

Navigating uncertainty

Future scenarios for Canadian oil and gas

In today's environment, making long-term decisions has never seemed more challenging or been more important

Globally, the oil and gas industry is facing **two concurrent crises - COVID-19** and the **oil price collapse**. For Canada, however, the industry has the additional challenges of **market access** and **stakeholder resistance**.

Where can oil and gas companies even start to plan for the next decade when situations could evolve in so many different ways? A helpful strategy is to **imagine alternative or uncertain future environments** to test and understand how decisions might play out. We call it **scenario planning**.

This document introduces four plausible scenarios of how the Canadian oil and gas industry may evolve over the next 10 - 15 years. These scenarios outline potential futures, and have been created to spark insight and spot opportunity. In this document, we:



Describe the uncertainties facing the Canadian oil and gas industry and present four possible future scenarios.



Describe the implications for strategic and operational choices in an environment of increased uncertainty.



Identify short and long term decisions for companies to rethink how to compete and thrive.

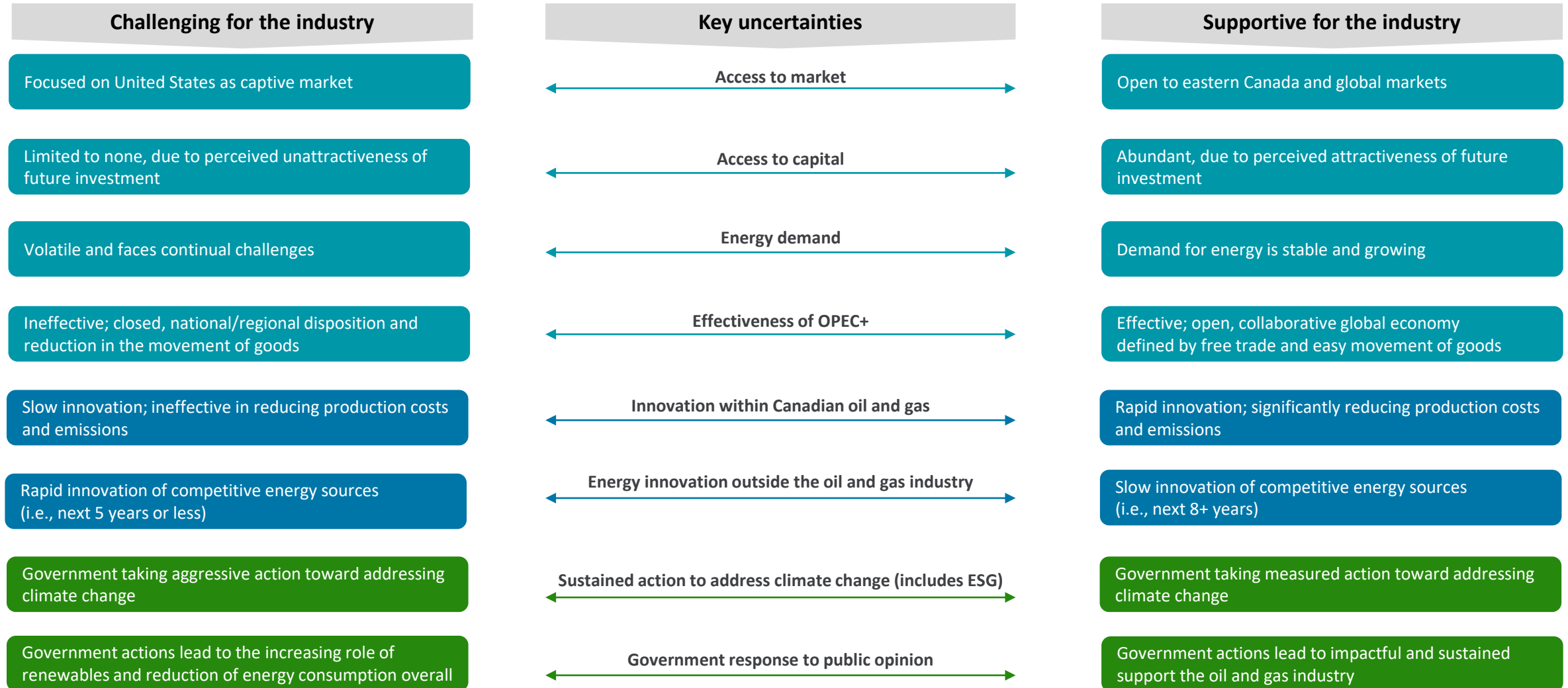


What are scenarios?

