

# CLIMATE

## BUILT TO CHANGE THINGS FOR THE BETTER

As the leading U.S. LNG exporter, we are supporting the global energy transition as we supply customers with affordable, reliable and cleaner-burning natural gas. This is helping them to grow their economies, improve local air quality (when displacing coal) and meet their climate goals. We are leveraging our unique position in the market as a conduit between producers and customers in order to effect change. In 2020, we continued our focus to increase transparency on the greenhouse gas (GHG) emissions footprint of our supply chain through expanded engagements with our gas suppliers and shipping partners, and we advanced our assessment of the lifecycle emissions of our LNG.

# CLIMATE

## OUR FOCUS AREAS

As we advance our climate strategy, we are focused on identifying and managing climate-related risks and opportunities facing our business and the broader LNG industry. In this section, we communicate our approach following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD):

- **Governance:** Maintaining board and executive oversight of — and involvement in — the management of climate risks and opportunities, as well as the execution of our climate strategy.
- **Strategy:** Integrating climate considerations across our business to evaluate strategic risks and opportunities that enhance the competitiveness of our LNG and the industry overall.
- **Risk management:** Undertaking comprehensive analyses to assess climate-related risks and opportunities and inform our actions and response.
- **Metrics and targets:** Developing appropriate climate-related metrics and tools to assess and evaluate our GHG performance, as well as the performance of our partners across the LNG value chain.

## BOARD OVERSIGHT AND MANAGEMENT APPROACH

Identifying, assessing and managing climate-related risks and opportunities is critical to our business. In 2018, we established formal, board-level oversight of climate change issues by the board's governance and nominating committee. Members of our executive leadership team oversee the implementation of our climate strategy and emissions performance.

## PROGRESS AND HIGHLIGHTS

- Initiated lifecycle GHG emissions analysis across the LNG value chain.
- Published a [Climate Scenario Analysis](#) to assess the resilience of our current and future business under various carbon-constrained scenarios.
- Reduced Scope 1 GHG emissions intensity over 33%<sup>22</sup> since 2016 and maintained methane intensity at less than 0.02%<sup>23</sup> for the past four years.

## LOOKING FORWARD

- Assess additional GHG management opportunities at our LNG facilities.
- Conduct [pilot-scale field studies](#) on GHG emissions at select producers, with the goal of assessing emissions performance, and scale up relevant quantification, monitoring, reporting, and verification (QMRV) methods.
- Collaborate on a first-of-its-kind study to characterize GHG emissions associated with LNG shipping.
- Intend to provide customers with [Cargo Emissions Tags](#), from 2022, that provide estimated GHG emissions associated with each LNG cargo, from the wellhead to the delivery point.

22. Scope 1 GHG emissions include emissions reported to the EPA under the Greenhouse Gas Reporting Program (GHGRP). All carbon dioxide equivalent (CO<sub>2</sub>e) is reported using 100-year Global Warming Potential (GWP). Methane (CH<sub>4</sub>) GWP = 25 and N<sub>2</sub>O GWP = 298. GHG emissions intensity is reported as total Scope 1 GHG emissions per million standard cubic feet (MMscf) of LNG exported in the calendar year, as reported to the U.S. Department of Energy (DOE). 23. Methane intensity is reported per the ONE Future Reporting Protocol as metric tons of methane emissions per metric tons of LNG exported (as methane), as reported to the DOE.



# CLIMATE GOVERNANCE AND STRATEGY

## GOVERNANCE

### Board oversight

The board's governance and nominating committee maintains formal review of our climate change strategies and policies. The full board received quarterly updates on climate and sustainability initiatives throughout 2020. At our board's request, we held a board climate strategy session in 2020. Senior leaders engaged the board on emerging climate-related risks and opportunities, business unit plans, responses and overall company performance.

An external environmental, social and governance (ESG) expert from one of the world's largest asset managers updated the board on emerging climate and ESG trends through the lens of an institutional shareholder. As an outcome of this board session, we enhanced our climate strategy by launching a corporate-wide effort to further integrate climate into our business and strategy.

### Executive oversight

Under the formal oversight of our board of directors, our executive leaders are directly responsible for identifying, assessing and managing climate-related risks and opportunities, and implementing our climate strategy. The SVP of corporate development and strategy and SVP of policy, government and public affairs (PGPA) lead the development

and execution of our climate strategy. Executives across our business functions, including our chief financial officer, chief commercial officer, executive vice president of worldwide trading, and the SVP of operations — who maintains responsibility for monitoring and managing our emissions footprint — help guide this effort. Our executive leadership reports directly to our CEO on climate strategy and planning on a regular basis. In 2021, an ESG metric will account for 10% of the total performance scorecard weighting as part of our annual cash bonuses. Including ESG as one of our strategic metrics for 2021 illustrates our company-wide commitment to these important issues.

