

Climate Resiliency Report

2021

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Caution regarding forward-looking statements

The forward-looking statements contained in this climate resiliency report for Énergir (as defined in the Glossary) (the “**Report**”) include information regarding the impact of climate change on a global scale, including in the communities served by Énergir and its subsidiaries, Green Mountain Power and Vermont Gas (as defined in the Glossary) (collectively, the “**Corporations**”), the Corporations’ decarbonization strategy in order to mitigate the risks of climate change and to adapt to such changes and take advantage of opportunities as well as other information that is not historical fact. These forward-looking statements can reflect the intentions, initiatives, expectations, and opinions of the Corporations’ management team (collectively, “**Management**”) and are designed to help stakeholders better understand the approach it intends to take in managing climate change risks and opportunities and to help customers. Such information may not be pertinent for other purposes. Generally, forward-looking statements are often identified by words and expressions such as “anticipates”, “believes”, “estimates”, “expects”, “seeks”, “plans”, “projects”, “forecasts”, “aims”, and other variants and similar expressions as well as the negative or conjugated forms.

This Report contains forward-looking information or statements relating in particular to the following:

- the future of energy on a global scale, particularly factors and trends that could or should shape that future;
 - the transition towards a low GHG (as defined in the Glossary) emissions economy and the role that different energy sources should play in this transition;
 - quantitative scenarios issued by organizations forecasting several possible global GHG emission trajectories by 2030-2050 and which the Corporations have relied on, scenarios that take into account the impact, over different timelines, of what the climate risks and opportunities identified in this report might have on the resilience of the Corporations’ business models;
- It should be noted that no climate scenario is perfect and, in this context, the Corporations have chosen those that best meet TCFD criteria (as defined in the Glossary). Readers should note that the scenarios are not a statement by the Corporations on plausible assumptions, but aim instead to cover the realm of possibilities;
- the scenarios of Énergir, Green Mountain Power and Vermont Gas (collectively, “the **scenarios**”) as they have been scaled for Quebec and Vermont since the two jurisdictions have their own policies and regulations and they have each made political commitments to fight climate change;

- the trends shaping these scenarios and their expected or potential impact on energy markets in general and the Corporations in particular, as well as the transition risks associated with each of these scenarios for the Corporations’ business models;
- the analysis of the scenarios on the Corporations’ strategies with respect to the resilience of their respective business models;
- the effectiveness of the Corporations’ risk management strategies, particularly in mitigating climate change risks;
- Énergir’s Vision 2030-2050;
- Énergir’s climate targets and indicators directly related to GHG emissions from its operations, as well as some of those from its entire value chain, both upstream and downstream at its clients’ sites;
- Green Mountain Power’s climate plan; “Path to 100%”;
- Vermont Gas’ climate plan; “Path to Net Zero”;
- Green Mountain Power and Vermont Gas’ climate metrics and targets that are linked to their respective customers’ GHG emissions;
- expected future financial and operating performance, financial strength and flexibility, opportunities for growth and expansion, strategic planning, and the execution of the Corporations’ strategic plans.

Such forward-looking statements reflect the current opinions of Management and are based on information currently available to Management.

Forward-looking statements involve known and unknown risks and uncertainties and other factors outside the control of Management, including but not limited to the general nature of the aforementioned, terms of decisions rendered by regulatory agencies; uncertainty that approvals will be obtained by the Corporations from regulatory agencies and interested parties to carry out all of their activities and the socio-economic risks associated with such activities; the competitiveness of natural gas in relation to other energy sources in a context of worldwide fluctuations in petroleum product prices; climate change and its impact on the Corporations’ business activities, whether due to acute or chronic physical events, political, regulatory, technological, market, or legal changes; uncertainty related to the implementation of Quebec’s 2030 Energy Policy, the city of Montreal’s climate plan and Vermont’s Renewable Energy Standard, as well as the government’s implementation of other measures, plans, laws or regulations with respect to the environment and the climate that are constantly evolving; the

reliability or costs of natural gas and electricity supply; the integrity of the natural gas and electricity transportation and distribution systems; the evolution and profitability of development projects; the ability to complete attractive acquisitions and the related financing and integration aspects; the ability to complete new development projects; the ability to secure future financing; general economic conditions; the impact of an epidemic or pandemic outbreak (such as COVID-19) or other public health crises; exchange rate and interest rate fluctuations; a potential U.S. or Canadian tax reform and other factors described in section G) RISK FACTORS RELATING TO ÉNERGIR INC. AND ÉNERGIR LLP of Énergir Inc.’s MD&A for the fiscal year ended September 30, 2021 and in subsequent quarterly Énergir Inc. MD&As that might address changes to these risks. Variations in these factors could cause the information provided in this Report to differ materially from actual results. Such variations could, for example, include unforeseen changes in the legislative and regulatory framework, failure to obtain certain authorizations, significant fluctuations in natural gas prices, supply difficulties or any other significant change related to one or more of the aforesaid factors.

Although the forward-looking statements contained in this Report are based on what Management believes to be reasonable assumptions, Management cannot assure investors that actual results will be consistent with these forward-looking statements. These forward-looking statements are made as of the date of this Report, and Management assumes no obligation to update or revise them to reflect new events or circumstances, except as required under applicable securities laws. These statements do not reflect the potential impact of any unusual item or any business combination or other transaction that may be announced or that may occur after the date hereof. All forward-looking statements in this Report are qualified by these cautionary statements. Readers are cautioned to not place undue reliance on these forward-looking statements.

Glossary

In this climate resiliency report:

° C means Degrees Celsius.

Board means the Board of Directors of Énergir inc., in its capacity as general partner of Énergir L.P.

Carbon neutrality or Net Zero emissions⁽¹⁾ means an activity which has a net zero GHG emissions result. A company can reach carbon neutrality first by avoiding and by reducing GHG emissions and, second, by offsetting GHG emissions that could not be avoided or reduced through sequestration or compensation (e.g., planting trees); thereby, producing negative emissions or by receiving credits for emission reductions or negative emissions generated by third parties. A carbon neutral company can emit residual GHGs.

Carbon pricing means an economic tool which serves to internalize the costs of damages caused by GHG emissions into the market price of a product in order to direct consumers and society towards lower carbon choices. The simplest expression of carbon pricing is the carbon tax. CATS is also a form of carbon pricing.

CATS means the cap-and-trade system for greenhouse gas emission allowances established by the Regulation respecting the cap-and-trade system for greenhouse gas emission allowances (Quebec).

CIRAIG means the Interuniversity Research Centre for the Life Cycle of Products, Processes and Services.

CO₂ means carbon dioxide.

CO₂ eq. means carbon dioxide (CO₂) equivalent.

COVID-19 means the global coronavirus disease pandemic that broke out during fiscal years 2020 and 2021.

Delayed Action Scenario means the Bank of Canada's 2 degrees C or less Scenario by 2100 compared to preindustrial levels through delayed action.

Énergir means Énergir L.P.

ESG means environmental, social and governance.

GHG means greenhouse gases.

Green Mountain Power means Green Mountain Power Corporation.

Green Mountain Power Board means the Board of Directors of Green Mountain Power.

GWh means gigawatt hours.

IPCC means the Intergovernmental Panel on Climate Change, established in 1988 by the World Meteorological Organization and the United Nations Environment Program, to provide periodic scientific assessments on climate change, its implications and potential future risks.

LNG means liquefied natural gas.

Management means the management of Énergir inc. in its capacity as general partner of Énergir L.P.

Mm³ means millions of cubic metres.

NATEM means the North American TIMES Energy Model.

NDC means nationally determined contributions pursuant to the Paris Agreement.

NDC Scenario means nationally determined contributions (NDC) scenario as more fully described in the GHG Emissions Scenarios section.

Net Zero Scenario means the net zero emission scenario by 2050 as published by the International Energy Agency in May 2021.

RCP means Representative Concentration Pathways.

REC means a renewable energy certificate certifying that one megawatt hour of electricity was generated from an eligible renewable energy source. RECs can be sold and traded independent of the underlying energy source, and their owner can claim that they purchased renewable energy.

RES means the mandatory Renewable Energy Standard for Vermont utilities set out by the renewable energy statutes of Vermont.

RNG means renewable natural gas.

Scope 1 means direct GHG emissions from fixed or mobile Énergir, Green Mountain Power or Vermont Gas facilities, as the case may be.

Scope 2 means indirect GHG emissions associated with the generation of electricity, heat or vapour imported for the operations of Énergir, Green Mountain Power or Vermont Gas, as the case may be.

Scope 3 means GHG emissions other than the Scope 2 emissions indirectly produced by the operations of Énergir, Green Mountain Power or Vermont Gas, as the case may be, but that are nonetheless linked to their total value chain.

Status Quo Scenario means the Bank of Canada's *Status Quo* Scenario.

Sustainable Development Scenario (SDS) means the International Energy Agency's below 2 degrees C Scenario compared to preindustrial temperatures.

TCFD means Task Force on Climate-related Financial Disclosures.

Under2 Coalition means a global community of multinational corporations and state and regional governments committed to climate change action.

UNFCCC means the United Nations Framework Convention on Climate Change.

Vermont Gas or VGS means Vermont Gas Systems, Inc.

Vermont Gas Board means the Board of Directors of Vermont Gas.

Vision 2030-2050 means Énergir's strategy, with respect to its natural gas distribution activities, on how it will adapt, from 2030 to 2050, to changing energy environments and impacts related to climate change.

1. The definition used is adapted from the definition provided in the following report: *Trajectoires de réduction d'émissions de GES du Québec – Horizons 2030 et 2050 (Mise à jour 2021)*. Dunsky (Page 6): https://www.dunsky.com/wp-content/uploads/2021/09/Rapport_Final_Trajectoires_QC_2021.pdf

About this Report

This Climate Resiliency Report follows the recommendations set by the TCFD. It covers the two entities that distribute natural gas, that is to say, Énergir for the distribution of natural gas in Quebec and Vermont Gas for the distribution of natural gas in Vermont. It also covers Green Mountain Power which distributes electricity in Vermont, the most material entity (besides Énergir) according to its size and type of activities in relation to climate change. This report therefore covers entities that represent more than 93% of the group's total assets. Énergir intends to gradually expand the scope of its report on climate resiliency to include other subsidiaries in the future.

The report covers these entities' fiscal year ended on September 30, 2021, i.e., the period from October 1, 2020 to September 30, 2021.

To learn more about Énergir's sustainable development performance according to various environmental, social and governance (ESG) indicators, please refer to its [Sustainability Performance Tracking Platform](#). As for Green Mountain Power and Vermont Gas' performance, please refer to GMP's [B Corp certification](#) documents and for Vermont Gas to its [2050 Vision website](#).

To learn more about Énergir, Green Mountain Power and Vermont Gas' operations, please refer to Énergir inc.'s 2021 MD&A (which must be read along with its 2021 financial statements) and 2021 annual information form, available online on SEDAR at www.sedar.com under Énergir inc.'s profile.

Key new features of this report

Scope of the report:

- Addition of Vermont Gas, the sole natural gas distributor in Vermont, to the scope of this report.

Strategy:

- Decision of Énergir, Green Mountain Power and Vermont Gas to be aligned with a trajectory consistent with achievement of Net Zero emissions by 2050 of the energy distributed to its customers;
- Addition of a Net Zero scenario that limits the temperature to 1.5°C compared to the pre-industrial era.

Risk Management:

- Refinement of the analysis process and climate risk management.

Governance:

- Application of executive compensation linked to the GHG reduction objectives.

Metrics and Targets:

- 2021 fiscal year performance updates to targets presented in Énergir's 2020 Climate Resiliency Report.



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President's Message



Éric Lachance
President and Chief Executive Officer

COVID-19 pandemic and the climate emergency, both crises remind us of how fragile our world is; both highlight the responsibility we have to each other. Some of the lessons learned from the fight against the pandemic could be useful in dealing with the climate emergency such as the decisive action taken by many countries and companies demonstratively adapting and individuals effectively embracing remote working. Humanity is resilient when it understands the importance of what is at stake.

» Énergir's commitment

This second climate resiliency report is a testament to a company that is serious, genuinely committed, and is using all the leverage at its disposal to contribute to the fight against climate change to the best of its ability. We are still aligned with our 2030-2050 Vision which we announced one year ago, and we have since refined the analysis of the contributions of the initiatives that are a part of this Vision. We recognize the growing global mobilization of the need for action. This report also reflects a certain humility in saying that we do not yet know precisely how we will be able to successfully achieve Net Zero emissions by 2050.

» Limiting global warming

Aside from the health crisis, 2021 has been an almost uninterrupted string of extraordinary weather events. Several countries have announced more ambitious commitments, starting with Canada, which has increased its target to reduce GHG emissions reductions by 40 to 45 % compared to 2005 by 2030 and passed a Net-Zero Emissions Accountability Act. In the United States, the Federal government has rejoined the Paris Agreement and submitted its NDCs. As of this report, the combined NDCs of all Paris Agreement signatory countries are not sufficient to limit the rise in temperatures to 1.5°C. The COP26 in Glasgow has helped to rally other countries which have set climate ambitions to limit warming to 2.4°C. Companies also have their part to play and many have announced new decarbonization targets (often Net Zero emissions by 2050). Climate action therefore seems to be gaining strength, while at the same time the IPCC has become more pessimistic about the ability to respond to the climate emergency.

In this report, the International Energy Agency's Net Zero scenario has been added to the range of climate scenarios used, a scenario that is compatible with a trajectory that limits temperature rise to 1.5°C. It is clear to us that alignment with such a trajectory will require additional decarbonization efforts by 2030, for both Quebec and Vermont. It will necessitate that countries and businesses be able to revise their ambitions to achieve this.

Last year, when we published our first report on climate resiliency report, Énergir considered that its revised business model was compatible with a trajectory to limit warming to 2°C. Recalibrating to a 1.5°C warming cap means going further, faster, in our efforts to reduce GHG emissions by 2030. The task is colossal.

Énergir, Green Mountain Power and Vermont Gas have the ambition to be proactive leaders in the fight against climate change. In this respect, we want to be consistent with a Net Zero emissions trajectory by 2050. Through the energy we distribute and our energy services, we will support our customers in their own transition with energy solutions tailored to their needs and oriented towards continuous decarbonization. Above all, we have the ambition to develop a business model that is resilient, resilient in terms of climate of course, but also financially and societally.

» Tangible progress

Énergir's Vision 2030-2050 for its gas distribution activities in Quebec which we announced in 2020, was an important questioning and revision of our business model that aims to decarbonize our natural gas network and focus on activities with high added value for the Quebec energy system, those for which we expect to have a sustainable competitive advantage. We are still aligned with the trajectory we have set, as we aim to reduce GHG emissions from the buildings we serve by 30% by 2030 and achieving Net zero emissions related to the energy distributed to our customers by 2050. We have already identified concrete measures that should make it possible to achieve most of the reductions needed to achieve this objective. The emission reductions in our Vision 2030-2050 are major and provide a solid basis for going even further.

Énergir's leadership has earned it a second place in Corporate Knights' *Best 50 Canadian Corporate Citizens* ranking this year, particularly for the strength of its investments in renewable energy. Énergir has also demonstrated the seriousness of its climate commitment with the addition of GHG performance indicators to its remuneration policy. For the first time, executive compensation was linked to the achievement of GHG emission reduction targets.

To ensure that this energy transition is just and inclusive, Énergir, the Fédération des travailleurs et travailleuses du Québec (FTQ) and Énergir's unionized employees have also set up a parity committee on a just transition, to examine the impacts of achieving our Vision 2030-2050 on Énergir workers.

