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Energy and resources:
Pioneering the transition to a low-carbon future



A multidimensional challenge, climate change is permeating nearly every aspect of the value chain of companies in the energy and resources (E&R) industry. As E&R executives ponder the implications on their investments and business models, the conversation needs to align strategic vision with tactical execution based on reliable data. This paper offers some practical suggestions for getting started.

When it comes to climate change, the E&R industry is unique. Granted, energy production is one of the world's largest sources of greenhouse gas (GHG) emissions. However, because it's highly visible—smokestacks, refineries, open pits, drilling rigs, and the like—E&R tends to be in the spotlight more often than other high-emitting sectors, such as agriculture, power and utilities and real estate. Environmental activists have taken aim on investment in E&R, leading to a fossil-fuel divestiture movement, delaying the construction of infrastructure and assets, and making it difficult and expensive for many E&R companies to obtain insurance.

Climate change also poses an existential threat, which further differentiates the sector from other industries. On the one hand, there is an enormous opportunity for the E&R sector to innovate and to lead the transition to sustainable energy sources. On the other hand, it creates the misperception that the goals of E&R companies and responsible climate action are mutually exclusive.

The implications of climate change

The consequences of climate change for the E&R industry are complex and sometimes paradoxical.



Pervasive challenges

Capital constraints loom large when it comes to making the investments required to reduce emissions. While the lack of investment has not brought the industry to a standstill, it's limiting the tempo at which companies can fund the decarbonization solutions and technologies that would accelerate the transition away from carbon-based fuel.

Activists have coalesced into a global movement advocating for the divestiture of fossil-fuel investments. The strength of this movement has already been sufficient to get the attention of the world's largest fund manager, BlackRock, which has about US\$7 trillion in assets under management.¹ In January 2020, Larry Fink, BlackRock's chief executive, declared that "climate risk is investment risk" in his annual letter to CEOs.² He also predicted that as markets started to price climate risk into the value of securities, it would spark a fundamental reallocation of capital.³

Once the COVID-19 pandemic took hold, conventional wisdom suggested the crisis would divert attention from climate change. But, as Fink described in his letter to CEOs in 2021, "just the opposite took place, and the reallocation of capital accelerated even faster than I anticipated."⁴ Calling this reallocation "a tectonic shift," he further acknowledged that "the creation of sustainable index investments has enabled a massive acceleration of capital towards companies

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better prepared to address climate risk."⁵ To this point, research from RBC Global Asset Management shows that more than 80% of institutional investors in Canada apply an environmental, social, and governance (ESG) screen.⁶

With 30- to 50-year investment horizons, the long life of Canadian E&R industry assets and resources poses the additional risk of technology debt and stranded assets. This situation is exacerbated by lack of access to capital. The less capital companies have, the more they must rely on existing assets to generate the cash they need to fund the transition to sustainable energy sources. If there isn't funding from other sources, it makes the journey much longer and more difficult.

"Climate risk is investment risk"

Larry Fink | CEO, BlackRock



Tactical target-setting

Teck, Canada's largest diversified resource company, has set an overarching goal of achieving net-zero emissions by 2050, with a shorter-term objective of reducing the carbon intensity of its operations by 33% by 2030.¹⁹ Among other tactics, its sustainability strategy comprises procuring 50% of its electricity demands in Chile from clean energy by 2025 and 100% by 2030.²⁰ The company also seeks to displace the equivalent of 1,000 internal combustion engine vehicles by 2025 by accelerating the adoption of zero-emissions alternatives for transportation.²¹ In addition, Teck supports a circular economy through its urban material recovery programs for lead batteries, zinc alkaline batteries, and cathode-ray-tube glass, which are recycled at the company's Trail Operations smelting and refining complex in southern British Columbia.²²

Transformative opportunities

Some E&R organizations see climate change as an opportunity to diversify their offerings and transform their business models. By making the growing imperative to address climate change and reduce carbon emissions central to their business strategy, they are capitalizing on opportunities to:

Reduce their operational costs by investing in energy efficiency, electrification, and renewable energy production and storage.

Diversify their offerings by developing or acquiring sustainable, low-emission fuels and technologies.

Gain resilience with regard to regulatory change by anticipating and planning for climate risk.

Make themselves more attractive to progressive investors who screen for ESG criteria.

Spur innovation internally and build ecosystem relationships externally.

