climate change resilience

advancing a lower carbon future

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Original release October 11, 2021; updates October 12, 2021, including page 38 (updated description of Scope 3 emissions) and page 42 (updated routine flaring language).

a view from our lead director

"We are confident in Chevron's ability to deliver higher returns and lower carbon."

"The Board oversees Chevron's performance and management of various environmental, social, and governance matters with a commitment to understanding and responding to the feedback of our investors and stakeholders. When we meet with investors and other stakeholders, Chevron's approach to climate change and the energy transition is an important part of the dialogue.

At this year's Annual Meeting of Stockholders, the level of support for climate-related proposals indicated investors' expectations for additional information and action. To be responsive, we have updated this year's *Climate Change Resilience* report with new details about our approach to Scope 3 emission targets and our aspiration to be net zero in Upstream Scope 1 and 2 emissions.

We believe the future of energy will be lower carbon, and we intend to be a leader in that future."

— Dr. Ronald D. Sugar
Lead Director

chairman's letter

"Solutions start with problem solving, which is exactly what the people of Chevron do—and what we have excelled at for over 140 years."

In the four years since publishing our first climate risk disclosure, conversations about climate have intensified, innovation and technology advancement has accelerated, and the energy system that underpins our global economy has continued to evolve. So have we.

Investors, partners, and employees frequently ask what the future of energy holds, what it means for our Company, and how we can work to help address climate change. Solutions start with problem solving, which is exactly what the people of Chevron do—and what we have excelled at for over 140 years.

Achieving change at scale requires partnership and collaboration throughout the energy system. It calls for advancements in science, engineering, and infrastructure; leaps in technology; and smart evolution of policy. Succeeding in this future means continuing to make energy ever cleaner and—to bring all of society forward—affordable and reliable on a global scale.

Transitioning to a lower carbon future provides opportunity for our Company and our customers. Essential industries that have helped build modern society, like transportation, agriculture, and manufacturing, desire to find viable ways to lower the carbon intensity of their operations. Our work to create fuels of the future—like hydrogen, renewable diesel, and sustainable aviation fuel—seeks to lower the carbon intensity of these products and support our customers' efforts to reduce their greenhouse gas emissions. Opportunity also exists for surface and subsurface storage of carbon, a critical enabler of global net zero ambitions. Our strategy is straightforward: Be a leader in efficient and lower carbon production of traditional energy, in high demand today and for years to come, while growing low-carbon businesses that will be a bigger part of the future.

When the Paris Agreement went into effect in 2016, the carbon intensity of our oil production was near the global industry average. Since that time, we've taken steps to reduce our Upstream Scope 1 and 2 carbon intensity, and in 2020, we achieved first-quartile performance for both oil and gas. Earlier this year, we established 2028 carbon-intensity targets, aligned with the second Paris Agreement stocktake. To communicate our progress in lowering the overall carbon intensity of our traditional operations and growing lower carbon business lines to help address Scope 3 emissions, we are introducing a portfolio carbon-intensity metric. This approach will measure the full value chain carbon intensity of our entire business. We are also introducing a net zero aspiration for Upstream Scope 1 and 2 emissions. We believe we have a competitive advantage to deliver carbon solutions that are good for our stockholders and all stakeholders.

As a company of problem solvers, we look to the future of energy with optimism, believing it to be essential to human progress. This report offers further information and insights about our strategy, the steps we're taking to advance a lower carbon future, and the reasons we believe this is an exciting time to be in the business of energy.

Thank you,

Mike

Michael K. Wirth
Chairman of the Board and
Chief Executive Officer
October 2021

advancing a lower carbon future

carbon aspirations

pages 38, 50, 62

eliminating
net zero 2050 for upstream scope 1 and 2 emissions

enabling
emissions reductions of 30 mmtpa CO_2e by 2028

capital allocation

pages 40, 50–54

$2B
by 2028 in carbon-reduction projects

$8B
by 2028 in low-carbon investments

targets

pages 44, 46, 48–52, 59–61

carbon intensity 2028 targets:

portfolio carbon intensity (scope 1, 2, and 3)
71 g CO_2e/MJ

upstream carbon intensity (scope 1 and 2)
24 kg CO_2e/boe

refining carbon intensity (scope 1 and 2)
36 kg CO_2e/boe

low-carbon business 2030 targets:

renewable fuels
100 mbd

hydrogen*
150 mtpa

carbon capture and offsets
25 mmtpa

MJ = megajoules boe = barrels of oil-equivalent mbd = thousands of barrels per day
mtpa = thousands of tonnes per annum mmtpa = millions of tonnes per annum

*Chevron's approach to hydrogen envisions the use of green, blue, and gray hydrogen. For more information, see page 51.

policy

pages 43, 58

transparent reporting

carbon pricing

This report contains forward-looking statements relating to Chevron's operations that are based on management's current expectations, estimates, and projections. For more information, see page 72.

executive summary

At Chevron, we believe the future of energy is lower carbon, and we support the global net zero ambitions of the Paris Agreement. This report builds on our previous four reports and has updates throughout, including key updates to pages 32–44 to reflect our response to stockholders on net zero and our contributions to support our customers in addressing their emissions (Scope 3).

reliable and disciplined oversight

Our governance structure calls for Chevron's full Board of Directors and executive leadership to exercise their oversight responsibilities with respect to potential climate change–related risks and energy-transition opportunities. This oversight is executed through regular engagement by the full Board of Directors and also through deeper, focused engagement by all Board committees. This occurs primarily through the Board's Public Policy and Sustainability Committee, as well as the Board's Management Compensation, Audit, and Nominating and Governance Committees. At the executive level, we manage potential climate change–related risks and energy-transition opportunities through the Enterprise Leadership Team and the Global Issues Committee, each of which meets regularly throughout the year. We periodically reassess our governance structure to enable Chevron to maintain a Board composition and governance framework that is effective for managing the Company's performance and risks as we deliver value to our investors.

risk assessment and management

We face a broad array of risks, including physical, legal, policy, technology, market, and reputational risks. We utilize an enterprisewide process to assess major risks to the Company and seek to apply appropriate mitigations and safeguards. As part of this process, we conduct an annual risk review with executive leadership and the Board of Directors and assess our risks, safeguards, and mitigations.

higher returns, lower carbon

Our primary objective is to deliver higher returns, lower carbon, and superior shareholder value in any business environment. Chevron's strategic and business planning processes bring together the Company's views on long-term energy market fundamentals to guide decision making by executives and to facilitate oversight by the Board of Directors. The world's energy demands are greater now than at any time in human history. Chevron has a long and celebrated history of producing oil, gas, and other products that enable human progress, which it proudly continues today, as it pursues the energy future. Most published outlooks conclude that fossil fuels will remain an important part of the energy system for years to come, and that the energy mix will include increasingly lower carbon sources. As part of our strategic planning process, we use models and internal analysis to forecast demand, energy mix, supply, commodity pricing, and carbon prices—all of which include assumptions about future policy, such as those that may be implemented in support of the Paris Agreement's goal of "holding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels."

In 2020, more than 60 percent of our total Scope 1 and 2 equity greenhouse gas (GHG) emissions (i.e., participating share of emissions both from facilities that Chevron operates and from our nonoperated joint ventures) were in regions with existing or developing carbon-pricing policies.* In this environment, and into a future likely to include additional lower carbon policies, we seek to find solutions that are good for society and good for investors.

We use carbon prices and derived carbon costs in business planning, investment decisions, impairment reviews, reserves calculations, and assessment of carbon-reduction and new energy opportunities. We believe that our asset mix and actions in new energies enable us to be flexible in response to potential changes in supply and demand, even in lower carbon scenarios like the International Energy Agency's (IEA) *Net Zero by 2050* (NZE 2050) scenario or under higher-emissions scenarios like the Intergovernmental Panel on Climate Change AR5 Representative Concentration Pathway 8.5 that models a hypothetical upper bound of physical risks. We believe the likelihood of either scenario is remote and do not rely on either scenario in our current business planning.

success in a lower carbon future

Affordable, reliable, ever-cleaner energy is essential to achieving a more prosperous world. We have a strategy that combines a high-return, low-growth, lower carbon–intensity† traditional business together with faster-growing, profitable, lower carbon new energy businesses that leverage our strengths.

in summary

Chevron has world-class capabilities and people—and we intend to apply them to advance Chevron's growth to a lower carbon future. Higher returns, lower carbon: We believe we must deliver both to earn a higher valuation for our stockholders and benefit all stakeholders.

* Scope 1 includes direct emissions. Scope 2 includes indirect emissions from imported electricity and steam. Scope 3 includes all other indirect emissions, such as the use of products by customers.
† Carbon intensity refers to a measure of CO_2e per unit of production. For more information, see page 61.

Q&A

with the honorable jon m. huntsman jr., former ambassador and member of the PPSC

"If Chevron is to lead responsibly on climate, then ambitions are required. We support the Paris Agreement, which calls for achieving net zero GHG emissions in the second half of this century."

As you return to the Chevron Board, including serving on the Public Policy and Sustainability Committee, what do you see as the greatest policy issue facing the Company today?

Huntsman: Chevron is a world-class company with a significant global reach. Of all the policy issues facing the Company, the one that transcends all others is climate change. We must lead and be solution oriented, which gladly is recognized by Chevron leadership, starting with the Board. We are well-positioned to confront the post-COVID environment, which will carry both social and economic challenges. But at the same time, we will expect that Chevron helps advance a lower carbon economy. With 140 years of navigating difficult circumstances and policy issues, Chevron is better prepared than ever to lead as a responsible and respected global energy company.

Some are calling for Chevron to establish an ambition for net zero by 2050. What is your view on the issue?

Huntsman: If Chevron is to lead responsibly on climate, then ambitions are required. We support the Paris Agreement, which calls for achieving net zero GHG emissions in the second half of this century. Chevron is already a leader in producing energy at a carbon intensity well below the average of the global system and is in the best-performing quartile of all oil and gas producers. Addressing the world's need for affordable, reliable, and lower carbon energy is a priority that must be tailored to our broader goals around sustainability while generating a competitive return for investors. Our Board is deeply engaged on this issue and has aligned the Company's ambitions to advance these opportunities.

With your background as a diplomat, policymaker, and businessperson, how do you think Chevron can best support the global effort to reach the goals of the Paris Agreement?

Huntsman: The best way a company can support this effort is to report on the carbon efficiency of the products they sell, along with making continuous carbon efficiency improvements and advancing new technologies that expedite all of the above. Companies like Chevron that are global leaders must play a role in informing good policy, driving innovative solutions, and working with others to lower the carbon intensity of the global economy. None of this will happen without strong and unprecedented global collaboration around Paris Agreement goals while maintaining economic growth and enhancing the standard of living for all. As I return to the Board, I've never been more optimistic or impressed about what Chevron is doing to support the global energy transition.

section 1

governance framework

Our climate-related governance is designed to manage potential climate change–related risks and energy-transition opportunities. Board oversight, executive management, and organizational capability are foundational elements to our reliable and disciplined approach.

1.1 board oversight

Chevron's Board oversees the Company's strategic planning and risk management, both of which include climate change issues. Chevron's governance structure includes multiple avenues for the Board to exercise its oversight responsibilities with respect to risks and opportunities, including those related to climate change.

The full Board, on an annual basis, reviews the Company's strategy, including long-term energy outlooks and leading indicators that could signify change. The Board has access to education and training on climate-related materials and to Chevron's internal subject matter experts. The Board also regularly receives briefings on climate-related issues, including policies and regulations, technology, and adaptation. The full Board has met with external experts who have shared their perspectives on climate change and the energy transition. Accessing external experts—who have differing viewpoints about the speed and scale of the energy transition—in addition to internal experts, enables the Board to consider the risks and energy opportunities arising from climate change.

The Board and its committees annually review Chevron's Enterprise Risk Management (ERM) process, which assists the Board of Directors and executive leadership in overseeing key strategic risks for the Company. Climate change is addressed in a comprehensive manner in the ERM process (see page 9).

Given the nature of climate change and its relevance to our business, the entire Board addresses climate change–related issues, with each of the Board's committees focused on certain aspects. The Board has four standing committees: Public Policy and Sustainability; Audit; Nominating and Governance; and Management Compensation. Each Board committee includes only independent Directors, and each is chaired by an independent Director, who determines the frequency, length, and agenda of the meetings. Each Committee Chair has access to management, Company information, and independent advisors, as needed. Issues considered by the committees are regularly reported to the Board. In 2020 and 2021, the full Board reviewed its governance of potential climate change–related risks and energy-transition opportunities with the aim of attaining complete coverage and assignment of responsibilities. Each committee undertook a revision of its charter in order to clearly and proactively articulate its oversight related to climate issues and coverage of related Board responsibilities. The Public Policy and Sustainability Committee's charter was enhanced to underscore its leadership role among the Board committees in providing oversight of potential climate change–related risks and energy-transition opportunities.

1.1.1 Public Policy and Sustainability Committee (PPSC)

The PPSC assists the Board in monitoring, identifying, and evaluating potential climate risks, policies, and trends that affect Chevron's activities and performance. The PPSC discusses Chevron's progress in addressing the energy transition, establishment of climate-related goals, and voluntary reporting of environmental matters, including those related to sustainability and climate change. The PPSC reviews Chevron's political activities, including how its direct and indirect lobbying on climate issues supports Chevron's climate strategy and reflects on the Company's reputation. In conjunction with the Board Nominating and Governance Committee, the PPSC reviews climate-related proxy proposals and makes recommendations on the Company's responses. The PPSC is also responsible for overall coordination within the Board on climate-related issues.

1.1.2 Audit Committee (AC)

The AC is responsible for oversight of the integrity and compliance of the Company's financial statements and for seeing that financial reports and associated disclosures adequately reflect all financial risks that are material to the business. The AC analyzes potential financial risk exposures as part of Chevron's ERM process, including potential financial risks associated with climate change.

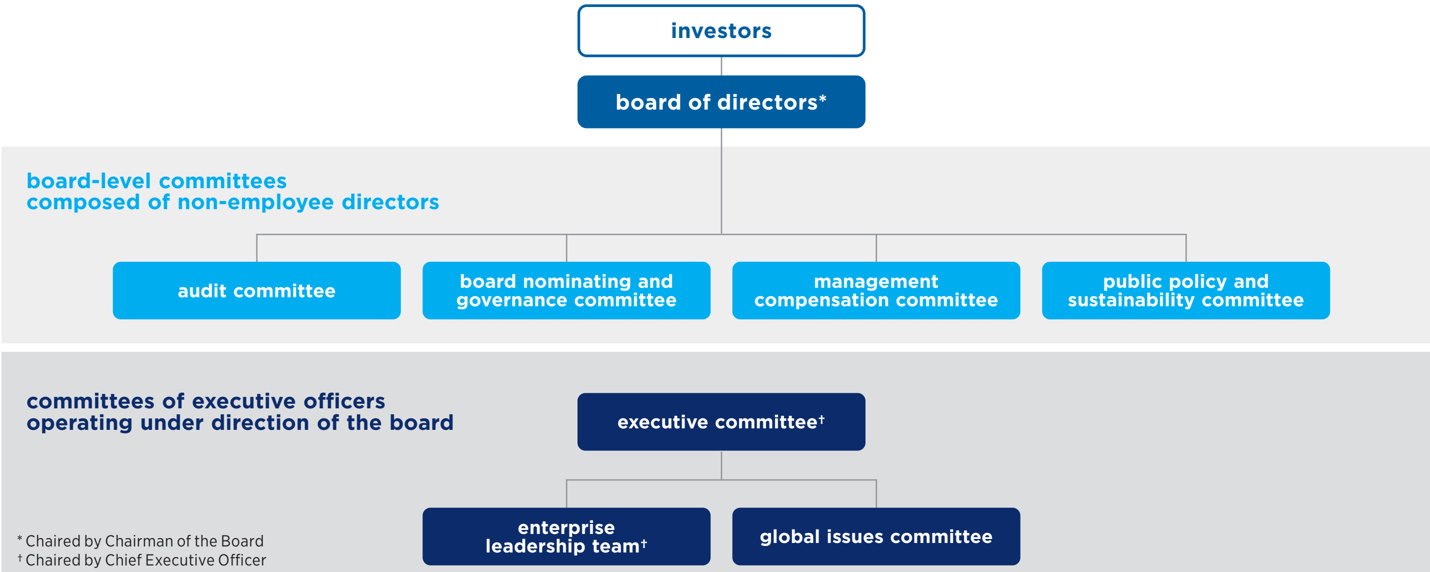
the role of an auditor

Registered public accounting firms must follow auditing and related professional practice standards established by the Public Company Accounting Oversight Board (PCAOB).

- The objective of the audit of financial statements by an independent auditor is the expression of an opinion on the fairness with which the statements present, in all material respects, a company's financial position, results of operations, and cash flow in conformity with generally accepted accounting principles.
- Auditors must maintain independence as required by the American Institute of Certified Public Accountants' Code of Professional Conduct and by Securities and Exchange Commission requirements.

Chevron monitors developments in PCAOB standards, including Auditing Standard 3101 regarding critical audit matters, and incorporates them into our internal processes. More information on auditing standards is available on the PCAOB website.

chevron's governance structure relevant to potential climate change–related risk and energy-transition opportunity oversight



These risks are discussed in the Risk Factors section of the Company's Annual Report on Form 10-K.[1] The AC selects and engages the Company's independent auditor and oversees the Board's responsibility with respect to the independent audit of the Company's financial statements.

1.1.3 Management Compensation Committee (MCC)

The MCC considers the relative alignment of the Company's compensation policies and practices with investors' interests, including those related to sustainability, climate change risks, and energy-transition opportunities. The MCC assesses and approves the incorporation of GHG-related performance measures into the scorecard that affects the compensation of management and most other employees.

1.1.4 Board Nominating and Governance Committee (BNGC)

The BNGC identifies and recommends prospective Directors with the goal of maintaining a Board composition appropriate to overseeing the wide-ranging risks that affect Chevron. The BNGC regularly reviews the appropriate skills and qualifications of Directors in the context of the current composition of the Board, the operating requirements of the Company, and the long-term interests of investors. Among the skills and qualifications desired on our Board are experience in environmental affairs and extensive knowledge of governmental, regulatory, legal, or public policy issues. Under our Corporate Governance Guidelines, the BNGC considers expertise and experience with respect to climate issues when assessing Board membership.

Chevron's Directors have a diverse set of skills, experience, and expertise to enable the Board to effectively provide oversight of potential climate change–related risks and energy-transition opportunities. Several independent Directors bring specific environmental and policy skills and qualifications to the Board. Their experience comes from academic, government, and business sectors. These diverse perspectives help enable the Board to challenge itself and management on climate change–related risks and energy-transition opportunities.

The Board periodically reassesses Chevron's governance structure and the skills, experience, and expertise of the Board of Directors in an effort to enable Chevron to maintain an effective framework for managing the Company's performance and the risks to our business.

our nomination process

To maintain a balance of knowledge, experience, background, and capability, when conducting its review of the appropriate skills and qualifications desired of Directors, the BNGC considers:

- Leadership experience in business as a chief executive officer, senior executive, or leader of significant business operations
- Expertise in science, technology, engineering, research, or academia
- Extensive knowledge of governmental, regulatory, legal, or public policy issues
- Expertise in finance, financial disclosure, or financial accounting
- Experience in global business or international affairs
- Experience in environmental issues (including climate change)
- Service as a public company director
- Diversity of age, gender, and ethnicity
- Such other factors as the committee deems appropriate, given the current needs of the Board and the Company

board of directors

highly engaged, diverse board with relevant skills and qualifications

Michael K. Wirth
Chairman and Chief Executive Officer
Former Vice Chairman of the Board and Executive Vice President of Midstream & Development, Chevron

Ronald D. Sugar
Lead Director
Retired Chairman and CEO, Northrop Grumman Corporation **(3, 4)**

Wanda M. Austin
Retired President and CEO, The Aerospace Corporation **(3, 4)**

John B. Frank
Vice Chairman, Oaktree Capital Group, LLC **(1)**

Alice P. Gast
President, Imperial College London **(2, 3)**

Enrique Hernandez, Jr.
Chairman and CEO, Inter-Con Security Systems Inc. **(2, 4)**

Marillyn A. Hewson
Retired Chairman, CEO, and President, Lockheed Martin Corporation **(1)**

Jon M. Huntsman Jr.
Former U.S. Ambassador to China, Russia; Former Governor of Utah **(2, 4)**

Charles W. Moorman
Senior Advisor to Amtrak, Retired Chairman and CEO, Norfolk Southern Corporation **(3, 4)**

Dambisa F. Moyo
Co-Principal, Versaca Investments **(1)**

Debra Reed-Klages
Retired Chairman, CEO, and President, Sempra Energy **(1)**

D. James Umpleby III
Chairman and CEO, Caterpillar Inc. **(2, 3)**

Skills, Experiences, and Expertise: ● CEO/Senior Executive/Leader of Significant Operations ● Science/Technology/Engineering/Research/Academia ● Government/Regulatory/Legal/Public Policy ● Finance/Financial Disclosure/Financial Accounting ● Global Business/International Affairs ● Environmental

Committees of the Board: **(1)** Audit: Debra Reed-Klages, Chair **(2)** Public Policy and Sustainability: Enrique Hernandez, Jr., Chair **(3)** Board Nominating and Governance: Wanda M. Austin, Chair **(4)** Management Compensation: Charles W. Moorman, Chair

1.2 executive management of climate risks

Under the direction of the Board, Chevron's Executive Committee is composed of executive officers of Chevron and carries out Board policy in managing the business affairs of the Company. The Enterprise Leadership Team (ELT) and Global Issues Committee (GIC), described below, are subcommittees of the Executive Committee.