The 2021 financial year was rich in achievements:

- We have entered into a dual-energy electricity-natural gas agreement with Hydro-Québec that should substantially reduce GHG emissions in the building sector. The agreement aims to replace heating systems that run solely on natural gas with dual-energy systems that reserve the use of natural gas during periods of extreme cold. This agreement, which is to our knowledge unique in the world, which is subject to the Régie de l'énergie's approval, could generate a reduction in GHG emissions of up to 500,000 tonnes of CO₂ by 2030.
- The RNG sector continued to develop with the conclusion of numerous RNG supply contracts (including the RNG supply contract at the new Warwick production site in the Centre-du-Québec region, which entered into operation and began delivery of RNG to Énergir). Several other sites are under construction or in planning. Énergir aims to deliver to its customers for consumption at least 10% of RNG by 2030.

- Énergir has confirmed its interest in green hydrogen with the adoption of a "roadmap" dedicated to this sector. The objective is to guide the examination of the many strategic and operational options regarding this molecule. In particular, we applied to the Régie de l'énergie for permission to invest in a project to assess the interchangeability of hydrogen with natural gas in our distribution network.
- We acquired 20% of our system gas through our initiative for the responsible procurement of natural gas.

» Vermont activities

Vermont Gas is a gas distributor whose operations mirror ours in Québec. Across the border, we find the same corporate philosophy, the same desire of the entire team to contribute to the solution. Renewable natural gas is also being developed there. Partnerships have been entered into with farmers to convert organic waste into renewable energy, as we have done in Quebec. During the year, the US Northeast's largest anaerobic "digester" went into operation in the town of Salisbury, Vermont. It is a collaboration between Vermont Gas, Vanguard Renewables, Middlebury College and the Goodrich Family Farm.

Green Mountain Power, electricity producer and distributor, has made substantial investments to strengthen the network's resilience to storms for customers. These investments have included distributed generation, energy storage infrastructure, undergrounding of power lines, and the implementation of rapid restoration systems. Green Mountain Power is now carbon free in its electricity supply portfolio, ahead of its 2025 target and Vermont's goals.

» Collaboration for decarbonization

Quebec and Vermont are in a unique position. Around the world, the bulk of the work to be done to meet GHG reduction targets consists in decarbonizing electricity generation. In Quebec and Vermont, electricity is already widely decarbonized. That's a tremendous asset. It also means that the solutions we need to find are ones that most of the world will start looking for in 10 or 15 years. The knowledge and experience base we can build on is therefore quite limited. On many issues, we need to break new ground in terms of decarbonization. This is both exciting and challenging.

This issue is both pressing and galvanizing. It brings together the employees of the Énergir group in Quebec and in Vermont, both to embrace the same conviction. I would like to highlight their involvement and thank them for it.



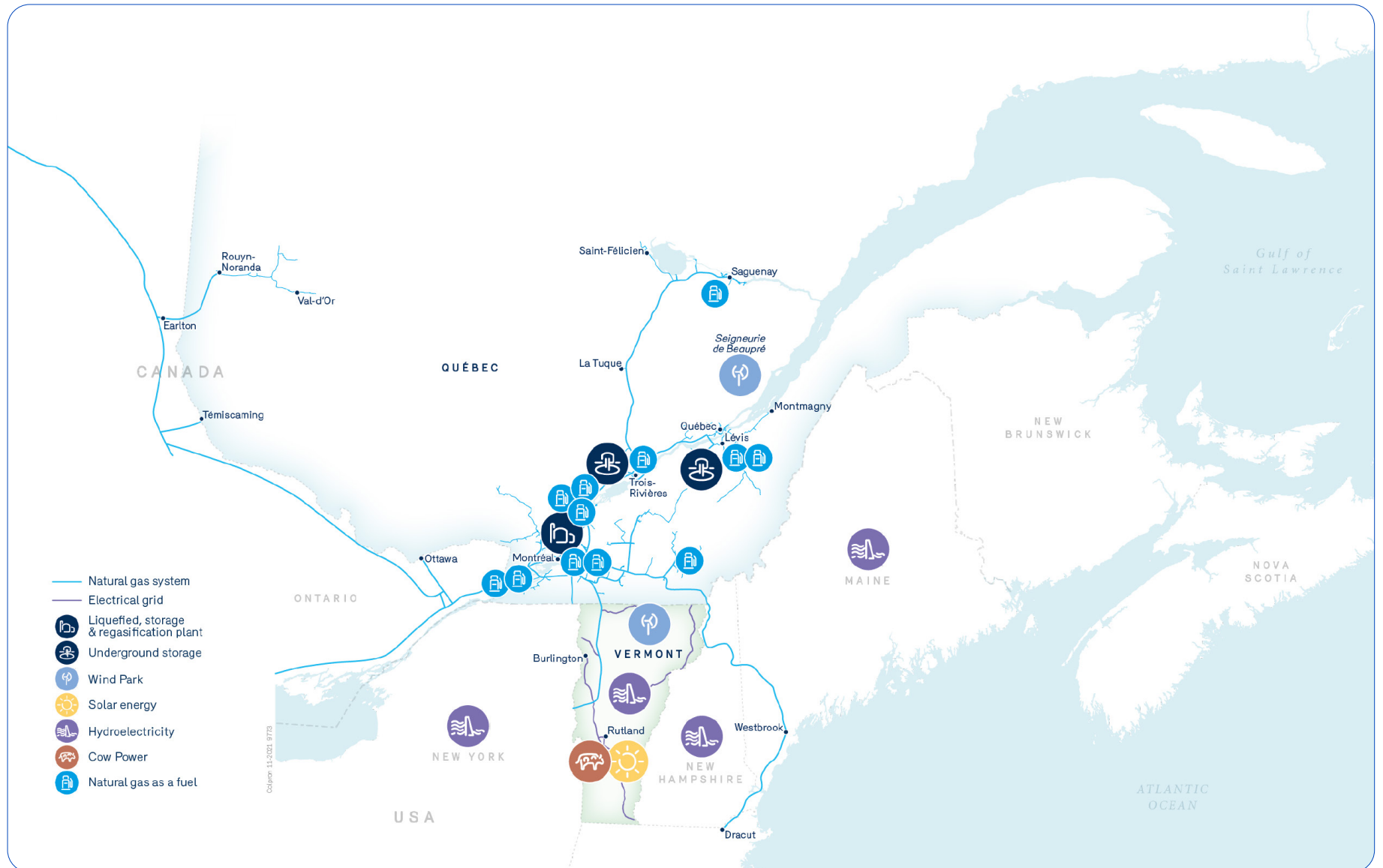
Éric Lachance
President and Chief Executive Officer

Presentation of the Corporate Group

With more than \$9 billion in assets, Énergir is a diversified energy business whose mission is to meet the energy needs of approximately 535,000 customers and the communities it serves in an increasingly sustainable way. Énergir is the largest natural gas distribution company in Quebec; through its joint ventures, it also generates electricity from wind power. And through its subsidiaries and other investments, Énergir is present in the United States, where it generates electricity from hydraulic, wind, and solar sources; it is also the largest electricity distributor and the sole natural gas distributor in the State of Vermont. Énergir values energy efficiency and invests its resources and continues its efforts in innovative energy projects such as renewable natural gas. Through its subsidiaries, it also provides a variety of energy services. Énergir strives to become the partner of choice for those seeking a better energy future.

In both Quebec for the distribution of natural gas and Vermont for the distribution of electricity, the distribution of energy is an activity that is regulated.

The Corporate Group's main operations





Natural gas distribution
in Quebec

energir

More than
211,000 customers
in Quebec

Over
345 municipalities

environ
11,000 km
underground network

» Natural Gas Distribution in Quebec

Through its 11,000-km network, Énergir distributes approximately 97% of the natural gas consumed in Quebec to some 211,000 customers in approximately 345 municipalities. Énergir has the transportation capacity to manage fluctuations in its customers' consumption. Énergir provides natural gas service to the residential, commercial and industrial markets.

In all of these markets, it also offers its customers energy efficiency programs to help them consume less and better. The following table illustrates the distribution of the volumes distributed by Énergir and the total revenue for its 2021 fiscal year.

Normalized Natural Gas Deliveries in Quebec and Revenues Generated

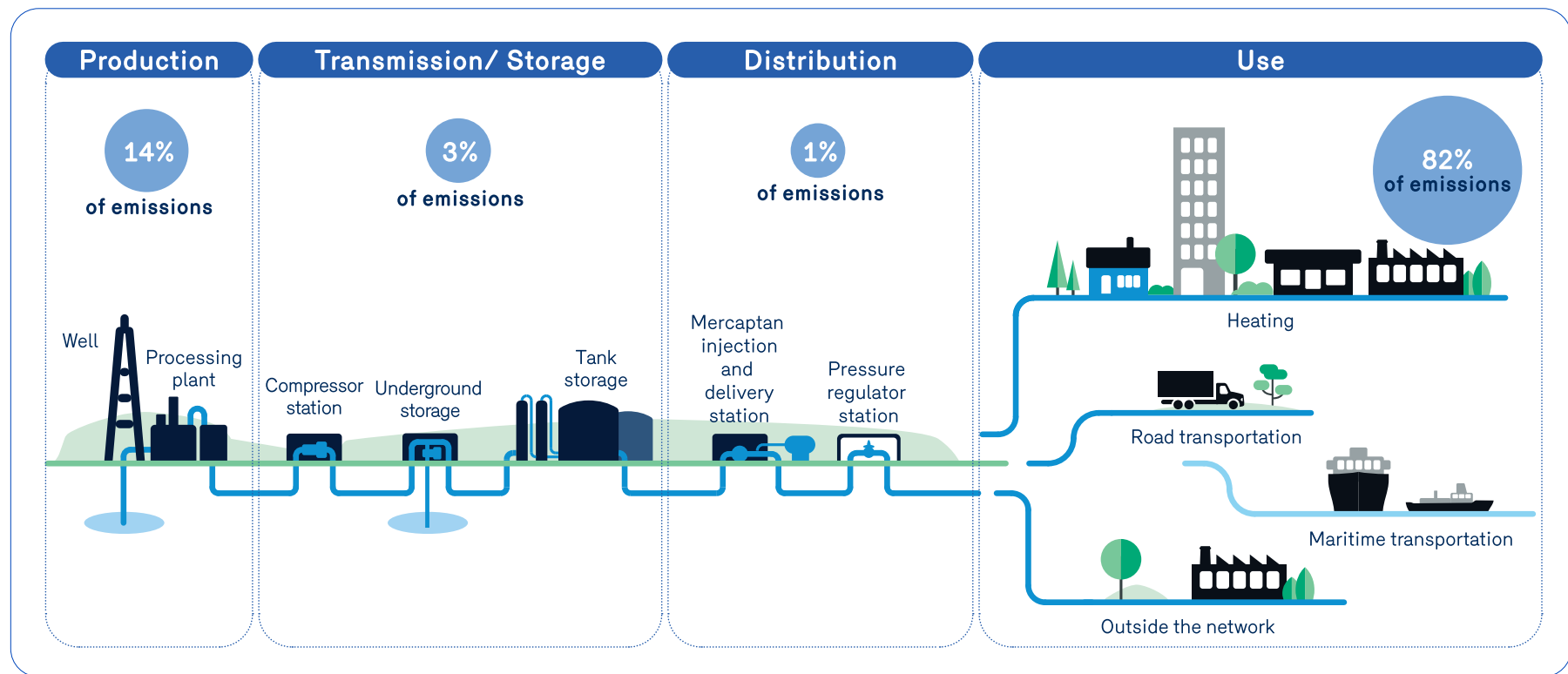
	Volumes Delivered (Mm ³)	% of gas delivered by market	Revenues (Millions \$)	% of revenues by market
Industrial	3,904.3	64.1	465.6	35.2
Commercial	1,571.1	25.8	569.6	43
Residential	618.0	10.1	289.1	21.8
Total	6,093.4	100.0	1,324.3	100.0

» Contribution to GHG emissions per component of the value chain⁽²⁾

Life cycle analysis confirms that the distribution phase, over which Énergir has full control, accounts for 1% of the combined life cycle emissions of natural gas. The phase related to the use of natural gas accounts for 82% of GHG emissions.

In Quebec, emissions related to the use of natural gas amount to about 12 million tonnes of CO₂ eq., or approximately 15% of Quebec's total GHG emissions⁽³⁾.

Contribution to GHG emissions per component of the value chain



2. CIRAIG (July 2020) *Environmental profile of natural gas distributed in Quebec*. Énergir commissioned the CIRAIG to create the environmental profile of natural gas distributed in Quebec based on a life-cycle approach.

3. Whitmore, J. and P.-O. Pineau, 2021. *State of Energy in Quebec 2021*, Chair of Energy Sector Management, HEC Montreal, prepared for Energy Transition Quebec, Montreal. https://energie.hec.ca/wp-content/uploads/2021/02/EEQ2021_web.pdf. (page 45).



Distribution of Electricity in Vermont

Over
270,000 customers
in Vermont

16,600 km
of overhead
distribution lines

2,500 km
of underground
distribution lines



» Distribution of Electricity in Vermont

Green Mountain Power is the largest electricity distributor in Vermont, serving over 77% of the state and more than 270,000 customers. Green Mountain Power's core business includes the production, purchase, and sale of electricity in Vermont and, to a much lesser degree, electricity transportation in New Hampshire and electricity production in New York, Maine, New Hampshire and Vermont. Green Mountain Power's network comprises over 2,700 km of overhead transmission

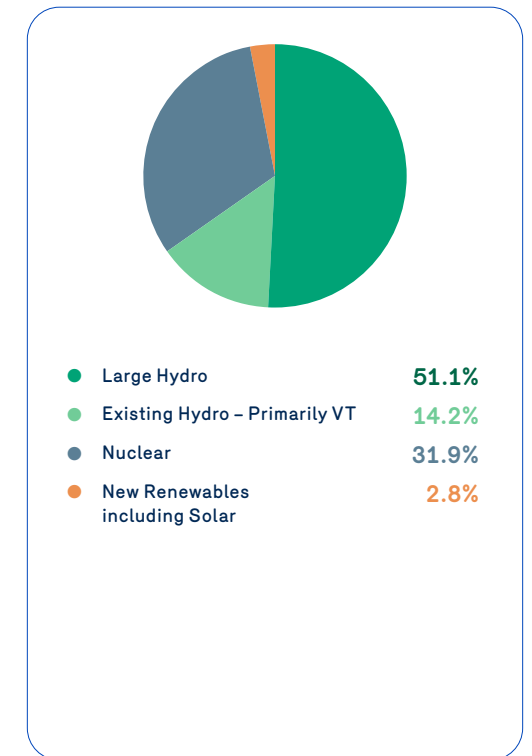
lines, 16,600 km of overhead distribution lines and 2,500 km of underground distribution lines, located mainly in Vermont but also extending to the States of New Hampshire and New York.

Green Mountain Power's supply portfolio is now 100% carbon free, 68% renewable and comprises several sources of power generation: primarily hydroelectricity, and to a lesser extent, nuclear, wind and solar power along with other renewable sources.

Green Mountain Power has 42 small hydroelectric facilities across New England. It also owns Kingdom Community's 63 MW wind farm in Lowell, Vermont.

The following chart illustrates the breakdown of deliveries in terms of GWh and revenues during fiscal year 2021.

Green Mountain Power's Energy Supply Sources⁽⁴⁾



Electricity Deliveries and Revenue Generated

	Deliveries (in GWh)	% of GWh Delivered by Customers Class	Revenue (Millions of US\$)	% of Revenue by Customer Class
Residential	1,572.7	38.4	304.1	45.9
Small and Medium Consumption Commercial and Industrial Customers	1,409.2	34.4	234.6	35.4
High Consumption Commercial and Industrial Customers	1,111.4	27.1	121.5	18.3
Other Customers	3.8	0.1	2.6	0.4
Total	4,097.1	100.0	662.8	100.0

4. The data in this graph reflect the treatment of supply sources from which RECs and other carbon free-generation attributes were retained or retired. GMP operates under a revenue decoupler adjustor.