Scenarios are stories about what the future may be like. They're created through a structured process to stretch thinking, challenge conventional wisdom, and lead to better decisions. They are not predictions about what will happen; they are hypotheses about what could happen, designed to open our eyes to new opportunities and to hidden risks.

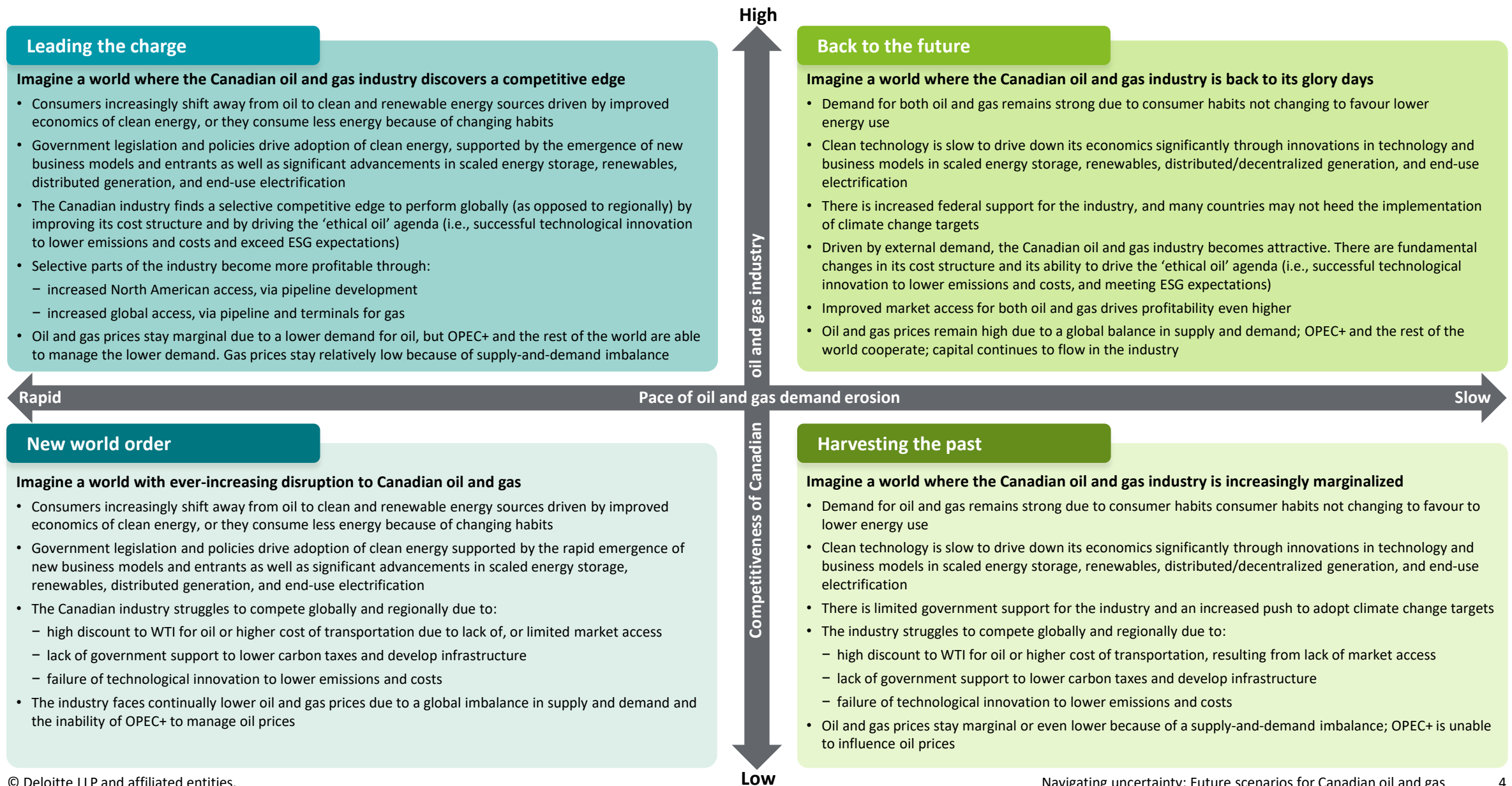
Inevitably, new uncertainties may surface and existing ones may evolve. The uncertainties outlined in this document are based on information available as of early June 2020.