1.2.1 Enterprise Leadership Team

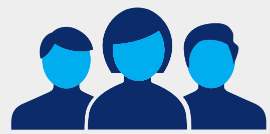
The ELT is responsible for managing the composition, resource allocation, and strategic direction of Chevron's portfolio to achieve Chevron's objectives. The ELT focuses on performance improvement by understanding current performance and business drivers and assessing the progress and status of key corporate initiatives, like the development of our New Energies business lines (see pages 50–53) to take advantage of energy-transition opportunities. The ELT also oversees the ERM process (see page 9), which addresses climate change–related risks. At its monthly meetings, the ELT receives briefings from Chevron's subject matter experts on topics such as energy transition and climate change, geopolitical risk, innovation and technology, the policy landscape, and market conditions. For example, the ELT receives briefings and provided guidance on energy-transition strategies; peer activities; enterprisewide optimization and funding of carbon-reduction projects; performance on and updates to metrics; technology and innovation; policy; and future energy opportunities. The ELT also consults outside experts to discuss energy transition and climate change issues. In addition to these topical discussions, the ELT reviews carbon-price forecasts, which are incorporated into all business units' business plans and, as appropriate, into their carbon management plans (see page 30).

1.2.2 Global Issues Committee

The GIC oversees the development of Chevron's policies and positions related to global issues that may have a significant impact on Chevron's business interests and reputation.

The vice president of Chevron Strategy & Sustainability chairs the GIC and serves as the secretary to the PPSC of the Board, helping connect the GIC's work to the PPSC.

The GIC receives updates from subject matter experts on an array of climate change–related issues, such as carbon policy development around the world; Company positions on carbon policy; political developments; lobbying and trade association activity; and environmental, social, and governance (ESG) reporting practices. The GIC reviews the public climate change–related actions of other companies to understand how our peers are responding to climate change–related risks and energy-transition opportunities. It also oversees our stockholder engagement plan and reviews feedback from our stockholder engagements. The GIC is focused on ensuring that our strategy is clearly communicated and that stakeholder feedback and concerns are carefully considered.



1.3 organizational capability on energy transition

We seek to further enhance organizational capability, to identify energy transition opportunities, and to advance our lower carbon future. Chevron Technology Ventures (CTV) targets external innovation and transformational technology in areas like carbon capture, utilization, and storage (CCUS), hydrogen, and emerging power technologies. The Chevron Technical Center (CTC) develops and deploys technology across the entire business, including integrating lower carbon technology into our operations. In 2021, we formed Chevron New Energies, a business focused on the scaling of hydrogen, CCUS, and offsets. Chevron Strategy & Sustainability continues to steward the company's long-term strategy by integrating climate change, energy transition, and other sustainability themes into macroeconomic forecasting, supply-and-demand forecasting, price forecasting, portfolio modeling, and competitor intelligence.

section 2

risk management

chevron employs long-standing risk management processes for identifying, assessing, and managing the risks to our business, including potential risks related to climate change

Our Enterprise Risk Management process provides corporate oversight for assessing major risks to the Company and overseeing the safeguards and mitigations that are put in place. As part of the annual ERM process, the Enterprise Leadership Team evaluates categories of risks and their potential consequences, financial and otherwise. It also identifies and assesses the effectiveness of safeguards and mitigations in place to manage each risk category. When necessary, the ELT develops and implements improvements to strengthen the Company's safeguards. Following endorsement by the ELT, the annual ERM assessment is reviewed by the Board of Directors. Potential climate change–related risks are integrated into multiple ERM categories. Our management of risk is further aided by other systems and processes. For example, operational risks vary by geography and segment, but we seek to approach risk management in a consistent manner through our Operational Excellence Management System (OEMS).

Climate disclosure frameworks generally identify two main areas of corporate climate risk: physical risks* and transition risks. Physical risks include potential physical impacts driven by both acute events and long-term shifts in climate patterns. Transition risks include the potential risks to a company arising from the transition to a lower carbon energy system, such as policy changes, litigation, technology advancements, shifts in supply and demand, and changing stakeholder perceptions.

2.1 physical risk

According to the UN Intergovernmental Panel on Climate Change (IPCC AR5), the physical risks of climate change are varied and widespread. As disclosed on page 20 of the Company's 2020 Annual Report on Form 10-K, the Company's operations are subject to disruption from natural or human causes beyond its control, including physical risks from hurricanes, severe storms, floods, heat waves, other forms of severe weather, wildfires, ambient temperature increases, and sea level rise.

We have in place practices to manage risks to our operations associated with the impacts of ambient conditions and extreme weather events, regardless of any connection to anthropogenic climate change. These long-standing practices are currently applied to also address possible effects of climate change and to maintain the ongoing resilience of our infrastructure. For example, Chevron's Metocean Design and Operating Conditions Standard provides guidance for the physical parameters to be used in the design, construction, and operation of offshore and coastal facilities, including those on land that may be threatened by coastal inundation due to storm surges. The 2021 review of our corporate environmental process incorporated the potential physical risks to Chevron facilities and operations that may be associated with future climate changes via the Climate Assess procedure, giving it parity with other environmental risk. The procedure is captured within the corporate OEMS, as part of Environmental Risk Assessment and Management, and identifies and addresses the potential physical impacts of climate change to capital projects, facilities, and operations under our control (see page 37).

With worldwide operations subject to diverse microclimates and weather phenomena, we stay prepared for the possibility of natural disasters. Based on risk evaluations and business impact analysis, business units develop and implement a Business Continuity Plan to provide continuous availability—or prompt recovery—of critical business processes, resources, and facility operations. Our business units work with local communities and emergency response teams to develop site-specific plans in the event of any disruption. The plans and processes are regularly reviewed and tested to promote business continuity.

*Two such frameworks are CalPERS/Wellington Management, *Physical Risks of Climate Change (P-ROCC)*, which can be accessed at wellington.com/uploads/2019/10/21eb89c87e979dac a0b3fe271c7408e1/physical-risks-of-climate-change_procc_framework.pdf, and the Task Force on Climate-related Financial Disclosures (TCFD), *Recommendations of the Task Force on Climate-related Financial Disclosures*, which can be accessed at assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf.

2.2 transition risks

Our ERM process encompasses risks typically identified as climate-related transition risks, including legal, policy, technology, market, and reputational risks. Risks that could materially impact our operations and financial condition are discussed in the Risk Factors section of our Annual Report on Form 10-K.

2.2.1 Policy risks

Policies addressing climate-related issues are evolving (see pages 14–20). The direct effects, as well as second- and third-order effects, of potential policy changes will depend on the type and timing of such changes. As disclosed on pages 21–23 of the Company's 2020 Annual Report on Form 10-K, significant changes in the regulatory environment, including those driven by climate-related issues, could affect our operations.

For example, legislation, regulation, and other government actions related to GHG emissions and climate change could continue to increase Chevron's operational costs and reduce demand for Chevron's hydrocarbon and other products.

working together

Trade associations work to identify issues that range across a broad spectrum of topics and to develop and promote sound policy.

1. We are committed to compliance, transparency, and accountability in our lobbying activities.
2. We have executive management and Board oversight of direct and indirect lobbying activities.
3. We are committed to having an honest conversation. This means sharing our perspective, listening to others, respecting differences, and working to find solutions.
4. Our climate lobbying activities seek to encourage appropriate measures supporting our ambition to deliver affordable, reliable, and ever-cleaner energy, including on issues of public policy like the global energy transition.
5. We rarely agree 100 percent with any trade association, but we believe participation is important to the informed exchange of views on issues like the energy transition.

See our climate lobbying report at chevron.com/-/media/chevron/sustainability/documents/chevron-climate-lobbying-report.pdf for more information on our engagement with trade associations and page 56 for our climate policy positions.

Climate-related issues are integrated into the Company's strategy and planning, capital investment reviews, and risk management tools and processes, where applicable (see pages 30–31). They are also factored into the Company's long-range supply, demand, and energy price forecasts (see page 29).

2.2.2 Technology risks

Development and deployment of innovations and emerging technologies in pursuit of a lower carbon economy may disrupt or displace portions of the current economic system. As disclosed on pages 19–20 of the Company's 2020 Annual Report on Form 10-K, technology advancements could affect the price of crude oil.

The Chevron Technical Center (CTC) supports Chevron's businesses through research, technology, and capability development. The CTC also helps bridge the gap between business unit needs and emerging technology solutions developed externally in areas affecting our business (see pages 21–22, 54). In 2018, Chevron established the Chevron Future Energy Fund with a commitment of $100 million, and a follow-up Future Energy Fund II in 2021 with a commitment of $300 million, to invest in breakthrough technologies that could enable the energy transition.

Our investments and partnerships have focused on areas such as alternative energy, transportation and infrastructure, capturing and reducing emissions, and energy storage.

2.2.3 Market risks

The potential impacts of climate change on markets are both complex and uncertain. As disclosed on page 19 of the Company's 2020 Annual Report on Form 10-K, Chevron is primarily in a commodities business that has a history of price volatility. Potential consumer use of substitutes to Chevron's products that may be developed in the future may impact our business.

We are focused on maintaining a strong balance sheet as well as maintaining prudent liquidity levels. Our policies and controls provide centralized governance over key enterprise processes, including banking, liquidity management, foreign exchange, credit risk, financing, and climate change–related risks and energy-transition opportunities (see pages 30–31).

litigation

In recent years, Chevron, along with many other investor-owned energy companies (comprising a small, select subset of the broader oil and gas industry), has been named in more than 20 lawsuits brought by various U.S. cities, counties, states, and trade associations, all of which seek to hold these investor-owned companies financially responsible for changes in climate and the effects of those changes. In the only decision to date finally resolving one of these cases on the merits, the Second Circuit affirmed dismissal of all claims. See *City of New York v. Chevron Corp.*, 993 F.3d 81 (2d Cir. 2021). We will continue vigorously defending ourselves against claims that we believe are factually and legally without merit.

Suggesting that investor-owned energy companies, which are responsible for only a small amount of the overall global oil and gas production, and an even smaller portion of the overall global GHG inventory, should be held retroactively liable for the effects of the cumulative phenomena of climate change is illogical. First, the extraction, production, and sale of oil and gas have brought immense economic benefits to billions of people around the world and have long been actively promoted by governments—by law and by express policy. Second, retroactive liability against a small subset of oil and gas companies ignores issues of legal causation, the history of how our complex energy system has developed, as well as national security and international geopolitical imperatives. Moreover, any putative relief will neither have an effect on global demand for oil and gas nor efficiently address global impacts of climate change. Focusing on investor-owned companies is arbitrary and opportunistic; it punishes successful companies who are often the most responsive, transparent, innovative, and responsible producers.

Claims that we have concealed superior knowledge of climate change from the public are false. The potential effects of greenhouse gases—including those produced by certain end uses of fossil fuels—on the climate have been the subject of study and public discussion by prominent scientists and government officials for more than half a century.

Climate change is a global issue that requires a global solution by policymakers. We welcome meaningful efforts to address the issue of climate change and look forward to continuing to engage with governments and stakeholders to develop constructive solutions to help deliver a lower carbon future. But litigation is neither an appropriate nor an effective tool for accomplishing that objective.

2.2.4 Legal risks

In recent years, a variety of plaintiffs have brought legal claims against various defendants alleging climate-related losses and damages. As disclosed on page 23 of the Company's 2020 Annual Report on Form 10-K, increasing attention to climate change may result in additional government investigations and private litigation against Chevron.

We have highly capable legal staff and associated safeguards through all levels of the enterprise to identify, evaluate, and actively address legal risks. Our legal experts review and report on emerging issues and trends that could impact the Company. They aim to provide systematic reviews of climate-related matters and timely analysis and advice for the management of identified risks.

2.2.5 Reputational risks

As disclosed on page 23 of the Company's 2020 Annual Report on Form 10-K, increasing attention to climate change matters may impact our business. Organizations that provide information to investors on corporate governance and related matters have developed ratings processes for evaluating companies on their approach to environmental, social, and governance matters. Such ratings are used by some investors to inform their investment and voting decisions. Also, some stakeholders, including but not limited to sovereign wealth, pension, and endowment funds, have been promoting divestment of fossil fuel equities and urging lenders to limit funding to companies engaged in the extraction of fossil fuel reserves. Unfavorable ESG ratings and investment community divestment initiatives may lead to increased negative investor sentiment toward Chevron and our industry and to the diversion of investment to other industries. Refer to Section 1, Governance Framework (see pages 5–8).

Our Global Issues Committee actively stewards our reputation by working toward alignment of key corporate policies, practices, and public positions related to climate change.

Our OEMS includes a Stakeholder Engagement and Issues Management process that facilitates engagement with local communities and stakeholders to identify and assess the unique risks for each business unit's operations. Potential social, political, and reputational risks are identified, leading to risk management strategies. We regularly engage with investors and other stakeholders to receive feedback on climate-related issues.

section 3

strategy

higher returns, lower carbon

As a global company, we operate in many jurisdictions that have enacted lower carbon policies. In 2020, more than 60 percent of our total Scope 1 and 2 equity GHG emissions were in regions with existing or developing carbon-pricing policies, in addition to other lower carbon policies like mandates for biofuels and renewables, methane regulation, and emerging support for technologies like carbon capture, utilization, and storage (CCUS), hydrogen, and mandatory reporting. Under current and potential future market conditions, we seek to understand the impacts of climate-related actions and strategies and to advance opportunities to increase returns to investors in both our traditional business and lower carbon business.

Chevron has world-class capabilities and people—and we intend to apply them to accelerate a lower carbon future. Our strategy combines a high-return, low-growth, lower carbon–intensity traditional business together with faster-growing, profitable, lower carbon New Energies businesses that leverage our strengths.

Our strategic and business planning processes guide our actions to deliver higher returns and lower carbon. We discuss our approach to each energy-transition opportunity in Section 4, Our Portfolio (see pages 38–54).

Our strategic and business planning process: Analyzing the fundamentals to drive strategic focus and action

Chevron's strategic and business planning processes bring together the Company's views on long-term energy market fundamentals to guide decision making by executives and facilitate oversight by the Board of Directors. We use models and internal analysis to forecast demand, energy mix, supply, commodity prices, and carbon prices—all of which include assumptions about future policy and technology developments.

The chart below details fundamental areas analyzed in our strategic planning process. These fundamentals help guide our decisions on strategy, portfolio management, business planning, and capital allocation.

The world's energy demands in recent years are greater than at any time in human history, and most published outlooks conclude that fossil fuels will remain a significant part of an energy system that increasingly incorporates lower carbon sources of supply. Within this context, we align our strategy with areas in which we have a competitive advantage and in which we see potential to generate increased value for our investors.

Our strategic process supports our ability to operate in a lower carbon policy environment. For example, we use carbon prices and derived carbon costs in business planning, investment decisions, impairment reviews, reserves calculations, and evaluation of opportunities for carbon reduction and new energies. We believe that lower carbon–intensity oil and gas assets will remain economically competitive under a wide range of future scenarios. We believe that our asset mix enables us to be flexible in response to potential changes in supply and demand, even in lower carbon scenarios like the hypothesized NZE 2050 scenario (see pages 32–36 and Section 4). In addition, our recently launched Chevron New Energies organization will assist us to succeed if the projections for various accelerated energy-transition pathways begin to materialize.

Exhibit 1. A disciplined approach to strategy development

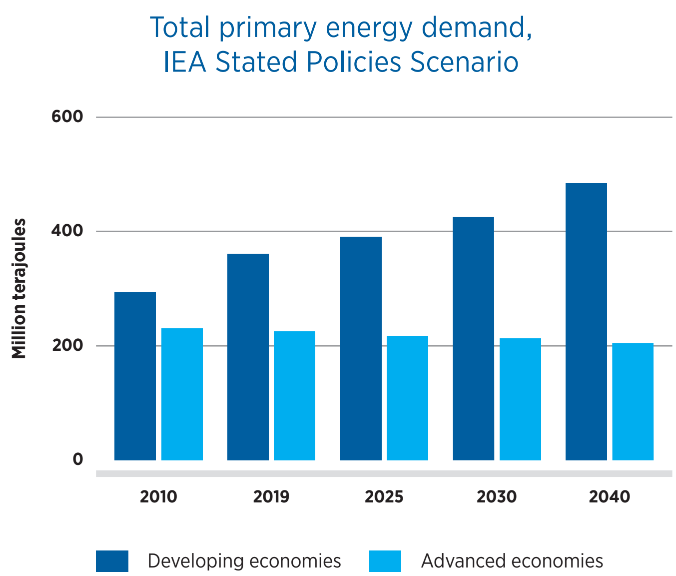
3.1 how we approach long-term fundamentals

We have a dedicated cross-functional team that tracks and forecasts long-term fundamentals to inform us of potential changes in market dynamics that could indicate the need for changes to strategy.

3.1.1 Macroeconomic and demographic drivers: Population growth, increasing standards of living, and consumer behaviors
Affordable, reliable energy enables economic development by facilitating modern production techniques, which ultimately leads to increased lifespans and a higher quality of life.[2] Individuals and society benefit from access to affordable, reliable, and ever-cleaner energy. As populations and incomes grow and billions of people in less-developed countries seek a higher standard of living, many experts forecast global energy demand to increase, even as the energy intensity of the world's economic output is declining.[3] As incomes improve, more economic growth comes from the service sector, which is often more energy and carbon efficient than manufacturing. In addition, technological advancements and ongoing improvements in energy efficiency will likely further reduce energy intensity. These effects may be less prevalent in nations that are in the process of industrialization and infrastructure development, as these activities require immense energy resources.[4]

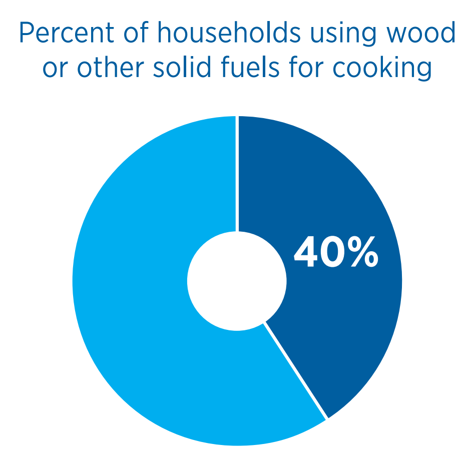
Changes in consumer behavior can also influence energy demand. Some behaviors, like remote working and videoconferencing, can lead to a decrease in energy demand. Other behaviors, like more home deliveries, can lead to an increase in energy demand. The impact of behavioral changes may be modulated by other demand drivers, such as government policies or the long life of existing infrastructure. For example, although some municipalities have passed ordinances prohibiting the inclusion of gas infrastructure in new buildings, natural gas still accounts for about 23 percent of household energy use in the United States.[5] Demand for natural gas is primarily driven by existing homes and buildings, which typically have very long service lives. Accordingly, the IEA's 2020 *World Energy Outlook* (WEO) expects behavioral changes to be "influential" but "not game-changers" in its Stated Energy Policies Scenario.[6]

Exhibit 2. A growing middle class drives demand for access to energy



Source: IEA, *World Energy Outlook 2020*, iea.org/reports/world-energy-outlook-2020.