Distribution of Natural Gas in Vermont



Over
55,000 customers
in Vermont

Transportation and
distribution network of
over
1,500 km

» Distribution of Natural Gas in Vermont

Vermont Gas owns and operates a natural gas transportation and distribution network of over 1,500 km in Vermont, United States. Vermont Gas is the sole gas distributor in Vermont, serving over 55,000 mainly residential and commercial customers. The following table illustrates the distribution of customers according to the volumes distributed by Vermont Gas and the total revenues for its 2021 fiscal year.

Normalized Natural Gas Deliveries in Vermont and Revenues Generated

















	Volumes Delivered (Mm ³)	% of gas delivered by market	Revenues (Millions \$)	% of revenues by market
Résidentiel	112	29	55	49
Commercial	271	71	56	51
Total	382	100	111	100

Climate Change Risks and Opportunities

In fiscal year 2020, Énergir initiated, for its natural gas distribution activities in Quebec, an exercise to consider risks and opportunities related to climate change structured according to the recommendations of the TCFD. In fiscal year 2021, Énergir refined it. A common methodology for Énergir, Green Mountain Power and Vermont Gas was used (for more information, see the *Risk Management* section).

The tables on the following pages therefore present these risks and opportunities for Énergir, Green Mountain Power and Vermont Gas, specify how they would manifest themselves and what the potential financial repercussions would be. Considering that the risk manifestations mainly have economic repercussions affecting favourably or unfavourably the economic position of Énergir, Green Mountain Power or Vermont Gas, the table also presents the assessment of the impact of these risks on their economic position and customers' rates. In order to assess the potential financial impact, an analysis was carried out based on one or more of these measures: the impact on net profit, the rate of return and the impact on rates.

The perspective chosen is the 2030 horizon knowing that some of these risks could have different repercussions on a longer-term horizon.

Risks		Sensitivity	Potential Financial Impact	Opportunities
Political and legal 	Increase in the price of carbon.		<ul style="list-style-type: none"> Increase in service costs (implementation of specific measures to reduce the carbon footprint) reflected in customers' rates; Decrease in demand for fossil natural gas, resulting in particular from an increase in compliance costs (e.g., CATS). 	<ul style="list-style-type: none"> Increased demand for renewable natural gas and energy services; Increased demand for responsible procurement of natural gas⁽⁵⁾; Policies, regulations and financing conducive to RNG and hydrogen development; Injection of green hydrogen in the gas network; New clean technologies to decarbonize the energy delivered; Diversification of renewable energy sources; Energy efficiency in offices, electrification of certain vehicle fleets, source reduction, re-use, recycle and repurpose resources used; Achievement of our 100% renewable supply targets (eg. Green Mountain Power target 2030); Reduction of emissions with a renewable electricity supply.
	More aggressive decarbonization goals.			
	More restrictive regulation of existing products and services.			
	Inconsistency between the regulatory framework and our business objectives.			
	Exposure to GHG emissions litigation or non-compliance with GHG emission reduction regulations.			
Technological 	Lesser efficiency of natural gas technologies compared to alternative energy solutions.		<ul style="list-style-type: none"> Decrease in demand for fossil natural gas (resulting from the use of comparatively more efficient equipment, electrotechnology, storage); Stranded investment costs in technologies that do not favour the achievement of our objectives. 	<ul style="list-style-type: none"> Development of complementary energy services (energy expertise, storage assets, fuel, green hydrogen); Increase in the offer of energy efficiency programs; New clean technologies to decarbonize the energy delivered.
	Technological advances that facilitate decarbonization for customers.			
	Unsuccessful investments in new technology.			
Market-related 	Change in customer behaviour that favours energy sources with lower GHG emissions.		<ul style="list-style-type: none"> Decrease in demand for fossil natural gas; Lower share on certain markets that could have an impact on the distribution of revenues from Énergir. 	<ul style="list-style-type: none"> Dual-energy offer for Quebec customers; Diversification of renewable energy sources including solar energy from sites of varied sizes (from residential rooftops to larger sites); Sharing program for peak electricity periods with customers.
	Increase in supply costs.			
Reputational 	Change in customer behaviour towards energy sources with lower GHG emissions.		<ul style="list-style-type: none"> Reduced or more difficult access to financing (resulting from the consideration of environmental (including GHG emissions), social and societal criteria in the financing of projects or businesses); Decrease in demand for fossil natural gas. 	<ul style="list-style-type: none"> Implement decarbonization strategies.
	Increased stakeholder concern about GHG emissions.			

5. <https://www.energir.com/en/about/media/news/developpement-et-approvisionnement-energetique-responsables-et-transparents/>



» Physical risks

The physical risks associated with climate change have a different influence depending on the nature of the activities. Indeed, electricity production and distribution activities, which rely on assets that are mostly above ground, are more sensitive than gas distribution activity to the variability and intensity of storms, forest fires, variability in precipitation thus affecting maintenance or production costs. Green Mountain Power’s wind production is more widely influenced by wind strength and its solar production is dependent on intensity and periods of sunshine.

Climate change can also have an impact on consumption profiles with greater demand for electricity in summer depending on the demand for air conditioning for example.

The gas network which is mostly underground can be more significantly impacted by landslides or floods and consumption can also be influenced by climate change; indeed, the decrease in cold periods can reduce the volumes distributed. Énergir remains proactive in ensuring the resilience of its networks.

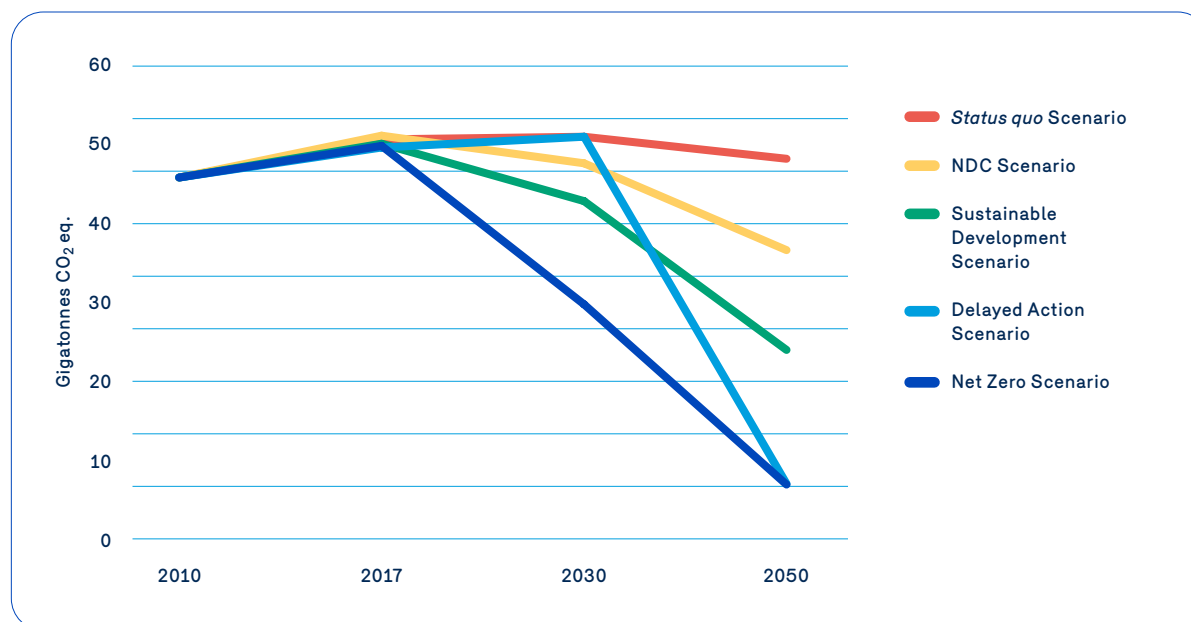
● Limited Impact ● Moderate Impact ● Potentially Significant Impact

Risks	Sensitivity	Potential Financial Impact	Opportunities
Acute 	●	<ul style="list-style-type: none"> Lower revenues relating to the decrease in the natural gas distribution capacity (resulting, for example, from disruptions in the supply chain); Increased operating costs (maintenance and repair, including labour, equipment and potential environmental damage, insurance premiums and costs related to the negative impacts on the workforce); 	<ul style="list-style-type: none"> Investment in network resilience projects; Scenario development and modelling to assess the long-term costs of climate risks.
Chronic 	●	<ul style="list-style-type: none"> Increase in required investments (more resilient construction or more frequent repairs); Reduced insurability of assets located in “high risk” areas; Changes in demand due to milder winters and hotter summers. 	

» GHG Emission Scenarios

Énergir, Vermont Gas and Green Mountain Power recognize that they have an important role in the transition to a low-carbon economy and seek to better take into account the scope of potential impacts by assessing various future GHG emissions scenarios. In line with TCFD recommendations, Énergir, Vermont Gas and Green Mountain Power relied on five quantitative scenarios from independent agencies that describe several possible global GHG emission pathways in the 2030-2050 timeframe, and then used recognized methods to scale them for Quebec (Canada) and for the state of Vermont (USA). The use of these scenarios allows Énergir, Green Mountain Power and Vermont Gas to analyse the impact of climate change on the resilience of their business model over different time horizons. The scenarios chosen by Energir are not GHG emissions forecasts. They represent a range of possible futures with respect to GHG emissions. While other scenarios are available or emerging, the scenarios used in this report have the advantage of proposing a range of possible futures that are fundamentally distinct from each other. Energir, Green Mountain Power and Vermont Gas will remain vigilant about monitoring climate scenarios, their potential impacts and their use in GHG emission pathways.

Global GHG emissions according to the scenarios used



Status quo Scenario⁽⁶⁾**1**

This *Status Quo* Scenario is based on IPCC's 7.0⁽⁷⁾ scenario. This Scenario represents a future where few actions are taken to limit global warming. The physical risks for this scenario are therefore greater in the second half of this century than for the other scenarios described below, as no additional measures are taken to reduce GHG emissions. It should be noted that this scenario has been revised to take into account the application over time of current regulations, particularly carbon pricing which is expected to rise. The trajectory of this scenario therefore reduces GHG emissions between 2030 and 2050, unlike that presented for the same scenario in Énergir's 2020 climate resiliency report.

NDC Scenario**2**

The NDCs embody the commitments of each Paris Agreement signatory country to reduce their national GHG emissions and adapt to the effects of climate change. Each country that is a signatory to this agreement must establish, communicate and update, on a five-year basis, the successive determined contributions it plans to make at the national level. Canada is a signatory of the Paris Agreement and submitted an NDC plan that came into effect in 2016. The NDC plan was subsequently revised in 2017, and in 2021. The United States submitted an NDC plan in April 2021. This scenario is therefore evolving in line with the new NDCs announced by various countries over time. To date, commitments to GHG emission reductions by 2050 through NDCs are not sufficient to contain warming to 2°C or less compared to the pre-industrial era. However, it is closer to the 2°C scenarios compared to when Énergir's 2020 climate resiliency report was published, reflecting global commitments global action. Following the 26th annual United Nations Climate Change Conference (also known as COP26) held in November 2021, the NDC trajectory presented in this report could also evolve further in the coming months as Paris Agreement signatory countries are invited to revise their NDC.

Sustainable Development Scenario**3**

The Sustainable Development Scenario represents a stabilization of energy demand despite economic and population growth. This stabilization is supported by significant and internationally coordinated efforts to boost energy efficiency and shift away from fossil fuels for energy production. The substitution of fossil fuels and the sustained decarbonization efforts in this scenario are consistent with a world where global warming is limited to 2 degrees or less compared to preindustrial levels.

Delayed Action Scenario**4**

The Delayed Action Scenario represents a future where countries fail to meet their NDC commitments between 2020 and 2030, and then take more stringent mitigation measures to reduce the level of GHG emissions and limit warming to 2 degrees or less compared to preindustrial levels. Measures are delayed until 2030 and require significant catch-up between 2030 and 2050. As a result, GHG reductions after 2030 and the associated transition risks are much greater in this scenario.

Net Zero Scenario**5**

The Net Zero Scenario is a new scenario included in this report and was published in May 2021 by the International Energy Agency. This scenario is based on the IPCC SR 1.5 P2 scenario⁽⁸⁾. This scenario represents a transformation of the global energy system to achieve a global net zero emissions objective by 2050 while limiting global temperature rise to 1.5 degrees C or less compared to the pre-industrial era. This scenario also assumes continued economic growth.

In this scenario, declining final energy demand, the rapid deployment of more energy-efficient technologies, electrification and the rapid growth of renewables play a central role in reducing emissions across all sectors. Emerging fuels and technologies, such as hydrogen and hydrogen-based fuels, bioenergy and carbon capture and storage, also play a major role, especially in sectors where emissions are often the most difficult to abate. This scenario excludes any new oil or gas fields beyond the projects already underway today.

The current and announced policies so far do not allow the realization of the Net Zero Scenario.

6. Bank of Canada – Scenario Analysis and the Economic and Financial Risks from Climate Change: https://www.bankofcanada.ca/2020/05/staff-discussion-paper-2020-3/?page_moved=1.

7. Among other things, the IPCC approves climate change impact scenarios that analyze the physical impacts of different atmospheric GHG concentration scenarios by 2300, called Representative Concentration Pathways (RCP). Each RCP scenario therefore provides a likely variation of the climate that will result from the GHG emission level chosen as a working hypothesis. The RCP8.5 scenario is the most pessimistic, that is to say, it is the scenario where the Earth and the atmosphere warm the most.

8. The SR1.5 P2 scenario was published in 2019 in the *IPCC Special Report on the consequences of global warming of 1.5°C above pre-industrial levels and the associated trajectories of global greenhouse gas emissions, in the context of strengthening the global climate change response, sustainable development and the fight against poverty*. This scenario focuses on sustainable economic activity, healthy and low-carbon consumption patterns propelled by technological innovation in the energy sector with limited societal acceptability for bioenergy and carbon capture and storage. This scenario charts a global emissions reduction trajectory of 47% in 2030 and 95% in 2050 compared to 2010 emissions.

Strategy

Énergir, Green Mountain and Vermont Gas strive to be proactive leaders in the fight against climate change. Their ambition is therefore to:

- be consistent with a Net Zero trajectory related to the energy they distribute by 2050;
- to be leaders, thanks to the energies they distribute and, as the case may be, that they produce by supporting their customers and society with innovative solutions that decarbonize their activities.

Énergir, Green Mountain Power and Vermont Gas are also aware that they must take into consideration exogenous constraints over which they have little or no control, including:

- changes in the regulation and price of carbon;
- technological developments related to the production of renewable energies;
- decarbonization plans of their industrial clients (desired technologies, timeframe for implementation, decarbonation targets, etc.);
- social acceptance of certain decarbonization technologies such as carbon capture and sequestration.