Numerous uncertainties face the Canadian oil and gas industry



Legend: ■ Social/Government ■ Technological ■ Economic

Four potential futures for oil and gas



Leading the charge

Imagine a world where the Canadian oil and gas industry discovers a competitive edge

- Consumers increasingly shift away from oil to clean and renewable energy sources driven by improved economics of clean energy, or they consume less energy because of changing habits
- Government legislation and policies drive adoption of clean energy, supported by the emergence of new business models and entrants as well as significant advancements in scaled energy storage, renewables, distributed generation, and end-use electrification
- The Canadian industry finds a selective competitive edge to perform globally (as opposed to regionally) by improving its cost structure and by driving the ‘ethical oil’ agenda (i.e., successful technological innovation to lower emissions and costs and exceed ESG expectations)
- Selective parts of the industry become more profitable through:
 - increased North American access, via pipeline development
 - increased global access, via pipeline and terminals for gas
- Oil and gas prices stay marginal due to a lower demand for oil, but OPEC+ and the rest of the world are able to manage the lower demand. Gas prices stay relatively low because of supply-and-demand imbalance

Back to the future

Imagine a world where the Canadian oil and gas industry is back to its glory days

- Demand for both oil and gas remains strong due to consumer habits not changing to favour lower energy use
- Clean technology is slow to drive down its economics significantly through innovations in technology and business models in scaled energy storage, renewables, distributed/decentralized generation, and end-use electrification
- There is increased federal support for the industry, and many countries may not heed the implementation of climate change targets
- Driven by external demand, the Canadian oil and gas industry becomes attractive. There are fundamental changes in its cost structure and its ability to drive the ‘ethical oil’ agenda (i.e., successful technological innovation to lower emissions and costs, and meeting ESG expectations)
- Improved market access for both oil and gas drives profitability even higher
- Oil and gas prices remain high due to a global balance in supply and demand; OPEC+ and the rest of the world cooperate; capital continues to flow in the industry