Exhibit 3. Billions of people would benefit from affordable, reliable, and ever-cleaner energy



Source: World Bank, World Development Indicators, databank.worldbank.org/source/world-development-indicators.

3.1.2 Policy: Trends, framework, and impact analysis

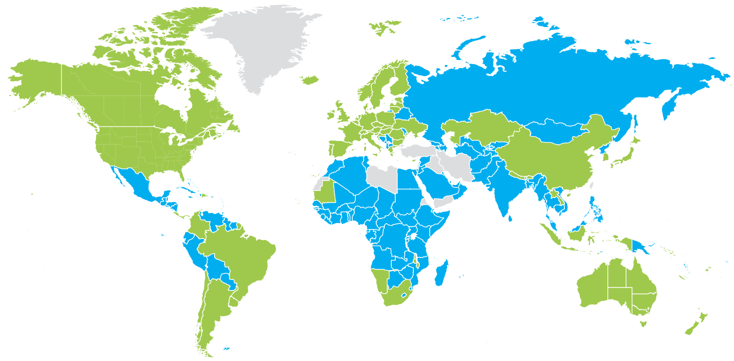
Policies, like those that support the Paris Agreement, can change the amount of energy consumed, the rate of energy-demand growth, the energy mix, and the relative economics of one fuel versus another. Tracking and anticipating policy trends helps us identify potential changes in energy mix and supply/demand scenarios and adjust our outlooks accordingly.

Policy trends: The Paris Agreement, which went into effect in 2016, aims to hold "the increase in the global average temperature to well below 2° C above pre-industrial levels and [to pursue] efforts to limit the temperature increase to 1.5° C above pre-industrial levels."* Under the agreement, each country may pursue its own strategies for achieving its Nationally Determined Contributions (NDCs). According to the IEA, the current NDCs do not appear to enable achieving the goals of the Agreement,[7] although new, updated, or reconfirmed NDCs are intended to be submitted.

According to the IPCC, achieving the Paris Agreement's goals will require peaking emissions as soon as possible and global net zero emissions by "around 2070" (2065–2080). The IPCC finds that achieving a 1.5° C scenario with high confidence and without any temporary overshoot would require net zero by "around 2050" (2045–2055). Other IPCC scenarios reach net zero later this century, but they achieve 1.5° C outcomes through greater adoption of carbon dioxide removal opportunities. Achieving a 1.5° C goal will require nations to reduce emissions across all sectors of the economy. It will also require increasing removals by sinks, such as nature-based solutions (e.g., forestry), and through technology solutions (e.g., CCUS).

The IPCC finds there are numerous potential pathways to achieving the goals of the Paris Agreement. All pathways include the continued use of oil and gas, even in rapid decarbonization scenarios. To achieve net zero emissions by 2050, direct air carbon dioxide capture and storage and carbon capture and storage (CCS) are required to be scaled up and globally deployed. Without this technology, the IPCC climate models cannot achieve theoretical solutions to reach net zero in the desired time frame.

Exhibit 4. Nearly all countries have endorsed the Paris Agreement and some are supporting net zero ambitions



Endorsed Paris Agreement

Endorsed Paris Agreement and government support for net zero

As of October 2021.

Sources: United Nations Treaty Collection, treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en; United Nations Framework Convention on Climate Change, unfccc.int.

to achieve global net zero, markets should be empowered to incentivize the most carbon-efficient producers

We support the Paris Agreement and its goal of "holding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels," which per the IPCC implies reaching global net zero in the second half of this century. We believe that the optimal approach is to drive the most efficient and cost-effective reductions economywide, paired with natural and technological emissions removals. Narrow sectoral or geographic metrics are less efficient than broad economywide solutions, which are uniquely able to incentivize the most efficient and cost-effective reductions. Chevron supports a price on carbon, applied as widely and broadly as possible, as the best approach to reduce emissions. We work to encourage national policies to support international linkages (for example, through Article 6 of the Paris Agreement), with the goal of ultimately building up to a liquid and integrated global carbon market.

Individual companies contribute to achieving the goals of the Paris Agreement through their participation in policies that may be included in the NDCs of the countries in which the companies operate. We work with governments to encourage well-designed policies that can strengthen the NDCs, such as carbon pricing and rewarding the most efficient and least carbon-intensive producers. Most energy forecasts agree that oil and gas will continue to be a significant source of energy—even in a net zero scenario for years to come. We believe the transparent reporting of performance will enable the market to reward the most carbon-efficient producers.

*UN Intergovernmental Panel on Climate Change (IPCC), *Special Report: Global Warming of 1.5 °C*, 2018, ipcc.ch/sr15/.

Policy organizational framework: Given the sheer scale of the global challenge to address climate change, allocation of limited resources as efficiently and effectively as possible is critical to creating the greatest opportunity for success. Prioritizing efforts that curtail emissions at the lowest cost per tonne, irrespective of where or in which sectors those abatements occur, is the most economically efficient approach. These efforts, grouped by category, can be ordered by cost of the reduction on a per-tonne basis in a graphical representation (Exhibit 5), often called a marginal abatement cost curve (MACC).*

Each bar represents one type of mitigation opportunity. The height of each bar represents the cost of abatement, generally expressed in a breakeven cost per tonne of carbon dioxide–equivalent (CO_2e), and the width of each bar represents the volume of abatement, usually in tonnes of CO_2e. Generally, efficiency and some renewable-power applications are less costly than nature- and land-based reductions, which are generally less costly than CCUS and other technologies still in early development. Potential carbon-reduction costs and volumes can also vary by geography or application.[8]

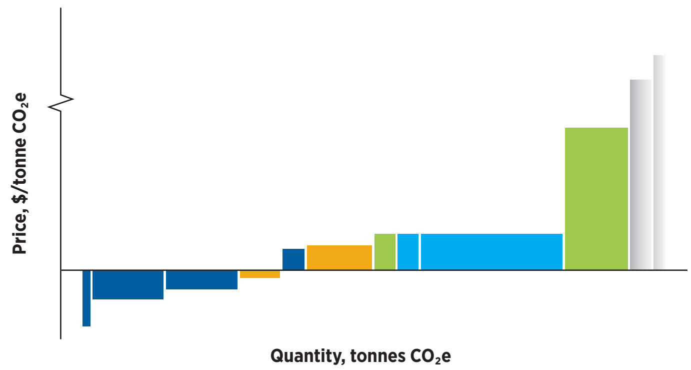
Because it is impossible to know the exact abatement cost and reduction available in order to design specific policies for targeted reduction opportunities, many economists believe the most efficient way to achieve economywide emissions reduction is through a price on carbon.[9] Carbon pricing incentivizes reductions across the economy and investment in reduction technologies for the future. A price in the form of either a tax—which sets the cost of reduction—or a cap-and-trade system—which sets the volume of reduction—can flexibly integrate additional information and solutions within a market-based framework, strengthening and compounding its comparative advantages over time (Exhibit 6). In addition, carbon prices could raise revenue that can either be invested in reduction technologies whose commercial application might otherwise be too distant to incentivize investment or returned to impacted communities and consumers.

The wider the coverage of a price, the more opportunities there are to find carbon reductions. For example, in non-OECD economies, it is often less expensive to reduce emissions because investment may not have been made in the most efficient technology. By linking OECD and non-OECD economies, financing can be mobilized to incentivize reductions from the lowest-cost area. It is estimated that with global cooperation (for example through the Paris Agreement), reductions can be made at half the cost of an inefficient and unlinked system.[10]

Policies narrowly targeted at specific geographic regions, sectors, or technologies can miss the efficiencies of a comprehensive market-based system. The impact of a targeted approach may be a reordering of the MACC-abatement opportunities—by shifting a higher-cost activity to the left on the graph (Exhibit 7).

*Construction of a MACC requires detailed understanding of a wide range of technologies and mitigation options across the various sectors of the economy. Numerous decisions are also necessary, such as the grouping of technologies and the choice of discount rate, which can affect both the volume and the cost calculations. MACCs should be taken as qualitative, rather than quantitative, representations of the costs and potential magnitudes of mitigation options unless done with facility- and project-specific information.

Exhibit 5. A MACC can be a helpful organizational framework for policy analysis and abatement-potential analysis



Note: Example of a marginal abatement cost curve; project ranking represents average prices, but specific projects within categories vary.

Exhibit 6. In markets with carbon pricing, the carbon cost often follows the cost of abatement in the market†

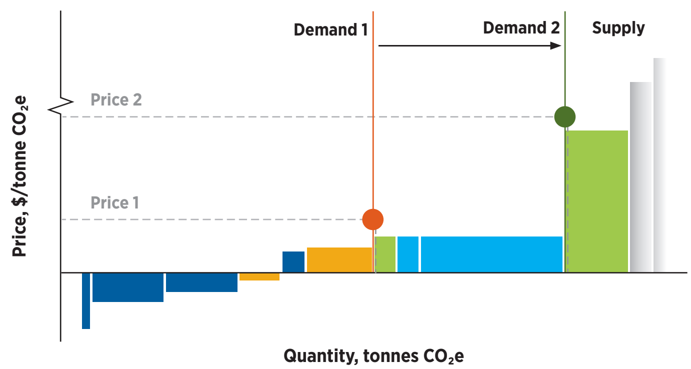
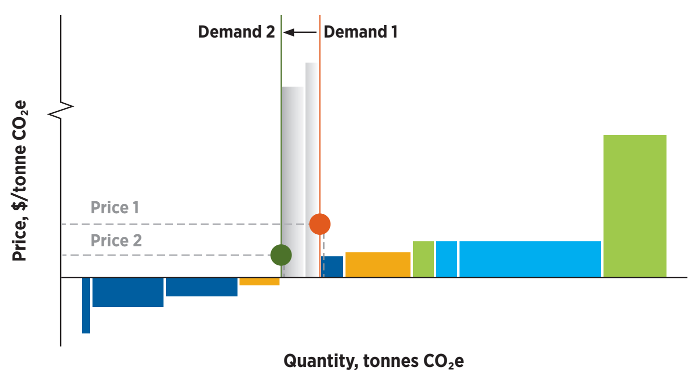


Exhibit 7. In markets with narrowly targeted policies, abatement opportunities may be reordered†



Efficiency, maintenance
Renewable power
CCS
Forestry, agriculture, waste management, industry
Other technologies

†For illustration only. Not drawn to scale.

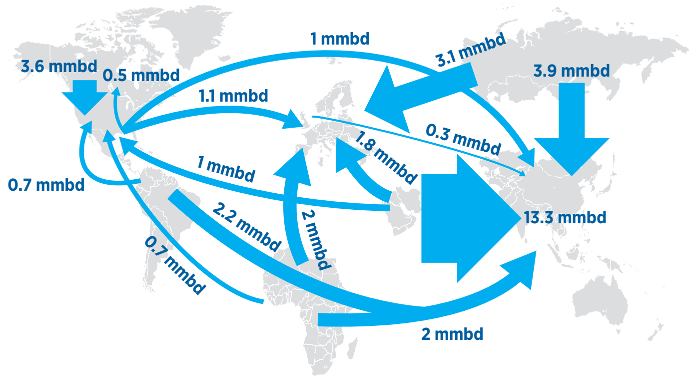
This typically achieves emissions reductions at greater overall costs to society and may distort price signals (e.g., lower the carbon price) by adding reductions, or supply, to the market.

Although carbon pricing is generally regarded as the most efficient way to widely reduce emissions, governments may want to support innovation by investing in technologies whose commercialization could unlock greater reduction opportunities even though they are currently more expensive and have a "green premium," which is the "additional cost of choosing a clean technology over one that emits a greater amount of greenhouse gases."[11] Similarly, targeted policies are sometimes helpful for addressing instances in which a desirable reduction activity would not otherwise occur because of a barrier. For example, although efficiency projects often are economic, the entity that needs to invest in the reduction activity may not be the same entity that receives the benefit from the investment (e.g., in situations that involve leased equipment).

Policy impacts: The timing, scope, scale, and design of policies to support the goals of the Paris Agreement will vary and could have direct and indirect impacts on the Company. Policies can change the amount of energy consumed, the rate of energy-demand growth, and the relative economics of one fuel versus another.

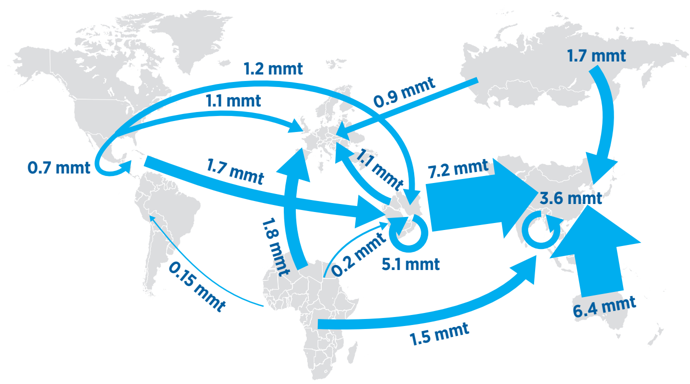
- Efficiency improvements are expected to have the largest impact on moderating energy-demand growth (e.g., consumers purchase more-efficient vehicles or more-efficient appliances). Efficiency policies, up to a point, are often some of the most cost-efficient on a per-tonne basis. You can read more about our actions on efficiency on page 41.
- Technology mandates, like renewable fuel and portfolio standards, and electric vehicle mandates, can change the economics of different energy sources and may change the energy mix. You can read more about our actions on renewables on pages 41 and 49.
- Carbon pricing and fuel taxes increase the cost of fossil fuels and can affect the relative economics of the fuel mix. In addition, carbon pricing can incentivize the most efficient producer of a particular product. You can read more about Chevron's approach to carbon pricing on page 29. You can read more about our approach to carbon-efficient production on page 40.
- Policy design in major demand centers and markets is increasingly important because of impacts on the relative economics of fuel choices, particularly for those that trade in global markets. Oil, gas, and associated products are globally traded commodities (Exhibits 8 and 9). Border carbon adjustment mechanisms, which are applied in carbon-pricing programs and import requirements under renewable fuels mandates to prevent offshoring of emissions to other jurisdictions (also known as leakage), can raise the cost of an imported product. Impact is often tied to the benchmarked carbon intensity of the product's production.

Exhibit 8. About 50 percent of global daily oil production crosses borders



Source: IHS Markit, ihsmarkit.com.
mmbd = millions of barrels per day

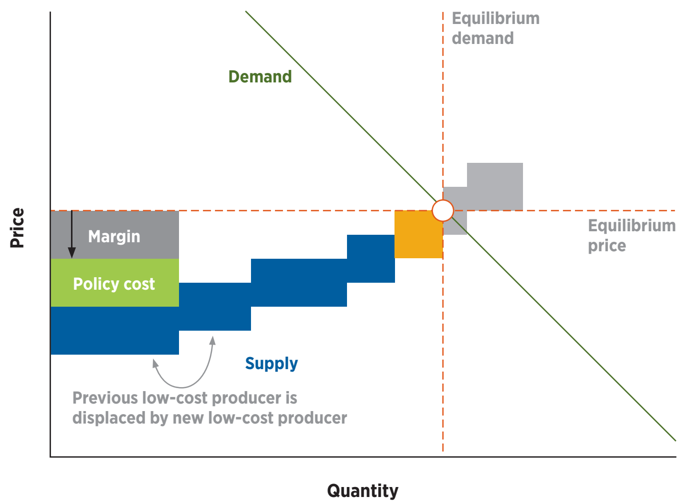
Exhibit 9. Virtually all LNG produced crosses borders



Source: IHS Markit October 2020 LNG flows.
LNG = liquefied natural gas
mmt = million metric tonnes

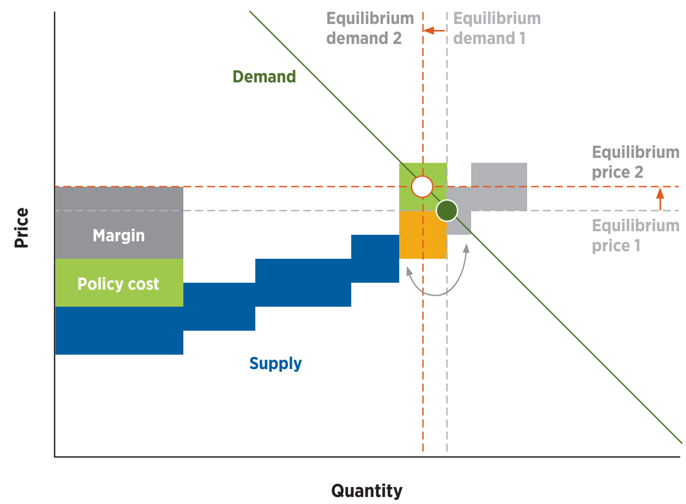
Direct policy cost impact analysis: The extent to which a policy can affect commodity prices and margins depends on the ability to recover the costs in the marketplace. Many jurisdictions take this into consideration in the context of local production and refining trade competitiveness.

Exhibit 10. Policy applied to producer below the marginal producer leads to the least ability to recover costs*



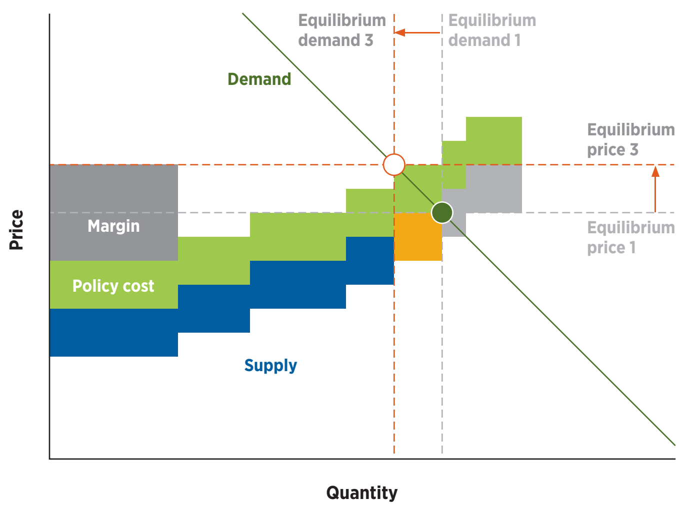
If a policy is applied to a single producer or jurisdiction, the cost can erode margins and may make the supply/refining/sale uncompetitive.

Exhibit 11. Policy applied to the marginal producer leads to some ability to recover costs*



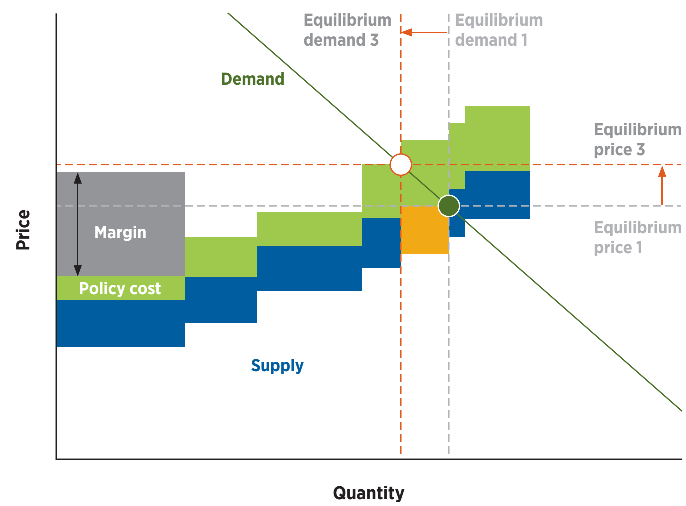
If a policy is applied to the marginal producer, the commodity price can rise to recover a portion of the cost or to the level at which the next producer becomes the marginal producer, whichever is less.

Exhibit 12. Policy applied to all producers leads to the greatest ability to recover costs*



If a policy is applied to all producers by the same amount per unit of production, the cost of supply rises, thus enabling the greatest cost-recovery potential; however, less total supply is needed.