Activities in Quebec

 Natural gas distribution
in Quebec

energir

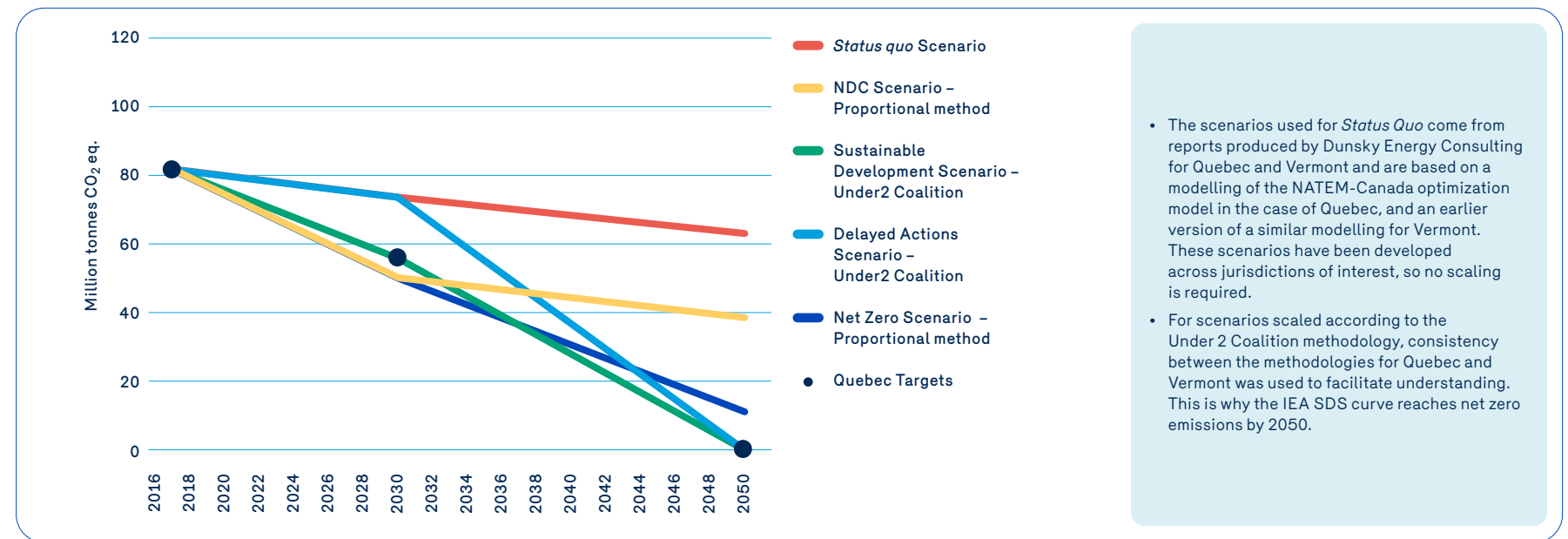
» Quebec-wide scenarios

To ensure that its Vision 2030-2050 enables its resiliency by 2050, Énergir used the scenarios presented in the *GHG Emission Scenarios* section. In order to interpret the meaning of the global scenarios presented above, they have been scaled to the jurisdiction of Quebec. Quebec has its own policies and regulations and has made political commitments to combat climate change (see Appendix 1) that influence possible future trajectories for GHG emissions.

Énergir has used the [Under2 Coalition](#)⁽⁹⁾ methodology where applicable and, in other cases, the proportional method to adapt the scenarios to the Quebec context.⁽¹⁰⁾ Once this scale is carried out, the GHG reduction trajectories in these scenarios become more significant for Québec. The Under2 Coalition methodology is relevant for Quebec, which is a partner of Under2 Coalition (see Appendix 1). The proportional methodology is also relevant for Quebec when the Under2 Coalition methodology cannot be applied. Indeed, the proportional methodology consists in transposing the percentage of emission reductions at the global level to Quebec.⁽¹¹⁾

The following graph therefore presents the possible trajectories of GHG emissions according to the scenarios used scaled up for Quebec. It also presents Quebec's targets in 2030 and 2050.

Potential annual GHG emission pathways according to the retained scenarios as they apply to Québec



- The scenarios used for *Status Quo* come from reports produced by Dunskey Energy Consulting for Quebec and Vermont and are based on a modelling of the NATEM-Canada optimization model in the case of Quebec, and an earlier version of a similar modelling for Vermont. These scenarios have been developed across jurisdictions of interest, so no scaling is required.
- For scenarios scaled according to the Under 2 Coalition methodology, consistency between the methodologies for Quebec and Vermont was used to facilitate understanding. This is why the IEA SDS curve reaches net zero emissions by 2050.

9. The Under2 Coalition became the Net Zero Coalition on October 19, 2021. As of December 16, 2021, Quebec had not revised its targets based on the Memorandum of Understanding revised by this coalition.
 10. This methodology is based on achieving the target of limiting global warming to 2 degrees C or less by 2100 from pre-industrial levels and reducing GHG emissions by one percentage relative to the 1990 levels in each jurisdiction by 2050. This methodology is therefore not applicable to scenarios that do not limit global warming to 2 degrees C or less by 2100 from pre-industrial levels.
 11. For example, under this methodology, 20% of global emission reductions scaled up at the Quebec and Vermont levels represents a 20% reduction in emissions in Quebec, and 20% in Vermont.

Thus, if Quebec were to align itself with a GHG emissions trajectory that limits the rise in global temperatures to 1.5°C, it would have to reduce GHG emissions by at least an additional 5 million tonnes CO₂ eq. by 2030. In addition, it should be noted that some scenarios such as the Net Zero Scenario do not succeed in reducing all GHG emissions in 2050. This scenario indicates in its assumptions that there would remain a small share of fossil natural gas for certain uses that are more difficult to decarbonize in Quebec's energy mix in 2050. It should be noted, however, that this does not prevent the achievement of carbon neutrality for Quebec, which can consistently be on such a trajectory, first by reducing energy consumption and then by integrating more renewable energies and finally by offsetting residual emissions.

According to updated scenarios, all the scenarios predict a reduction in GHG emissions and therefore a reduction in the use of more emitting energy sources over the 2030 and 2050 horizons. This necessarily leads to a transformation of the markets Énergir serves. However, the speed and intensity of emission reductions vary from scenario to scenario and Énergir will need to remain vigilant regarding the evolution of these scenarios in how they present future GHG emission pathways. For more details on the impacts Énergir anticipates that these scenarios could imply, please refer to [Appendix 3](#).

As mentioned in the *GHG Emissions Scenarios* section, the scenarios selected by Énergir are not projections but are used to analyze the risks and opportunities related to climate change from different angles.

» Énergir's Vision 2030-2050



To address climate risks and opportunities associated with climate change, Énergir had announced in the Fall of 2020 its Vision 2030-2050 which aims to enable it to achieve Net Zero emissions related to the energy distributed to its customers by 2050.

As described in the *Presentation of the Corporate Group* section, the phase related to the use of natural gas represents 82% of GHG emissions in the natural gas value chain. In addition, solutions to reduce GHG emissions in the building sector are immediately available. In this context, in order to contribute to achieving Net zero emissions related to the energy distributed to its customers by 2050, Énergir's vision 2030-2050 primarily targets by 2030 the GHG emissions of its customers (Scope 3) that come from the use (for the heating of air and water) of natural gas in the building sector (residential, commercial and institutional markets).

The initiatives that are a part of Vision 2030-2050 are presented below. Énergir recognizes that additional initiatives will be required to achieve its net zero target and be part of a trajectory limiting temperature rise to 1.5°C (for more details, see the *Resilience of Énergir's business model* section).

Concurrently, in fiscal year 2021, Énergir refined its quantification of the uncertainties associated with decarbonization. To account for these uncertainties, it uses a range of possible GHG emission reductions in this sector⁽¹²⁾. The use of such a range makes it possible to consider the uncertainties surrounding decarbonization, particularly the development of first, second and third generation RNG production technologies. The low end of the range is based on established technologies and reflects Quebec's current technical and economic potential for RNG production in 2021⁽¹³⁾. The high end of the range is based on the development of the technologies mentioned above.

The priority given to the decarbonization of the building sector by 2030 is based on the fact that the technologies to reduce GHG emissions from this sector are technically and commercially viable. As a result, uncertainty about the decarbonization of this sector is lower. With the initiatives presented below, Énergir envisages that the building sector could become carbon neutral between 2030 and 2050.

During fiscal year 2021, Énergir confirmed its interest in green hydrogen with the adoption of a "roadmap" dedicated to this sector. The objective is to guide the examination of the many strategic and operational options for hydrogen. In November 2021, the Régie de l'énergie has authorized Énergir to invest in a project to assess the interchangeability of hydrogen with natural gas in its distribution network. Nevertheless, at this stage, Énergir has not included hydrogen injection or carbon capture in its projections, due to the great uncertainty surrounding the commercialization of these solutions. However, Énergir aims to gradually integrate these solutions into its projections in the coming years, while uncertainty about their technical and economic potential will decrease over time.

These ranges of reductions, according to the solutions identified in its Vision 2030-2050, are illustrated in the following table:

Sector	Projected GHG emission reductions from natural gas use compared to 2020
Building in 2030 <ul style="list-style-type: none"> • residential • commercial • institutional 	31 to 38%
All sectors in 2050	51 to 80%

12. Instead of the single target presented in Énergir's 2020 Climate Resiliency Report, the target of a 70% reduction in GHG emissions from its entire customer base by 2050.

13. https://www.energir.com/~media/Files/Corporatif/Publications/181120_Potentiel%20GNR_Rapport%20synth%C3%A8se_ANG.pdf?la=en



Projection of emissions in buildings in 2030

(in Mt. of CO₂ eq. and change % of 2020 level)

GHG emissions observed 2020
(Mt. CO₂ eq.)

4.3

	Low range		High range	
	Known technologies (Low-medium uncertainty)		Technological breakthroughs (Medium-high uncertainty)	
	Projected reductions	%	Projected reductions	%
Decarbonization strategies				
Comprehensive Energy Efficiency Plan	-0.4	-10%	-0.5	-11%
Complementarity with electricity	-0.5	-11%	-0.6	-13%
Renewable natural gas	-0.7	-17%	-0.9	-22%
Subtotal decarbonization strategies	-1.7	-39%	-2.0	-46%
Impact of the external context by 2030 (Economic growth, slowdown in development, energy efficiency outside Énergir, loss of customers and global warming, etc.)				
	+0.3	+8%	+0.3	+8%
Projected GHGs in 2030 GHG reductions compared to 2020	3.0	-31%	2.7	-38%



Projection of emissions in all sectors in 2050

(in Mt. of CO₂ eq. and change % of 2020 level)

GHG emissions observed 2020
(Mt. CO₂ eq.)

11.2

	Low range		High range	
	Known technologies (Low-medium uncertainty)		Technological breakthroughs (Medium-high uncertainty)	
	Projected reductions	%	Projected reductions	%
Decarbonization strategies				
Comprehensive Energy Efficiency Plan	-3.4	-31%	-3.7	-33%
Complementarity with electricity	-0.7	-6%	-1.0	-9%
Renewable natural gas	-2.6	-23%	-5.2	-46%
Subtotal decarbonization strategies	-6.7	-60%	-10.0	-88%
Impact of the external context by 2050 (Economic growth, slowdown in development, energy efficiency outside Énergir, loss of customers and global warming, etc.)				
	+1.0	+9%	+1.0	+9%
Projected GHGs in 2050 GHG reductions compared to 2020	5.5	-51%	2.3	-80%

Énergir will continue its efforts to identify other solutions to achieve Net zero emissions related to the energy it distributes for all its customers by 2050.

» Status on major decarbonization initiatives

1 Accelerating the growth of long-term energy efficiency efforts

It is generally recognized that energy efficiency reduces GHG emissions at a low cost to society⁽¹⁴⁾. Énergir has set the target of enabling its customers to reduce their emissions by one million tonnes CO₂ eq. between 2020 and 2030, through its various energy efficiency programs⁽¹⁵⁾. By 2030, this target is expected to achieve, what Énergir has achieved over the past 20 years. Since 2001, Énergir's energy efficiency programs have made it possible to finance more than 130,000 energy efficiency projects, which have led to more than 1.3 million tonnes CO₂ eq.

Énergir aims to maintain this accelerated pace between 2030 and 2050, despite the fact that achieving these reductions could become progressively more difficult. Indeed, energy efficiency is a key initiative in terms of Énergir's resilience, because its benefits are multiple:

» **For customers**, energy efficiency generates savings on their energy bills that could allow them to invest in more expensive decarbonization solutions (such as RNG), thus contributing to the reduction of GHG emissions.

- » **For society**, energy efficiency allows the reduction of GHG emissions at a lower cost.
- » **For Énergir**, energy efficiency helps maintain customer loyalty and reduce customer attrition, while offering decarbonization solutions.

To this end, Énergir is launching several strategies to enhance its current offering while promoting new and increasingly efficient technologies and digital intelligence. To do so, it is developing marketing strategies and communication campaigns to maximize customer participation in its energy efficiency programs and considering the development of new energy services.

In the building sector, Énergir's efficiency efforts would contribute to reducing emissions in the range of 0.4 and 0.5 million tonnes CO₂ eq. by 2030. These efforts, combined by those carried out by third-parties are expected to contribute to a reduction of 0.9 million tonnes CO₂ eq. by 2030, which is in line with the government of Quebec's targets.

Climate metrics and targets

2030 target

Reduction of 1 million tonnes CO₂ eq. for all markets served between 2020 and 2030 resulting from Énergir's energy efficiency efforts.

2021 performance

Savings of 42,829,020 M³ and reduction of 82,275 tonnes CO₂ eq. 104% of the 2020-2021 annual target. Énergir had an exceptional year in terms of energy efficiency projects in fiscal 2021 with the achievement of 104% of the 2021 target for energy efficiency.

14. <https://www.scorecard.energycanada.org/wp-content/uploads/2019/11/Energy-Efficiency-At-A-Glance-Efficiency-Canada.pdf>.

15. This target covers the period from October 1, 2020 to September 30, 2030 and covers all of the markets served by Énergir and takes into account the contribution of its Energy Efficiency Programs.

2



Rapidly increase its customers' RNG consumption to at least 10% by 2030 based on new marketing approaches

With the expected increase in the price of carbon in the medium and long term, the implementation of a decarbonization pathway for customers, through energy efficiency and RNG, would allow them to significantly reduce their carbon footprint related to the use of natural gas, while maintaining the competitiveness⁽¹⁶⁾ of Énergir's solutions.

Increasing the injection of RNG for consumption in Quebec is a key initiative in terms of Énergir's resilience, as its benefits are multiple:

- » **For customers**, RNG is a form of renewable energy that enhances the low-carbon energy supply and allows them to reduce their GHG emissions without having to invest in new equipment.
- » **For society**, RNG enables decarbonization at a competitive societal cost⁽¹⁶⁾ for several market segments, compared to other renewable alternatives. In addition, the RNG sector allows the recovery of residual organic residues, to capture and reduce GHG emissions from several sectors (such as the municipal and agricultural sectors) in a circular economy perspective. RNG is also a new sector of locally produced renewable energy that promotes regional economic development.

- » **For Énergir**, RNG makes it possible to replace fossil natural gas with renewable energy, thus reducing the attrition rate of its customers and maintaining the relevance of its distribution network.

Énergir aims to deliver increasing volumes of RNG available to its' customers. By 2030, it aims for a quantity of RNG representing at least 10% of the annual volumes it distributes, which would equate to about 567 Mm³ and an emissions reduction of 1 million tonnes CO₂ eq.

In the longer term, the technical and economic potential of producing RNG in Québec could be even greater with the arrival of new technologies, such as methanation⁽¹⁷⁾. The quantities of RNG delivered to customers could grow significantly between 2030 and 2050 to between approximately 1,400 and 2,700 Mm³ annually according to the ranges presented above.

However, there are several obstacles to this increase in the delivery of RNG, in particular, the availability of organic matter to produce RNG, the time to develop and put into operation RNG production sites and the evolution of the applicable legislative and regulatory framework.

Énergir expects that by 2030, in the building sector, the volumes of RNG consumed could result in a reduction between 0.7 and 0.8 million tonnes CO₂ eq.

Climate metrics and targets

2030 target

Reduction of 1 million tonnes CO₂ eq. between 2020 and 2030⁽¹⁸⁾, including 0.8 million tons in the building sector.

2021 performance

More than 5 Mm³ of RNG consumed by customers (representing 0.13% of the total distributed), and a reduction of 9,659 tonnes of CO₂ eq. in the building sector.

These results are below the expected volumes of RNG used by customers, but several new RNG projects will be added to Énergir's supply for deliveries in the coming months and years. Indeed, new RNG supply contracts have been approved by the Régie de l'Énergie. Thus, on September 30, 2021, Énergir entered into contracts with various suppliers, pursuant to which, these suppliers shall deliver to Énergir 104.7 Mm³ of RNG starting on different dates and coming to maturity at various dates. Énergir is also refining its RNG procurement and marketing strategy, which should be filed with the Régie de l'énergie in fiscal year 2022.