New world order

Imagine a world with ever-increasing disruption to Canadian oil and gas

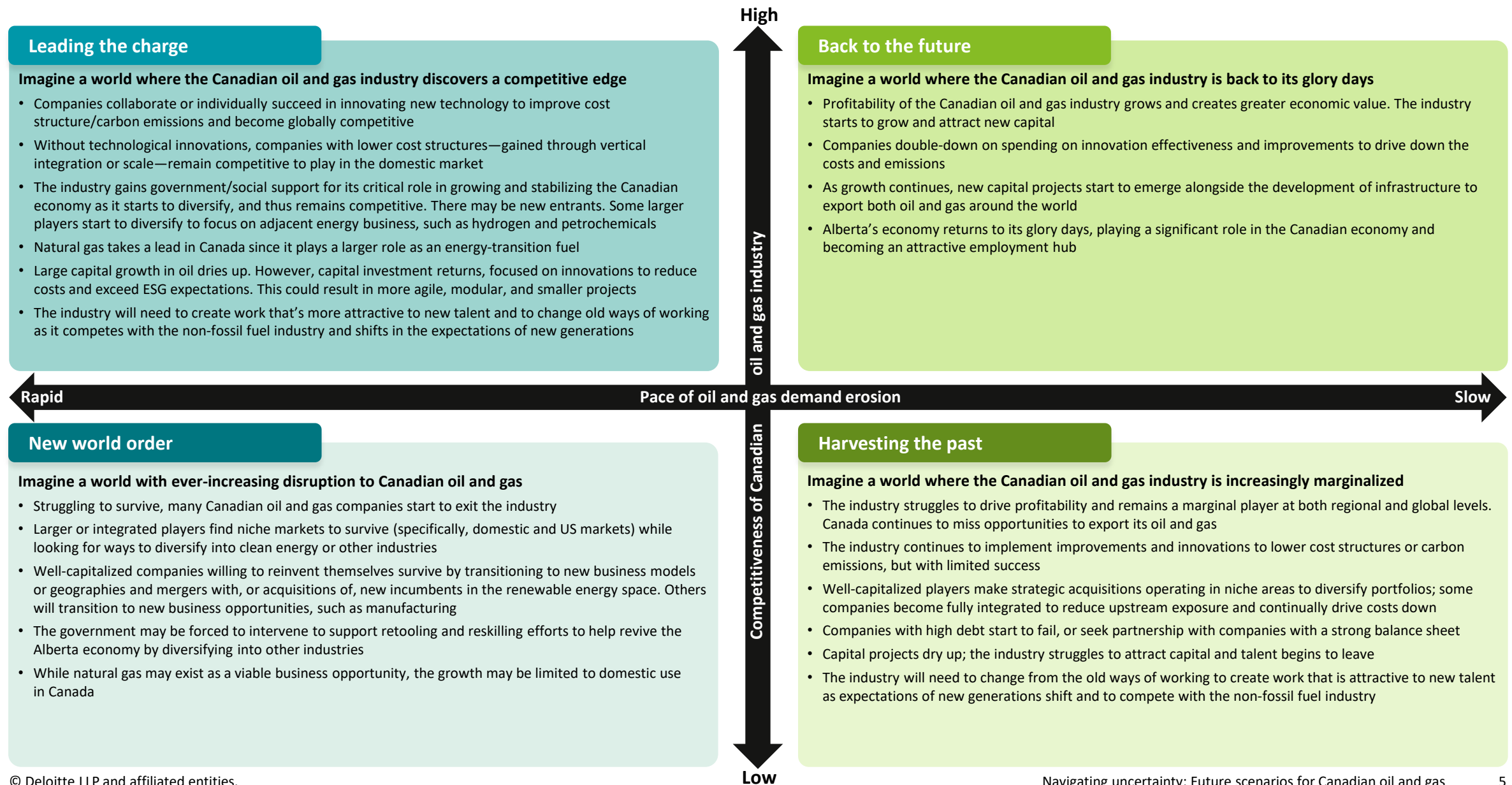
- Consumers increasingly shift away from oil to clean and renewable energy sources driven by improved economics of clean energy, or they consume less energy because of changing habits
- Government legislation and policies drive adoption of clean energy supported by the rapid emergence of new business models and entrants as well as significant advancements in scaled energy storage, renewables, distributed generation, and end-use electrification
- The Canadian industry struggles to compete globally and regionally due to:
 - high discount to WTI for oil or higher cost of transportation due to lack of, or limited market access
 - lack of government support to lower carbon taxes and develop infrastructure
 - failure of technological innovation to lower emissions and costs
- The industry faces continually lower oil and gas prices due to a global imbalance in supply and demand and the inability of OPEC+ to manage oil prices

Harvesting the past

Imagine a world where the Canadian oil and gas industry is increasingly marginalized

- Demand for oil and gas remains strong due to consumer habits not changing to favour lower energy use
- Clean technology is slow to drive down its economics significantly through innovations in technology and business models in scaled energy storage, renewables, distributed/decentralized generation, and end-use electrification
- There is limited government support for the industry and an increased push to adopt climate change targets
- The industry struggles to compete globally and regionally due to:
 - high discount to WTI for oil or higher cost of transportation, resulting from lack of market access
 - lack of government support to lower carbon taxes and develop infrastructure
 - failure of technological innovation to lower emissions and costs
- Oil and gas prices stay marginal or even lower because of a supply-and-demand imbalance; OPEC+ is unable to influence oil prices

The implications of the four scenarios are significant



Leading the charge

Imagine a world where the Canadian oil and gas industry discovers a competitive edge

- Companies collaborate or individually succeed in innovating new technology to improve cost structure/carbon emissions and become globally competitive
- Without technological innovations, companies with lower cost structures—gained through vertical integration or scale—remain competitive to play in the domestic market
- The industry gains government/social support for its critical role in growing and stabilizing the Canadian economy as it starts to diversify, and thus remains competitive. There may be new entrants. Some larger players start to diversify to focus on adjacent energy business, such as hydrogen and petrochemicals
- Natural gas takes a lead in Canada since it plays a larger role as an energy-transition fuel
- Large capital growth in oil dries up. However, capital investment returns, focused on innovations to reduce costs and exceed ESG expectations. This could result in more agile, modular, and smaller projects
- The industry will need to create work that's more attractive to new talent and to change old ways of working as it competes with the non-fossil fuel industry and shifts in the expectations of new generations

