

Overview

- NL Offshore Oil and Gas Industry Overview
- Global Energy Demand and Energy Transition
- Sustainable Finance
 - What it isn't
 - What it is
- Sustainable Finance & the Energy Sector Goals
- The Future of the NL Offshore Industry



Newfoundland and Labrador's Offshore Production Projects



Hibernia Operated by HMDC Start-up: 1997 Gravity Base Structure (GBS)



Terra Nova
Operated by Suncor Energy
Start-up: 2002
Not currently producing as Asset Life
Extension Project Underway Floating
Production, Storage and Offloading
Vessel (FPSO)



White Rose Operated by Husky Energy Start-up: 2005 FPSO



Hebron Operated by ExxonMobil Start-up: 2017 GBS

New Projects





• West White Rose Project

- Operated by Husky Energy
- Concrete Gravity Supported <u>Platform</u>
- Fixed drilling rig, producing back to the SeaRose FPSO
- Project sanctioned Q2 2017
- Project deferred in 2020

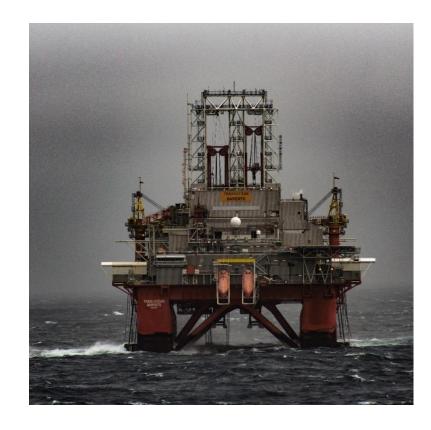
Bay du Nord

- Operated by Equinor
- FPSO development concept
- Framework agreement with Government of NL announced July 2018
- Not yet sanctioned and sanction decision deferred

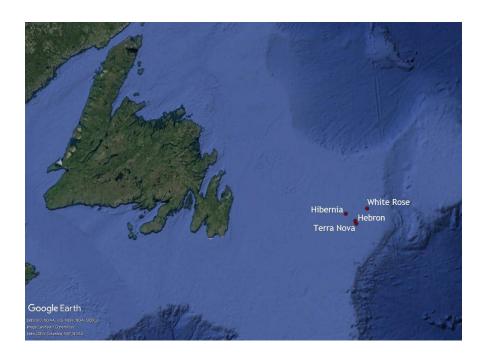
Exploration

Exploration activity

- Nine exploration drilling projects recently completed environmental assessment process
- Over \$4 Billion in exploration work commitments related to these programs; poised to attract near-record drilling levels in the coming years
- Open Calls for Bids and additional calls planned for 2022
- An independent resource assessment conducted in 2021 estimated NL's offshore potential at more than 64 billion barrels of oil and 224 trillion cubic feet natural gas in just 10% of the province's offshore area