16. According to RNG prices anticipated by Énergir during this period based on Énergir's RNG supply contracts until 2030.

17. Methanation is the reaction of carbon monoxide or carbon dioxide with hydrogen in the presence of a catalyst to produce methane.

18. This is the equivalent of the GHG reduction emission resulting from a distribution of 10% of RNG to its customers.

3



Develop a strong complementarity with electricity

Electricity will play a key role in decarbonizing Quebec's economy, including in the building sector by 2030.

However, the conversion of hydrocarbon uses in Quebec to electricity presents significant challenges. Hydro-Quebec, Quebec's electricity distribution, is forecasting a power deficit in the coming years⁽¹⁹⁾ because of increased demand from the electrification of transportation and the conversion of other uses related to petroleum products. This electrification could significantly increase Hydro-Québec's peak demand, which would entail significant costs in electrical infrastructure and power calls to meet this demand during a few hundred hours per year and would greatly increase the societal cost of decarbonization.

Therefore, complementarity between Hydro-Québec's electricity network and Énergir's gas network would see a portion of certain natural gas uses converted to electricity in the residential, commercial and institutional market segments, while natural gas and RNG would be used during peak electricity use periods, occurring during the year's cold spells, reducing buildings' carbon footprint in a much more cost-effective way in Quebec.

In this context, in fiscal year 2021, Énergir entered into, with Hydro-Québec, an agreement for the establishment of a joint and coordinated dual-energy offering. Concretely, Énergir's customers participating in this offer will replace their natural gas-only heating systems with dual-energy systems that will most of the time heat buildings with electricity and only use natural gas during the coldest times of the year. This arrangement is expected to reduce participating Énergir customers' natural gas consumption by just over 70% (i.e., avoiding around 500,000 tonnes of CO₂ equivalent by 2030), and therefore reduce GHG emissions related to the heating of residential, commercial and institutional buildings, at the best possible cost for society.

In September 2021, Énergir and Hydro-Québec jointly filed to the Régie de l'énergie, an application for approval in order to implement this agreement with respect to the issues under its jurisdiction.

This agreement will help Québec in its efforts to achieve its objective of reducing GHG emissions by 50% in the building sector by 2030 compared to their 1990 level, as foreseen in the *2030 Plan for a Green Economy*. The Government of Québec has expressed its support for this initiative by issuing a decree of economic, social and environmental concerns in which it emphasizes the project's importance in achieving the targets of the *2030 Plan for a Green Economy*. This plan allocates a budget of \$125 M to fund initiatives designed to achieve an optimal complementarity of the electricity and gas networks.

Thus, the effort to promote complementarity between the electricity and gas networks is a key initiative with regard to Énergir's resilience, because, if the Régie de l'énergie approves the application as submitted, its benefits would be multiple:

- » **Customers** who will take advantage of Hydro-Québec's dual-energy rate will be able to benefit from a reduction in their energy bill.
- » **For Quebec society as a whole**, this agreement will reduce GHG emissions at the best cost. These savings are estimated at \$1.7 billion compared to full electrification⁽²⁰⁾.

- » **For Hydro-Québec**, this agreement will allow for better management of electricity demand in very cold weather and significant cost savings in electrical infrastructure required to serve the peak demand only. This will reduce the costs borne by all its customers.
- » **For Énergir**, this agreement allows for the development of its gas network, the maintenance of its customers and the distribution of volumes of natural gas of high value for the Quebec energy system. In addition, the agreement provides for Hydro-Québec to pay Énergir a contribution for GHG emission reductions. This contribution will enable Énergir to minimize the impact of volume reductions on rates and maintain a significant share of its revenue in the markets targeted by dual-energy.

Climate metrics and targets

2030 target

Reduction of 500,000 tonnes CO₂ eq. between 2020 and 2030.

2021 performance

Agreement entered into with Hydro-Québec, filing of the residential offering with the Régie de l'énergie and preparatory work the commercial offering planned for launch in fiscal 2022.

19. Hydro-Quebec: Supply Plan 2020-2029: http://publicsde.regie-energie.qc.ca/projets/529/DocPrj/R-4110-2019-B-0005-Demande-Piece-2019_11_01.pdf.

20. By 2030, it is estimated that this represents savings of \$1.7 billion compared with fully electrifying those markets currently fuelled by natural gas, an amount that would have led to a rate increase for Hydro-Québec customers (source, Hydro-Québec press release dated July 14, 2021 (c.f. case filed with the Régie R-4169-2021, Exhibit B-0005, page 40, table 40)

4



Diversify Énergir's activities to foster new growth drivers

Energy efficiency, RNG and complementarity with the electricity grid are vectors for maintaining customers and revenue in a decarbonization context. The diversification of operations in Quebec would also allow Énergir to achieve medium- and long-term growth. For example, Énergir is currently evaluating certain opportunities in the development of district energy loops, as well as the expansion of services offered to customers, particularly in terms of optimizing their energy consumption.

In addition, diversification could also take the form of more upstream involvement in the RNG sector as well as in the development of the green hydrogen sector as a source of energy supply.

2021 update

Hydrogen



The development of the green hydrogen sector is an opportunity to promote new growth vectors and decarbonize certain sectors of the economy. In this context, Énergir questioned its role in the green hydrogen value chain in Quebec, and one of the avenues is the distribution of this hydrogen (in pure form or in the form of RNG). However, one of the major challenges of hydrogen is its competitive transportation and its impact on Énergir's network and its customers' equipment.

Énergir has therefore developed a pilot project that will enable it to carry out certain technical validations of the effects of a mixture of hydrogen and natural gas on network components and natural gas appliances.

Industrial sector



In fiscal year 2022, in collaboration with its customers, Énergir plans to work with its customers to identify the most promising technologies and solutions that would reduce GHG emissions in the industrial sector. Énergir has begun documenting the GHG emission reduction targets of its industrial customers and intends to meet with them in order to better understand their environmental ambitions and to be able to support them now and in the long term with innovative solutions.

District energy loops



The market for new generation energy loops is currently emerging in Quebec, and Énergir is, in its opinion, well positioned to actively contribute to the deployment of these new energy networks. The targeted business model makes it possible to invest in low-emission or carbon-neutral energy infrastructures, in order to sell turnkey thermal energy to customers (long-term thermal energy sales contracts). The development of the energy loop sector is in line with the company's diversification objectives, is in line with the expertise of existing teams and positions Énergir as a key player in Québec's energy transition. It should be noted that energy loop projects are highly complementary to the efforts of dual-energy and RNG growth initiatives. In addition, Énergir is already working on the advancement of several energy loop project opportunities.

» Resilience of the Énergir business model

In achieving the four initiatives, Énergir's Vision 2030-2050 is consistent with a GHG emissions reduction trajectory as provided for in the Sustainable Development Scenario, which is aligned with the Government of Quebec's targets.

Consequently, it would ensure the viability of the business model by focusing on value creation rather than on the volume of natural gas distributed, while the quantities of natural gas distributed could be maintained or slightly reduced by 2030 and then decrease more markedly by 2050. At the same time, the increasing volumes of RNG distributed by 2050 would reduce exposure to higher carbon taxation.

Over the past fiscal year, global climate discussions as well as state commitments have begun to take greater account of new scenarios aligned with trajectories to limit temperature rise to 1.5°C and lower than pre-industrial levels. In this report, Énergir has integrated a new scenario (the Net Zero Scenario) into the range of trajectories to be used to assess its climate resilience in order to reflect this reality. It is important to clarify that, at this time, neither Québec nor Canada has adopted climate targets that would align with a pathway that would limit the rise in temperature to 1.5°C and below⁽²¹⁾. Énergir is aware that there are additional reductions in emissions that would need to be achieved by 2050, particularly in the next ten years, if Quebec were to adopt a more restrictive GHG emissions reduction trajectory than those limiting global warming to 2°C or less.

Ensuring the resilience of Énergir's business model will be a complex task. It will have to ensure that it maintains competitive rates, while preserving its revenue and profits, at a time when the volumes distributed are expected to decrease and the integration of new sources of renewable energy will be more expensive. Énergir is confident that its vision 2030-2050 and its related initiatives will ensure this resilience.

The measures to ensure Énergir's resilience by 2050 are based mainly on the following premises, as shown in the graph below:

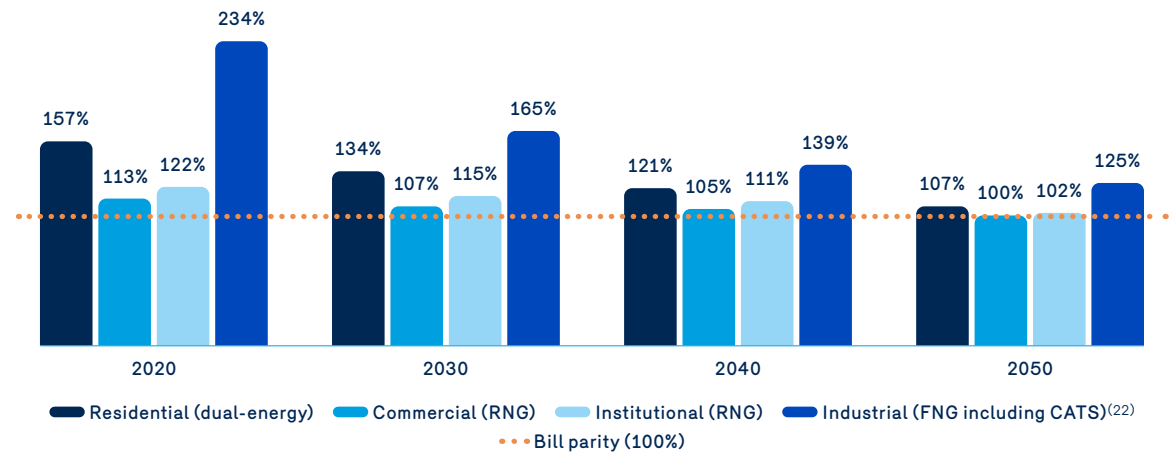
1	In the main markets targeted, Énergir expects that RNG will remain competitive with respect to electricity and less costly from a societal perspective (refer to the graph on the following page).
2	The competitive advantage of fossil natural gas should be stable until 2050 (refer to the graph on the following page) in the industrial market, giving Énergir enough flexibility to integrate more decarbonization alternatives, which could put upward pressure on rates. These decarbonization alternatives could induce upward pressure on rates. However, rising carbon prices by 2050 should make it economically attractive to integrate several decarbonization measures.
3	The reduction in revenue associated with the estimated decrease in natural gas volumes distributed in 2050 could be offset by initiatives that allow Énergir to maintain its revenue, such as support for energy efficiency or the implementation of the joint dual-energy commercial program with Hydro-Québec (as these two actions are more fully described in the <i>Vision 2030-2050</i> section).

21. In fact, while Canada has set a target to be carbon neutral by 2050, such a target does not automatically mean that it is consistent with a GHG emissions trajectory that limits the increase in temperature to 1.5°C or less by 2100 relative to pre-industrial levels. This depends, among other things, on when GHG emissions start to decline significantly.

Maintaining Énergir's competitive position is indeed important. A decrease in distributed volumes coupled with an increase in costs (carbon price, integration of renewable energies) induces upward pressure on rates. To limit this pressure over time and maintain a competitive energy supply, Énergir must therefore focus on value-added activities. Maintaining a competitive energy supply is an essential element of Énergir's business model. Indeed, natural gas distribution activities in Quebec are regulated. The profit generated by Énergir depends on the net value of its assets (its rate base) as well as the rate of return authorized by the Régie de l'énergie. Like operating costs, profit is authorized annually during the rate case and recovered through Énergir's rates. Rates that remain competitive in the majority of the target markets significantly limit the risk of not recovering invested capital and the associated return in the medium and long term. It is in this context that Énergir illustrates in the graph below the evolution of the competitive position in the main target markets.

2020-2050 Competitive Position

Electricity bill as % of natural gas bill



+ 100%

In this graph, a market for which the competitive position is greater than 100% is a market in which Énergir's rate, determined according to costs, profits and volumes distributed are advantageous for our customers compared to all-electric solutions.

+ 125%

125% means an economic advantage of 25% over electricity.

- The data used for FNG, electricity and inflation price projections come from the following sources: Platts, McGraw Hill Financial, Intercontinental Exchange, Inc. (ICE), Bank of Canada.
- RNG forecasts are based on Énergir's supply contracts until 2030.
- The sources for the CATS evolution projections are as follows: ClearBlue Markets and CaliforniaCarbon until 2030, then by Wood MacKenzie to achieve Net Zero by 2050.



» 2022 Climate Action Plan

To achieve net zero emissions for the energy it distributes by 2050, additional solutions to those presented in Vision 2030-2050 will be needed. During fiscal 2022, Énergir intends to continue working to refine its decarbonization roadmap and further align its strategy with a trajectory compatible with limiting temperature rise to 1.5°C. This will involve a series of actions that will enable it to reduce uncertainties, including the following:

1	Meet with its main industrial customers to better understand their decarbonization goals and the innovative solutions that Énergir can offer to support them.
2	Develop and implement the residential dual-energy offer and file the commercial and institutional offer to the Régie de l'énergie.
3	Continue to grow its energy efficiency efforts over the long term.
4	Increase customers' RNG consumption and support the development of its ecosystem.
5	Pursue a roadmap for hydrogen and other potential decarbonization solutions.
6	Improve knowledge of the life cycle of natural gas, the impact of methane and pursue its initiative for the responsible procurement of natural gas.
7	Assess the potential of carbon capture and storage technologies, primarily for the industrial sector.



Activities in Vermont



Electricity Distribution
in Vermont



Distribution of
Natural Gas in Vermont



» Vermont-wide scenarios

In order to interpret the meaning of the global scenarios presented above, they have been scaled to the jurisdiction of Vermont. Vermont has its own policies and regulations and has made significant commitments to address climate change (see [Appendix 1](#)) that influence possible future trajectories.

Green Mountain Power and Vermont Gas used the Under2 Coalition methodology where applicable and, in other cases, the proportional methodology, as more fully described in the *Québec-wide scenarios* section. The Under2 Coalition methodology is relevant to Vermont, which is a member of the Under2 Coalition (see [Appendix 2](#)).

The proportional methodology is also relevant for Vermont when the Under2 Coalition methodology cannot be applied. Indeed, the proportional methodology consists in transposing the percentage of emission reductions at the global level to Vermont.