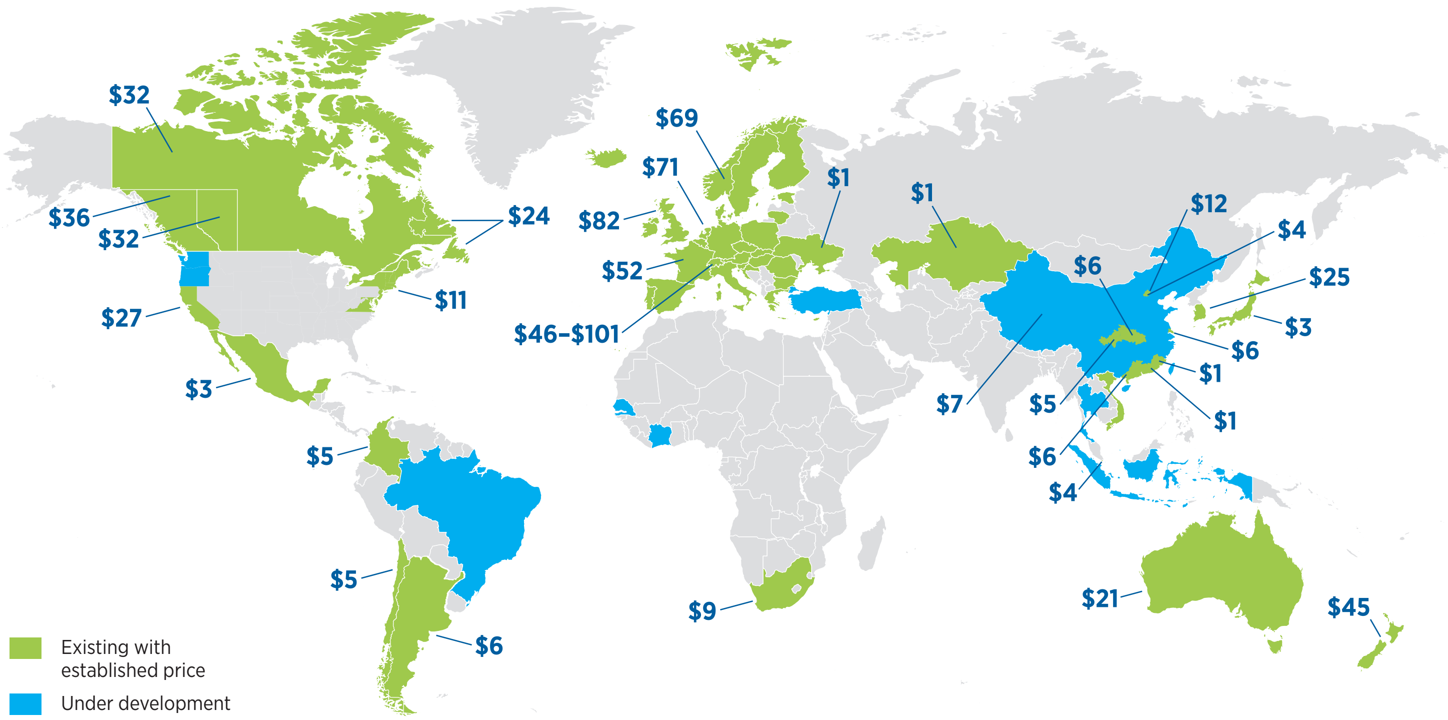
Exhibit 13. Policy applied to all producers; production efficiency incentivized and leads to the ability to recover more than costs*



If a policy cost is applied to all producers by the same amount per tonne of emissions, such as via a performance benchmark, those producers with more-efficient production have a greater ability to recover costs, which may increase margins even though less total supply is needed. Conversely, less-efficient producers may incur higher costs and be priced out of the market.

*For illustration only. Not drawn to scale.

Exhibit 14. Carbon-pricing mechanisms are in place or under development in 45 national and 35 subnational jurisdictions around the world



Sources, as modified by Chevron Corporation: World Bank, *Carbon-pricing Dashboard*, carbonpricingdashboard.worldbank.org; Energy Intelligence Group, *EI New Energy Global Carbon Prices*, October 2021; Government of Canada, canada.ca/en/services/environment/weather/climatechange/climate-action/pricing-carbon-pollution.

In 2020, more than 60 percent of our Scope 1 and 2 GHG emissions were in regions with existing or developing carbon-pricing policies.

Australia Our Upstream facilities are regulated by the federal Safeguard Mechanism that took effect in 2016, which caps facility-level emissions and requires emissions above this cap to be offset, creating an indirect carbon-pricing policy. As of August 2021, the price for an Australian offset was $16/tonne (AUD22).

California Our Upstream oil assets, refineries, and refined gasoline and diesel sales are regulated under a cap-and-trade policy that took effect in 2013. In Upstream and refining, allowance allocations are aligned with a performance benchmark to consider competitiveness of trade-exposed industries. All fuel suppliers are covered by the regulation for refined-product sales. As of November 2020, the price for an allowance in California was $17/tonne.

Canada Federal The government implemented a carbon tax of $15/tonne (CAD20) in 2019 that increases to $37/tonne (CAD50) in 2022, which may be met with an equivalent program at the provincial level. Provinces may use the revenue generated as they see fit, including to protect trade-exposed industries. The federal price acts as a backstop and is applied in provinces not deemed equivalent to provincial pricing programs.

Alberta Our joint-venture Upstream assets are subject to the economywide carbon price of $32/tonne (CAD40) in 2021. A performance benchmark for large emitters was established under the Technology Innovation and Emissions Reduction Regulation program in 2020 and designed to protect the competitiveness of trade-exposed industries.

Atlantic Canada Atlantic Canada has a broad-based carbon-pricing program that tracks the federal program. Our joint-venture assets in Atlantic Canada are under this performance-based large-emitter program.

British Columbia Our Upstream interests are subject to the economywide carbon tax, in effect since 2008, of $36/tonne (CAD45) for combustion emissions.

Colombia Our fuel supplies, along with others sold in the country, are subject to a $5/tonne (COP19,500) carbon tax in effect since 2017. Alternatively, we can sell carbon-neutral fuel via the use of offsets.

European Union Our Oronite plant in France is regulated under the European Union cap-and-trade system in effect since 2005. Allowance allocations are aligned with a performance benchmark to consider the competitiveness of trade-exposed industries. As of August 2021, the price for an EU allowance was $68/tonne (EUR58).

Kazakhstan Our joint-venture Upstream assets are regulated under a cap-and-trade policy that started in 2013. Allowance allocations are aligned with a performance benchmark to consider the competitiveness of trade-exposed industries.

Singapore A carbon tax of $4/tonne (SGD5), in effect since 2019, is being applied to our joint-venture refinery and Oronite additive facility.

South Korea Our joint-venture refinery is regulated under a cap-and-trade system in effect since 2015. Allowance allocations are aligned with a performance benchmark to consider the competitiveness of trade-exposed industries. As of August 2021, the price of a Korean allowance was $19/tonne (KRW21,750).

Others *Jurisdictions such as Israel, Thailand, Brazil, and the states of Washington, New Mexico, and Oregon are in the process of analyzing or developing carbon-pricing programs. Coverage and other details regarding these programs are still under consideration. China's national emissions trading scheme started in 2021, but currently only covers the power sector.*

* *Italics* indicates a policy is under development.

We believe it is a competitive advantage to already operate in a lower carbon policy environment. We have direct exposure to carbon pricing via our operations in some of these jurisdictions. In addition to carbon-pricing regulations, we operate in areas that incentivize low-carbon intensity via GHG regulations such as low-carbon fuel standards and methane regulations.

methane*

Canada Federal The government published federal methane regulations in 2018 and works with provinces and territories to establish regulations equivalent to federal guidelines.

Alberta and British Columbia In 2019, both provinces finalized equivalency agreements with the federal government that allow the provinces to regulate province-level programs that will ultimately achieve the same objectives.

Newfoundland *The province has agreed to work with the federal government to develop regulations, including limiting use of pneumatic devices, to reduce methane emissions by 45 percent by 2025. Proposals include leak detection and equipment controls, most of which would come into effect between 2020 and 2023.*

U.S. Federal In 2021, the Congressional Review Act was used to reinstate methane as a regulated pollutant in the EPA's regulation of new and modified sources in the oil and gas sector (NSPS OOOOa).

California Our Upstream operations are subject to a methane rule that requires leak detection and repair and storage tank and other equipment controls. Most requirements have been in effect since 2018 and apply to both new and existing facilities.

Colorado Our Upstream operations are subject to methane rules that require leak detection and repair and storage tank and other equipment controls. The rules apply to new and existing facilities and have been in effect since 2014, with recent updates in 2020 that added emissions-monitoring requirements on new flowback operations.

New Mexico In 2021, New Mexico adopted natural-gas waste reduction rules that established a statewide enforceable regulatory framework to secure reduction in oil and gas emissions and prevent the waste of natural gas from new and existing sources. *Another rule targeting volatile organic compounds and methane reductions as a co-benefit is under development.*

Nigeria *Nigeria's "Guidelines for Reducing Methane Emissions from the Oil and Gas Operations in Nigeria" is in development.*

biofuels*

Australia Renewable-fuel-blending mandates in the state of New South Wales, in effect since 2007, and in the state of Queensland, in effect since 2017, apply to all fuel suppliers and require that volumes of biofuel be blended into diesel and gasoline fuels.

Colombia A renewable-fuel-blending mandate, in effect since 2001, applies to all fuel suppliers and requires that volumes of biofuels, if available domestically, be blended into motor fuels.

Malaysia A renewable-fuel-blending mandate, in effect since 2014, applies to all fuel suppliers and requires that volumes of biofuel be blended into diesel fuel.

Philippines A renewable-fuel-blending mandate, in effect since 2007, applies to all fuel suppliers and requires that volumes of biofuels be blended into gasoline and diesel fuels.

South Korea A renewable-fuel-blending mandate, in effect since 2012, applies to all fuel suppliers and requires that volumes of biodiesel be blended into diesel fuel.

Thailand A renewable-fuel-blending mandate, in effect since 2002, applies to all fuel suppliers and requires that volumes of biofuels, if available, be blended into gasoline and diesel fuel.

U.S. Federal A renewable-fuel-blending mandate, in effect since 2006, requires the introduction of increasing volumes of biofuels into the U.S. fuel supply. This obligation applies to all refiners/importers of gasoline and diesel fuels.

California A low-carbon-fuel mandate, in effect since 2011, applies to all fuel suppliers in California and sets carbon-intensity standards for gasoline, diesel, and the fuels that replace them.

Oregon A renewable-fuel-blending mandate, in effect since 2009, did apply to all fuel suppliers and required that volumes of biofuels be blended into gasoline and diesel fuels. In 2016, a low-carbon-fuel mandate replaced the renewable-fuel-blending mandate.

Washington A renewable-fuel-blending mandate, in effect since 2008, applies to all fuel suppliers and requires that volumes of biofuels be blended into gasoline and diesel fuels. *A low-carbon-fuel mandate is currently being discussed.*

* *Italics* indicates a policy is under development.

Exhibit 15. From mandatory reporting requirements to renewable portfolio standards to carbon capture regulations, policy-enabled markets are advancing around the world

United States

renewable power
- State-level renewable power targets of 8.5%–60%

biofuels
- The Renewable Fuel Standard 2 requires increasing volumes of biofuels; approximately 20 billion gallons were required in 2020

carbon capture
- 45Q tax credit of US$50/tonne for permanent CO_2 storage

mandatory reporting
- *The Securities and Exchange Committee is considering a rule for climate change disclosure*
- EPA Greenhouse Gas Reporting Program requires facility-level emissions reporting for emissions > 2k tCO_2e

European Union

renewable power
- 32% of energy derived from renewables by 2030; *"Fit for 55" package proposed, increasing target to 40% by 2030*

biofuels
- 14% renewable fuels target by 2030; 3.5% from advanced biofuels

carbon capture & hydrogen
- *US$13 billion between 2021 and 2030 to support technology scale-up*

mandatory reporting
- *The EU Taxonomy defines which investments are "environmentally sustainable"*
- *Proposed expansion to mandatory ESG reporting covering all large companies and requiring more-detailed information via new EU sustainability reporting standards and mandatory assurance*

United Kingdom

renewable power
- 15% of energy consumption from renewable sources

biofuels
- 12.4% Renewable Transport Fuel Obligation by 2032
- Renewable aviation fuels and renewable fuels of non-biological origin are added into the program

carbon capture & hydrogen
- *US$1.3 billion to support four CCUS hubs and clusters*
- *US$1.25 billion to support hydrogen strategy*

mandatory reporting
- UK emissions trading scheme for facilities with installed combustion equipment at a total rated input greater than 20MW
- *UK announced it will begin work on its own Taxonomy and will use the metrics and thresholds set by the EU Taxonomy as a starting point*
- Streamlined Energy and Carbon Reporting requires companies that have consumed (in the UK) more than 40,000 kWh of energy in the reporting period to disclose energy and carbon information

Norway

biofuels
- 30% increase in aviation biofuels by 2030, from 2018 baseline

carbon capture
- $1.8 billion to support Longship CCS project

Kazakhstan

mandatory reporting
- Emissions trading scheme for facilities with emissions > 20k tonnes CO_2

China

renewable power
- Increase wind and solar generation capacity to 1,200 gigawatts by 2030

hydrogen
- Up to US$2.5 billion for cities to build out hydrogen infrastructure and promote fuel cell vehicle adoption

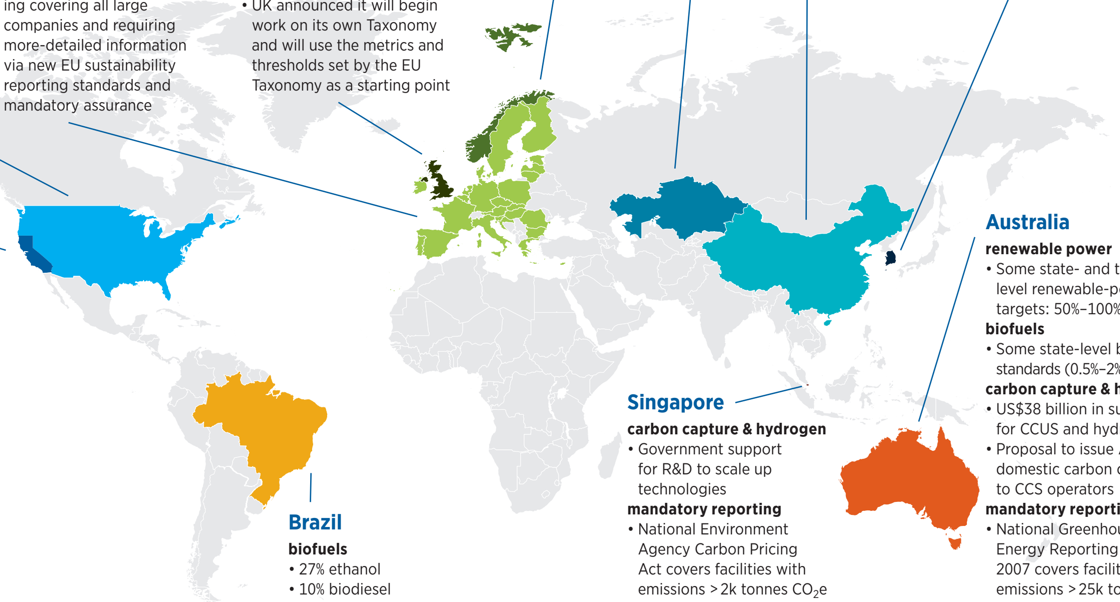
South Korea

renewable power
- 25% renewable-power targets by 2030

biofuels
- 3% renewable-fuel-blending ratio

hydrogen
- Roadmap to develop hydrogen and fuel cell economy

mandatory reporting
- Emissions trading scheme for facilities with emissions > 25k tonnes of CO_2e



California

renewable power
- 60% of energy from renewables by 2030

biofuels
- 20% reduction in the carbon intensity of transportation fuels by 2030 from 2011

carbon capture
- CCS projects qualify for Low Carbon Fuel Standard credit generation

hydrogen
- US$115 million for hydrogen infrastructure

mandatory reporting
- CARB Mandatory Reporting of Greenhouse Gas Emissions covers facilities with emissions > 10k tCO_2e

Brazil

biofuels
- 27% ethanol
- 10% biodiesel

Singapore

carbon capture & hydrogen
- Government support for R&D to scale up technologies

mandatory reporting
- National Environment Agency Carbon Pricing Act covers facilities with emissions > 2k tonnes CO_2e

Australia

renewable power
- Some state- and territory-level renewable-power targets: 50%–100%

biofuels
- Some state-level biofuel standards (0.5%–2% biodiesel)

carbon capture & hydrogen
- US$38 billion in support for CCUS and hydrogen
- *Proposal to issue Australia domestic carbon credits to CCS operators*

mandatory reporting
- National Greenhouse and Energy Reporting Act 2007 covers facilities with emissions > 25k tonnes CO_2e

Sources: European Commission, *CO_2 Emission Performance Standards for Cars and Vans (2020 onwards)*, ec.europa.eu/clima/policies/transport/vehicles/regulation_en; IEA, *Global EV Outlook 2020*, webstore.iea.org/login?ReturnUrl=%2fdownload%2fdirect%2f3007; EU Energy Directive, *Renewable Energy Directive*, ec.europa.eu/energy/topics/renewable-energy/renewable-energy-directive_en; Lawrence Berkeley National Laboratory, *U.S. Renewables Portfolio Standards*, eta-publications.lbl.gov/sites/default/files/2017-annual-rps-summary-report.pdf; Singapore Ministry of Sustainability and the Environment, a-star.edu.sg/Research/funding-opportunities/lcer-fi-grant; Kevin Morrison, "Australia to Involve Carbon Capture, Storage for Credit," argusmedia.com/en/news/2229216-australia-to-involve-carbon-capture-storage-for-credit.

Australia Hydrogen: In 2020, the government directed the Clean Energy Finance Corporation to make approximately US$220 million available to support growth in the hydrogen industry. Hydrogen and CCUS: In 2020, Australia released its *First Low Emissions Technology Statement—2020*, which aims to leverage co-investment from the private sector and other levels of government to drive at least US$38 billion of new investment over the decade. Priority areas include CCUS and hydrogen.

Europe *Hydrogen and CCUS: The EU Innovation Fund under the EU Emissions Trading System is expected to raise up to $13 billion (EUR11.5 billion) between 2021 and 2030, which will support scaling up hydrogen and CCUS projects. The United Kingdom announced more than $1 billion (GBP800 million) to support four CCUS hubs and clusters and unveiled its hydrogen strategy in August 2021, which proposed $1.25 billion (GBP900 million) to support hydrogen development. Mandatory reporting: The EU Taxonomy is a framework that purports to define which investments are "environmentally sustainable." Companies will be required to report the share of Capex, Opex, and revenue that satisfies overarching principles, as well as a series of technical screening criteria. Reporting requirements begin in January 2022. In November 2020, the United Kingdom announced it will begin work on its own taxonomy, which will use the metrics and thresholds set by the EU Taxonomy as a starting point.*

South Korea Hydrogen: In 2019, South Korea announced its national Hydrogen Economy Roadmap to support hydrogen and fuel cell development. In 2020, South Korea's National Assembly passed the Hydrogen Economy Promotion and Hydrogen Safety Management Act, which provides a legal framework for government efforts, including providing subsidies to industry.

United States CCUS: Starting from 2018, the United States expanded its federal 45Q tax credit, which provides $50/tonne for CO_2 stored permanently and $35/tonne if the CO_2 is put to use in support of CCUS applications. This can be combined with state-level programs, such as California's Low Carbon Fuel Standard, to incentivize CCUS deployment to produce lower carbon–intensity fuels.

* *Italics* indicates a policy is under development.

3.1.3 Technology trends: We believe removals and hydrogen are key to a lower carbon future

Improvements in technology can reduce energy costs, lower emissions, and influence the energy mix by changing the relative competitiveness of different energy types. Three of the most prominent areas of investment include natural and technological CO_2 removals; hydrogen; and battery storage. Removals and hydrogen in particular are important technologies to assist in the decarbonization of hard-to-abate sectors.