Back to the future

Imagine a world where the Canadian oil and gas industry is back to its glory days

- Profitability of the Canadian oil and gas industry grows and creates greater economic value. The industry starts to grow and attract new capital
- Companies double-down on spending on innovation effectiveness and improvements to drive down the costs and emissions
- As growth continues, new capital projects start to emerge alongside the development of infrastructure to export both oil and gas around the world
- Alberta's economy returns to its glory days, playing a significant role in the Canadian economy and becoming an attractive employment hub

New world order

Imagine a world with ever-increasing disruption to Canadian oil and gas

- Struggling to survive, many Canadian oil and gas companies start to exit the industry
- Larger or integrated players find niche markets to survive (specifically, domestic and US markets) while looking for ways to diversify into clean energy or other industries
- Well-capitalized companies willing to reinvent themselves survive by transitioning to new business models or geographies and mergers with, or acquisitions of, new incumbents in the renewable energy space. Others will transition to new business opportunities, such as manufacturing
- The government may be forced to intervene to support retooling and reskilling efforts to help revive the Alberta economy by diversifying into other industries
- While natural gas may exist as a viable business opportunity, the growth may be limited to domestic use in Canada

Harvesting the past

Imagine a world where the Canadian oil and gas industry is increasingly marginalized

- The industry struggles to drive profitability and remains a marginal player at both regional and global levels. Canada continues to miss opportunities to export its oil and gas
- The industry continues to implement improvements and innovations to lower cost structures or carbon emissions, but with limited success
- Well-capitalized players make strategic acquisitions operating in niche areas to diversify portfolios; some companies become fully integrated to reduce upstream exposure and continually drive costs down
- Companies with high debt start to fail, or seek partnership with companies with a strong balance sheet
- Capital projects dry up; the industry struggles to attract capital and talent begins to leave
- The industry will need to change from the old ways of working to create work that is attractive to new talent as expectations of new generations shift and to compete with the non-fossil fuel industry

The industry faces several decisions in the short term while considering long term implications



What are the aspirations for the energy company we are building?



How can we increase our cost competitiveness?



What kind of company can we acquire to vertically integrate? What assets do we divest?



How can we diversify into adjacent energy businesses and/or other industries?



What kind of industry collaboration will help us as the Canadian industry navigates through uncertainties?



What government support should we gain for the industry to help revive, stabilize and transition the Canadian economy?



How can we gain the support or mitigate the resistance of First Nations?



How can we create an organization that can rapidly transition as demand for oil and gas erodes?



How do we attract, retain and reskill talent for our changing business?



How can we attract more capital into the industry as we revive and transition?



The current crisis has pushed our Canadian industry further deep into **Harvesting the Past**

Conclusion

Canada's oil and gas industry has undoubtedly had to **navigate dramatic and unprecedented challenges** – from the collapse in oil prices to the global economic shut down due to the COVID-19 pandemic, paired with the steep decline in demand and sudden supply surge.

The industry has a **vital role in the resurgence and growth of Canada's economy**. Major infrastructure projects (i.e., Trans Mountain pipeline expansion and LNG Canada), the re-purpose of valuable assets for energy transition (i.e., refinery units and oil sands assets), and the transformation to thrive in a low-carbon world (i.e., hydrogen and renewables production, carbon fibre manufacturing), position the Canadian industry for long-term growth in operations, jobs and revenues. These provide **the foundation for innovation as energy demand and markets evolve**.

Numerous uncertainties impact the pace at which global demand for oil and gas will erode and the competitiveness of the Canadian oil and gas industry in regional, North American and global markets. Companies **are reimagining how they will compete and thrive**, and are addressing difficult short and long-term decisions about their future.

As you reflect on the four future scenarios, consider:



- ✓ Which scenario best describes the most plausible future you see for the Canadian industry?
- ✓ How will the industry transition from the current 'Harvesting the Past' scenario to the scenario you foresee as the future? Will it be a direct transition or will the industry transition through one or more scenario? Will the transition be gradual or rapid?
- ✓ What are the potential implications specific to your company?
- ✓ What can you do today to position your company to be sustainable in both the short and long-term?



Scenarios are stories about how the future could unfold. They are intended to **stretch thinking and challenge conventional wisdom**, but are always plausible and logical.