One prominent example of E&R diversification and business-model transformation is the giant petroleum organization BP. Its chief executive, Bernard Looney, has outlined a sustainability framework for the 111-year-old company aimed at achieving net-zero

carbon emissions by 2050 or sooner.⁷ To meet this goal, he emphasized that BP will have to fundamentally reorganize itself, including investing less in oil and gas and more in low-carbon businesses over time.⁸

A big part of the plan involves acquiring or developing new low-carbon businesses and collaborating with providers in the renewable energy space.⁹ For instance, the joint venture Lightsource BP finances, develops, and manages large-scale solar energy projects, recently closing on a \$250 million financing package for its Impact Solar project located in Texas.¹⁰ BP has also formed a joint venture with Bunge in Brazil to create a bioenergy company in the world's fastest-growing biofuels market.¹¹

This type of transformation is not limited to the oil majors. Across the E&R industry, companies are responding to stakeholder demands to address GHG emissions. For instance, Newmont Corporation recently committed to reducing its emissions by 30% by 2030, with the ultimate goal of achieving net-zero carbon emissions by 2050.¹² To back up this commitment, the company plans to invest US\$500 million in climate change initiatives over the next five years, from 2021 through 2025,¹³ with electrification as a significant part of its sustainability strategy. And in Ontario, where it's dubbed the "mine of the future," Newmont Goldcorp's Borden mine features state-of-the-art health and safety controls, digital mining technologies and processes, and an electric underground fleet of vehicles and equipment.¹⁴



Retail innovation

Citing climate change as the single biggest issue facing our planet, Bullfrog Power, a Spark Power company, has disrupted the traditional retail energy business model by giving consumers and businesses a previously non-existent green choice.²³ Responding to customer demand for clean energy, the company injects green electricity, biogas, or biofuels into the system to match the amount of energy a home or business uses.²⁴ A participating customer continues to receive a regular bill, but also gets a bill to offset their electricity use with green energy. Bullfrog ensures that for every kWh of electricity clients use, a kWh from a pollution-free, renewable source is put on the grid on their behalf.²⁵ This allows the customer to contribute to greening the grid or the pipeline and building a circular economy, since much of this additional cost goes toward funding renewable energy projects in communities across Canada.²⁶

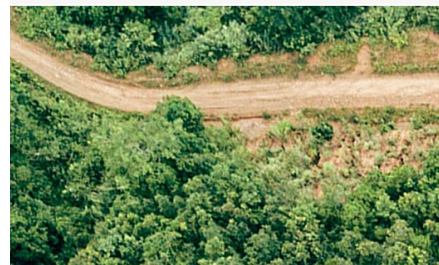
How to get started

Industry leaders are setting both energy-intensity and absolute emissions-reduction targets, and some have begun to consider broader value-chain emissions. Those even further along the transformation journey are diversifying their businesses, developing innovative low-carbon business models, and linking climate-related goals to executive compensation.

Many companies are still defining their responses to climate risks or attempting to gain traction with nascent decarbonization programs. If yours is among them, here are few suggestions for jumpstarting such efforts:

Set the strategic direction by assessing climate risk-and-opportunity scenarios far into the future

This is important for gaining clarity on the direction in which you may have to pivot, including how fast and how heavily. How does a complex E&R company assess what the world might look like 10, 15, or even 30 years from now? Many public and private organizations have already done the heavy lifting by developing research-based scenarios. For instance, Deloitte's Future of Energy scenarios have been designed to inform strategy by helping companies gauge the rate and direction of society's transition to other energy production sources.



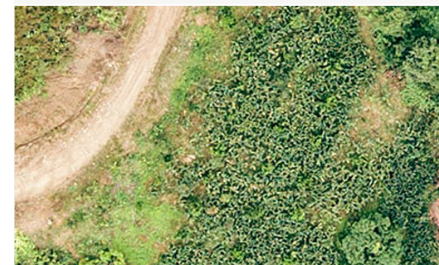
Understand what your emissions are

Aggregating historical enterprise-level emissions data is often the first step in setting a baseline. This includes understanding and navigating any areas where data is unavailable or isn't sufficiently robust. Once these gaps have been addressed, the complete baseline of data can be used to inform emissions forecasts. You can then consider how various scenarios related to climate change may affect your business and how you can go about integrating a low-carbon approach into day-to-day operations.