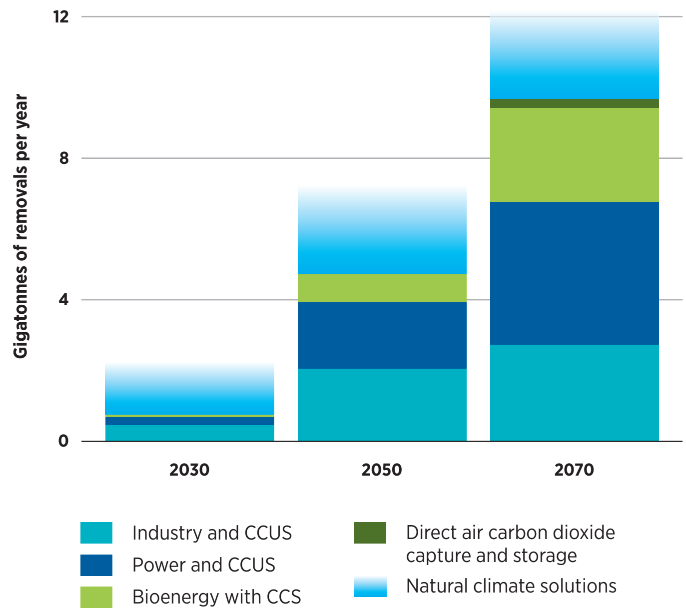
Removals: The IPCC 1.5° C report pointed out that many pathways to achieving the <2° C goal will require "negative emissions" approaches. Negative emissions, or CO_2 removals, are often classified as natural climate solutions and technology removals, like carbon capture. Both can be essential tools in mitigating GHG emissions and meeting the goals of the Paris Agreement (Exhibit 16).[12] According to the IEA's *Energy Technology Perspectives 2020* report, CCUS is expected to play a central role as one of four key pillars of global energy transitions, alongside renewables-based electrification, bioenergy, and hydrogen. CCUS may also unlock faster decarbonization of carbon-intensive production processes, such as cement manufacturing.

Hydrogen: Hydrogen is a versatile energy carrier, with potential as a lower carbon fuel, particularly in sectors that are hard to decarbonize. Under some scenarios, demand for blue and green hydrogen could more than triple by 2050[13] if costs come down and infrastructure is built out (Exhibit 17). Targeted government policies can encourage research and development to drive down costs and improve performance so hydrogen can become commercially viable. Policy can also help lower the risk of investment for first movers by enabling development of supply chains and infrastructure that drive down costs and enable economies of scale.

Battery storage: Over the past decade, there has been notable cost reduction and performance improvement in lithium-ion (Li-ion) batteries and other storage technologies. Such progress, combined with a drop in the cost of producing renewable energy and advancements in other technologies, such as smart-grid and demand-management innovations, has the potential to increase electrification in sectors like light-duty passenger transportation. These advances facilitate increased use of renewable energy in electricity generation and help mitigate the problem of intermittency.

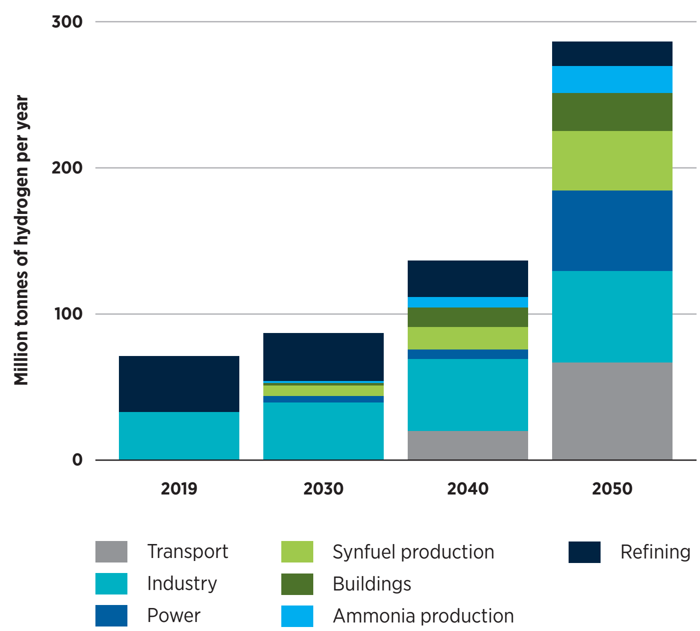
However, even with these improvements in energy storage, many leading energy experts agree that additional technology breakthroughs are needed to enable wider scaling of renewables and decarbonization in other hard-to-abate sectors. CCUS and hydrogen are the among the most promising of these other technologies.

Exhibit 16. CCUS and natural climate solutions could make a long-term contribution toward reducing GHG emissions



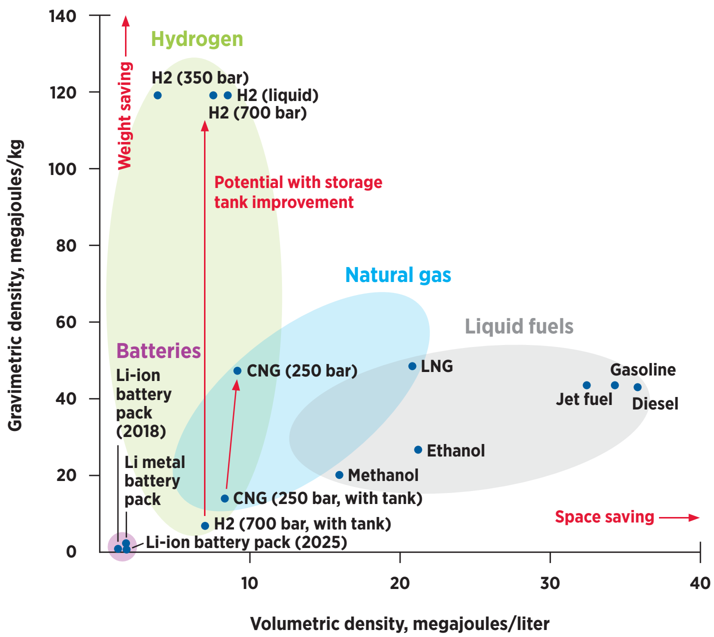
Source: IEA, *Energy Technology Perspectives 2020*, iea.org/reports/energy-technology-perspectives-2020. Bronson Griscom et al., "Natural Climate Solutions," Proceedings of the National Academy of Sciences of the United States of America, October 2017, pnas.org/content/114/44/11645. University College London, *Future Demand, Supply and Prices for Voluntary Carbon Credits—Keeping the Balance*, June 2021, trove-research.com/wp-content/uploads/2021/06/Trove-Research-Carbon-Credit-Demand-Supply-and-Prices-1-June-2021.pdf.

Exhibit 17. Under the IEA's SDS, hydrogen demand could more than triple by mid-century



Source: IEA, *Energy Technology Perspectives 2020*, iea.org/reports/energy-technology-perspectives-2020.

Exhibit 18. Energy density of different fuel sources (shown with tank) can drive the attractiveness of fuel types



Sources: Argonne National Laboratory, GREET model fuel specifications; AABC (Advanced Automotive Battery Conference) for Li-ion battery performance; with Chevron internal compilations.

Energy density of different fuels: The energy density and portability of a fuel are among the most important characteristics when considering viability for use in transportation. Two important aspects are as follows:

- **Gravimetric density**, the energy contained in a unit mass of fuel, determines how far one can travel with a given amount of fuel. Higher gravimetric density means less weight is required to be carried as fuel, meaning more weight capacity is available for carrying people and freight.
- **Volumetric density**, the energy stored in a unit volume of fuel, determines how much space the fuel takes up. Higher volumetric energy density means less space is required to store the fuel, and thus more space is available for carrying people and freight.

Fundamental differences in energy densities are a major obstacle to using alternative fuels for some modes of transport, such as long-distance shipping and air travel. To date, few alternative fuels or energy storage systems can surpass the energy densities of liquid fuels.

Gaseous fuels like compressed natural gas and hydrogen currently require large and heavy tanks for on-board vehicle storage. Further research and development are needed to reduce the weight and size of such storage tanks. Li-ion battery systems have achieved considerable progress in light-duty vehicle applications in the past decade, but some trade-offs in range, which is dictated by energy density, still exist.[14]

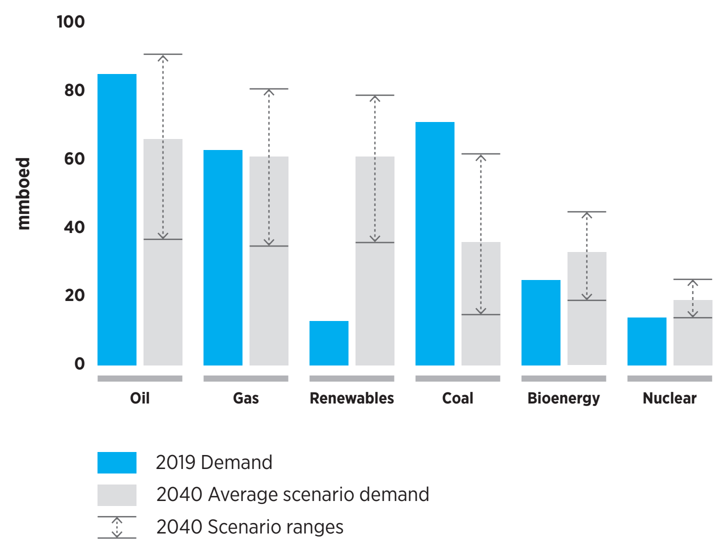
3.2 how we approach the future energy mix

We have a dedicated cross-functional team that forecasts the energy system decades into the future. We track and analyze energy demand and mix drivers to work to understand which sources of energy supply are likely to meet expected demand. We believe the energy mix will continue to be primarily determined by the economics of each energy supply source, which are influenced by the intersection of macroeconomic and consumer, policy, and technology trends. The relative importance of these factors can vary by region and over time.

Oil and gas currently account for a majority of global energy supply, at approximately 310 exajoules per year and have a diverse set of end uses. In some uses, like aviation, marine, freight, and petrochemicals, there are few, if any, cost-effective and scalable alternatives to oil. We utilize signposts to help us track key demand indicators to test our views and to help determine whether alternatives are emerging faster, or slower, than our primary scenario.

Although the future is uncertain, and oil and gas may fall below today's share of the energy supply, most energy experts agree that these commodities will be required to satisfy global energy demand under almost any future market scenario—even one in which policies increasingly aim to limit fossil fuel use and reduce GHG emissions.[15]

Exhibit 19. Most scenarios show a range of energy sources will make up the future energy mix

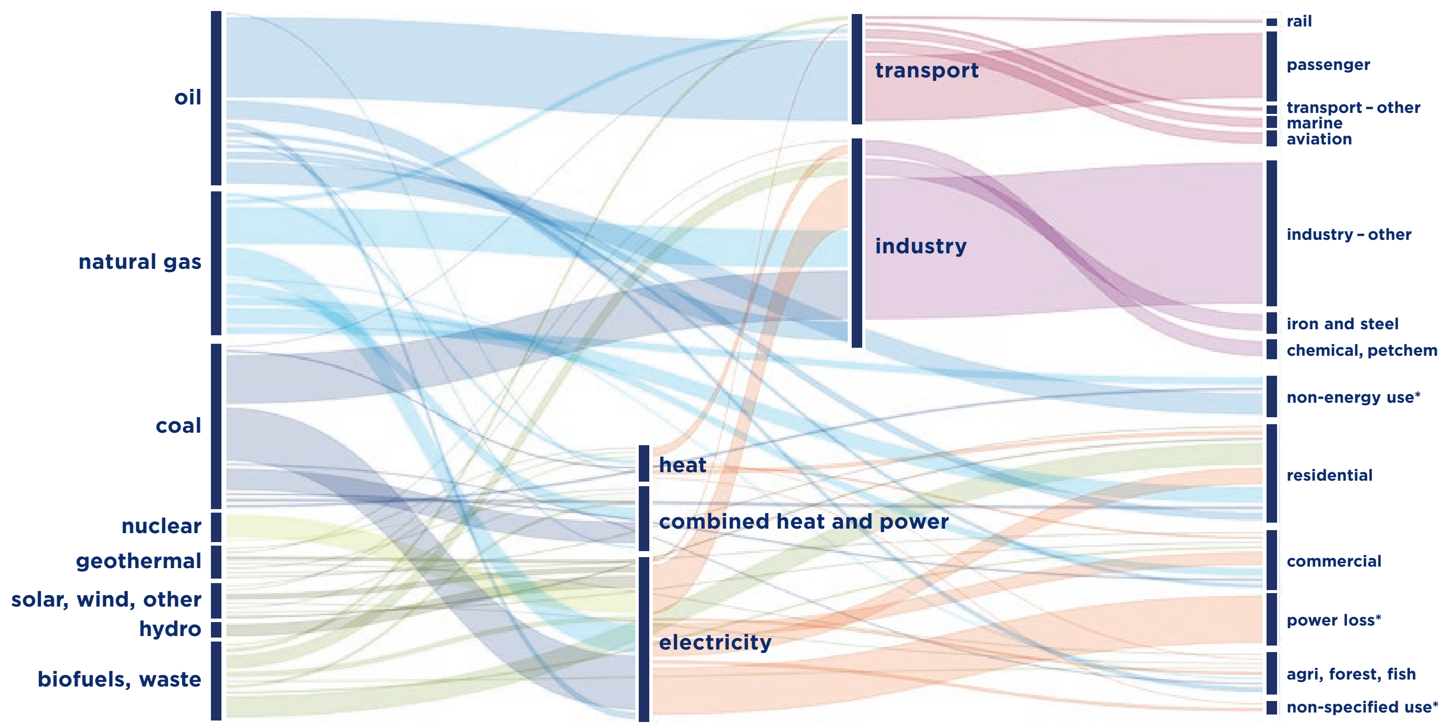


Sources: IEA, *World Energy Outlook 2020*, iea.org/reports/world-energy-outlook-2020; IHS Markit 2020 Scenarios; Wood Mackenzie, *Energy Transition Outlook 2020: Highlights*; IEA, *Net Zero by 2050*, iea.org/reports/net-zero-by-2050.

mmboed = millions of barrels of oil-equivalent per day

Exhibit 20. Oil and gas have many important and diverse uses, as shown in world energy flows

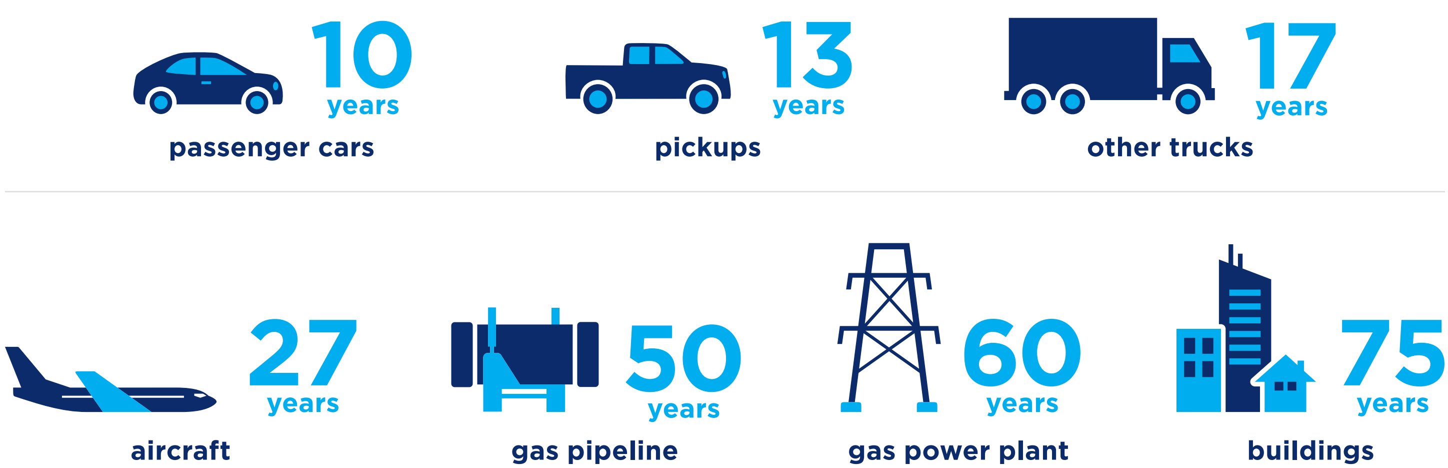
The IEA estimates that primary energy demand in 2020 declined by approximately 4 percent.



*__Power loss__ = Loss in gas distribution, electricity transmission, and coal transport. **Non-energy use** = Those fuels that are used as raw materials in the different sectors and are not consumed as a fuel or transformed into another fuel. Non-energy use is shown separately in final consumption under the heading *non-energy use*. **Non-specified use** = All fuel use not elsewhere specified, as well as consumption in the above-designated categories for which separate figures have not been provided. Military fuel use for all mobile and stationary use is included here (e.g., ships, aircraft, roads, and energy used in living quarters), regardless of whether the fuel delivered is for the military of that country or for the military of another country.

Based on data from: IEA, *2018 World Balances*, excluding "Other Energy Sector" balances, iea.org/sankey/, modified by Chevron Corporation.

Exhibit 21. Turnover of energy infrastructure will influence the pace of change



Sources: EIA, Today in Energy page, *Natural Gas Generators Make Up the Largest Share of Overall U.S. Generation Capacity*, rb.gy/mkqtf2; Bureau of Transportation Statistics (BTS), *Average Age of Automobiles and Trucks in Operation in the United States*, bts.gov/content/average-age-automobiles-and-trucks-operation-united-states; BTS, *Average Age of Aircraft 2019*, bts.gov/average-age-aircraft-2019; National Renewable Energy Laboratory (NREL), *Useful Life | Energy Analysis*, nrel.gov/analysis/tech-footprint.html; *Assumptions to the Annual Energy Outlook 2021: Commercial Demand Module*, eia.gov/outlooks/aeo/assumptions/pdf/commercial.pdf; Massachusetts Institute of Technology, *Buildings Life Cycle Assessment (LCA) | Concrete Sustainability Hub*, cshub.mit.edu/buildings/lca.

3.3 our approach to demand and supply

How we approach demand: Our views on short- and long-term demand are based on analysis of macroeconomic and demographic trends, technological pathways, consumers' behavioral patterns, and policy impacts, among other factors. Growing populations, rising incomes, and urbanization are the principal forces behind energy-demand growth, as they typically lead to greater use of transportation, heating, cooling, lighting, and refrigeration. Policies will continue to play a large role in aggregate energy demand and fuel mix. Given the range of uncertainty across key demand drivers, we analyze multiple demand scenarios as part of our annual planning cycle.

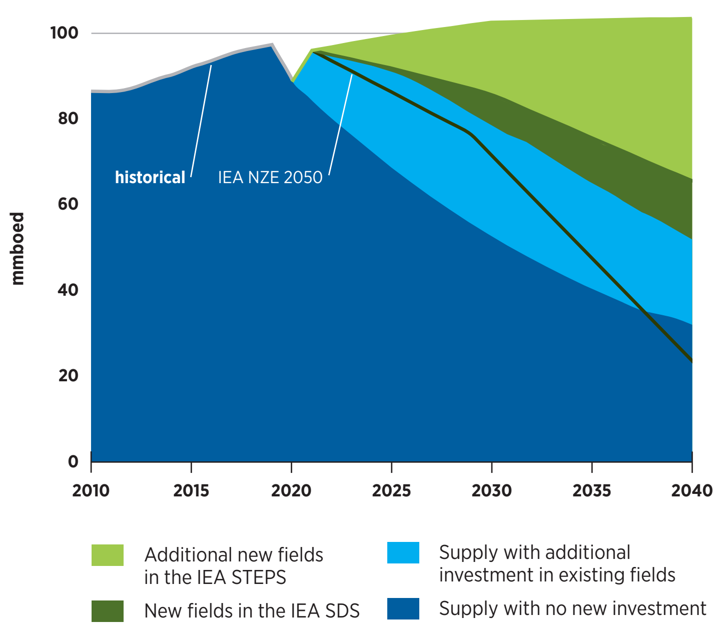
As the world recovers from the COVID-19 pandemic, we expect energy demand to return to pre-crisis levels, although the timing of recovery may vary by region and type of demand.

How we approach supply: Every year we develop a range of long-term oil, gas, and refined-product supply scenarios to inform our views on prices, test our strategies, and assess business risks. The process involves our proprietary view of the principal drivers of supply growth, including resource supply curves, production constraints, capacities at secondary processing facilities, fiscal and financial requirements, and geopolitical trends and shifts. Given the complex set of variables and uncertainties associated with forecasting long-term supply, we routinely examine multiple scenarios and assess our forecasts against third-party perspectives.