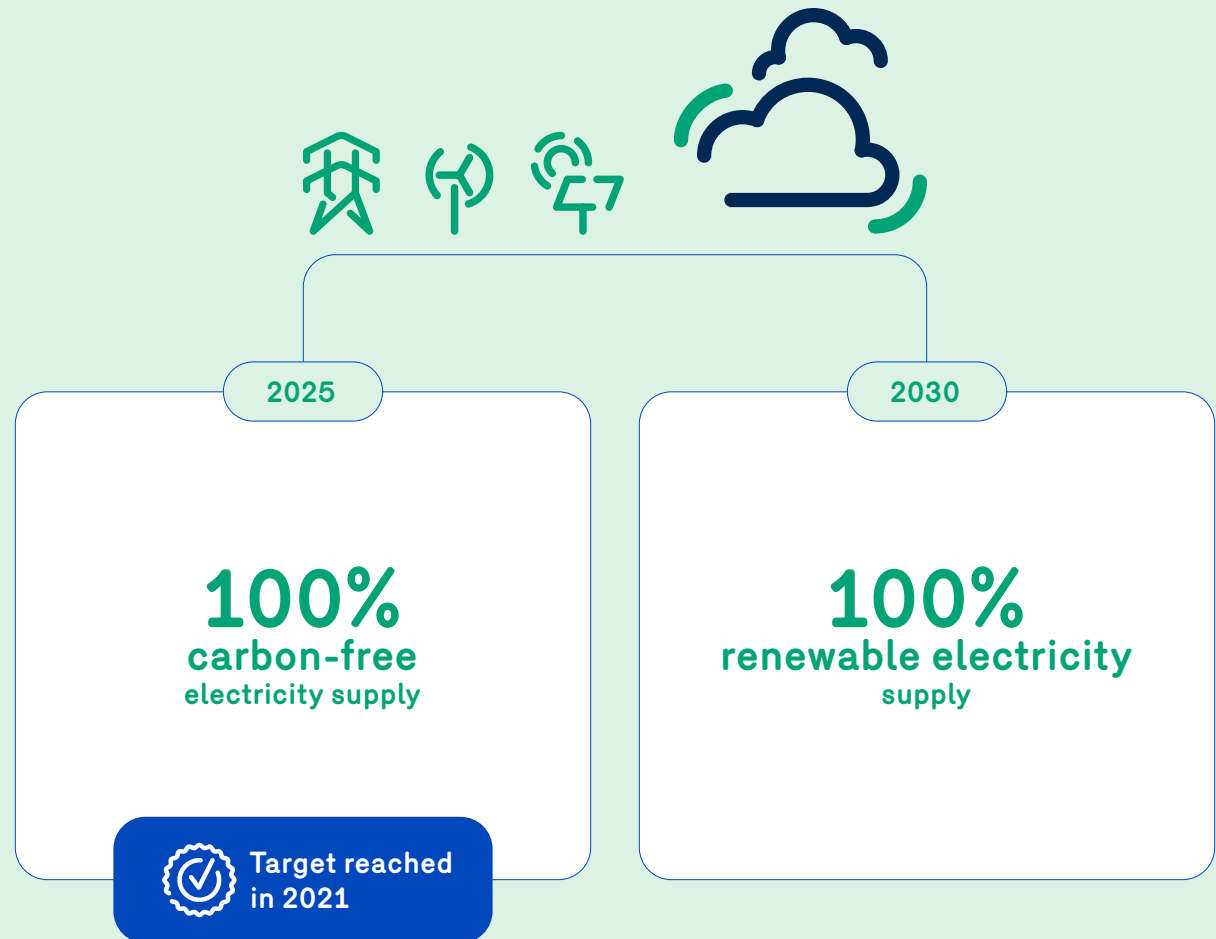
For more details on the impacts Green Mountain Power and Vermont Gas anticipate that these scenarios could imply, please refer to [Appendix 3](#).


Possible trajectories of annual GHG emissions under the scenarios used scaled up for Vermont






Green Mountain Power's "Path to 100%"

To address climate risks and opportunities, Green Mountain Power's *Path to 100% renewable* has one focus: customers. How to best serve them cost effectively and reliably in this time of climate change, and to offer them the latest available technologies. Green Mountain Power is providing clean, cost-effective, and reliable power, as more and more customers choose self-supply and strategic electrification. For these purposes, Green Mountain Power has adopted a proactive and detailed Climate Plan, with ambitious goals to achieve 100% carbon-free electricity supply on an annual basis by 2025 and 100% renewable electricity supply on an annual basis by 2030. In fact, Green Mountain Power has exceeded the goal of getting to 100% carbon free by four years (through direct sourcing, retirement of RECs or a combination of both). As of 2021, Green Mountain Power's annual power supply mix is 100% carbon free and 68% renewable. These goals exceed Vermont's regulatory requirements.



	As such, because Green Mountain Power's supply portfolio is already carbon neutral, it is less exposed to the transition risks inherent to climate change. This is why Green Mountain Power is focusing on physical resilience risks to develop an energy system where generation is closer to customers, more interconnected and more empowering for customers, which requires:
1	Change from the old energy system of centralized, fossil fuel-based generation transmitted through traditional poles and wires to customers far away, toward lower GHG emissions, renewable, distributed generation with new, complex local and regional grid management opportunities.
2	Change from one-way electricity flowing from a central plant to a customer toward two-way energy information, storage, and delivery between customers and Green Mountain Power. Green Mountain Power is collaborating with its customers to deploy a significant fleet of batteries throughout the grid.
3	Balance the declining loads from self generation and efficiency with the increasing demand from strategic electrification in order to decarbonize the transport and thermal sectors.
4	Continually improve the resiliency of the energy delivery system and customers' premises through innovative programs and solutions including battery storage and smart electric infrastructure in homes and businesses.

	Green Mountain Power is investing in energy delivery models that seek transformation to adapt to the evolving energy generation context in the following ways:
1	Leverage many different resources (distributed energy resources) to manage the new grid, one that is multi-directional with intermittent resources. Using battery storage to meet the need previously fulfilled by fossil-fuel generators and retiring these assets.
2	Establishing communities of distributed energy resources that are communications enabled to optimize the operating cost of the electrical system and the use of renewable and non-emitting generating sources.
3	Offering a diverse portfolio of innovative energy programs that promote measures consistent with Vermont energy policy and appeal to the personal goals of each customer ⁽²³⁾ .

	Green Mountain Power is investing in resiliency, reliability measures to counter the effect of climate change on its system through its newly designed and regulatory-supported Climate Plan by:
1	Integrating the evolution of technology to underground parts of distribution system to lead to a cost competitive solution compared to overhead allowing for more burial of lines in reliability challenged locations, notably to reduce exposure of Green Mountain Power's assets to physical risks of climate change such as severe storms.
2	Better preparing Green Mountain Power's grid to serve as the backbone for Vermont's aggressive goals to cut GHG emissions and transition off fossil fuels.
3	Creation of Resiliency Zones to take a targeted approach to communities that have multiple resiliency challenges including electric, communications and social vulnerability. This helps customers achieve ubiquitous broadband connectivity that is required to unlock innovative energy services that help cut costs and reduce GHG emissions through load management and control.
	In March 2021, Vermont Electric Co-op and Green Mountain Power each launched a Broadband Deployment Program to help more Vermonters in some of the hardest-to-reach corners of Vermont get connected to broadband quickly and cost-effectively.

23. Example: <https://www.wcax.com/2021/10/12/solar-project-power-middlebury-college-toward-renewable-energy-goal/>

» Resilience of Green Mountain Power's Business Model

The implementation of the Climate Plan that Green Mountain Power has laid out is consistent with a GHG emission reduction trajectory as described in the Sustainable Development Scenario or the Delayed Action Scenario described in the *Vermont-wide Scenarios* section above. In this report, Green Mountain Power has included a new scenario to assess its climate resilience in a 1.5°C trajectory. It is important to clarify that, for the moment, neither Vermont nor the United States have adopted climate targets to align with a trajectory to limit the temperature rise to 1.5°C or less. Green Mountain Power is aware that there are additional emission reductions that would have to be achieved, particularly in the next ten years, if Vermont were to adopt a more restrictive GHG emissions reduction trajectory than those limiting global warming to 2°C or less. This may have a positive impact on Green Mountain Power's customers through decarbonized solutions to Vermonters that will grow load and help reduce rate pressure.

Green Mountain Power has set specific goals that are either greater than those set through the Under2 Coalition of which Vermont is a partner of, or in line with Vermont's stated objectives.

- | | |
|---|---|
| 1 | Achieve a carbon-free annual power supply portfolio by 2025 which was completed 4 years ahead of schedule ⁽²⁴⁾ . |
| 2 | Achieve a 100% renewable annual power supply portfolio by 2030, through direct sourcing, retirement of RECs or a combination of both. These goals exceed Vermont's requirements. |
| 3 | Contribute to Vermont's goal of reducing GHG emissions by at least 26% below 2005 levels by 2025, and at least 40% below 1990 levels by 2030, in part by electrifying transportation, as set forth in the <i>Global Warming Solutions Act</i> which came into force in 2020. |
| 4 | Leveraging Vermont's Renewable Energy Standard, Tier III, by delivering solutions directly to customers that eliminate or reduce fossil fuel consumption. |



24. Through direct sourcing, retirement of RECs or a combination of both

» Vermont Gas' Path to Net Zero

For over 50 years, Vermont Gas has delivered its customers safe, reliable, and affordable energy in northwestern Vermont. Five decades ago, natural gas was the disruptive technology that came in cleaner and better for the environment than alternative fuels. With changing public policy and customer expectations, VGS aims to again disrupt the thermal energy landscape for the next 50 years. As a contributor to climate change, Vermont Gas realizes its role in impacting how Vermonters decarbonize and the imperative to act. In 2019, Vermont Gas announced an ambitious and comprehensive strategy to transform the company and target Net Zero emissions for the energy it distributes by 2050 in direct support of the State of Vermont's mid-century climate goal.

Vermont Gas's Climate Action Plan is a three-part strategy with key initiatives to:



1	Grow Alternative Renewable Energy Portfolio	Incorporate 20% RNG or other decarbonized alternative energy sources into the gas portfolio by 2030. As part of this initiative, Vermont Gas committed to invest in local renewables which have the additional benefits of removing methane from the atmosphere in Vermont, improving water quality to Vermont's waterways, helping provide a new revenue source for agriculture, and ultimately accomplishing Vermont Gas' decarbonization vision (Goodrich Farm Anaerobic Digester project in Salisbury, Vermont).
2	Boost Energy Efficiency and Explore New Product Development	Increase investments in energy efficiency by boosting weatherization activities with residential customers and expanding assistance to commercial and industrial customers. In addition, pilot the service and installation of lower carbon sources for thermal energy customers, such as electric heat pump water heaters.
3	Innovate by Leveraging Partnerships	Accelerate projects like district energy (network of underground pipes used to provide thermal or heat energy to buildings more efficiently than individual systems), BTV Sound project ²⁵ , hydrogen, and geothermal with key climate-forward partners.

25. In partnership with the Burlington International Airport (BTV), Vermont Gas has committed to provide the local match for a federal grant to launch an innovative soundproofing/weatherization pilot project for homes of Vermont Gas customers around the airport. Home improvements for soundproofing substantially overlap with energy efficiency improvements.

» Resilience of Vermont Gas' business model

Achieving Vermont Gas' Climate Plan outlined in the *Vermont Gas Path to Net Zero* Section above is consistent with a GHG emission reduction trajectory as described in the Sustainable Development Scenario or the Delayed Action Scenario, described in the *Vermont-Wide Scenarios* section above. Vermont Gas has set specific goals that are equal or greater than those set through the *Global Warming Solutions Act* that came into force in 2020. This Act was passed in response to concerns around Vermont's changing climate and the magnitude of what must be done to reduce GHG emissions and prepare for the impacts of climate change on Vermont's landscape.

In this context, this Act requires the State of Vermont to reduce GHG emissions to:

- 26% below 2005 levels by 2025;
- 40% below 1990 levels by 2030; and
- 80% below 1990 levels by 2050.

Over the past year, global climate discussions and government commitments have begun to take greater account of new scenarios aligned with trajectories to limit temperature rise to 1.5°C or less than pre-industrial levels. In this report, Vermont Gas has included a new scenario in the range of trajectories to be used to assess its climate resilience in order to reflect this reality. It is important to clarify that for the moment, neither Vermont nor the United States have adopted climate targets to align with a trajectory to limit the temperature rise to 1.5°C or less. Vermont Gas is aware that there are additional emission reductions that would have to be achieved, particularly in the next ten years, if Vermont were to adopt a more restrictive GHG emissions reduction trajectory than those limiting global warming to 2°C or less.

Vermont Gas is revisiting even more aggressive targets to accomplish GHG emissions reductions. Vermont Gas set the following:

Contribute to Vermont's goal of
**reducing GHG emissions
 by at least
 26%**
 below 2005 levels by 2025,
 and at least 40%
 below 1990 levels by 2030.

Achieve a
net zero
 emissions energy supply
by 2050.

Risk Management

» Identification, evaluation and management of risks and opportunities

Énergir, Green Mountain Power and Vermont Gas have adopted a risk governance framework to facilitate the achievement of business objectives and strategies while reflecting an organizational culture committed to managing risks in proactive and efficient ways. Risk functions are an integral part of the activities and decisions of Énergir, Green Mountain Power and Vermont Gas.

The existing integrated risk management process includes risks related to climate change. Indeed, the process to identify, assess and manage climate risks is integrated into the business risk management process and asset management processes.



Identification of risks and opportunities

Employees and Management are jointly committed to the continuous management of risks and opportunities based on experience and expertise. Risks are an integral part of management discussions and operational committees. Emerging risks are identified and integrated into the respective risk universe of Énergir, Green Mountain Power and Vermont Gas in order to be the subject of an assessment by the management of the entities.



Risks and opportunities assessment process

Énergir, Green Mountain Power and Vermont Gas have implemented risk assessment methodologies that consider for each risk its probability of occurrence and its potential impact. The controls in place and mitigation measures are considered and Management ensures that the risks are prioritized and addressed according to their relative impact.



Reporting and follow-up

Through a consolidated dashboard that takes into account the activities of Énergir, Green Mountain Power and Vermont Gas, major risks are presented annually to the Management Committee and to the Board.

Énergir, Green Mountain Power and Vermont Gas being aware of the range of risks of transitioning to a low-carbon economy and of the physical risks associated with climate change, these processes are intended to evolve over time and to be refined, in particular the risk management processes which aim to better understand the financial consequences of physical risks.

Thus, Énergir, Green Mountain Power and Vermont Gas intend to continue to develop this risk assessment and identification process with quantifications of risk scenarios including climate scenarios in order to properly determine the short, medium and long term consequences of these risks and the financial, societal or environmental impacts of the occurrence of these risks.

Risk management practices will continue to evolve in a process of continuous improvement within the entities.

Governance

The governance of Énergir and its subsidiaries reflects the group-wide commitment to contribute to and pursue efforts to address the impacts of climate change.

» Oversight by the Board of Énergir

Risks and opportunities related to climate change are monitored by the Board and by Management. The Board oversees the management of Énergir's activities to ensure, among other things, the company's financial health and resilience over the short, medium and long term. More specifically, it ensures that Management adopts a strategic planning process and periodically implements a strategic plan that addresses business opportunities and risks, among other things. It also ensures that Énergir's corporate strategy, including strategic initiatives stemming from climate change issues, is deployed. Furthermore, it identifies and monitors Énergir's main risks and ensures the implementation of appropriate measures and management systems for such risks.

The Board is supported by the following committees, which jointly oversee the effectiveness of Énergir's strategies and performance with respect to climate change risks and opportunities. The mandates of the Board and its committees were amended in September 2020 in order to specify their respective roles with respect thereto. In order to ensure that the members of the committee described below have the expertise and knowledge required to support the Board, a grid of profiles and expertise has been drawn up.



Reporting on climate-related risks and opportunities to the Board

The **Occupational Health, Safety and Environment Committee** is responsible for the climate change component. It receives periodic reports from the reporting team in this regard, including a follow-up report on the achievement of GHG reduction targets. As part of the preparation of this climate resiliency report, this committee examines the action plan in this regard and discusses with Management the initiatives that Énergir proposes for the fiscal year, in order to pursue its climate ambition. It also makes the recommendations to the Board for approval of this report. On the other hand, this committee monitors the implementation of Énergir's Environmental Policy.

The **Audit Committee** ensures that Management takes appropriate steps to identify financial risks that could affect Énergir, including those stemming from climate change, and that it implements sufficient measures to manage those risks.

The **Human Resources and Corporate Governance Committee** develops Énergir's governance approach, including climate change governance, practices and procedures for applying the approach.

» Management Oversight by Énergir

Énergir Inc.'s President and CEO manages Énergir's operations, supported by the Management Committee, in which all sectors of Énergir are represented. The President and CEO is ultimately responsible for strategic planning and ensuring that the company's initiatives cover risks and opportunities related to climate change. Under his leadership, the Management Committee has developed a strategic plan to guide the company's development for 2030-2050. The plan's alignments are regularly reviewed to take into account emerging and new trends and ensure that they remain relevant. The Management Committee has established a framework in order to identify, assess and manage the various risks inherent to the industry in which Énergir operates, including those related to climate change.