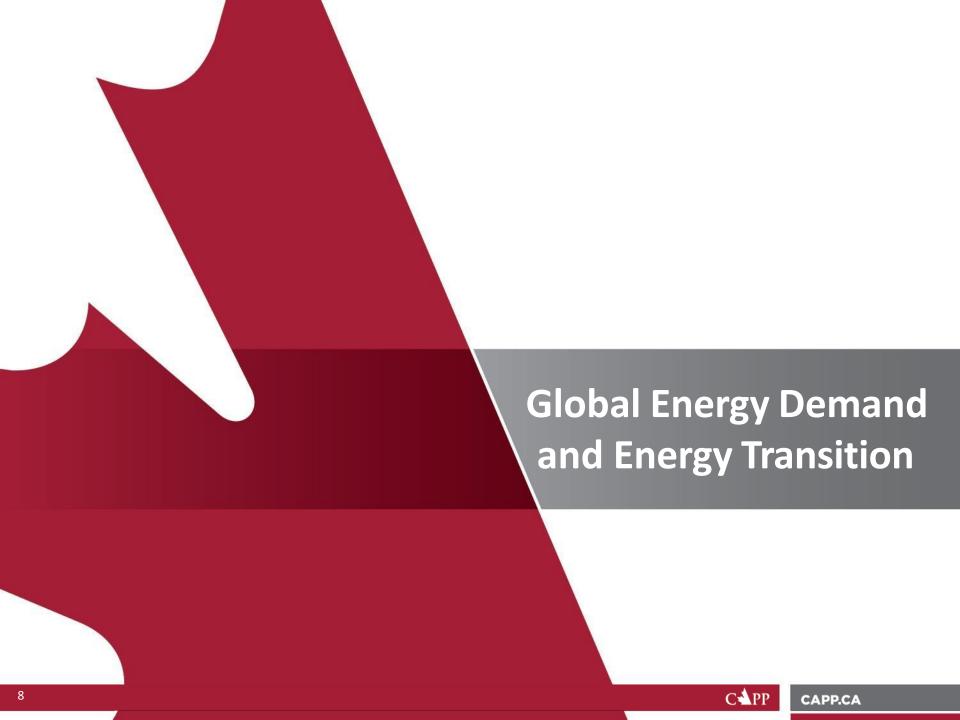


Offshore Industry is Critical to NL's Economy

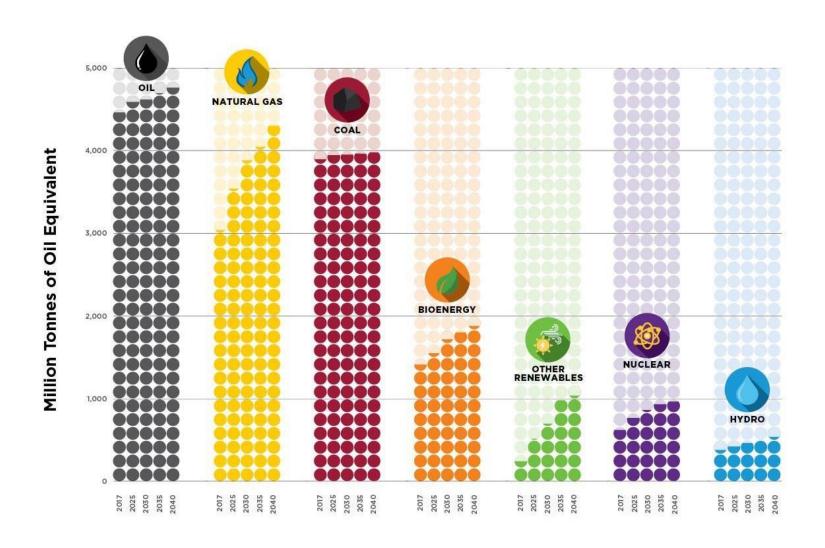


- Offshore industry has been an economic driver in NL for decades and there is significant growth potential
 - Contributing 30% of GDP, 13% of labour compensation and 10% of employment in NL from 2010-2017; Royalties accounted for 19% of provincially-sourced revenue (not including tax impacts)*
 - The federal government received \$2.1B through direct taxes and \$5.5B from Hibernia dividends over same period*.
 - Directly employs 6,000 people and up to 20,000 indirectly
- NL's responsibly-produced lower emission oil is needed as global demand for oil is predicted to grow

^{*} Source: 2020 study by the NL Department of Finance.



Growth in the Global Energy Mix from 2017-2040



Global Energy Transition

How is the global energy transition going? Taken together, the aggregate impact of nuclear, hydroelectric and solar/wind generation reduced global reliance on fossil fuels from ~95% of primary energy in 1975 to ~85% in 2020. In other words, energy transitions take a long time and lots of money.

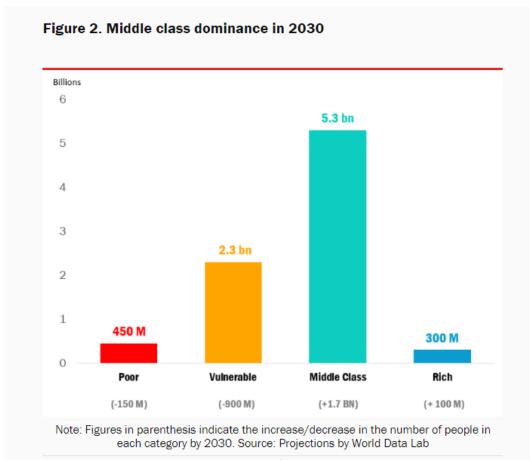
-JP Morgan Asset & Wealth Management, 2021 Annual Energy Paper