## STRATEGY

We believe that Cheniere's LNG has a net positive impact on global emissions, helping to meet growing energy demand, supporting the energy transition by displacing more carbon-intensive fossil fuels, and enabling further adoption of renewables. As a result, we expect LNG demand to continue to grow for decades. In addition, we are using our unique position in the industry — building on our relationships with gas producers, LNG customers, shipping owners and others — to help reduce the carbon footprint of our value chain.

We aim not only to remain economically competitive compared to other global natural gas suppliers, but also environmentally competitive. In 2020, we launched a comprehensive initiative to further integrate climate considerations into our corporate strategic priorities. Built around our Climate and Sustainability Principles, this integration effort is focused on identifying, assessing and managing strategic risks and opportunities across all parts of our organization and our value chain. The primary goals of this effort are to improve environmental performance, strengthen the long-term resilience of our company and help ensure that our LNG continues to provide climate benefits to our customers.



We view the recommendations of the TCFD as a global standard for climate disclosure and have strengthened alignment of our disclosures with the TCFD framework surrounding its four key themes: Governance, Strategy, Risk Management, Metrics and Targets. The remainder of this section responds to the TCFD reporting recommendations, and our [TCFD Index](#) provides additional relevant sources and details our level of alignment with each recommendation.

“Cheniere has been a leading driver within Collaboratory to Advance Methane Science (CAMS) in supporting our first-of-a-kind research project to measure total methane emissions from an LNG carrier vessel. This project will give us the know-how to develop a much stronger understanding of the climate impact of LNG and how to mitigate it, and Cheniere has been a critical component in both funding and providing expertise on shipping logistics.”

– Dr. Paul Balcombe, Queen Mary University of London

# OUR CLIMATE STRATEGY IS BASED ON THE FOUR PILLARS OF OUR CLIMATE AND SUSTAINABILITY PRINCIPLES:

## Supply chain



We are working to leverage our position to improve environmental performance across our supply chain.

In 2020, we continued to increase transparency on the GHG emissions footprint of our supply chain through expanded engagements with our gas suppliers and shipping partners. We also advanced our assessment of the lifecycle emissions of the LNG we supply. We believe that the data gathered in these initiatives will support the advancement of robust, science-based policies. To that end, we recently announced that beginning in 2022, we intend to provide our long-term customers with [Cargo Emissions \(CE\) Tags](#) that will provide estimated GHG emissions associated with each LNG cargo, from the wellhead to the delivery point. The CE Tag will be calculated using our lifecycle analysis model, which is built upon the U.S. Department of Energy's framework but is customized for our value chain, utilizing data from our gas suppliers, LNG transporters and liquefaction facilities. We also host an annual gas supplier workshop with our upstream producer partners, at which we reiterate the importance of climate and sustainability. We collaboratively share best practices and data, and encourage proactive measures to monitor, report and mitigate emissions. The U.S. natural gas industry has already taken steps to improve its emissions transparency and voluntarily reduce methane emissions. In fact, approximately 70% of the gas volumes we purchased in 2020 came from companies committed to a voluntary methane emissions reduction target. Moreover, in early 2021, we launched a new initiative with our suppliers to further enhance the management of GHG emissions and support emissions QMRV, a critical step in addressing GHG emissions. In addition, to reduce LNG shipping emissions,

when considering our term shipping requirements, Cheniere Marketing (CMI) seeks to charter vessels with the most efficient propulsion and containment systems, where feasible.<sup>24</sup> In May 2021, Cheniere and Shell worked together to [offset the full lifecycle GHG emissions](#) associated with a cargo of LNG, by retiring nature-based offsets to account for the estimated CO<sub>2</sub>e emissions produced through the entire value chain, from production through use by the final consumer. We're focused on measuring, reducing and mitigating emissions, and this first carbon neutral cargo for Cheniere highlights our efforts to measure and mitigate emissions throughout the LNG value chain.

## Science



We base our climate strategy and decisions on the best available science. We are analyzing our lifecycle GHG emissions to identify and assess climate-related risks and opportunities across our value chain, with the strategic goals of supporting the resiliency of our LNG and promoting transparency, avoidance and reduction in our GHG footprint. As a co-founder of CAMS,<sup>25</sup> we are also advancing peer-reviewed research to enhance understanding of the natural gas industry's climate impacts and opportunities. This includes supporting several studies to better understand emissions profiles across the LNG value chain, including the first-ever [onboard assessment](#) of emissions from LNG vessels, which will be led by Queen Mary University of London.<sup>26</sup> We are also establishing a [new research and development \(R&D\) project](#) with selected gas producers to assess emission performance and QMRV, and the scalability of the novel emissions monitoring methods.