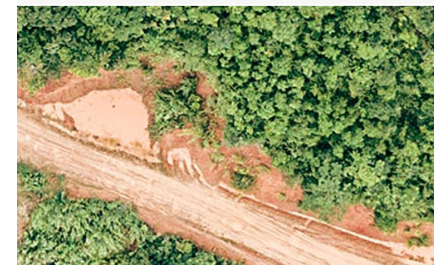
Establish a target that aligns with a range of plausible scenarios

In considering what your emissions-reduction or energy-intensity targets could look like, one option is to set a science-based target. More than 1,000 businesses around the world are already working with the Science-Based Targets initiative (SBTi) to reduce their emissions in line with the goals of the Paris Agreement: limiting global warming to well below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C. The SBTi outlines a five-step process for setting a science-based target, and helps companies to find clearly defined pathways for reducing their Scope 1, 2, and 3 GHG emissions according to a set of established criteria.



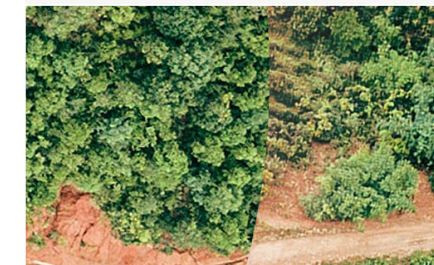
Engage with investors to understand their expectations

Many institutional investors are coming under pressure to reduce climate related risk in their portfolios. They are also seeking information to better understand climate-related financial impacts and companies' potential strategic responses to them. The Task Force on Climate-related Financial Disclosures (TCFD) has published a standardized, international framework of recommendations to help organizations assess the financial impact of climate-related risks and opportunities on their businesses, including those related to the global transition to a low-carbon economy. While voluntary, the TCFD framework often provides a good foundation for meeting investor expectations regarding climate-related financial disclosure.



Get tactical

Understand that setting targets is just the beginning of a longer journey. To begin decarbonization, E&R companies must first have enough confidence in their company's emissions data to disclose their targets. They should then assess the full range of potential abatement and offset opportunities existing across all operational activities. Once this is understood, they can prioritize the projects deemed likely to confer the greatest abatement and strategic benefits at the least cost. Ultimately, attaining long-range targets will involve transformation in the form of revamping operating and governance models, business processes, technology investments, and risk-management frameworks.



Educate stakeholders about the drivers of climate change and how your company's abatement strategies are having an impact

To inform the communications plan, interview internal and external stakeholders, including customers, policymakers, and investors, to understand critical questions that may be asked with respect to market resilience, changing physical environment, financial implications, governance, and how the organization is seizing opportunities. Your organization should also be prepared to report company-wide emissions and track target progress annually.



Leading the future of energy

The heightened intensity of the public spotlight has forced many E&R companies to accelerate their efforts to decarbonize their operations. In an environment where it is easy to blame them for climate change, it is also easy to overlook the pioneering role these companies have played in developing low-carbon technologies and in leading the way toward a cleaner, greener future. Now, companies of all sizes and across all subsectors have the opportunity to build upon this progress, and it's important for stakeholders to support them. The E&R industry may be the largest contributor to global greenhouse emissions, but it is also the biggest lever available to society for driving significant change.

Climate change solutions

Deloitte offers a broad range of climate change services and solutions that link finance to science. Applying the latest climate science, these solutions consider multiple strategic and financial factors, such as business growth and capital allocation, to help companies make meaningful investments in emissions-abatement opportunities.

The Decarbonization Solutions package includes modules relating to abatement portfolio management, decarbonization scenarios, abatement pathways, impact

analysis, and consideration of physical climate risk. The modules are based on scientific information from leading bodies and methodologies, such as Represented Concentration Pathways from the Intergovernmental Panel on Climate Change, shared socio-economic scenarios from the International Institute for Applied Systems Analysis, and methodologies from the Science-based Targets Initiative, among others. The modules compare forecast emissions reductions from selected abatement projects with short, medium, and longer-

term aspirations and pathways as well as identify physical climate risk. Deloitte also offers access to a deep pool of professionals with science, business, and technology backgrounds. They can help companies to identify grants and incentives to fund the transition, establish sustainability targets and metrics, disclose performance, implement digital solutions, including data integration and intelligent monitoring systems, and respond to ESG requests, concerns, and challenges.

The E&R industry is one of the biggest levers available to society for its potential to drive significant reductions in the global carbon footprint.

Contact

Henry Stoch
Partner,
Canada Climate and
Sustainability Leader
hstoch@deloitte.ca

Contributors

Jürgen Beier
Partner,
Energy & Resources
National Leader

Sean Delsnider
Senior Manager,
Growth Platforms Lead

Suki Hughes
Partner,
Consulting

Geneva Claesson
Partner,
Risk Advisory

Nathan Steeghs
Senior Manager,
Risk Advisory



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