Where do Fossil Fuels fit into the Energy Transition

After a century of rapid growth, energy demand is likely to plateau around 2030, primarily driven by the penetration of renewable energy sources into the energy mix. Global primary energy demand, millions of terajoules 650 571 +14% overall Rapid industrialization in China Renewables Unprecedented rise in Western living Expansion of global standards and local transport Industrialization of fueled by coal and oil Western economies Fossil fuels Energy use still largely biomass 1850 1900 1950 2000 2016 2030 2050 Compound 0.9% 1.7% 2.9% 1.9% 0.8% 0.1% annual growth rate Source: McKinsey Energy Insights' Global Perspective, January 2019 McKinsey & Company

Why is energy demand growing?

Global Middle Class Growing to 5.3 Billion by 2030

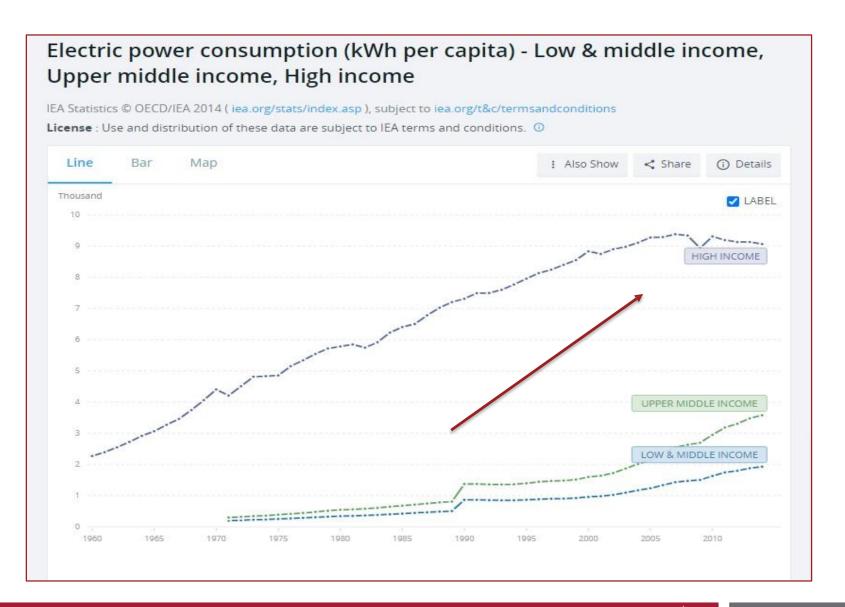


"Energy demand has long tracked economic growth. So much so that for the past two centuries, the amounts of energy that economies need have increased virtually in lockstep with the amounts of wealth that economies create. And, to a remarkable degree, wealth creation has depended on a society's proficiency at burning things."

McKinsey & Company

Bookings Institute: A global tipping point: Half the world is now middle class or wealthier

Movement to Middle Class-Greater Energy Consumption





Overview

"Interest in sustainable finance accelerated in 2020, with the COVID-19 pandemic highlighting the need for funds to help economies, businesses and individuals recover in a responsible manner that addresses environmental and social challenges. The global market for sustainable finance totaled US\$732 billion in 2020, up 29% from US\$565 billion in 2019, with responding to COVID-19 ranking fifth in terms of value for use of proceeds among bonds issued in 2020, behind renewable energy, green buildings, access to essential services and clean transport."

Green Bonds And Beyond: Sustainable Finance In The Capital Markets, Torys LLP, David Seville, Janet Holmes

Sustainable Finance vs Cancel Culture

"[We need to] revoke the social license of the fossil fuel industry."

Bill McKibben 350.org

"Sustainable finance is viewed as capital flows (as reflected in lending and investment), risk management activities (such as insurance and risk assessment), and financial processes (including disclosure, valuations, and oversight) that assimilate environmental and social factors as a means of promoting sustainable economic growth and the long-term stability of the financial system."