Énergir has adopted an internal governance structure that promotes the sound management of climate issues in establishing its objectives, strategies and actions across the organization. Thus, the offices of several vice presidents and the Chief Financial Officer support the Management Committee in its reporting to the Board and its Committees. They are assisted by their respective teams, the Sustainable Development Strategy Committee, and employees from different sectors of the company.



Parity Committee on Just Transition



Since the beginning of the 2021 calendar year, Énergir, the Fédération des travailleurs et travailleuses du Québec (FTQ) and the SEPB-463 executive have set up a parity committee on Just transition. The Parity committee has already met a few times to discuss, among other things, the concerns of Énergir's unionized employees, the initiatives of the Vision 2030-2050 to decarbonize the energy distributed by Énergir's activities and the impact of achieving this vision on Énergir's workers.

In fiscal year 2022, it is planned to analyze in more detail the impact of the just energy transition on jobs at Énergir, starting with unionized FTQ jobs. This will be based on the results of a report recently published in October 2021 by EnviroCompétences, the sectoral environmental workforce committee on skills, training, jobs and professions related to the green transition and climate change.

» Oversight by the Board of Directors and Management of Green Mountain Power

Green Mountain Power is regulated by the State of Vermont Public Utility Commission and is governed by the Board of Directors of Green Mountain Power, which has the power to oversee the management of the business in support of the resilience of Green Mountain Power for its customers in the short, medium and long term. Green Mountain Power is managed by its President and Chief Executive Officer. Green Mountain Power's corporate governance structure is comprised of its Board, two Board Committees and its Executive Leadership Team.

The Green Mountain Power Board reviews with management, Green Mountain Power's strategic goals and provides general advice and guidance to Green Mountain Power's management. The Green Mountain Power Board currently maintains an Audit Committee and a Compensation and Governance Committee and carries out many of its responsibilities through these two committees.



Green Mountain Power is committed to environmental action, awareness and accountability in all its business practices and operations. Green Mountain Power has in effect certain procedures, plans, and guidelines applicable to climate-change related matters adopted in the normal course of business. Green Mountain Power's by-laws include a requirement that the board of directors consider the environment and how to use energy as a force for the common good in the board of directors' decision-making process. This is one of the requirements for Green Mountain Power to be eligible for certification as a "Certified B Corporation" pursuant to the requirements and performance standards of B Lab, a non-profit organization, which certifies companies who voluntarily meet higher standards of social and environmental performance, transparency and accountability. Green Mountain Power successfully completed the certification process in 2017. The recertification process occurs every three years. While review of the application was delayed due to COVID 19, the process was recently completed, and recertification is imminent.

Regular reports on Green Mountain Power's activities are provided to Énergir's Board, including updates on Green Mountain Power's strategic initiatives related to clean energy and climate change.

Green Mountain Power is committed to environmental action, awareness and accountability in all its business practices and operations

» Oversight by the Board of Directors and Management of Vermont Gas

Vermont Gas is regulated by the State of Vermont Public Utility Commission, and governed by its Board of Directors, which exerts strategic influence on the business to ensure the resilience of Vermont Gas, while sustaining the foundational values of safety and affordability for its customers. Vermont Gas is led by its President and Chief Executive Officer. The corporate governance structure is comprised of a Board of Directors and corporate Officers.

The Vermont Gas Board reviews and approves Vermont Gas' annual strategic plan, key performance indicators ("KPIs"), and major initiatives, and provides general advice and guidance to Vermont Gas' Executive Team. The Executive Team manages strategic matters and presents key matters to the Vermont Gas Board for review and as needed, for approval. Updates to Vermont Gas' Climate Plan are presented and reviewed in depth by the Vermont Gas Board.

Vermont Gas is committed to climate change action, awareness, and accountability in all its business practices and operations. In November 2019, with the support of its board, Vermont Gas publicly announced its Climate Plan. Vermont Gas recognizes the global and local imperative of climate change and policy advancing decarbonization and is committed to doing more.

Regular reports on Vermont Gas' activities are provided to Énergir's Board, including updates on its strategic initiatives related to clean energy and climate change.

Incentive Programs

On October 1, 2020, Énergir and Green Mountain Power modified their respective long-term incentive program for executive officers. These programs which are based on the monitoring of performance indicators incorporate now a new strategic indicator, “Decarbonization Effort – Greenhouse Gas (GHG) Emissions Reduction.” This indicator tracks GHG emission reductions in Quebec and Vermont.



In Québec, three (3) complementary segments are monitored for a value of 75% of the indicator⁽²⁶⁾:

1	Energy efficiency
2	Injection of renewable natural gas
3	Transfer of customers to dual-energy



While Vermont’s GHG reduction targets are met and calculated based on achieving three levels for a 25% indicator value.

Specifically⁽²⁷⁾:

1	Level 1: total sales of electricity from any renewable energy source
2	Level 2: total electricity sales from new generation renewable energy
3	Level 3: in addition to achieving level 2, fossil energy savings from energy transformation projects



Vermont Gas’ Short Term Incentive Program, is measured by achievement of KPIs.

One of such KPIs is related to Vermont Gas’ carbon impact, reducing customer greenhouse gas emissions to meet their 2030 target by contracting at least an additional 100,000 MMBtu of RNG, hydrogen, or other decarbonized energy (e.g. geothermal) in fiscal year 2022.

26. The three segments are calculated in tonnes of CO₂ equivalent.

27. The three levels are calculated in megawatts/hour.

Metrics and Targets

» Our Measures Aimed at Contributing to Decarbonization

Énergir uses climate metrics and targets to track the impact of its strategic decarbonization initiatives. These metrics are available on Énergir's [Sustainability Performance Tracking Platform](#).

These targets and indicators may cover emissions related to its activities (Scope 1 and 2), as well as those occurring throughout its value chain (Scope 3), both upstream and downstream at its customers' sites.

Metric	Performance 2021	Énergir 2030 Targets
1 Responsible procurement of natural gas Initiative	<ul style="list-style-type: none"> 20% of system gas was purchased in connection with this initiative in 2021. ✓ Achievement of target for 2021. 	100% of fossil system gas supplies contracted by Énergir as part of the responsible natural gas procurement initiative.
2 Direct emissions from Énergir's activities ⁽²⁸⁾ : e.g., leaks, combustion, fleet	<ul style="list-style-type: none"> Direct emissions (Scope 1): 55,463.6 tonnes CO₂ eq. in 2020; Indirect emissions (Scope 2): 15.5 tonnes CO₂ eq. in 2020; Total direct and indirect emissions: 55,479.1 tonnes CO₂ eq. in 2020; GHG reductions: 20.9% reduction from 1990 levels. ✓ Achievement of target of 20% reduction by 2020.	-37,5% by 2030, from 1990 levels.
Indirect emissions from Énergir's activities: e.g., electric consumption		
3 Energy efficiency	<ul style="list-style-type: none"> Cumulative reduction of 164,330 tonnes CO₂ eq. resulting from energy efficiency in fiscal years 2020 and 2021; Reduction of 82,275 tonnes CO₂ eq. resulting from energy efficiency during fiscal year 2021 (including 42,337 tonnes CO₂ eq. reductions for customers in the building sector); The results of Énergir's energy efficiency programs have achieved savings of 42.8 million cubic metres during fiscal year 2021. ✓ Achievement of target for 2021. 	1Mt in GHG reductions between 2020 and 2030.
4 RNG	<ul style="list-style-type: none"> Volume of RNG consumed by Énergir's customers in fiscal year 2021: over 5 million cubic metres. GHG reduction of 9,758 tonnes CO₂ eq. for customers through RNG consumption in fiscal year 2021 (including 9,659 tonnes CO₂ eq. in customers in the building sector in fiscal year 2021). 	10% of RNG consumed by Énergir's customers, or 567 Mm ³ and 1 million tonnes CO ₂ eq. by 2030.
5 Complementarity / Dual-energy ⁽²⁹⁾	<ul style="list-style-type: none"> Entering into the agreement with Hydro-Québec and filing of the residential offering with the Régie de l'énergie. No GHG reduction in fiscal year 2021, as the program will begin in fiscal year 2022. 	0.5 million tons of GHG reductions by 2030.
6 Global GHG reductions in the building sector	<ul style="list-style-type: none"> GHG emissions reduction of 2.2% in fiscal year 2021, with 94,789 tonnes CO₂ eq. 	30% reduction in GHGs from Énergir's customers in the building sector by 2030 compared to 2020 levels.

28. Direct Greenhouse Gas Emissions (Scope 1) data include emissions that must be reported under the *Mandatory Reporting regulations for certain emissions of contaminants into the atmosphere* (RDO). To comply with the RDO, GHG declarations are based on the calendar year. That is why the 2019 data are presented in this report.

29. The information should be disclosed in a future report.

Green Mountain Power, GHG Performance and Targets

Green Mountain Power also provides annual data on various performance metrics related to its climate change work. Green Mountain Power Scope 1 and 2 metrics are not currently available, and Green Mountain Power could harmonize its report with the *GHG Reporting Protocol* in the future. According to the regulatory framework, Green Mountain Power provides information to the State of Vermont to prepare the *Vermont Greenhouse Gas Emissions Inventory and Forecast*.

Metric	2021 Performance	Green Mountain Power Targets
1 Percentage of carbon-free electricity supply	<ul style="list-style-type: none"> Percentage of Green Mountain Power's annual electricity supply which is: <ol style="list-style-type: none"> 1) carbon-neutral; and 2) constitutes renewable energy in accordance with the RES. In Fiscal year 2021, Green Mountain Power's power supply is 100% carbon free and over 68% renewable. In calendar year 2020, Green Mountain Power supply was 0 lbs of CO₂ eq. per MWh (0 kg CO₂ eq. per MWh) on an annualized basis. 	<ul style="list-style-type: none"> ✓ 100% carbon-free by 2025. 100% renewable by 2030. 75% renewable with 10% distributed generation by 2032 (RES); 100% renewable by 2030.
2 Customers – electric vehicles	<ul style="list-style-type: none"> Number of customers currently subscribing to electric vehicle charging rates (where applicable) or other relevant incentive programs through rate, pilot or other: <ul style="list-style-type: none"> > Green Mountain Power had 1,210 customers enrolled in controlled charging platform. 	<ul style="list-style-type: none"> ✓ Fiscal Year 2021: A total of 800 customers who have subscribed to Green Mountain Power home electric vehicle charging programs, either controlled or self-directed.
3 Heat pumps deployed	<ul style="list-style-type: none"> Green Mountain Power helped to deploy 5,882 heat pumps. 	<ul style="list-style-type: none"> ✓ Fiscal Year 2021: Cause 5,000 heat pumps to be deployed in customers homes and businesses.
4 Tier III⁽³⁰⁾	<ul style="list-style-type: none"> Green Mountain Power met its annual target. 	<ul style="list-style-type: none"> ✓ Fossil fuel substitution must increase by ¼% of retail sales in kWh, to reach 12% by 2032. ✓ The 2021 target is 4 ¼%.

30. Tier 3 is part of the RES standards for Vermont. This level requires utilities to replace customer fossil fuel use with increased electrification equivalent to 2% of annual sales every year by 2032, implementing measures reviewed and approved state technical advisors.

» Vermont Gas Metrics, GHG Performance and Targets

Vermont Gas also provides annual data on various performance metrics related to its climate change work. Vermont Gas Scope 1 and 2 metrics are not currently available, and Vermont Gas could harmonize its report with the *GHG Reporting Protocol* in the future. According to the regulatory framework, Vermont Gas provides information to the State of Vermont to prepare the *Vermont Greenhouse Gas Emissions Inventory and Forecast*.

Metric	2021 Performance	VGS Targets
1 Greenhouse gas emissions from company operations	<ul style="list-style-type: none"> GHG emissions from company operations were reduced 25% in 2021 as compared to 2020 levels through the use of RNG and carbon offsets. 	Execute initiatives to reduce greenhouse gas emissions from company operations by 25% from 2020 levels
2 Boost energy efficiency savings targets	<ul style="list-style-type: none"> Annual incremental net MCF savings of 240,000 MCF; GHG emissions reductions of 13,200 tonnes eq. CO₂; Lifetime natural gas savings of 4.2M MCF; Vermont Gas is on track for the three-year triennial reporting period (through 2023).	On track to meet quantifiable performance indicators (QPIs) #1 and #2 of three-year Demand Resource Plan 2021-2023.
3 Decarbonized thermal supply	<ul style="list-style-type: none"> Contract RNG: an incremental 48,000 MCF was added to cover new residential load in its supply portfolio. 	Contract RNG to cover new customer load as part of gas supply portfolio in fiscal year 2021.

Appendix

Appendix 1

» Operational context – GHG emissions

Although several international agreements have been adopted in recent years to limit GHG emissions, Énergir, Green Mountain Power and Vermont Gas' activities are more directly impacted by policies and regulations adopted at the national, regional and municipal levels. The commitments that national, regional or municipal authorities may make in international agreements have an influence on the context in which these authorities adopt their policies and regulations. Canada, Quebec and Vermont have therefore adopted policies and regulations to limit GHG emissions and combat climate change.

Jurisdiction	Policy or commitment	Objectives	
Canada	Policies and regulations	National contribution – Paris Agreement	Reduce its GHG emissions 40 à 45% vs. 2005 levels by 2030.
		Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds	Reduce methane emissions in the oil and gas sector by 40% to 45% vs. 2012 levels by 2025.
		Canadian Net-Zero Emissions Accountability Act	Establish a national GHG emission target for 2035, 2040 and 2045 to achieve carbon neutrality by 2050.
Québec	Policies and regulations	Policies and regulations 2030 GHG emission reduction objectives	Reduce its GHG emissions by 37.5% under 1990 levels by 2030.
		Plan for a green economy (2030)	Plan (i) to achieve the GHG emission reduction target set by the Government of Quebec for 2030 (i.e., a reduction of 37.5% from 1990 levels) and (ii) to achieve the GHG emission target of 50% by 2030 in the building sector, and (iii) adapt to climate change.
		<i>Regulation respecting the cap-and-trade system for greenhouse gas emission allowances (Quebec) (CATS)</i>	Under this plan, Énergir is required to reports its GHG emissions, GHG emissions from fugitive emissions and breakdowns on its network and the GHG emissions of its customers who are not themselves subject to it, and is required to cover all of these GHG emissions.
		<i>Regulation respecting the quantity of renewable natural gas to be delivered by a distributor</i>	Set the minimum quantity of RNG to be injected by a natural gas distributor at 1% of the total quantity of natural gas it delivers as of 2020 and at 5% as of 2025.
	<i>Act respecting the Ministère des Ressources naturelles et de la Faune</i>	Payment of an annual contribution to the Minister of Energy and Natural Resources in order to fund its activities, particularly programs and measures required to achieve energy efficiency targets set by the Government of Quebec.	
	Political commitments	Under2 Coalition	Reduce GHG emissions by 80% by 2050 in order to limit global warming to under 2 degrees C.
Vermont	Policies and regulations	<i>Global Warming Solutions Act of 2020</i>	Reduce Vermont's GHG emissions by at least 26% below 2005 levels by 2025 , at least 40% below 1990 levels by 2030, and at least 80% below 1990 levels by 2050.
		<i>Comprehensive Energy Plan</i>	Aim to meet 90% of Vermont's energy needs from renewable sources by 2050.
		<i>Vermont Renewable Energy Law</i>	Require a minimum amount of renewable electricity in supply portfolios; support relatively small (less than 5 MW) new renewable energy projects connected to Vermont's network; and invest in projects aimed at reducing the use of fossil fuels for heating and transportation.
	Political commitments	Regional Greenhouse Gas Initiative (RGGI)	Reduce regional GHG emissions by 30% vs. 2020 levels by 2030⁽¹⁾ .

1. The oil-fired turbine in Berlin, Vermont, is the only power facility of Green Mountain Power currently subject to RGGI compliance.