## Transparency



Our efforts to advance the measurement and quantification of emissions data will increase transparency across our value chain. Transparent communication and engagement with our stakeholders are also key priorities. This CR report, which was developed based on direct engagement with — and feedback from — our stakeholders, is our primary vehicle for climate-related disclosures. Since issuing our inaugural 2019 CR report, we have strengthened our alignment with the TCFD recommendations and published a Climate Scenario Analysis to communicate the resilience of Cheniere's business under various climate scenarios.

## Operational excellence



We integrate emissions reductions and efficiency improvements in our own operational design. Indeed, we are assessing the economic and operational feasibility of GHG management solutions at our Sabine Pass and Corpus Christi facilities in Louisiana and Texas.

“We're at the nexus of our upstream suppliers in North America and our customers around the world. We believe that, because of that position, we have a responsibility and commercial incentive to support and encourage efforts to increase the monitoring, reporting and verification, as well as mitigation, of methane emissions to maximize the climate benefits of LNG for our customers.”

– Anatol Feygin, Executive Vice President and Chief Commercial Officer

## CASE STUDY

Read more online about:

[Managing GHG emissions across the value chain](#)

<sup>24</sup> Cheniere considers the most efficient vessels available to include vessels that are not less than 173,400 cubic-meter vessels with two-stroke propulsion systems, which include XDF or MEGI vessels. XDF refers to vessels with low-pressure dual-fuel (LPDF), two-stroke engines. MEGI (main engine gas injection) refers to vessels with high-pressure dual-fuel (HPDF), two-stroke engines.

<sup>25</sup> Collaboratory to Advance Methane Science (CAMS) (2021), <https://methanecollaboratory.com/>. <sup>26</sup> CAMS, Research Opportunities (2021), <https://methanecollaboratory.com/research-opportunities/>.

## RISK MANAGEMENT

### Enterprise risk assessment

We incorporate climate-related risks and opportunities into our annual enterprise risk assessment (ERA) process, which is overseen by our chief risk officer and reviewed by the board of directors. We conduct an ERA to identify short- and medium-term risks within a five-year time horizon. We analyze these risks in terms of their potential financial or reputational impact on the organization. The formal ERA process takes place on an annual basis with a mid-year check-in to determine if any significant changes identified during the annual ERA process need to be addressed. Additionally, individuals responsible for oversight of climate risk have the ability to bring any significant changes to the attention of the chief risk officer on an ad hoc basis. The SVP of corporate development and strategy and SVP of PGPA are responsible for assessing climate-related risks as part of the overall ERA process.

### Identifying and managing climate-related risks and opportunities

The TCFD defines potential climate-related risks and opportunities according to two categories: transition and physical risks. Transition risks are those that stem from regulatory, economic, market, technological and other societal changes associated with the transition to a lower-carbon economy. Physical risks are those associated with physical impacts from climate change, like increases in severe weather or changes in weather patterns. We consider these risks over the short-, medium- and long-term, including their related potential financial impacts. In 2020, we also initiated a Climate Scenario Analysis to better understand these potential impacts and assess the resilience of our business model under a range of scenarios, which helps inform our strategy and business planning.

### Transition risks

To identify policy-related risks and opportunities, we review international and domestic climate policies and assess how they may affect our business. We also follow potential regulatory changes that could impact our business, as well as any potential requirements to expand reporting on climate or other environmental impacts. To manage these risks, we conduct ongoing engagements with policymakers and think tanks in the United States and key international markets.

To assess market risks, we actively engage our customers to help us understand changing market sentiment. Our efforts to enhance transparency around GHG emissions across the LNG value chain can inform and support our suppliers and customers' decarbonization efforts, and thereby help to enhance the GHG footprint of our product and the broader industry.

We work to address technology risks by assessing opportunities to reduce the carbon footprint of our product and help ensure the climate benefits of U.S. LNG. For example, we prioritize efforts to monitor and mitigate emissions in our operations and implement measures to improve efficiency throughout all phases, including design, construction and into ongoing operations.

We manage climate-related reputational risks through regular stakeholder engagement. In 2020, we interviewed over 60 stakeholders as part of efforts to identify our most relevant ESG topics and to better understand potential climate-related risks and opportunities to Cheniere's business (see [page 10](#)).

### Physical risks

We analyze our climate-related physical risks and opportunities during the design, construction and operation of our LNG facilities, and have built these to withstand a variety of extreme weather conditions. We have a dedicated Emergency Response Program, through which we plan and prepare for potential events, including extreme weather, that could impact business continuity and our workforce or our communities (see [page 36](#)).

In 2020, we enhanced our enterprise crisis management framework by strengthening our coordination and response process and establishing an executive-level crisis advisory team. Our emergency response capabilities and facility design were tested during one of the most active hurricane seasons on record. At Sabine Pass, our facility performed as planned during Hurricane Laura, and we safely reinitiated LNG production after operations had been suspended for only a week. Further, we conclude that Cheniere does not operate in any [areas of high water stress](#).