Canada's Expert Panel on Sustainable Finance

Sustainable Finance was intended to incent sustainable behavior not halt businesses deemed unpopular

Environment, Social and Corporate Governance (ESG) is Synonymous with Good Governance

- Good governance drives positive environmental, social and business performance – both corporately and from a jurisdictional perspective.
 - Canada and Canadian companies consistently are among the highest in international ESG rankings
 - Environmental and social risks are well managed and are increasingly being seen as part of running a business
 - Company focus and disclosure of ESG performance demonstrates awareness and management of material business risks and priorities for the organization.
 - More disclosure is not always better. Needs the right focus.
 - Good governance includes capable boards that challenge, support and provide perspective -not duplicate management.

Disclosure - A Tool in Measuring Performance

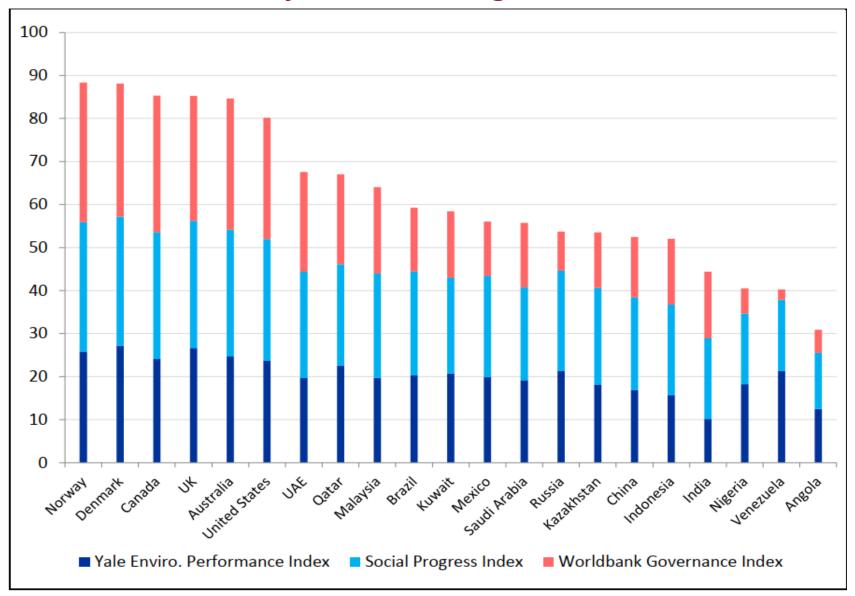
Disclosure not just for disclosure sake

- Disclosure is important to measure firm ESG performance, must be focused on material risks
- Useful disclosure: moves towards a value-based way of looking at material risks, specifically material to a company now and in the future
- ESG is not a "second bottom line" but integral to the real bottom line.
 Good ESG performance translates to profits and must be appropriately communicated
- The evolution of quality, availability and consistency of publicly available information is occurring, and a convergence will form

Voluntary reporting enables:

- Flexibility in choice that best suits a company and its investors.
- Responsiveness to adapt to dynamic environments and emergent risks.

Country Governance: Canada Near the Top in Aggregated ESG Scores. Second in Major Oil Producing Countries



So What is Needed?

A made in Canada Sustainable Finance Taxonomy

- Sustainable Finance Action Council (SFAC)
 - The council will bring together public and private sector financial expertise to support the growth of a strong, well-functioning, sustainable finance market. Financial sector leaders will provide input on the foundational market infrastructure needed for a stable and reliable sustainable finance market in Canada that will boost investor confidence and drive economic growth. Mobilizing capital is a critical part of Canada's work to meet its 2030 Paris target, achieve net-zero emissions by 2050, and ensure that Canada continues to have a prosperous economy.



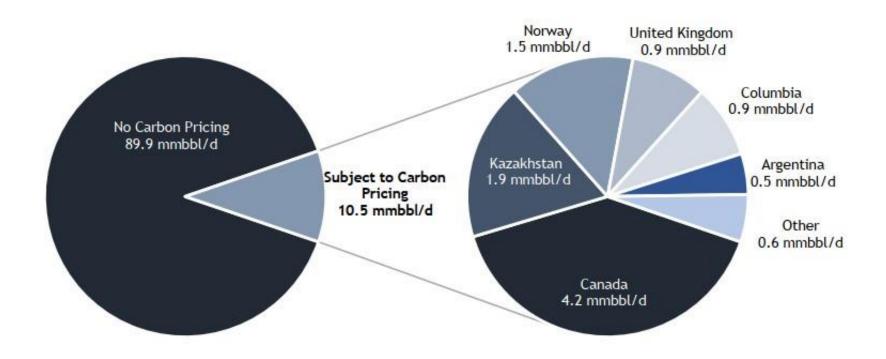
What are the Energy Sector's Goals?