3.3.1 View on oil demand

In 2019, global liquid fuel demand was approximately 100 million barrels per day (mmbd). In 2020, the COVID-19 pandemic reduced demand by approximately 8 mmbd, to about 92 mmbd.[16] The IEA's STEPS predicts oil demand to recover to pre-crisis levels by 2023.[17] Although global oil demand has grown at a rate of about 1 mmbd, or 1 percent per year, over the past several decades, the STEPS shows global oil demand growth slowing to about 750,000 barrels per day through 2030, due to economic impacts from COVID-19; slower long-term structural economic growth; aging populations in traditional oil-consuming centers like Europe, Japan, and the United States; and policy-driven efforts to increase vehicle efficiency and alternative-fuel penetration. The STEPS forecasts that growth in demand will then plateau, with a growth rate of less than 100,000 barrels per day through 2040.[18]

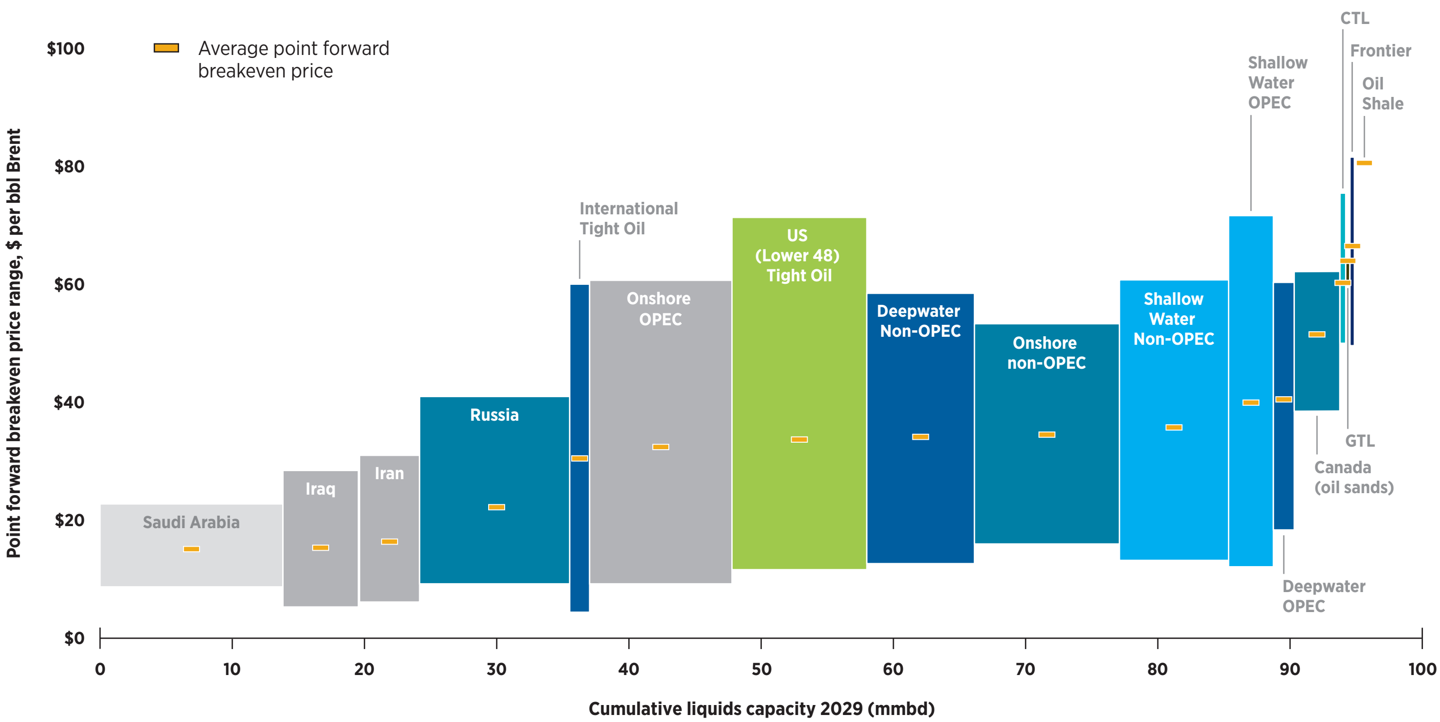
Exhibit 22. Realized decline rates determine the size of the supply gap and opportunities for new investment



Sources: IEA, *World Energy Outlook 2020*, iea.org/reports/world-energy-outlook-2020; IEA, *Net Zero by 2050*, iea.org/reports/net-zero-by-2050; production decline rates based on data from Rystad Energy UCube, December 2020.

mmboed = millions of barrels of oil-equivalent per day

Exhibit 23. Global liquids long-term supply curve and average point forward breakeven prices in 2029 show the supply curve is relatively flat, implying increased competition among producers



Liquids supply shown above includes crude oil, natural-gas liquids, coal-to-liquids (CTLs) and gas-to-liquids (GTLs).

Point forward breakeven is the amount of capital needed to produce the resource from today forward. This differs from full-cycle breakeven, which includes all costs for developing a new field. For a further discussion of breakeven calculations, see Energy Economics, *Tight oil market dynamics: Benchmarks, breakeven points, and inelasticities*, February 2018, sciencedirect.com/science/article/pii/S0140988317304103.

Source, as modified by Chevron Corporation: Wood Mackenzie, *Oil Supply Tool*, August 2021.

mmbd = millions of barrels per day

bbl = barrel

3.3.2 View on oil supply

At a macro-level, oil supply is significantly impacted by producers' strategies to manage near- and long-term uncertainties. For example, producers respond to demand expectations by adjusting investment levels. The IEA estimates that upstream oil and gas investments will have fallen by a third globally in 2020 due to COVID-related demand shocks. Further, geopolitical factors can drive production levels, evidenced by the breakdown of cooperation among OPEC+ (OPEC plus 11 non-OPEC members) in spring 2020, which severely disrupted global oil markets.

Capital spending on oil and gas is also impacted by the continued need for maintenance and investment in existing assets to manage decline rates. The production profile for a well, a field, or a geography depends on geological circumstances, engineering practices, and government policies, among other factors.

Although non-OPEC decline rates have been estimated to be about 3 percent[19] over the past decade, recent cost-cutting efforts and the shift in project base to higher portions of shale and tight oil have led to higher decline rates. Price declines stemming from COVID-19 demand shocks and OPEC+ tensions, uncertainty about the nature of demand recovery from the pandemic, limited price recovery, and a more constrained capital market could lead to inadequate investment, future supply shortages, and price volatility.

Although oil markets are well supplied in the short term, in the medium term, more investment would be required to meet increased demand—often referred to as the supply gap. We analyze this gap in order to forecast which types of resources will be needed in the future. Typically, the most economical barrels are produced from reinvesting in existing production to minimize natural decline.

A common way to visualize oil supply is via a supply curve by resource type, in which the width of the bar represents the amount of total production for a given year and the height of the bar indicates a representative price range over which that resource is economical to produce (Exhibit 23). Similar types of resources, or resources from certain regions, are grouped together and thus show a range of prices instead of a single price. In a more detailed and expanded version, every field would be its own line on the supply stack. Assets can move relative to one another when their breakeven values change due to technology, geopolitical or policy changes, fiscal terms, or other reasons. The supply stack is a useful way to gauge trends in the overall cost of supply and whether there have been shifts through time. However, care should be taken when drawing detailed conclusions from a supply stack, as the exact annual values depend on forecasts, such as project timing and performance.

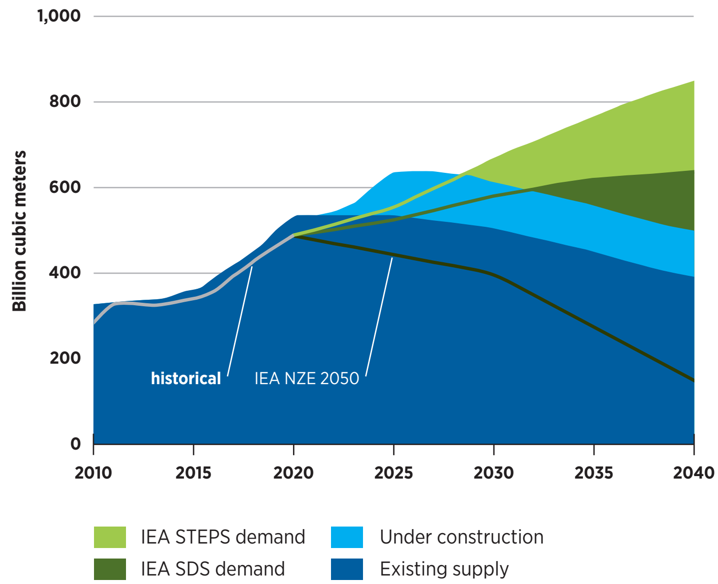
3.3.3 View on natural-gas demand

In 2019, global demand for natural gas was approximately 4,000 billion cubic meters, of which approximately 354 billion cubic meters was liquefied natural gas (LNG). LNG accounted for approximately 38 percent of natural-gas exchanges.[20] North America makes up more than 27 percent of demand, followed by Asia-Pacific at 21 percent, and Europe at 15 percent. Gas markets are priced regionally, and Asia continues to be the market with the largest forecasted growth. Growth in natural-gas demand is driven by its status as a relatively cost-competitive resource, a desire among key industrial or large energy consumers to diversify fuel sources, and efforts in some jurisdictions to reduce air pollution (e.g., China's Blue Sky Action Plan, which includes coal-to-gas objectives). Demand in Asia is expected to grow by 40 to 50 percent from 2019 to 2030.[21] There is not enough pipeline gas to satisfy the projected demand; thus, it is expected that Asia will continue to be a major importer of LNG. There are potential risks to the growth of gas in the power sector, including lower-cost coal and renewables penetration. Nevertheless, sustained growth for gas appears likely, particularly in the industrial sector, where gas is better positioned to provide high-temperature heat, compared with renewables. Gas has the advantage over refined products on price and over coal on emissions. Early indications of interest are emerging for lower carbon–intensity gas.

3.3.4 View on natural-gas supply

As with oil, we analyze future gas-supply needs against demand growth in the context of a supply curve to forecast future economically competitive sources of supply. For global natural-gas markets, the IEA projects there will be enough capacity from producing assets and projects under construction to satisfy global demand through 2025 (Exhibit 24).[22] In the medium- to long-term, a supply gap could open up as soon as the mid-2020s or beyond 2030, depending on the shape of the pandemic recovery, the adoption of gas in emerging economies, and the pace of renewable penetration. Asia is expected to experience the greatest demand growth, and with limited pipeline capacity, the region is forecasted to import more LNG. This is one reason LNG is predicted to be the fastest-growing source of supply within the gas sector.

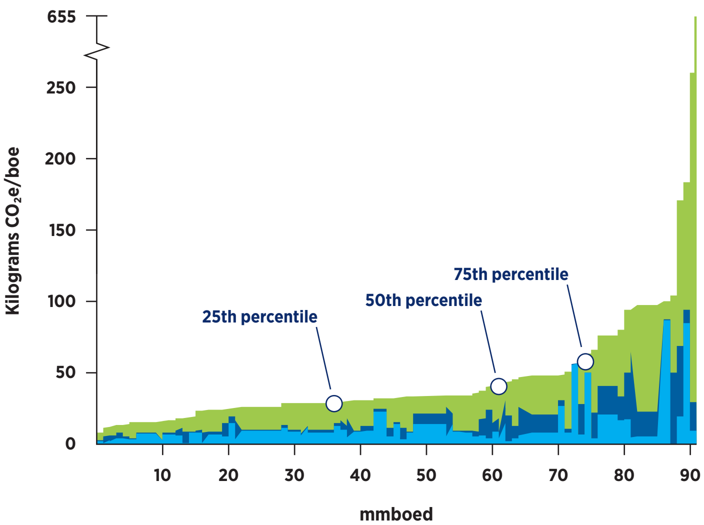
Exhibit 24. LNG supply and demand: NZE 2050, SDS, STEPS



Sources: IEA, *World Energy Outlook 2020*, iea.org/reports/world-energy-outlook-2020; IEA, *Net Zero by 2050*, iea.org/reports/net-zero-by-2050.

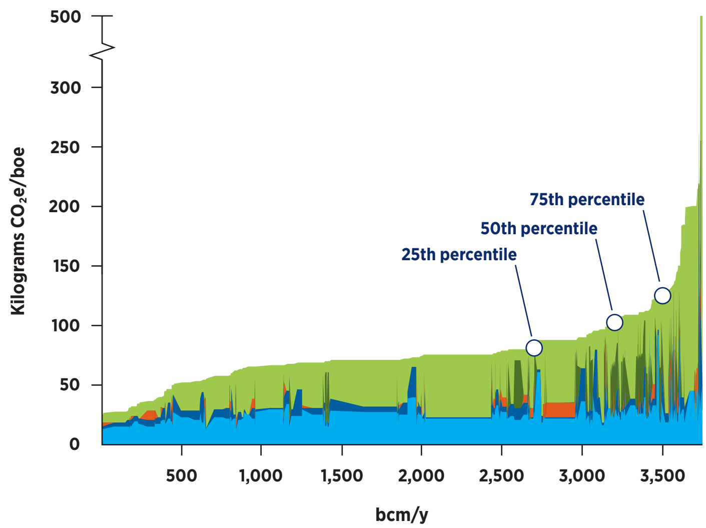
Carbon intensity of upstream production: Carbon intensity, or CO_2e per unit of production, of each resource type is loosely correlated to the resource's position, or cost of production, on the supply curve. Like the wide distribution of supply cost for each resource type, carbon intensity for each resource type is widely distributed and can be influenced by the producer. The charts from the IEA's *World Energy Outlook 2018* presented in Exhibits 25 and 26 represent the IEA's estimates for global carbon intensity supply stacks for oil and gas with the methane global warming potential converted to the IPCC AR4 values. The IPCC AR4 is currently used in part by the U.S. EPA, the European Commission, and common oil and gas industry calculations.[23, 24 *]

Exhibit 25. The global average oil production carbon intensity is 46 kg CO_2e/boe



Note: Based on field-level data.
Source: IEA, *World Energy Outlook 2018*, iea.org/reports/world-energy-outlook-2018.
boe = barrels of oil-equivalent
mmboed = millions of barrels of oil-equivalent per day

Exhibit 26. The global average gas production carbon intensity is 71 kg CO_2e/boe



Note: Based on field-level data.
Source: IEA, *World Energy Outlook 2018*, iea.org/reports/world-energy-outlook-2018.
boe = barrels of oil-equivalent
bcm/y = billion cubic meters per year

Higher-cost production is often correlated with more energy- and emissions-intensive production. For example, some heavy oil may require steam for production, which can impact both cost and emissions.

LNG is generally more carbon intensive than gas supplied via pipeline. Decisions about electrification, recovering waste heat, avoiding fugitive and vented emissions and flaring, and deploying CCUS technology can all impact the carbon intensity of gas.

*As part of the IPCC review process, climate change scientists regularly review the global warming potential (GWP) of different greenhouse gases and update their perspective on the current scientific consensus of the GWPs. Governments and industry then often use these GWPs in the development of their greenhouse gas inventories. Global warming is considered to be a long-term issue by the IPCC, and it is common practice to use a GWP time horizon consistent with that of the scenario analysis done by the IPCC. The AR4 100-year Global Warming Potential (GWP-100) assigns a GWP of 25 to convert the mass of methane to its carbon dioxide–equivalent value. AR5, released in 2014, assumes a GWP-100 of 30 for fossil sources of methane. AR6 was released in August 2021, but it is currently undergoing a final copy-editing process. The scenario analysis described in this report was completed under IPCC AR4.

3.3.5 View on refined-products demand

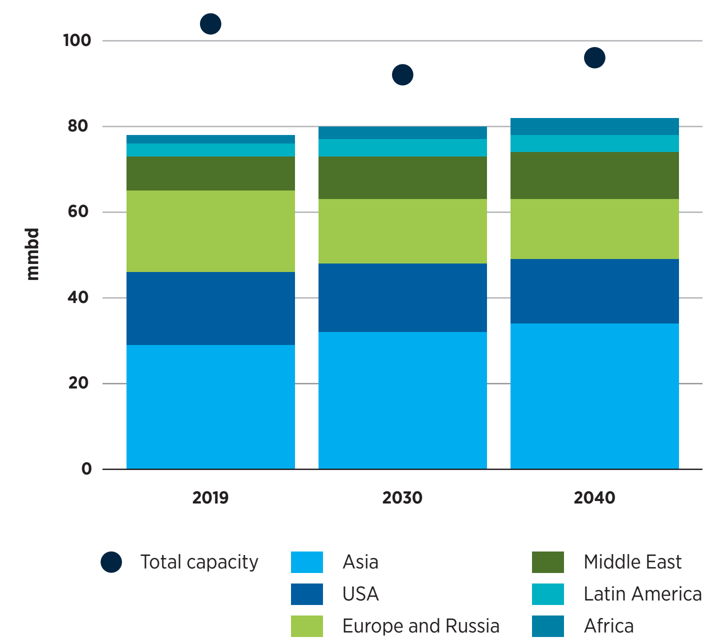
Transportation fuels and petrochemicals have accounted for all of the growth in global oil demand since 2000 and are expected to underpin sustained growth in demand over the next decade. According to the IEA's outlook, product-demand growth continues as increases in demand for transportation services and petrochemicals offset lower demand due to improved vehicle efficiency, greater use of biofuels, and electrification. Demand for high-value petrochemicals, used to produce plastics, resins, and fibers (among other products), is projected to rise by 25 percent between 2019 and 2030 in the STEPS. Policies and technologies aimed at reducing plastic waste and increased chemical recycling could reduce demand for oil and gas feedstocks. A delayed pandemic recovery could lead to a delay or weakening of these policies, although it could also lead to a dampening of demand growth for transport fuels.

3.3.6 View on refined-products supply

Global refining capacity stood at a little over 102 mmbd as of 2019. However, utilization was less than 75 percent during the second half of 2020, with about 1.2 mmbd of capacity closures since the start of 2020 due to impacts from the pandemic.[25] With a little less than 5 mmbd of additional capacity scheduled to come online over the next few years, it is expected that further closures are likely, with the bulk of them happening in Europe.[26] Most capacity additions are expected in Asia, where the majority of demand growth is expected to occur. Additional capacity growth is expected in the Middle East. Some refiners in the United States and Europe may convert to biofuels production to take advantage of existing and emerging policies. Biofuels production is expected to increase by 25 percent from 2019 to 2024.[27]

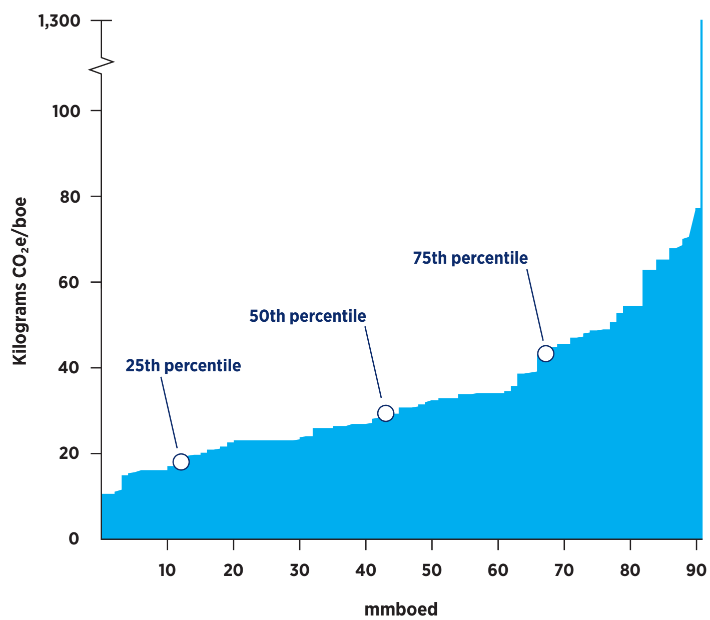
Carbon intensity of refining: Generally, more-complex refineries are more carbon intensive per unit of throughput than simpler refineries. More-complex refineries also have the ability to produce higher-value products like gasoline, diesel, and jet fuel. The chart presented in Exhibit 28 represents the IEA's estimates for global carbon intensity supply stacks for refining on a throughput basis.