Appendix 2

» Scenarios and Scaling

Different possible pathways based on global climate change scenarios are scaled up in Quebec to assess their local scope. To do so, Énergir, Green Mountain Power and Vermont Gas have chosen the global scenarios and scaling methodologies described below.

Scenario	Global scenario	Scaling methodology used for Quebec and Vermont
Status quo	The Status quo Scenario represents a future in which emissions continue to increase since no additional action is taken to limit global warming.	The scenarios used for the Status quo come from the report carried out by Dunsky Energy Consulting for Québec ⁽¹⁾ and are based on a modelling of the NATEM optimization model. This scenario was developed on a relevant jurisdiction basis and is consistent with a global Status quo Scenario. In this Status quo Scenario, only the actions and policies already in place or planned in the short term when the mandate is being carried out are included.
NDC – %	The NDCs are the contributions to which the signatory nations of the Paris Agreement have committed through a NDC submission to the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). The Agreement provides that the signatory countries submit new contributions every five years ⁽²⁾ . The scenario used for global NDC commitments is the one that was assessed by the Bank of Canada. It assumes that as of 2020, all countries act in accordance with their NDC submission, and assume continuous action after 2030, by an implicit trend in emissions changes ⁽³⁾ .	To scale the NDC scenario, the proportional methodology was used. The methodology for scaling targets proportionally is very simple. It is a matter of transposing the percentage of emission reductions at the global level to the jurisdiction of interest.
Sustainable Development Scenario – Under2 Coalition	The International Energy Agency scenarios are transition scenarios. They are widely used to describe the transition to a low-carbon economy and are particularly oriented towards the energy industry. The Sustainable Development Scenario represents stabilizing demand despite economic growth and a growing population. The substitution of combustion fuels and the sustained decarbonization efforts in this scenario are consistent with a world where global warming is limited to 2 degrees or less by 2100 compared to preindustrial levels.	The Under2 Coalition brings together infranational governments that are committed to reducing emissions in their jurisdictions. This coalition was created before the Conference of Parties (COP) which led to the Paris Agreement. The signatories of this agreement then committed to reducing their emissions by 80% to 95% with respect to 1990 levels, or at least by 2 metric tons per person, by 2050. Québec and Vermont are both signatories to the Under2 Coalition and their GHG emission reduction targets are aligned with the Under2 Coalition targets.
Delayed Action – Under2 Coalition	The Delayed Action Scenario represents a future where countries fail to meet their NDC commitments between 2020 and 2030, and then take more stringent mitigation measures to limit global warming to 2 degrees C or less by 2100 compared to preindustrial levels. The scenario used for global NDC commitments is the one that was assessed by the Bank of Canada.	To scale up the Delayed Actions Scenario, the Under2 Coalition methodology was used.
Net Zero – %	The Net Zero Scenario represents a transformation of the world’s energy system to achieve global carbon neutrality by 2050, while limiting the increase in global temperature to 1.5° C or less by 2100, compared to the pre-industrial era. This scenario also maintains economic growth. In this scenario, lower final energy demand, rapid deployment of more energy-efficient technologies, electrification and rapid growth of renewable energy play a central role in reducing GHG emissions in all sectors.	To scale the Net Zero Scenario, the proportional methodology was used. The methodology for scaling targets proportionally is very simple. It is a matter of transposing the percentage of emission reductions at the global level to the jurisdiction of interest.

1. See the Trajectoires de réduction d’émissions de GES du Quebec Report for more information: <http://www.environnement.gouv.qc.ca/changementsclimatiques/trajectoires-emissions-ges.pdf>.

2. Further information on Nationally Determined Contributions (NDCs) may be found on the secretariat website of the United Nations Framework Convention on Climate Change. <https://unfccc.int/fr/processus-et-reunions/l-accord-de-paris/l-accord-de-paris/contributions-determinees-au-niveau-national-ndcs>.

3. More details on the NDC Scenario can be accessed here: <https://www.bankofcanada.ca/2020/05/staff-discussion-paper-2020-3/>

Appendix 3

» Impacts of the Climate scenarios on the activities of Énergir, Green Mountain Power and Vermont Gas

Scenarios	Description of the impacts on Énergir		
	Énergir	Green Mountain Power	Vermont Gas
Status quo	The growth in natural gas volumes distributed by Énergir would continue past 2030. The increase in global temperatures could reach 3.6°C. It is therefore expected that climate change would further affect Énergir's physical assets.	Distributed volumes would remain relatively stable beyond 2030. Global temperatures could rise by 3.6°C; in such a case, climate change would be likely to affect certain physical assets such as hydroelectric assets (increase in water levels and volumes, especially during very intense rainfall events), transmission and distribution (accelerated vegetation growth rates, stress on trees resulting from rising temperatures, isolated flooding episodes) of Green Mountain Power or Vermont Gas assets.	
NDC	Achieving GHG emission reduction policies and targets would result in significant changes to Énergir's traditional business model. Some of Énergir's markets are expected to be significantly impacted, specifically building heating, where lower GHG emitting alternatives are available. Because the physical impacts of climate change over the next decade are driven by past emissions, some of the physical effects of climate change would be felt without reaching the significant impacts of the <i>Status Quo</i> Scenario. A global warming above 2°C is nevertheless expected to result in significant physical impacts.	Achieving Vermont's GHG emission reduction policies and targets would result in significant changes to the current traditional business model of Green Mountain Power and Vermont Gas. Since the physical impacts of climate change that will be observed over the next decade are dictated by past emissions, at least some of their above-mentioned physical effects would be felt even if the NDC Scenario materializes. A global warming above 2°C would nevertheless have significant physical repercussions. Some markets would be affected, such as building heating and transportation, for which less emissive alternatives through electrification are available. These changes would benefit Green Mountain Power customers by increasing load and thereby reducing rate pressure.	Some markets would be affected, such as building heating and transportation, for which less emissive alternatives through electrification are available.
Sustainable Development and Delayed Actions	The physical impacts of climate change would be the same for these two scenarios, but they are expected to affect Énergir at different times and in a more or less significant way. Énergir should therefore be less affected by the physical impacts of climate change after 2040. In the Sustainable Development Scenario, the energy transition would already be underway and continuing gradually through to 2030 and 2050. In this scenario, Énergir would have to continuously deal with sustained transition risks. Note that Québec's targets are aligned with the trajectory presented in this scenario. In the Delayed Actions Scenario, the possibility of a shock (an abrupt change in policies after 2030 affecting Énergir directly or the operations of its customers) is foreseeable. In this case, the adaptation of Énergir's business model in order to manage the risks associated with this transition could represent a significant challenge. These scenarios are consistent with limiting temperature rise to 2°C or less compared to pre-industrial levels.	The physical impacts of climate change would be the same, but they are expected to affect Green Mountain Power and Vermont Gas customers at different times and in a less severe way. In both scenarios, global warming is limited to 2 degrees or less by 2100 and therefore the assets and customers of Green Mountain Power and Vermont Gas would be less disrupted by climate change after 2040. In the Sustainable Development Scenario, the energy transition is underway and is faster, but stable by 2030 and 2050. Green Mountain Power customers would benefit from this through increasing load and reducing rate pressure. In the Delayed Actions Scenario, the actions needed to limit global warming to 2 degrees by 2100 do not occur until a sharp change in policies after 2030. In this case, managing Green Mountain Power's portfolio and operating activities to maintain a clean, cost-effective and reliable energy system would be key to helping its customers.	In the Sustainable Development Scenario, the energy transition is underway and is faster, but stable by 2030 and 2050. Vermont Gas is expected to continually deal with sustained transition risks. In the Delayed Actions Scenario, there is possibility of a shock (a sharp change in policies after 2030 affecting Vermont Gas directly or its clients' activities). In this case, adapting Vermont Gas' business model to control the risks associated with this transition could represent a considerable challenge. These scenarios are consistent with limiting the temperature rise to 2°C or less compared to pre-industrial levels.
Net zero	Énergir will have to deal continuously with sustained short-term transition risks. While the decarbonization effort will be major for all sectors of the economy by 2030 to limit temperature to 1.5°C relative to pre-industrial levels, this scenario imposes increased transition risks for Énergir but create conditions conducive to the implementation of its decarbonization solutions. Despite limiting temperature increases, physical risks are still expected, but are mitigated by prompt and concerted action. The current and announced policies so far do not allow the realization of the Net Zero Scenario.	Despite the limitation of rising temperatures, physical risks are still anticipated, but mitigated by rapid and concerted action. The current and announced policies so far do not allow the realization of the Net Zero Scenario. In the Net Zero Scenario, Green Mountain Power customers would reap maximum benefits through greater load growth reducing rate pressure. While the decarbonization effort will be major for all sectors of the economy by 2030 to limit the temperature to 1.5°C above pre-industrial levels, this scenario imposes risks of increased transition, but creates very favorable conditions for the implementation of its decarbonization solutions.	In the Net Zero Scenario, Vermont Gas has to continually deal with sustained transition risks in the short term. While the decarbonization effort will be major for all sectors of the economy by 2030 to limit the temperature to 1.5°C above pre-industrial levels, this scenario imposes risks of increased transition for the gas distributor, but creates favorable conditions for the implementation of its decarbonization solutions.

Appendix 4

» Scenario hypotheses

Scenario	Price of Carbon (USD 2020)	Impact of the price of carbon on the price of natural gas (Increase in the cost of natural gas associated with the price of carbon, in current 2020 dollars)	Capture and Storage	Technologies	Energy Consumption	NG Consumption	RCP	Temperature rise according to the RCP
Status quo	<ul style="list-style-type: none"> 2030: 120 USD/tonnes 2050: 462 USD/tonnes⁽¹⁾ 	<ul style="list-style-type: none"> 2030: 6.3 USD (2020)/MBtu – 0.23 USD/m³ 2050: 24.3 USD (2020)/MBtu – 0.87 USD/m³ 	<ul style="list-style-type: none"> 2050: practically no capture and sequestration 	<ul style="list-style-type: none"> CCS⁽²⁾; future technologies 	<ul style="list-style-type: none"> 2030: 5% less compared to 2020 2040: 3% less compared to 2020 2050: 5% less compared to 2020 	Québec : <ul style="list-style-type: none"> 2030: 22% less NG compared to 2020 2050: 77% less NG compared to 2020⁽³⁾ 	7.0	3.6°C
NDC	<ul style="list-style-type: none"> Canada 2030: 135 USD/tonnes Global in 2050: 200 USD/tonnes⁽⁴⁾ 	<ul style="list-style-type: none"> 2030: 7.1 USD (2020)/MBtu – 0.26 USD/m³ 2050: 10.5 USD (2020)/MBtu – 0.38 USD/m³ Demand Effect: reduction in demand that coincides with an increase due to the transition from coal to NG and the increase in the price of carbon. 	<ul style="list-style-type: none"> 2030: 0.35 Gt/year 2035: 2.5 Gt/year 2050: 3.8 Gt/year 	<ul style="list-style-type: none"> Hydrogen electrolysis, CCS whose technologies are to come. CCS is 4 times less important than in the Net Zero scenario. More than 90% of CCS projects in the advanced economies. 	<ul style="list-style-type: none"> 2030: 15% more compared to 2020 2040: 16% more compared to 2020 2050: 16% more compared to 2020 	<ul style="list-style-type: none"> 2030: 9% more NG compared to 2020 2040: 1% more NG compared to 2020 2050: 8% less NG compared to 2020 All new buildings reach zero carbon emission in 2030⁽⁵⁾ 	4.5	Over 2°C
Sustainable Development	<ul style="list-style-type: none"> 2030: 100 USD/tonnes 2050: 160 USD/tonnes⁽⁴⁾ 	<ul style="list-style-type: none"> 2030: 5.3 USD (2020)/MBtu – 0.19 USD/m³ 2050: 8.4 USD (2020)/MBtu – 0.30 USD/m³ Demand Effect: drop in price in 2030 due to a market reduction in the demand for NG from major importers. 	<ul style="list-style-type: none"> 2030: 0.9 Gt/year 2035: 3.5 Gt/year 2050: 5.4 Gt/year 	<ul style="list-style-type: none"> CCS: future technologies 	<ul style="list-style-type: none"> 2030: 5% more compared to 2020 2040: the same as 2020 2050: 5% less compared to 2020 	<ul style="list-style-type: none"> 2030: 2% more NG compared to 2020 2040: 18% less NG compared to 2020 2050: 41% less NG compared to 2020⁽⁵⁾ 	2.6	2°C
Delayed Action	<ul style="list-style-type: none"> 2035: 200 USD/tonnes 2050: 800 USD/tonnes⁽⁶⁾ 	<ul style="list-style-type: none"> 2030: 6.3 USD (2020)/MBtu – 0.23 USD/m³ 2050: 42.1 USD (2020)/MBtu – 1.51 USD/m³ 	N.A.	<ul style="list-style-type: none"> CCS from natural gas and coal combined cycle 	N.A.	<ul style="list-style-type: none"> 2030: global <i>status quo</i> (increase around 19%)⁽⁷⁾ 2050: 72% less production of NG compared to the global <i>status quo</i>⁽⁸⁾ 	4.5 (2030) 2.6 (2050)	2°C
Net Zero	<ul style="list-style-type: none"> 2030: 130 USD/tonnes 2050: 250 USD/tonnes⁽⁴⁾ 	<ul style="list-style-type: none"> 2030: 6.8 USD (2020)/MBtu – 0.25 USD/m³ 2050: 13.2 USD (2020)/MBtu – 0.47 USD/m³ Demand Effect: marked reduction in the demand for NG (55% reduction between 2020 and 2050) and prices fall to the marginal cost of delivery of LNG of projects in development. 	<ul style="list-style-type: none"> 2030: 1.6 Gt/year 2035: 4 Gt/year 2050: 7.6 Gt/year 	<ul style="list-style-type: none"> 2030: 20% of future technologies 2050: 50% new technologies +85% carbon neutral buildings. 60% of CCS projects in developing countries. 	<ul style="list-style-type: none"> 2030: 5% less compared to 2020 2040: 12% less compared to 2020 2050: 17% less compared to 2020 	<ul style="list-style-type: none"> No new production starting in 2030 2030: 15% less NG compared to 2020 2040: 41% less NG compared to 2020 2050: 71% less NG compared to 2020⁽⁵⁾ 	1.9	1.5°C

- Modeling undertaken by Dunsky based on the annual increase of 5% plus inflation of the price of CATS observed since 2013, Source: <https://www.environnement.gouv.qc.ca/changements/carbone/documents-spede/questions-reponses-en.pdf>, p.11).
- Carbon Capture and Sequestration
- Source: Dunsky and ESMIA, Trajectoires de réduction d'émissions de GES du Québec – horizons 2030 and 2050 (updated 2021) (French only), p.42, https://www.dunsky.com/wp-content/uploads/2021/09/Rapport_Final_Trajectoires_QC_2021.pdf.
- Source: World Energy Outlook 2021, Table B.2: CO₂ Prices, p.330, <https://iea.blob.core.windows.net/assets/888004cf-1a38-4716-9e0c-3b0e3fdbf609/WorldEnergyOutlook2021.pdf>.
- Source: World Energy Outlook 2021, Table A.2b: World final consumption, p. 301, <https://iea.blob.core.windows.net/assets/888004cf-1a38-4716-9e0c-3b0e3fdbf609/WorldEnergyOutlook2021.pdf>.
- Source: Bank of Canada – Scenario Analysis and the Economic and Financial Risks from Climate Change, Chart 3, p. 16 (price estimated according to the IPCC rule: \$75/t CO₂ reduces emissions by 20-30% by 2030).
- Increase of 18.9% between 2020 and 2030 for the Stated Policies scenario IEA, Source: World Energy Outlook 2021, Table A.2a: World final consumption – Stated Policies, p. 296.
- Source: Bank of Canada – Scenario Analysis and the Economic and Financial Risks from Climate Change, Table 3, p. 21, <https://www.bankofcanada.ca/wp-content/uploads/2020/05/sdp2020-3.pdf>.



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