- Supplying affordable, reliable and cleaner energy to a growing global population will continue to be the goal of Canada's upstream energy industry
- Oil and natural gas will continue to be an important part of the world's energy mix for the foreseeable future
- Supplying affordable, reliable and cleaner energy to a growing global population will continue to be the goal of Canada's upstream energy industry
- Climate change is a global challenge that requires global perspectives and solutions
- Advancing greenhouse gas (GHG) emissions reduction is critical to realizing the vision for Canada to be a global natural gas and oil supplier of choice
- Emissions reduction performance, including emission intensity, is increasingly the basis for policies such as low carbon fuel regulations, carbon pricing, specific reduction targets and emission caps; It's used to inform funding decisions by governments, funding agencies and investors

Emission Reduction Technological Advances are not Aspirational

- Technological advances are not aspirational, they are actual: the industry is taking serious, substantial steps to reducing emissions intensity
- Innovative technologies and process efficiency improvements are the main keys to reducing emissions across Canada's natural gas and oil industry
- Many producing companies are researching, developing and deploying technologies, and the industry also has a significant commitment to collaboration and knowledge sharing, aimed at improving performance across the sector and contributing to Canada's international climate change commitments
- Among the world's top 10 petroleum exporters, currently Canada alone has a methane reduction target

Global Crude Oil Production Subject to Carbon Pricing

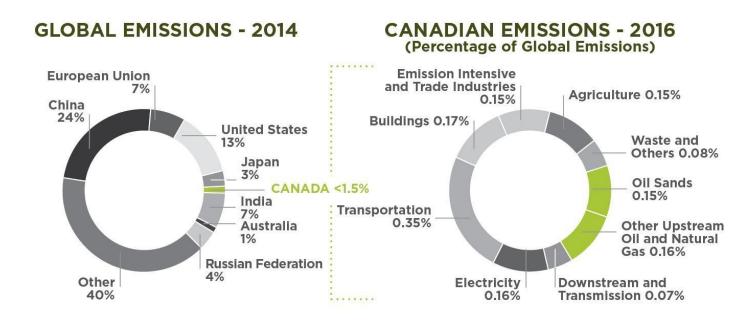


Source: NBF, World Bank, EIA

Source: National Bank Financial 2019

Canadian GHG Emissions in Global Context

- Canada is the most committed among the nations that have set out to reduce GHG emissions
- Canada generates < 1.5% of global GHG emissions
- Canada's upstream oil and natural gas industry contributes about 21 per cent of Canada's total emissions

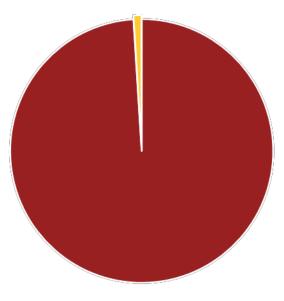


Source: Environment and Climate Change Canada, 2018 & World Resources Institute, 2017



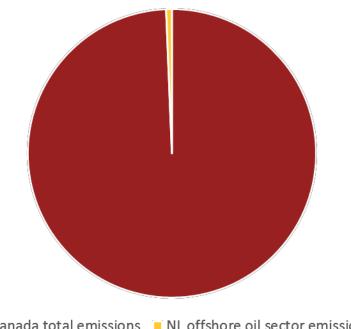
NL Offshore Emissions

Canadian Oil and Gas Sector Emissions (MT Co2 eq)