Exhibit 27. The gap between refinery runs and total capacity is expected to narrow in the next decade



Source: IEA, *World Energy Outlook 2020*, iea.org/reports/world-energy-outlook-2020.
mmbd = millions of barrels per day

Exhibit 28. The global average refining carbon intensity is 33 kg CO_2e/boe

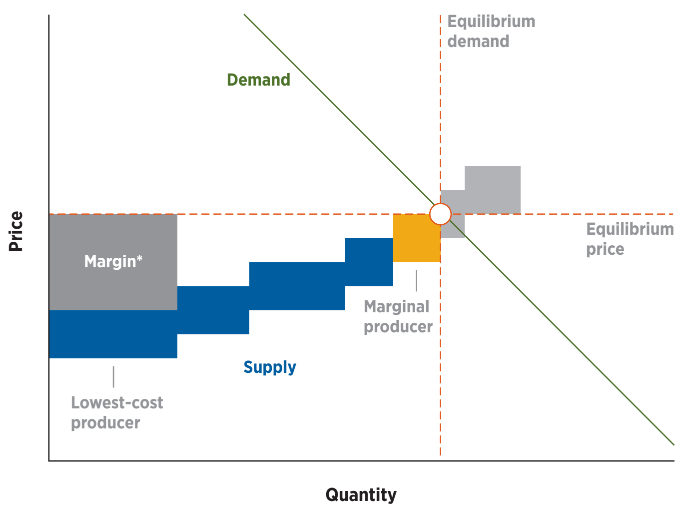


Source: IEA, *World Energy Outlook 2018*, iea.org/reports/world-energy-outlook-2018.
boe = barrels of oil-equivalent
mmboed = millions of barrels of oil-equivalent per day

3.4 how we approach prices: near term and long term

We analyze near- and long-term commodity prices with climate change policies and other regulatory and policy impacts. We utilize various quantitative methods to combine our supply-and-demand views and solve for equilibrium commodity prices at which the marginal producer can enter the market and still earn a reasonable rate of return.

Exhibit 29. Price is set where supply crosses demand



Note: For illustration only. Not drawn to scale.

Producers with costs lower than the marginal producer—lower and to the left on the blue stack—produce more and have larger margins than the marginal producer, in yellow. Producers with costs higher than the marginal producer—higher and to the right on the gray supply stack—typically would not develop assets.

*Margin is shared between all parties involved in production.

Near term: Markets are primarily characterized by the existing fixed capital stock, which was determined by past capital investment decisions. For conventional oil and gas assets, a new investment cannot immediately bring new supply to the market to affect price. For a new conventional oil field, "first oil" may take three to 10 years, depending on multiple factors, including the asset type and regulation. Tight oil has shorter development times; however, as discussed on page 25, uncertainties about shale operators' access to capital could limit tight oil's impact on near-term prices.

Long term: Competitive markets are characterized by mobility of capital investment. Over the long term, prices are determined where long-term supply and long-term demand curves intersect at a point that reflects the marginal operating costs, the investment costs on both the supply side and the demand side, and a minimum rate of return.

commodity-price forecasts

Our comprehensive, proprietary forecasts of commodity prices significantly influence our strategic and business planning. Because price is determined in a competitive marketplace, scenarios are used to reflect market uncertainties, generating multiple price trajectories. Our price outlooks include carbon-price forecasts and cover a wide range of oil prices, natural-gas prices, and costs of goods and services, among other considerations. These forecasts reflect long-range effects from population and economic growth, renewable fuel penetration, energy efficiency standards, climate-related policy actions, and demand response to oil and natural-gas prices.

difference between carbon price and carbon cost

Although the terms are sometimes used interchangeably, a carbon price, a carbon cost, and a shadow or proxy carbon price are different. For example, the term *carbon cost* is sometimes used to refer to carbon pricing and sometimes used to refer to the societal impacts from carbon emissions. A *shadow* or *proxy* carbon price is a hypothetical, aggregated price of carbon, which may include estimates for non-pricing regulations, published for investment analysis purposes.

For us, the term *carbon price* refers to an external price resulting from a policy like a carbon tax or cap-and-trade system, and for us, a *carbon cost* is generally a function of a jurisdiction-specific carbon-price forecast and asset-specific characteristics that represent the cost for compliance the asset would face. Like oil price forecasts, the proprietary information and the analysis that go into carbon-price forecasts and carbon-cost calculations are important to our strategy. Disclosure of our carbon-price forecasts or carbon-cost calculations could compromise commercially and competitively sensitive information. Consistent with our proprietary oil- and gas-price forecasts, we do not disclose our carbon-price forecasts or carbon costs.

We support a carbon price.

In this section, we outline how climate change risks are strategically managed, and we provide examples of how we have aligned specific segments of our portfolio in response to current market conditions.

3.5 strategic processes and action areas

We aim to deliver industry-leading results and superior shareholder value in any business environment. As discussed, oil and gas are declining resources and investment is needed to maintain them in order to fulfill projected demand, even in lower carbon scenarios. Given this, we will continue to develop resources to fulfill the world's demand for energy. At the same time, we will continue to maintain flexibility in our portfolio and will examine ways to adapt investment patterns in response to changing policy, demand, and energy-transition opportunities. Our experience indicates that superior financial performance is more achievable through active portfolio management—including allocating capital where highest returns are forecasted—than through presetting targets for certain types of assets.

chevron strategy & sustainability

For more than 140 years, we have striven to build a track record of operating with integrity and holding ourselves accountable to the high expectations of our stakeholders. We take this responsibility seriously and are proud of our role in delivering the affordable, reliable, ever-cleaner energy that is vital to human progress. Refer to Section 1, Governance, on pages 5–8, to learn more about organizational changes we have made to reflect the importance we place on sustainability.

3.5.1 Our strategic processes: Decision Analysis, business planning, capital-project approvals, business-development screening, and the marginal abatement cost curve process

Our Decision Analysis process: The scale of investment and time involved in finding, extracting, and processing oil and gas requires long-term planning and decision making to effectively manage the uncertainties inherent in these opportunities. Our Decision Analysis (DA) process is underpinned by a systematic, analytical approach that leads to clarity of action in support of a decision. The DA process is structured for developing, evaluating, and comparing alternatives, including future options, in the face of risk and uncertainty. It uses deterministic and probabilistic analyses and economic and financial-analysis tools, along with debiasing techniques, to improve the quality of all decisions. Our DA function is engaged throughout the organization to achieve high decision quality and decision clarity. DA concepts and tools are used in many of the processes described below.

Business planning: Business units incorporate carbon costs and anticipated capital and operating expenditures related to carbon issues in multiple ways.

- Business plans: In jurisdictions with regulations that impose a carbon price, carbon costs are included in business plans; in jurisdictions that do not yet have such regulations, but that are projected to implement them in the future, carbon costs are included in the business plan the year the prices are forecasted to start.
- Carbon management plans: Business units in jurisdictions with regulations that impose a carbon price go through an annual compliance-planning process with the goal of achieving the most efficient manner of compliance. Where we have multiple assets in a single jurisdiction, integrated plans are developed to optimize total compliance costs across the business. We develop MACCs for our facilities and compare the cost of internal reduction options with the carbon price or fees and purchasing offsets or allowances. The anticipated compliance costs, including investments to generate internal emissions reductions, are included in business plans.

stranded assets

High-profile publications have stated that the portfolios of many oil and gas companies are not competitive in a "well below 2° C world," implying that companies and their investors have significant exposure to "stranded" assets because a company's value is tied to these undeveloped assets. However, an oil and gas company's primary valuation comes from the oil and gas reserves it holds. Per the U.S. Securities and Exchange Commission, the definition of "reserves" requires that those assets be economically producible as of a given date. The commodity price used in these calculations is the average of the first-of-the-month pricing of the preceding 12-month period prior to the end of the reporting period, projected forward as a flat—or unescalated—price for the life of the field. For example, the Brent oil price used in reserve calculations for 2020 year-end reporting was approximately $41.

A common way to evaluate the depth of a company's reserves is to divide the quantity of proved reserves (*R*) by the annual production (*P*), creating a ratio (*R/P*) that indicates the number of years remaining before all proved reserves will be produced. At the end of 2020, Chevron's *R/P* ratio was 9.9 years.

Proved reserves: Oil and gas judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

Probable reserves: Additional reserves that analysis of geoscience and engineering data indicates are less likely to be recovered than proved reserves, but are more certain to be recovered than possible reserves. When probabilistic methods are used, there should be at least a 50 percent probability that the actual quantities recovered will equal or exceed estimated values.

Possible reserves: Additional reserves that analysis of geoscience and engineering data suggests are less likely to be recoverable than probable reserves. When probabilistic methods are used, there should be at least a 10 percent probability that the actual quantities recovered will equal or exceed estimated values.

Oil and gas assets that do not meet one of these requirements fall into the category known as "resources" and are not generally used when calculating a company's value. Further, these assets represent a static snapshot of a company's current portfolio mix and do not necessarily represent the long-term strategy for a company. As discussed in this report, we continually evaluate potential climate-related risks and energy-transition opportunities as part of our decision making around future investments and portfolio composition.

- Impairment reviews: Impairment reviews are triggered when events test market assumptions upon which our business plans and long-term investment decisions are made and are based on management's best estimate of future expected cash flows. Impairments could occur, for example, due to changes in national, state, or local environmental laws, including those designed to stop or slow the production of oil and gas. When triggering events arise, we perform impairment reviews to determine whether any write-down in the carrying value of an asset is required. Carbon costs are included in impairment reviews.

- Reserves: When calculating reserves, we incorporate a carbon cost in jurisdictions with enacted carbon-pricing regulations. For reserves accounting, per guidance in Accounting Standards Codification 932, our carbon-cost estimates are based on enacted regulations, not carbon-price forecasts, and follow reserve-accounting principles.

Capital-project approvals: Individual investments are developed, approved, and implemented in the context of the strategic plan, segment-specific business plans, and commodity price forecasts. Investment proposals are evaluated by management and, as appropriate, reported to the Executive Committee and the Board of Directors. Our final investment decisions are guided by a strategic assessment of the business landscape. Our internal carbon-price forecast and derived carbon costs are considered in the economic evaluations supporting major capital-project appropriations. In addition, a number of GHG-related factors are considered in project-appropriation assessments, such as:

- The annual profile of anticipated project GHG emissions and emissions intensity (both Scope 1 and 2)

- The identification and assessment of the options for reducing GHG emissions and optimizing carbon intensity

Business-development screening: We continue to enhance our screening processes to assess opportunities for portfolio fit, including assessing energy-transition opportunities and current and future opportunities' impact on the carbon intensity of our portfolio.

Marginal abatement cost curve process: Our MACC process is a disciplined and value-driven approach to reduce the carbon intensity of our operations and assets by optimizing carbon-reduction opportunities and integrating GHG-mitigation technologies across the enterprise (see page 40).

3.6 scenario test

stress-testing our portfolio under the IEA's NZE 2050 and the IPCC's AR5 representative concentration pathway (RCP) 8.5

We use long-term energy-demand scenarios and a range of commodity prices to test our portfolio, assess investment strategies, and evaluate business risk to strive to deliver results under a range of potential futures. We analyze alternative scenarios to stress-test our portfolio and integrate learnings into our decision making to remain competitive and resilient in any environment.

For longer-term scenarios, we routinely use external views to both inform and challenge our internal views. This includes scenarios that assume a range of longer-term global warming outcomes, which may include scenarios for which the possibility of occurrence is remote. Some observers suggest the abrupt reduction in demand from the COVID-19 pandemic has presented a real-world stress test for our portfolio and the industry. The pandemic's impact on energy markets arguably illustrates the scale of changes and disruption that would accompany a reordering of the economy and behavior in order to meet the goals of the Paris Agreement.[28]

A scenario is a hypothetical construct that uses assumptions and estimates to highlight central elements of a possible future, but is not a forecast, prediction, or sensitivity analysis.

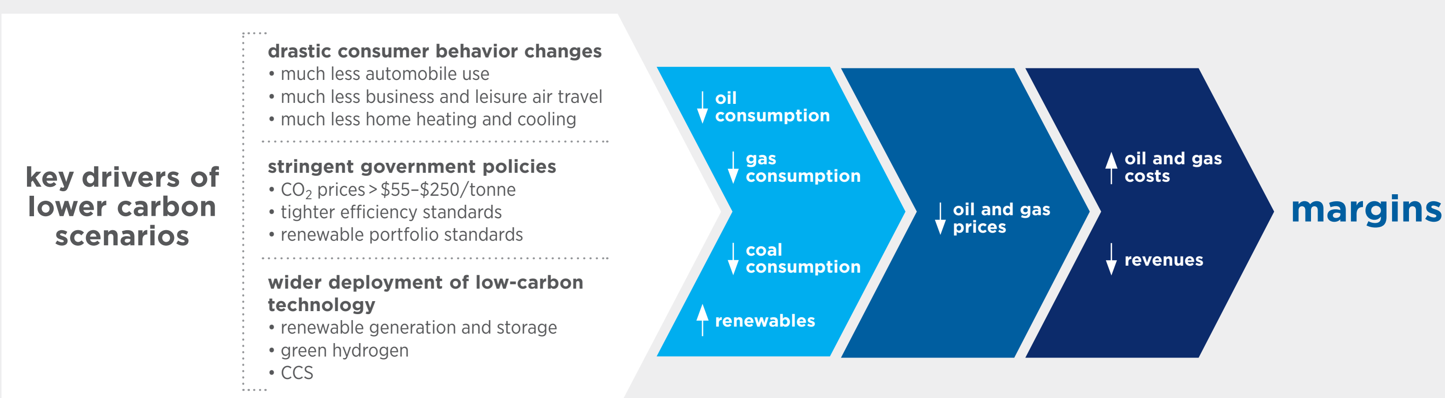
The statements included in this section represent projections and assumptions under the NZE 2050 scenario testing, not Chevron's own predictions or actual conditions or results at the present time.

3.6.1 The IEA's NZE 2050: Energy demand, oil, natural gas, refined product, new energies, and portfolio analysis

One example of a lower carbon scenario is the IEA's *Net Zero by 2050* scenario. NZE 2050 is limited to the energy sector and thus does not address natural climate solutions and impacts to land-use change that occur in non-energy sectors. The IEA states that the *"pathway remains narrow and extremely challenging, requiring all stakeholders—governments, businesses, investors, and citizens—to take action this year and every year after so that the goal does not slip out of reach."*

NZE 2050 is a hypothetical scenario that assumes what we believe to be a highly unlikely transformation of the global energy system from one currently supplied primarily by fossil fuels to a smaller one dominated by renewable energy, with renewables and bioenergy increasing from 16 percent to 67 percent of the global energy mix by 2050. It requires immediate and unprecedented action: globally coordinated policy design, strong international cooperation, vast capital redeployment, new infrastructure build-out, accelerated technology deployment, and a threefold improvement in energy efficiency that to date has not been forthcoming. NZE 2050 also assumes carbon prices reaching as much as $250 per tonne in advanced economies by 2050.

Exhibit 30. Potential impacts to oil and gas from lower carbon scenarios



Under NZE 2050, the global economy moves away from one largely powered by fossil fuels to one powered predominantly by renewable energy. In this scenario, steep declines in medium- and long-term oil and gas demand put downward pressure on prices.

We believe the likelihood of the IEA's NZE 2050 scenario is remote.[29] It is not reflective of any realistic current projections, especially in terms of global cooperation with regard to the adoption of effective global policies that would transform the global energy mix so dramatically by 2050. For example, in its *International Energy Outlook 2021* (IEO2021), the U.S. Energy Information Administration projects in its reference case that by 2050 global energy consumption will increase substantially as a result of population and economic growth and that oil and natural-gas production will also continue to grow.[30] Moreover, the wide range of unpredictable variables and externalities affecting long-term outcomes during this period of uncertainty and energy transition makes long-term modeling of this scenario inherently speculative. Therefore, we do not rely on the NZE 2050 scenario for our business planning. Nonetheless, we have conducted a scenario test of the IEA's NZE 2050 demand projections, as well as its oil, gas, and carbon price projections, to test against our portfolio. The NZE 2050 scenario outlined is not a prediction.

The IEA does not directly provide all market detail required to run a scenario analysis (e.g., regional product consumption). Regional demand information from the IEA's Sustainable Development Scenario was used as a guide to interpolate from the available NZE 2050 information to create the regional input estimates necessary to run the scenario. Other assumptions employed in our analysis included the following:

- Chevron would have extremely aggressive growth of CCUS, offsets, hydrogen, renewable fuels, and renewable natural gas.
- Refining and petrochemicals margins were decreased by the percentage change in Brent prices relative to our 2021 Business Plan price forecast.
- Marketing volumes were based on regional gasoline and diesel demand.

Our Corporate Audit department, which performs the internal audit function at Chevron, conducted a non-rated assurance review of the IEA's *Net Zero by 2050* scenario analysis. The Corporate Audit department found that the analysis was conducted in accordance with established internal process and emerging external guidance.

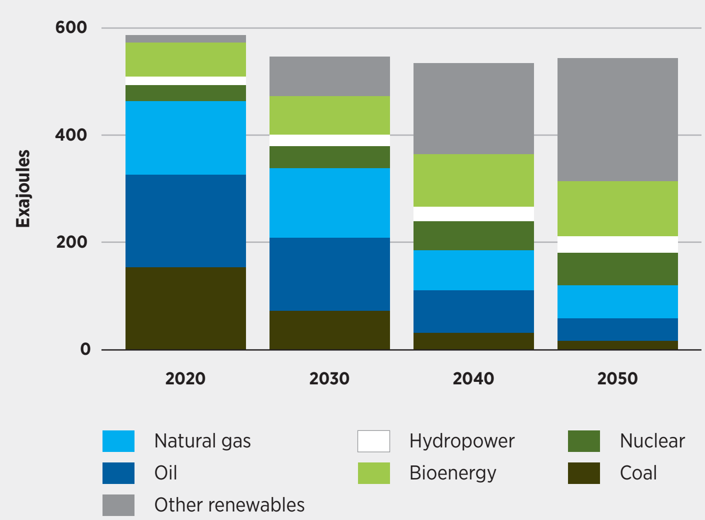
Energy demand and energy mix: The NZE 2050 scenario results in global energy demand that is approximately 7 percent lower than 2020 levels while supporting a global economy more than double the size. The NZE 2050 scenario's assumptions relevant to the oil and gas sector are as follows:

- Electricity use increases from approximately 20 percent of final energy consumption today to nearly 50 percent by 2050.
- Renewables and bioenergy account for approximately two-thirds of the global energy mix by 2050.
- The oil and gas sector's share of total primary energy demand declines from 50 percent today to approximately 20 percent by 2050.
- By 2050, CCUS accounts for 7.6 gigatonnes (Gt) of CO_2 removals.
- By 2050, crude oil prices drop to less than $25 per barrel, in real terms, and international gas prices drop to $2–$5 per mmbtu, in real terms.
- By 2050, carbon prices rise to $250 per tonne CO_2e in advanced economies, $200 in China, Russia, Brazil, and South Africa, and $55 in other emerging-market and developing economies.
- Consumer behavior drives much of the emissions reduction:
  - > 55 percent of emissions reductions in the scenario result from consumers adopting low-carbon technologies, such as electric vehicles or solar water heaters.
  - > 8 percent of the emissions reductions result from shifts in consumer behavior, including the phase-out of internal combustion engine vehicles in all cities by 2030, the capping of long-haul airline travel at 2019 levels, use of high-speed rail as a substitute for air travel, lower temperatures for heating, higher temperatures for space cooling, and higher levels of plastics recycling.
- Universal energy access is achieved globally by 2030.

Global energy investment increases from an average of $2 trillion per year today to over $4.5 trillion per year by 2030 and beyond.