### Potential climate-related risks and opportunities identified

As recommended by the TCFD, the following tables outline potential climate-related risks and opportunities, and mitigation opportunities that are relevant for our business. The mitigation measures identified are potential measures that may be relevant to addressing the corresponding risks. This list is not meant to be exhaustive nor commits Cheniere to incorporate these measures as part of its ERA process.



### Climate Scenario Analysis

In April 2021, we issued the "[Climate Scenario Analysis: Transitional Risk](#)" report, which provides insights into climate-related risks and opportunities related to the long-term resilience of Cheniere's business under multiple scenarios, including a trajectory consistent with the goals of the Paris Agreement to limit global warming to well below 2°C compared to pre-industrial levels. The report was informed by the recommendations of the TCFD.

Under all scenarios evaluated, we find that Cheniere is positioned to help meet growing demand for LNG through 2040. The analysis validates Cheniere's belief in the long-term resiliency of its business, even under a well-below-2°C pathway and a major transformation of the global energy system.

**POTENTIAL CLIMATE-RELATED PHYSICAL RISKS AND FINANCIAL IMPACTS**

Category	Potential climate-related risks	Potential financial impacts	Potential mitigation opportunities <sup>27</sup>
<b>Acute risks<sup>28</sup></b>	Increased frequency and severity of severe weather events (e.g., hurricanes, storm surge, temperature volatility)	Interruption of operations; damage to assets; delays in the completion of construction projects; increased insurance premiums	Business continuity and emergency response planning; physical risk assessment and modeling; property damage and business interruption insurance
<b>Chronic risks<sup>29</sup></b>	Rising sea levels; rising average temperatures	Damage to coastal assets; increased insurance premiums; increased resiliency costs	Infrastructure hardening beyond existing stringent design and construction considerations; solutions to strengthen coastal resilience

**POTENTIAL CLIMATE-RELATED TRANSITION RISKS AND FINANCIAL IMPACTS**

Category	Potential climate-related risks	Potential financial impacts	Potential mitigation opportunities
<b>Policy and legal risks</b>	More stringent state and federal reporting obligations and regulatory approval processes	Higher compliance costs and difficulty obtaining and maintaining permits from regulatory agencies	R&D on GHG emissions including methane; transparent, peer-reviewed GHG QMRV tools; engagement with domestic and international policymakers, regulators and industry organizations to advocate for uniform science-based policies for all market participants; monitoring of regulatory developments domestically and internationally; reducing operational footprint by improving efficiency and CO <sub>2</sub> management solutions
	Carbon policies, including methane regulations or standards in the United States and destination markets	Increased domestic natural gas prices; higher cost to supply gas to LNG terminals	
	New and existing subsidies for competing energy sources	Increased cost of exporting or limits to LNG exports to destination markets	
	Policies restricting or banning hydraulic fracturing	Reduced demand for LNG due to policy changes	
<b>Technology risks</b>	Technological advancements and increased integration of renewable energy sources	Restricted domestic gas supply and increased costs; reduced competitiveness of LNG in global markets	Innovation of product offerings with green credentials; diversification of services
		Reduced demand for LNG	

27. This column refers to potential mitigation opportunities that could be employed. Cheniere has not undertaken these activities, nor is it committed to doing so. 28. The TCFD defines “acute risks” as physical risks emanating from climate change that are event-driven (e.g., increased severity of extreme weather events like cyclones, droughts, fires, etc.). Task Force on Climate-related Financial Disclosures (TCFD) (2017, June), Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-TCFD-Annex-Amended-121517.pdf>. 29. The TCFD defines “chronic risks” as physical risks stemming from climate change that are driven by longer-term shifts in precipitation and temperature and increased variability in weather patterns (e.g., sea-level rise). Task Force on Climate-related Financial Disclosures (TCFD), (2017, June), Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-TCFD-Annex-Amended-121517.pdf>.

