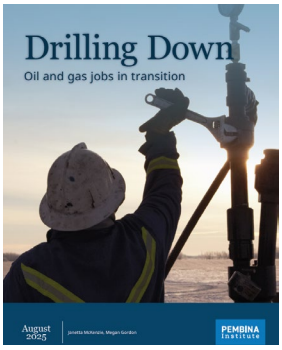
THE ENERGY SECTOR THAT ENRICHES CANADA – AND THE ONE THAT DOES NOT

Environmental activist organizations like to spread the message that "clean" sources of energy (i.e. wind, solar, biomass, and battery-powered electricity and vehicles) offer more economic benefits to Canada than does the oil and gas industry. A recent report published by the Pembina Institute (*Drilling Down Oil and Gas Jobs in Transition*), claimed that reduced employment trends in the oil and gas industry over the last decade were indicative of future trends. In other words, additions to employment in clean energy in future will cause Canada to prosper.



The Industry Comparisons

Six years ago, the Friends of Science posted an article of mine (Renewable Energy Jobs – For Other Countries). In that article, I cited Statistics Canada data indicating that "clean energy" was not a growth industry in Canada, that the increased costs of electricity due to renewables was reducing employment in Canadian industry, and that the main economic benefits of renewables were in fact accruing to China.

> ***"For the most part, that is the Chinese-American economic relationship.***
>
> ***The Chinese sell, the Americans buy, and the jobs move one way – to China."***
>
> **-Stephen Harper**

I recently reviewed the data to see whether the trends have changed. They have not. "Clean energy" (very broadly defined by StatsCan) is still only 3% of Canada's GDP, even after many billions of dollars have been spent by governments promoting it. Rising electricity rates in Canada, especially in Ontario, have continued to drive industry to other jurisdictions, just as is happening in Europe. China's role as the main global supplier of wind, solar and battery technologies has expanded at an alarming pace.

The Pembina Institute Report is misleading in almost every respect. It implied that employment levels are the most important standards against which to judge the economic contribution of an industry. Wrong. Some industries, including oil and gas, are capital-intensive, not labour-intensive, meaning that the production process entails higher levels of capital investment per unit of output. As a result, the oil and gas industry provides a broad range of economic benefits – higher national income, higher productivity, higher rates of investment in new technology and innovation, higher wages for workers, and higher levels of export revenues.

To offer some examples, the oil and gas industry is the largest goods-producing industry in Canada. It is 31% bigger than the next largest industry (Engineering and Construction Services) and 37% bigger than the Residential Construction industry. The industry excels in providing well-paying jobs; the average oil and gas worker's total compensation is roughly twice as high as the average for goods-producing industries. From 2010 to 2021, crude oil and natural gas exports ranged from about $50 billion to $120 billion per year, depending on commodity prices, before reaching a high of $188 billion in 2022.

As to employment, it can be generated in three ways, directly, indirectly, and in an induced way. Direct employment are jobs created to fulfill a product or service's demand, like a construction worker on a project. Indirect employment consists of jobs in supplying sectors that provide goods and services to support the direct jobs, such as a company making tools for the construction workers. Induced employment comes from the spending of income by direct and indirect employees, like restaurant workers serving the construction employees. The oil and gas industry's direct and indirect employment is about 450,000 people in Canada.

This economic activity and employment creates lots of revenue for governments. In 2022, a record-high $34 billion in royalties were collected by oil and gas producing provinces. These royalties have stayed at over $20 billion per year. An additional $8 billion per year is collected in income taxes. Of course, even more is collected in income taxes on the employees and on the companies that supply equipment and services to the oil and gas industries.

There is a stark contrast between the fiscal contribution of the oil and gas industry and the renewables industries as used in electricity generation. Publicly-owned electrical utilities of the type that operate in most Canadian provinces do not pay corporate income taxes. In some cases, they may make “payments in lieu of taxes”, but information on these payments is not readily available. In almost every case, the wind and solar generation plants were purchased not because they were needed but because of political decisions to displace coal-fired power plants; the results have been substantially higher rates for consumers. In Ontario, the situation is even worse. The unwillingness of the Ford government to allow the excessive cost of “clean energy” to increase consumer rates has meant that Ontario taxpayers have had to subsidize electricity rates. The annual taxpayer subsidy now exceeds $6 billion per year. Governments in Canada also have paid about $53 billion in subsidies to battery plants. The oil and gas industry enriches Canada, and the “clean energy” industry sucks wealth out of it.

The Context

The Pembina Institute report makes much of the fact that oil and gas industry investment declined in the post-2014 period, and implies that this will continue with “the transition”.