Leaders need to take **decisive action** to ensure their company and the Canadian industry are preparing now for what the future may hold.

Appendix



Uncertainty 1:

Representative driving forces

Will the global and national competitiveness of the Canadian oil and gas industry be high or low?

Low competitiveness of the Canadian oil and gas industry

- **Social and government support**
 - Government is not supportive of the industry. It imposes onerous restrictions (e.g., carbon taxes, regulations) and provides limited support (e.g., infrastructure development, incentives), limiting the ability of companies to be competitive in the energy market
- **Economic environment**
 - Access to capital in the industry is limited due to stricter ESG requirements and low profitability, resulting in limited replacement or expansion of oil-producing assets
 - Stringent ESG and licence-to-operate requirements, resulting in higher cost
 - Imbalance of global demand and supply, resulting in lower overall oil and gas prices (i.e., demise of OPEC+)
 - Lack of market access via pipelines or terminals to export oil and gas, resulting in higher crude discount and higher cost of transporting gas
- **Technology changes**
 - Technological innovation is limited/slow in achieving success to reduce emissions and costs, resulting in Canadian oil and gas being at the high end of the cost curve



High competitiveness of the Canadian oil and gas industry

- **Social and government support**
 - The Canadian oil and gas industry is seen as critical to the stability and growth of the Canadian economy. Government policies (e.g., carbon taxes, regulations) and support for infrastructure development are favourable to the industry
- **Economic environment**
 - Access to capital in the industry increases as the ability to meet ESG requirements exceeds expectations and profitability increases, resulting in increased replacement or expansion of oil-producing assets
 - OPEC+ is effective in creating a price umbrella and driving high prices, making Canadian oil attractive
 - Market access increases as LNG and pipeline projects proceed, resulting in lower crude discount and lower cost of/more access to transporting gas
- **Technology changes**
 - Technological innovation in the industry is high. Companies continue to invest and find success in technologies to make Canadian oil and gas competitive and sustainable

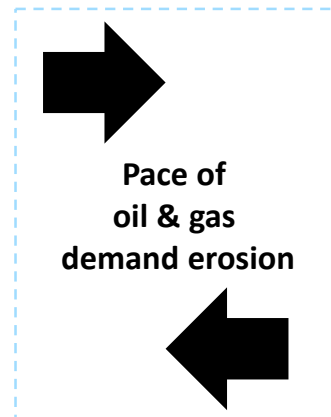
Uncertainty 2:

Representative driving forces

Will global demand for oil and gas erode rapidly or slowly?

Rapid pace of oil & gas demand erosion

- **Social and government support**
 - Government legislation and policies are supportive of low-carbon and energy transition, and provide positive incentives for clean and renewable energy sources
 - Demand for energy continues to grow but consumers increasingly shift away from oil to clean and renewable energy sources (e.g., electric vehicle adoption, sharing economy, advanced mobility solutions)
- **Economic environment**
 - Emergence of new business models drive energy erosion through collaboration between new market entrants and existing players across the entire value chain
 - Demand for energy declines due to major disruptive events (e.g., COVID-19, natural disasters), resulting in reduced demand for oil
- **Technology changes**
 - Sustainable energy is rapidly adopted and integrated, with significant advancements in scaled energy storage, distributed/decentralized generation, and end-use electrification (e.g., smart grids, Canadian natural gas/liquefied natural gas (CNG/LNG) in heavy transportation)



Slow pace of oil & gas demand erosion

- **Social and government support**
 - Government is not actively abiding by carbon emission targets nor actively pursuing the growth of low-carbon energy (failure of COP targets). Clean energy competes with fossil-based fuels without any incentives or subsidies
 - Demand for energy continues to grow, but societal behaviour continues to drive the global demand for oil
- **Economic environment**
 - Lack of new business models fails to erode demand for energy (e.g., collaboration between new market entrants and existing players, risk and reward-sharing)
 - Demand for energy remains strong despite major disruptive events (e.g., COVID-19, natural disasters), resulting in growth in demand for oil and gas
- **Technology changes**
 - While there is significant investment in scaled energy storage, renewables, and end-use electrification technology (e.g., smart grids, CNG/LNG in heavy transportation), it's not cost-competitive. This results in lower adoption rates and sustained demand for oil and gas

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