**POTENTIAL CLIMATE-RELATED TRANSITION RISKS AND FINANCIAL IMPACTS (CONT.)**

Category	Potential climate-related risks	Potential financial impacts	Potential mitigation opportunities
<b>Market risks</b>	Changing customer and financial market sentiment	Reduced demand for LNG due to changing customer preferences	Innovation of product offerings with green credentials; capital discipline; monitoring and transparency of lifecycle product footprint; additional measures to avoid, reduce, remove and offset emissions
	Uncertainty in market signals	Shifts in energy prices due to disruptions or impacts of climate change on supply and demand	Use of long-term contracts; flexible LNG marketing and trading (e.g., delivered at terminal cargoes)
	Increased cost of raw materials	Increased natural gas prices; increased production costs	Financial and capital allocation planning; identifying and expanding gas supply
	Introduction of low-cost, less carbon-intensive supply from new regions	Reduced demand for LNG	Monitoring of major shifts in natural gas and LNG markets including supply-demand mix, political and economic indicators, climate research, carbon policies; disciplined approach to capital deployment; commercial innovation, emphasis on value differentiators — including reputation, reliability and increased transparency — and standardization of lifecycle emissions; improvement of GHG footprint to differentiate Cheniere among global suppliers
<b>Reputational risks</b>	Stigmatization of sector	Additional financing challenges for new projects	Stakeholder engagement; industry collaboration and partnerships; transparent disclosure and reporting; improving carbon footprint across LNG value chain; operational carbon emission reduction through efficiency, capture and offsets
	Negative stakeholder feedback; poor operations by certain actors within the natural gas supply chain	Failure to hold social license to operate; increased communications costs; challenges attracting and retaining talent; increased cost of capital; reduced revenue	

**POTENTIAL CLIMATE-RELATED TRANSITION OPPORTUNITIES AND FINANCIAL IMPACTS**

Category	Potential climate-related opportunities	Potential financial impacts
<b>Technology and production efficiency</b>	Improvements in LNG facility design, energy and production efficiency	Reduced operating costs and increased production efficiency resulting in increased revenue; return on investment for efficiency or low-emission technology
	Upstream technology improvements; improvements in efficiency for newbuild LNG vessels	Increased competitiveness due to lower lifecycle emissions footprint of LNG
<b>Emissions tracking and mitigation</b>	Investment in research and development related to emissions characterization and management across the natural gas value chain	Innovative approach to retain cost competitiveness, and development of innovative commercial products and solutions; better management of future operating costs; responsiveness to customer preferences and requirements
	Investments in carbon capture, utilization and storage (CCUS); use of government incentives for carbon mitigation	Reduced exposure to carbon policies and regulations
	Assessment of supply chain lifecycle emissions; investment in digitization, quantification, monitoring, verification and reporting; engagement with partners across the LNG value chain on emissions management	Increased customer demand due to the ability of less carbon-intensive LNG to meet customers' climate goals; increased competitiveness due to enhanced transparency on the emissions profile of Cheniere LNG; reputational benefits; increased access to capital
<b>Products and services</b>	Development of innovative products with green credentials	Increased resilience of LNG due to availability of low-emission or carbon neutral products
	Diversification of products and services including LNG bunkering services for the marine fuel market	Increased revenue
<b>Government policies and consumer sentiment</b>	Shifts in consumer preferences leading to greater demand for natural gas relative to other fossil fuels	Increased revenue due to increased global demand for less carbon-intensive energy sources
	Access to new markets as a result of government climate policies	Increased revenue due to access to new and emerging markets
<b>Strategic planning</b>	Integration of climate into core business strategy and long-term planning	Increased access to capital due to stronger stakeholder relationships; improved competitive positioning; reduced exposure to carbon policies and regulations; increased revenue and demand
	Increased stakeholder engagement and disclosure	Reputational benefits; reduced cost of capital
	Access to innovative financial products (e.g., transition bonds, sustainability-linked loans)	Reduced cost of capital; reputational benefits

## METRICS AND TARGETS

We prioritize efforts to monitor and mitigate emissions across our operations and implement measures to improve efficiency throughout design, construction and ongoing operations. Such efforts are overseen by the SVP of operations, who provides regular updates to the board of directors on our performance. We track several metrics to assess and manage our operational footprint in line with our climate strategy. We focus on GHG and methane emissions intensity metrics to assess our year-to-year performance and how efficiently we are operating as we expand our LNG production capacity, while also reporting our absolute emissions (see [page 49](#)).

Our GHG emissions data reflect important elements of our company’s growth. As our production capacity grows with new liquefaction units, or “trains,” we will continue to focus on monitoring our GHG emissions intensity as a more meaningful measure of GHG performance management, in addition to absolute emissions. Trains that are being commissioned but are not yet fully operational also have an impact on our GHG and methane emissions intensity. In 2020, seven trains were fully operational, but one additional train began commissioning with production of first LNG and was placed into full operation in 2021.