The oil and gas industry’s uses of funds must be viewed in the context of the major market trends and political developments of the past decade. These include notably the significant decline in international oil prices from 2014 to 2021, the heavily discounted natural gas prices continent-wide from 2009 to 2020 and after 2022, and the global pandemic in 2020 to 2021. In 2014, oil prices dropped sharply due to a combination of increased global supply and weakening demand. Specifically, the rise of US shale oil production, coupled with OPEC’s decision to maintain production levels, contributed to the oversupply. This was made even worse in Canada in 2018 by the lack of adequate oil pipeline takeaway capacity. At the same time, slower economic growth, particularly in China, reduced global demand. Similarly, huge increases in US natural gas shale production reduced demand for Canadian gas in our principal market, and drove gas prices down. In the circumstances, the Canadian industry was forced to cut costs, both by strenuous efforts to improve operating efficiency, reducing investment in drilling and, in some cases, cutting staff. That’s what responsible companies do to remain viable.

The political factor was the systematic effort of the federal government after the 2015 election to reduce production and consumption of fossil fuels in the pursuit of its climate policy objectives. Since then, the government has blocked the construction of new oil pipelines, with the exception of the

TransMountain expansion system, and discouraged or blocked the construction of most pipelines and port facilities to allow the export of liquified natural gas. At the same time, dozens of well-funded environmental groups have done their utmost to turn public opinion against the further development of the oil sands. It is therefore not surprising that oil companies' reinvestment of cashflow in conventional oil and gas dropped to $27 billion (88% of cash flow) while reinvestment in oil sands dropped to $13.2 billion (31% of cashflow) in 2025. Climate policies, promoted by organizations like the Pembina Institute, have been responsible for ending greenfield construction of oil sands, Canada's largest and most promising hydrocarbon resource. Today, capital spending on oil sands is mostly for production maintenance. This, incidentally, has nothing to do with the fundamental economic viability of the oil sands resource.

The China Factor

The Pembina Institute report celebrates the employment of workers who spend a few weeks or months installing wind, solar and biomass plants in Canada but does not describe where the plants are actually manufactured. BloombergNEF's Energy Transition Supply Chains report, however, examined the state of "clean-tech" manufacturing and global trade patterns. According to that report, 70% of global manufacturing in every major clean-tech segment except hydrogen electrolysers was in mainland China. The nine largest solar panel manufacturers in the world are Chinese, including Canadian Solar, which in fact does most of its manufacturing in China. Eight of the 15 largest wind turbine manufacturers in the world are based in China. Further, 76% of clean-tech factory investment in 2024 went to support manufacturing in China. The Chinese in fact are over-expanding the capacity, which is driving prices down to unsustainable levels and undercutting the commercial viability of manufacturing in other countries. Bloomberg projected this trend to continue over the next few years.

Then there is the question of minerals supply and processing. Building solar photovoltaic (PV) plants, wind farms and electric vehicles requires more minerals than their fossil fuel-based counterparts. A typical electric car requires six times the mineral inputs of a conventional car, and an onshore wind plant requires nine times more mineral resources than a gas-powered plant. China is the dominant global player refining strategic minerals, being by far the largest processor of rare earth minerals, lithium,

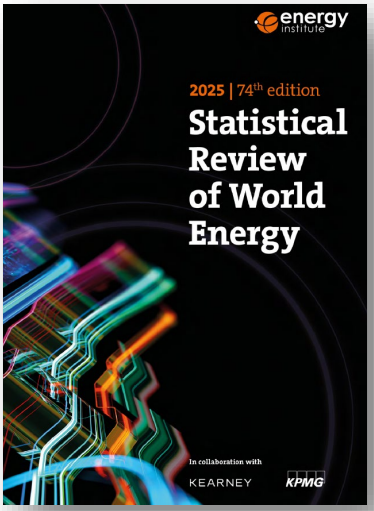
cobalt, nickel and copper. China also holds 78% of the world's cell manufacturing capacity for EV batteries, which are then assembled into modules that are used to form a battery pack.