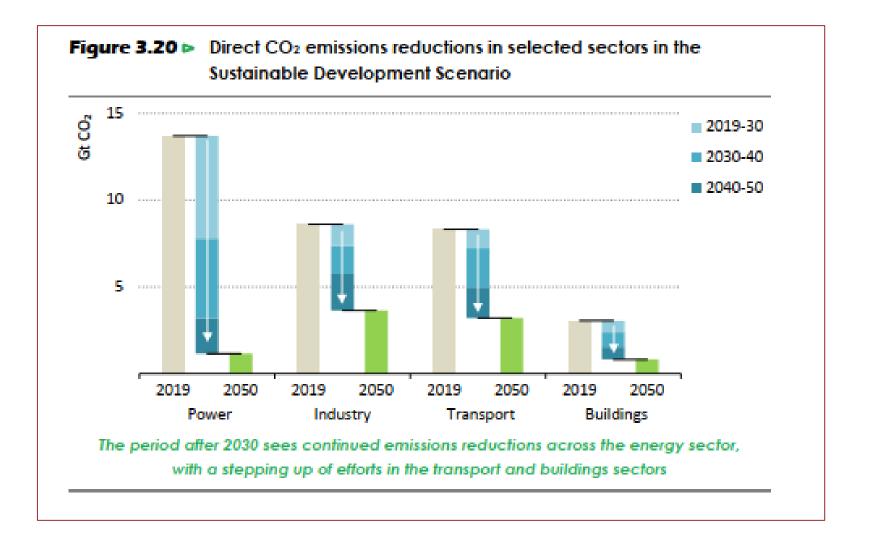
- Canada oil and gas emissions (non offshore)
- NL oil and gas sector emissions

Share of Canada's Total Emissions -NL Offshore (MT Co2 eq)



■ Canada total emissions ■ NL offshore oil sector emissions

Rather than take the Barrel out of the Economy, we need to take the Emissions out of the Barrel



NL Offshore Oil and Natural Gas Industry Perspectives on Climate Change

- Offshore oil and natural gas operators in Newfoundland and Labrador (NL) are committed to working with policy makers and other stakeholders to address the global challenge of climate change
- Offshore oil and natural gas operators see themselves as part of the solution to a lower carbon energy future
 - NL's offshore resources are amongst the best globally from an emissions intensity perspective
 - By continuing to manage and reduce greenhouse gas emissions, investing in technology and supplying lower carbon energy to meet global energy demand, the oil and gas industry is supporting the transition to lower carbon energy
 - The industry's significant investments in technology, digitalization and other environmental innovations contribute to economic diversification, and help enable clean energy growth

Emissions Reduction in NL's Offshore

- Offshore operators have reduced flaring significantly through the Global Flare Reduction Initiative in recent years
- Operators are working to manage and reduce emissions through operational efficiencies and preventative maintenance, which in turn will lead to reduced energy consumption
 - During maintenance programs, operators look at methods to improve efficiency of operation for power generation units and other key equipment, subsequently reducing emissions
 - Operators are implementing fugitive emissions monitoring systems that use optical gas imaging cameras, facilitating rapid leak detection and repair
 - Supply vessels use fuel management and monitoring systems to ensure vessels are operating as efficiently as possible and continue to consider new technology as it becomes available
 - Electrification of elements of offshore operations (e.g. Hibernia recently replaced their dieselpowered cranes with electric)
- There is exciting potential for future offshore projects to research and incorporate additional innovations (e.g. movement to onshore control centres, use of alternative low carbon fuels in marine transportation to support industry activity and technologies under development to further reduce flaring)

Research Underway Related to Offshore Emissions Reductions

- Locally there are exciting projects happening related to:
 - Flare reduction technology
 - Power generation optimization and monitoring systems
 - Use of hybrid solutions to power offshore vessels
 - Carbon capture and storage solutions for offshore facilities
 - Investigation of offshore electrification and power generation through wind energy
 - Blue hydrogen hydrogen produced from natural gas
- The Journey to Tomorrow's Offshore

Conclusion

- The benefits of the energy sector are far-reaching
 - Contributing to Canada's economic recovery and to global net-zero goals, displacing other less-responsible forms of energy
 - Advancing government's climate objectives through the development and commercialization of new technology while continuing to provide a reliable, secure source of energy
 - Leading globally on ESG
 - Providing jobs, revenues for governments and investing in communities
- Sustainable finance can, and should, be used to incent sustainable behavior
- NL offshore oil is amongst the best globally from an emissions intensity perspective and operators are taking action to manage and further reduce GHG emissions
 - There is significant international interest in NL's lower carbon-per-barrel oil
 - NL offshore oil can provide a reliable, lower-carbon source of energy to help meet growing global demand and can support Canada's vision as a leader in tackling climate change