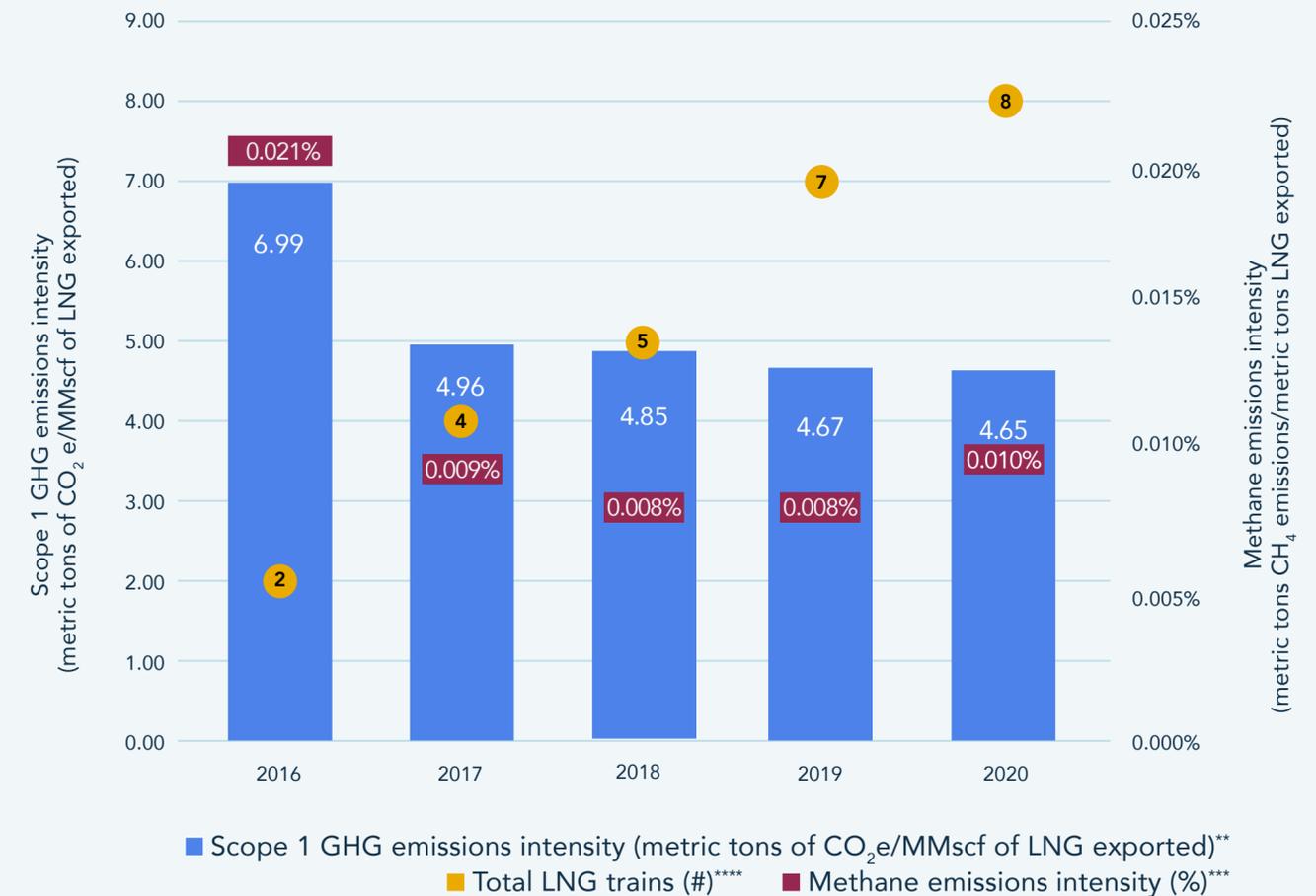
Between 2016 and 2020, our Scope 1 GHG emissions intensity decreased by over 33% and methane emissions intensity decreased by 52%, primarily due to the addition of LNG capacity and improved efficiency and operational practices. In 2020, due to the global pandemic, we experienced a 9% decrease in LNG exports from our terminals relative to 2019, and a 0.5% decrease in total GHG intensity.

However, we saw an increase of 426 metric tons in methane emissions, primarily caused by a release of hydrocarbons during Hurricane Laura, a Category 4 hurricane. Hurricane Laura triggered a complete shutdown and evacuation of the Sabine Pass facility and necessitated intermittent venting from the LNG tanks to ensure safety of people, plant and community. All practicable precautions were taken in accordance with established plans and procedures to mitigate the potential for releases to occur while evacuating the plant site and rendering the equipment safe, as well as during the restart of the facility. We reported this incident to the Louisiana Department of Environmental Quality (LDEQ). As a result, we saw methane emissions increase in 2020 by 19.8%.

Methane constitutes a small fraction of our total Scope 1 emissions. Including LNG terminals and pipelines, methane emissions represented just 1.05% of our total Scope 1 emissions in 2020. In addition, we have maintained a methane emissions intensity rate of less than 0.02% over the past four years, significantly lower than targets of 0.2%-0.25% or lower set by industry initiatives such as the Oil and Gas Climate Initiative (OGCI).<sup>30</sup> Nonetheless, we continue to monitor and reduce fugitive and vented methane emissions in our operations.