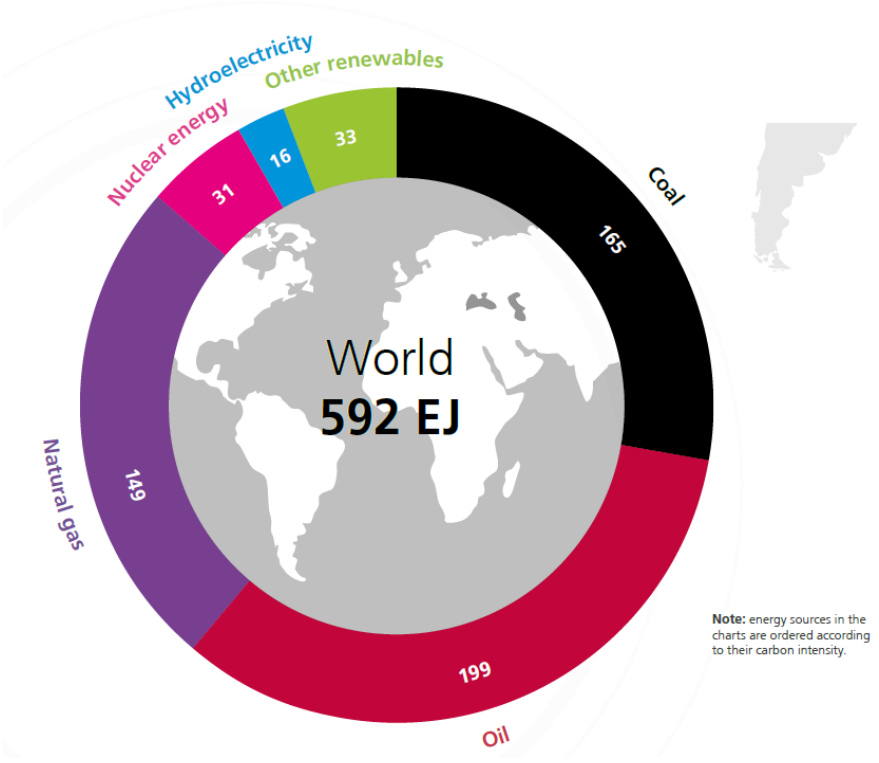
This concentration of key supplies of energy sources far surpasses that which has ever existed for petroleum, about which western countries still fixate on security concerns. Yet, few including the authors of the Pembina Institute report even mention it as a consideration.

Transition, What Transition?

The Pembina Institute, like many others, persists in repeating and propagating the falsehood that the world is in the midst of a transition away from fossil fuels to renewable energy. As indicated by the annual reports of the Statistical Review of World Energy, this simply is not true. Notably:

- In 2024 global energy consumption rose 2% from its 2023 level to 592 exajoules. Oil had the largest share (199 exajoules, or 33.6 %), followed by coal (165 exajoules, or 27.9%), and natural gas (149 exajoules, or 25.2 %). Hydrocarbon energy thus provided 86.7% of the world's energy needs. Nuclear energy provided 31 exajoules (5.2%), hydro-electricity 16 exajoules (2.7%) and "other renewables 33 exajoules (5.6%).
- Global crude oil and condensate production in 2024 totaled 82,788 thousand barrels per day.
- Global liquids consumption in 2024 was 104.7 million barrels per day, by far the all-time high. Total liquids consumption increased from 93.7 million barrels per day in 2014 to 104.7 million barrels per day in 2024, an increase of 11 million barrels per day, or almost 12%. In other words, liquids consumption grew over the period at an annual average rate of over one million barrels per day, in spite of the significant reduction in demand and economic activity during and after the pandemic.
- Global natural gas consumption totaled 4,127.8 billion cubic metres in 2024, an increase of 2.5% over 2023.
- Global coal production grew by 0.8% from 2023 to 2024, reaching 182.23 exajoules. Contrary to the general impression left by media accounts, coal production has increased from 165 exajoules in 2014 to 182 exajoules in 2024.





Source: https://www.energyinst.org/statistical-review

The developing countries, which now consume over two-thirds of global energy and produce 68% of greenhouse gas emissions, continue their use of hydrocarbons that offer them lower costs and more secure energy sources than renewables. They will only change if the developed countries pay the costs of their investments, which the developed countries have refused to do. This has been made clear at successive meetings of the Conferences of the Parties to the Framework Convention on Climate Change (COPs), and this will be made clear again at COP 30 in Brazil this year.

About the Author

Robert Lyman is an economist with 27 years of experience as an analyst, policy advisor and manager in the Canadian federal government, primarily in the areas of energy, transportation, and environmental policy. He was also a diplomat for 10 years. Subsequently he has worked as a private consultant conducting policy research and analysis on energy and transportation issues as a principal for Entrans Policy Research Group. He is a frequent contributor of articles and reports for Friends of Science, a Calgary-based independent organization concerned about climate change-related issues. He resides in Ottawa, Canada. Full bio.

About Friends of Science Society

Friends of Science Society is an independent group of earth, atmospheric and solar scientists, engineers, and citizens that is celebrating its 23rd year of offering climate science insights. After a thorough review of a broad spectrum of literature on climate change, Friends of Science Society has concluded that the sun is the main driver of climate change, not carbon dioxide (CO2).

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