CO<sub>2</sub> represents the majority of our Scope 1 GHG emissions. Our absolute Scope 1 CO<sub>2</sub> emissions decreased by about 10% in 2020 compared to 2019, primarily due to decreased production related to the COVID-19 pandemic.

### SCOPE 1 GHG AND METHANE INTENSITY\*



\* All CO<sub>2</sub>e is reported using 100-year GWP. CH<sub>4</sub> GWP = 25 and N<sub>2</sub>O GWP = 298.  
 \*\* Scope 1 GHG emissions include emissions reported to the EPA under the GHGRP. All CO<sub>2</sub>e is reported using 100-year GWP. CH<sub>4</sub> GWP = 25 and N<sub>2</sub>O GWP = 298  
 \*\*\* CH<sub>4</sub> intensity is reported per the ONE Future Reporting Protocol as metric tons of CH<sub>4</sub> emissions per metric tons of LNG exported (as methane), as reported to the DOE.  
 \*\*\*\* Trains that are being commissioned but are not yet fully operational also have an impact on our GHG and CH<sub>4</sub> emissions intensity. In 2020, seven trains were fully operational but one additional train began commissioning with production of first LNG and was placed into full operation in 2021. Number of LNG trains reflects the number of trains from which emissions were included in annual reporting to the EPA GHGRP.

## REDUCING GHG EMISSIONS IN OUR OPERATIONS

Our LNG facilities are our largest source of energy consumption and Scope 1 GHG emissions, primarily due to the power used for refrigerant turbines and thermal oxidizers. We have implemented a range of technologies and processes to help us reduce these emissions, including:

- **Waste heat recovery (WHR) systems:** All our LNG trains capture waste heat from refrigerant turbines and from their thermal oxidizer combustion exhausts, which is used to provide heat for other processes needed throughout the facilities. By incorporating WHR systems into our design, we estimate fuel savings of approximately 4 million

standard cubic feet per day (MMscfd) per train, which would translate to over 600,000 metric tons per year of CO<sub>2</sub> savings from our eight operational trains at the Sabine Pass and Corpus Christi liquefaction facilities.<sup>31</sup>

- **Methane emissions management:** Through our subsidiaries, affiliates and investments, we operate three pipelines, all of which were constructed using several best practices for managing emissions. For instance, it is our standard practice to use zero-emission, compressed-air pneumatic controllers on valves and other equipment, which eliminate methane emissions from these devices. We have also minimized the number of pipeline blowdowns, which reduce the release of methane emissions, by keeping

compressors pressurized for up to 12 hours after required shutdowns. We have started a program to enhance this technology by allowing a compressor to remain pressurized after shutdown for several days. We also perform fugitive methane emissions monitoring at our LNG terminals and compressor stations on a regular basis. Between 2016 and 2020, we conducted 48 surveys across our company, covering close to 400,000 components. As shown in the 2020 GHG emissions breakdown chart below, fugitive methane emissions constitute 0.14% of our total GHG emissions. See the [Key Performance Data table](#) for additional emissions data.

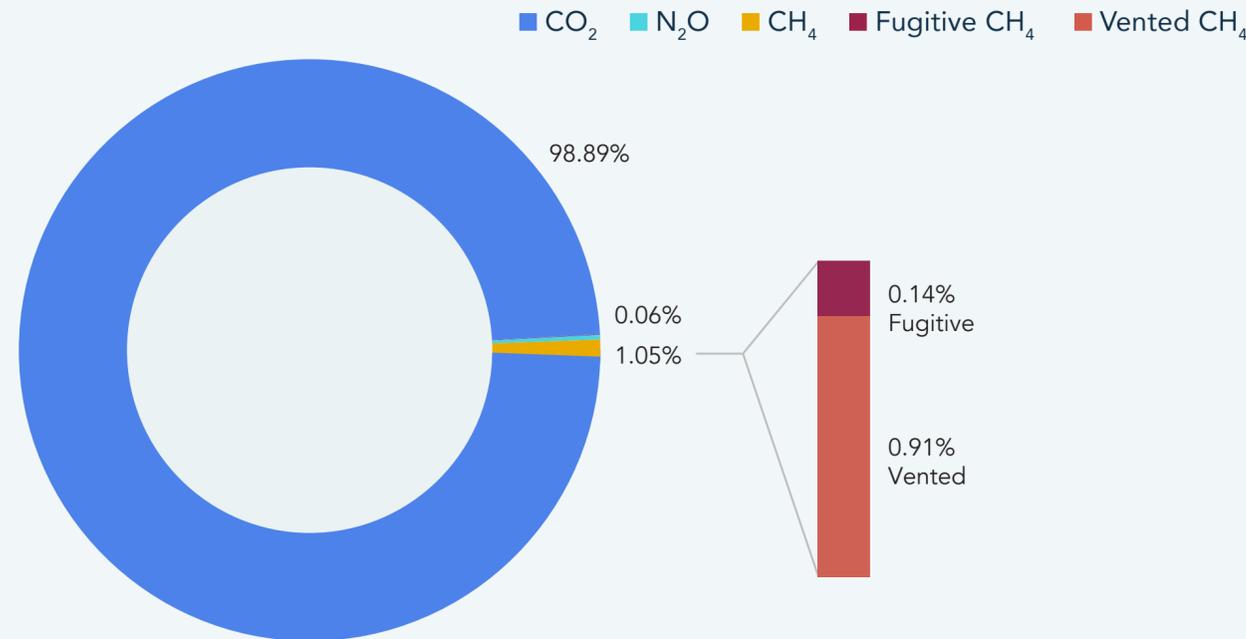
### READ MORE

Read more in our [ESG Metrics and Disclosures Appendix](#) about:

[GHG emissions monitoring and management](#)

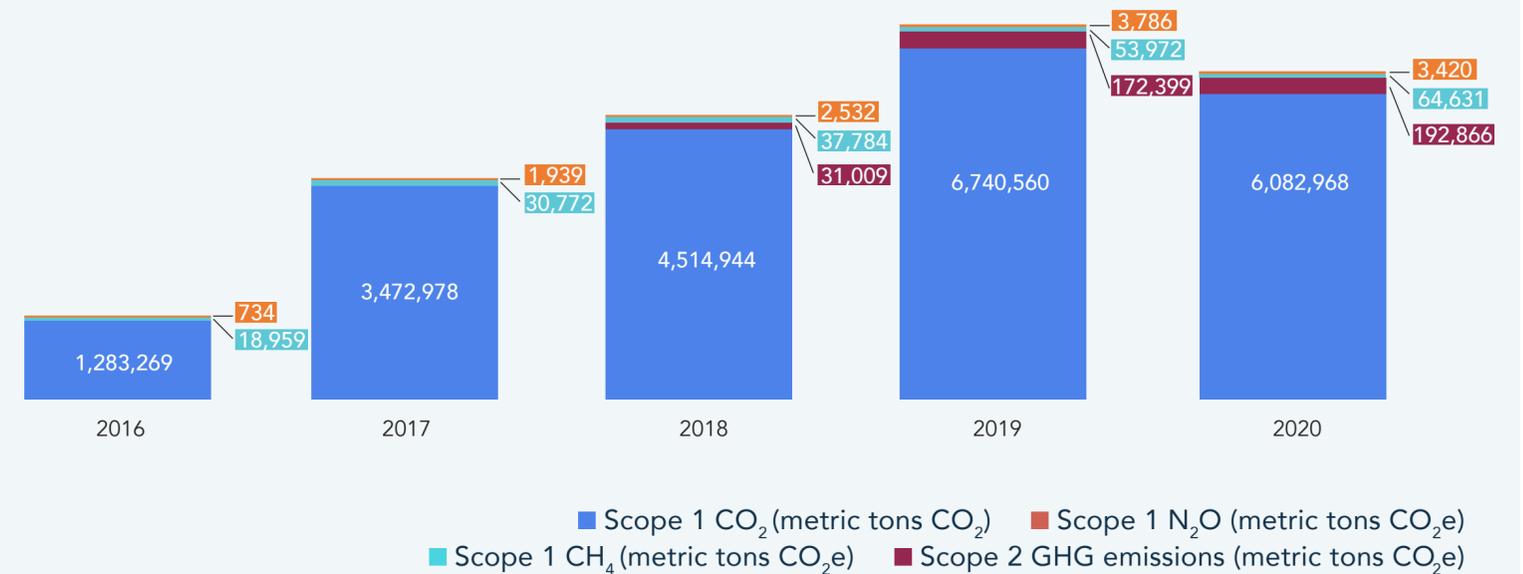
[Operational efficiency and energy management](#)

## 2020 SCOPE 1 GHG EMISSIONS BREAKDOWN



All GHG emissions are disclosed as reported to the EPA under the GHGRP. All CO<sub>2</sub>e is reported using 100-year GWP. CH<sub>4</sub> GWP = 25 and N<sub>2</sub>O GWP = 298. Scope 1 GHG emissions intensity as reported to the EPA under the GHGRP, per MMscf of LNG exported in the calendar year, as reported to the DOE.

## SCOPE 1 AND 2 GHG EMISSIONS



Emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are reported on an absolute basis without GWP weighting as reported to the EPA under the GHGRP. Scope 2 emissions (2018–2020) are based on electricity purchased for use at major offices and operating sites using the location-based method per the GHG protocol Scope 2 guidance.

31. In 2020, seven trains were fully operational, but one additional train began commissioning with production of first LNG and was placed into full operation in 2021.