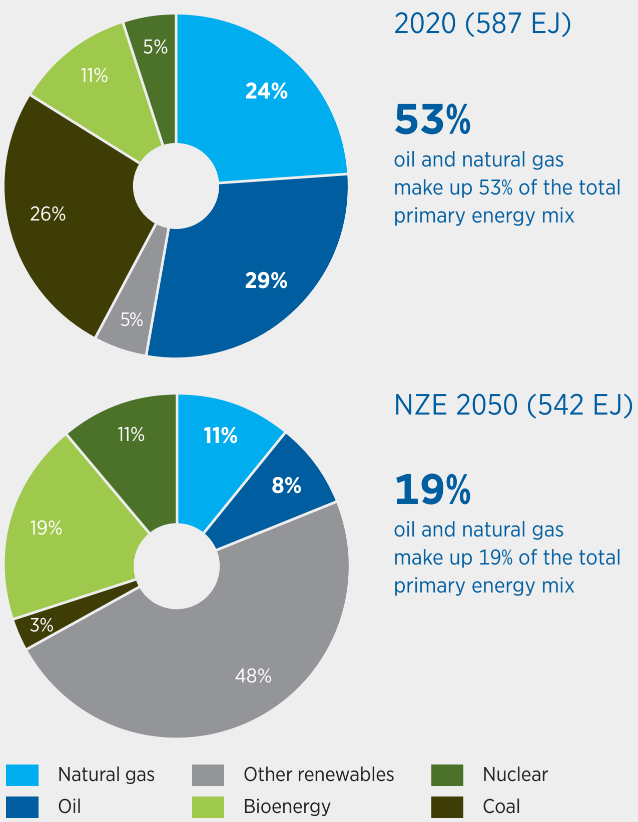
mmbtu = millions of British thermal units

Exhibit 31. Total primary energy demand in the IEA's NZE 2050



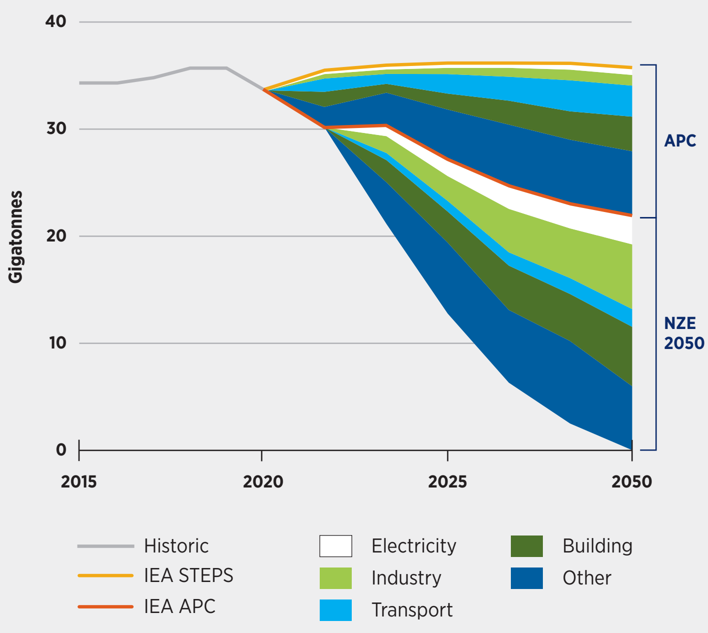
Source: IEA, *Net Zero by 2050*, iea.org/reports/net-zero-by-2050.

Exhibit 32. IEA 2020 world total primary energy mix vs. NZE 2050



Source: IEA, *Net Zero by 2050*, iea.org/reports/net-zero-by-2050.
EJ = exajoules

Exhibit 33. Global CO_2 emissions from energy reductions in the IEA's APC and NZE 2050



Source: IEA, *Net Zero by 2050*, iea.org/reports/net-zero-by-2050.
APC = Announced Pledges Case

oil

- **Oil demand:** In the NZE 2050 scenario, oil demand drops to about 24 mmbd by 2050, a drop of over 75 percent from today's levels. The majority of oil demand in 2050 is from uses for which oil is not combusted, such as chemical feedstocks, lubricants, paraffin waxes, and asphalt. Oil demand for transportation drops by approximately 90 percent from 2020, although sectors such as aviation continue to account for approximately 4 mmbd of demand.
- **Oil supply:** Lower demand implies that less supply is required. However, because of the natural decline inherent in oil production, even under NZE 2050, ongoing investment in existing fields is still needed.*
- **Oil price:** NZE 2050 projects the price of oil to drop to approximately $35 per barrel by 2030 and to less than $25 per barrel by 2050 in real terms. Although lower prices will lead to lower operating costs, lower prices will intensify cost competition in a smaller marketplace. However, this price track can still provide profitability to producers that remain in the market.

natural gas

- **Natural-gas demand:** Under the NZE 2050 scenario, gas demand peaks in the mid-2020s at about 4,300 billion cubic meters (bcm), but begins dropping thereafter, reaching a level of 1,750 bcm in 2050, approximately 55 percent lower than in 2020. The decline in natural-gas demand begins to slow after 2040 as hydrogen use increases. By 2050, more than half of global natural-gas demand goes to blue hydrogen production.
- **Natural-gas supply:** As with oil, there continues to be a need for natural-gas investment in existing fields in NZE 2050. Under the NZE 2050 scenario, traded volumes of LNG fall by 60 percent and traded volumes of pipeline gas fall by 65 percent between 2020 and 2050.
- **Natural-gas price:** Although NZE 2050 provides high-level views on gas prices, the lack of granular regional information or projections in the dataset makes it difficult to draw more than a broad conclusion that benchmark gas prices decline in each region in the scenario.

refined products

In the NZE 2050 projected scenario, rapid electrification of the vehicle fleet leads to a sharp decline in demand for refined products, such as gasoline and diesel, and decreased refinery

* According to the IEA, "Upstream oil and gas investment averages about USD 350 billion each year from 2021 to 2030 in the NZE. This is similar to the level in 2020, but around 30% lower than average levels during the previous five years. Once fields under development start production, all of the upstream investment in the NZE is to support operations in existing fields; after 2030, total annual upstream investment is around USD 170 billion each year." IEA, *Net Zero by 2050*, May 2021, p. 103, iea.org/reports/net-zero-by-2050.

throughput. Between 2020 and 2050, refinery runs fall by 85 percent. At the same time, demand for non-combusted refined products, such as petrochemicals, increases. Refineries able to shift production to chemical feedstocks and biofuels may gain competitive advantage, as both of these products see increased demand. Nevertheless, the scale of changes in NZE 2050 would inevitably lead to rationalization. However, refineries able to shift to other areas, such as chemical recycling, renewable fuels, or hydrogen production, may be reconfigurable to avoid full closure.

CCUS, hydrogen, and renewable fuels

- **CCUS:** NZE 2050 assumes implementation of policies to support a range of measures that establish markets for CCUS investment. By 2050, approximately 7.6 Gt of carbon are captured, with almost 50 percent coming from fossil fuel combustion. While efforts are pursued to increase the efficiency of industrial processes such as cement manufacturing in NZE 2050, CCUS plays an important role in limiting these emissions from harder-to-abate energy-consuming sectors. In addition, many developing nations have recently built or are building large numbers of coal power plants. Given the service life of these facilities, retrofitting them with CCUS will play a central role in reducing emissions in these economies.
- **Hydrogen:** Low-carbon hydrogen demand sees an almost sixfold increase in NZE 2050 projections, from approximately 90 million tonnes in 2020 to 520 million tonnes in 2050. Approximately 50 percent is used in heavy industries, such as steel and chemical production, and 30 percent is converted to other fuels for areas such as shipping and aviation. By 2050, almost 60 percent of hydrogen production is from electrolysis, and approximately 40 percent is from natural gas in combination with CCUS.
- **Renewable fuels:** Renewable fuels supplies accelerate in NZE 2050, with liquid biofuels expanding by a factor of 4 and biogases by a factor of 6 by 2050. Transport demand is driven by heavy road freight, shipping, and aviation. Advanced liquid biofuels increase their share of the global aviation fuel market from 15 percent in 2030 to 45 percent in 2050. In addition, biogas and biomethane are also used as clean cooking fuels and in electricity generation in NZE 2050.

portfolio analysis

We tested our portfolio against projected demand and prices under NZE 2050. The NZE 2050 hypothetical scenario relies on assumptions that would entail unprecedented policy and other action by a large number of stakeholders and governments worldwide to achieve emissions-reduction targets. Under the assumptions underlying the scenario analysis, we believe Chevron could transition to meet the market changes projected by the scenario by taking a number of actions, including: further focusing our Upstream portfolio on assets that are the most competitive from a cost and carbon-intensity perspective; aligning Downstream & Chemicals around scaled, efficient, flexible, integrated, and high-margin value chains; and concentrating our New Energies investments in areas where we have competitive advantage, such as CCUS, hydrogen, and renewable fuels. Our business model can evolve to accommodate the growth of our New Energies business if the policies, such as significant economywide carbon prices envisioned in NZE 2050, enable lower carbon solutions to scale. Under this hypothetical scenario, we would expect to experience substantial reductions in projected cash flow as we evolve from a company focused primarily on hydrocarbon extraction and refining to one also focused on new energies, CCUS, and petrochemicals. In the long term, under the carbon prices assumed in this scenario, New Energies, including renewable fuels, would generate a larger share of Chevron's cash flow and earnings. As such, New Energies would go from being a very small part of the portfolio to becoming the largest driver of cash flow and could deliver a profitable transition for shareholders.

- **Short- and mid-term impacts (0–10 years), Upstream:** In the NZE 2050 scenario, Chevron's diverse and flexible portfolio would help to mitigate modeled risk and would enable us to adjust capital in response to changing industry economics. In addition, our MACC investments would enable us to further reduce the carbon intensity of our assets and supply the market with lower carbon–intensity crude, which is still needed in NZE 2050. Although Upstream capital and exploratory spending, production, and cash flow would decline over the first decade in the NZE 2050 scenario, free cash flow is projected to remain positive.
    - Today, much of our Upstream investment is focused on unconventional assets in the Permian Basin, Argentina, Canada, and the DJ Basin. These short-cycle assets give us the flexibility to respond to commodity price volatility, cash flow, and earnings, even in a hypothetical low-price environment like the IEA's NZE 2050 scenario.
    - In addition to these unconventional assets, our strong Upstream base businesses in Kazakhstan, the Deepwater Gulf of Mexico, and Nigeria would continue to generate cash flow in the short term at lower crude prices based on investments largely made in the past. These assets would provide opportunities for investment in brownfield projects that are typically higher return and lower risk because they

leverage existing assets and infrastructure. The startup of the Future Growth Project in Kazakhstan would increase the cash-generation ability of our base business there.

> Our LNG assets in Australia would generate cash flow in an environment that lacks substantial price growth with just our existing asset base and select brownfield investments. Our gas assets in the Eastern Mediterranean region would represent an additional and sizable source of cash flow during this period with only limited investment.

> In a declining demand and low-price environment like NZE 2050, operating costs would likely decline across the portfolio, driven by efficiency initiatives and portfolio rationalization, and there would be a general reduction in industry cost structure due to reduced demand for goods and services.

- **Short- and mid-term impacts (0–10 years), Downstream & Chemicals:** Although NZE 2050 shows a sharp decline in demand for transport fuels in the United States and Asia, we believe that the Downstream portion of our portfolio would remain resilient through 2030 due to actions we have taken to enhance refinery competitiveness. In addition, our investments in renewable fuels would provide opportunities for more rapid growth as demand for these commodities would increase in NZE 2050. Petrochemical demand is shown to increase in NZE 2050, which could help maintain cash flow from the chemical business.

- **Short- and mid-term impacts (0–10 years), New Energies:** In the near term, our focus on scaling renewable fuels would enable us to meet the growing demand for these commodities seen in NZE 2050. In addition, our focus on scaling hydrogen and CCUS would enable us to meet the demand growth that begins to occur in the latter half of this decade in NZE 2050. Although we expect that New Energies' cash flow will be negative during the next decade, we believe it could become positive by 2030 in the NZE 2050 scenario.

- **Long-term impacts (10–plus years), Upstream:** In this scenario, post-2030, there would be no new investment in Upstream. Free cash flow would decline substantially in the 2030s. By 2050, cash flow and production would be modest. Although competition among producers intensifies in this market, declining prices would also push other industry costs lower. Our legacy gas assets such as Gorgon, Wheatstone, and the Eastern Mediterranean would continue to be competitive in meeting demand for natural gas. In addition, the increased demand for hydrogen would create opportunities to supply gas for blue hydrogen. Lower prices may challenge assets in disadvantaged parts of the supply stack, which may lead to changes in our Upstream portfolio. We would continue to exhibit capital discipline, and we would lower our cost base to maximize the value of our portfolio. Our continued focus on reducing the emissions intensity of our operations would enable us to supply the market with lower carbon–intensity crude and natural gas.

- **Long-term impacts (10–plus years), Downstream & Chemicals:** The continued decline in demand for gasoline and diesel would result in reduced margins globally. Lighter crudes and lower runs would lead to less feed for conversion units in more complex refineries, which in the absence of flexibility, efficiency, and reconfiguration could disadvantage high-conversion refineries (e.g., coking), relative to simpler refineries. Our investments in biofuels could allow for full refinery conversion to meet the continued demand for these commodities. In addition, tightly integrated value chains in areas, such as the U.S. West Coast, the U.S. Gulf Coast, and Asia, could enable us to pivot these operations to blue and green hydrogen. Finally, the continued demand for chemicals could enable continued select investments in petrochemical facilities.

- **Long-term impacts (10–plus years), New Energies:** New Energies would generate a larger share of Chevron cash flow and earnings, as the demand for hydrogen and CCUS continues to increase in NZE 2050. Under the rapidly increasing carbon prices, demand for hydrogen, and unprecedented growth in CCUS capabilities assumed in this scenario, our investments in these areas would continue to grow, potentially enabling us to meaningfully pivot and scale into these new areas of opportunity.

3.6.2 The IPCC's AR5 RCP8.5: Physical risk and adaptation analysis

We have existing practices that identify and manage risks associated with the impacts of ambient conditions and extreme weather events on our operations. Recognizing that climate models continue to evolve, in 2020, we undertook a stress-test exercise for our operated assets with regard to the hypothetical upper bound of physical risks that third parties model as potentially related to climate change using a time horizon of 30 years. Our assessment used third-party tools and methodologies[31] and evaluated IPCC RCPs.

RCPs are GHG concentration scenarios "that include time series of emissions and concentrations of the full suite of greenhouse gases and aerosols and chemically active gases, as well as land use/land cover" that were used for climate modeling and research as part of the IPCC's AR5.[32] RCP scenarios are not predictions. Among the full set of RCPs, AR5 RCP8.5 is the pathway with the highest greenhouse gas emissions. AR5 RCP8.5 assumes continued accumulation of GHG concentrations with an increase in radiative forcing greater than 8.5 W/m^2 and a projected temperature increase by 2100 of 2.6° C to 4.8° C relative to the beginning of this century. We used AR5 RCP8.5 to enable assessment of the upper bound of theoretical risk in the absence of further expected decarbonization, although we believe the likelihood of this scenario is remote.

We assessed acute hazards (lethal heat waves, wildfires, droughts, coastal flooding, riverine flooding, and severe storms) as well as chronic hazards (mean ambient temperature and outdoor workability conditions) to 2050. The analysis drew on emerging methods[33] in climate science to create modeled outcomes from public data.[34] Limitations include the desktop nature of analysis, uncertainties around emissions pathways and the pace of warming, climate model accuracy and natural variability, and uncertainties inherent in predicting outcomes that could be related to climate change and relating those outcomes to potential impacts on us.

Portfolio analysis: Because of the global nature of our business, our assets do not all share the same physical attributes and would not all be impacted in the same way. We observed that under the modeled outcomes and assumptions, our asset portfolio is generally resilient to acute and chronic hazards under AR5 RCP8.5 through 2030. Assuming modeled outcomes are realized, maintaining a high level of resilience to acute hazards beyond 2030 may require additional hardening for specific assets. We would expect this hardening to be managed in the ordinary course of our business through facilities management and business planning processes. Based on modeled outcomes, chronic hazards could increase impacts on some assets beyond 2030. We would expect that financial impacts could be mitigated if we were to undertake appropriate adaptation measures in the future. Under modeled outcomes, we would expect our operated facilities to be generally resilient to modeled physical risk. There may, however, be dependencies on third-party-owned and third-party-operated assets, like local infrastructure, that could affect operations. Notably, these dependencies already exist and are managed in the ordinary course of our business.

summary of scenario test

Although our asset mix would need to evolve to adapt to various scenarios, we believe our portfolio management approach would enable Chevron to be resilient under the modeled assumptions.

We believe our processes for tracking leading indicators and adapting our business enable us to be flexible in response to potential changes in policy, supply, demand, and physical risk.

section 4

our portfolio

the future of energy

We believe the future of energy will be lower carbon, and we intend to be a leader today and in that future. Our strategy is straightforward: Be a leader in efficient and lower carbon production of traditional oil and gas energy, in high demand today and for years to come, while growing the lower carbon businesses that we believe will be a bigger part of the future.

Portfolio carbon intensity: We are introducing a portfolio carbon intensity (PCI) metric that represents the carbon intensity across the full value chain associated with bringing products to market, including from use of sold products, a type of Scope 3 emissions.

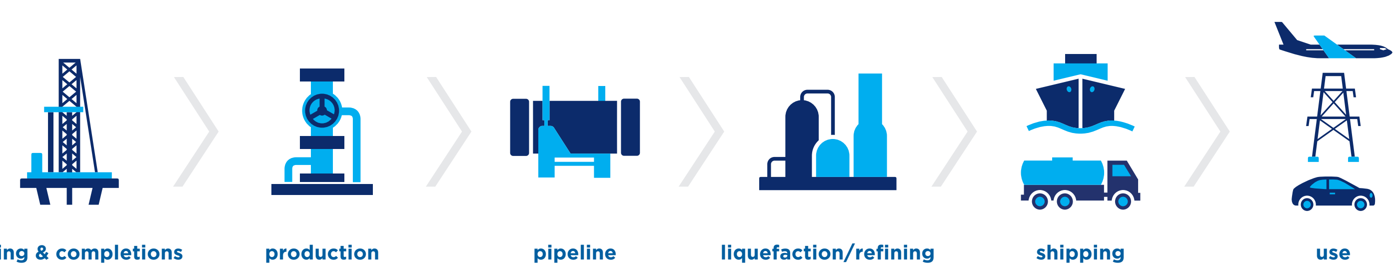
Scope 3 emissions are not generated by the activities of Chevron (Scope 1) or its suppliers of electricity and steam (Scope 2), but rather from activities not controlled by Chevron. In our case, Scope 3 emissions result principally from customers' use of the products we sell. Scope 3 is the largest category of emissions associated with Chevron's activities. Scope 3 emissions associated with energy providers such as Chevron are driven by global demand, which is in turn driven by economics, policy, regulation, and consumer behavior on a global scale.

Nonetheless, we believe the most effective approach to estimating the total emissions associated with the activities of companies like Chevron and their customers would cover the full value chain inclusive of all emission types (Scope 1, 2, and 3). The PCI methodology facilitates transparency and replicability in calculations and data with information from financial statements and emissions disclosures.

This approach enables validation of reporting and comparison of carbon intensities of companies that may participate in different parts of the value chain. This metric encompasses Upstream and Downstream business, as well as growing lower carbon business lines in renewables, hydrogen, and carbon capture and offsets. The PCI metric will also capture our aspiration of net zero for Upstream Scope 1 and 2 emissions. Our PCI target for 2028 is 71 g CO_2e/MJ, a >5 percent decrease from 2016.

We aspire to achieve net zero Upstream emissions (Scope 1 and 2) by 2050. Accomplishing this aspiration depends on continuing progress on commercially viable technology, government policy, successful negotiations for CCS and nature-based projects, availability of cost-effective, verifiable offsets in the global market, and granting of necessary permits by governing authorities, as explained in Section 3.

Exhibit 34. Working to track the carbon intensity through the value chain



carbon accounting*

We support well-designed climate policies and believe a price on carbon is the most efficient mechanism to harness market forces to reduce emissions.

In addition, verifiable, full value chain carbon-intensity data can enable price discovery, a comparison of the "green premium," and a supply chain of affordable, reliable, and ever-cleaner products. Digital technology forms a critical foundation for enabling our lower carbon strategy. We have made important strides in modernizing our information technology and digital systems, and we continue to invest, directly and through partnerships, in developing critical digital products, such as for carbon tracking and tracing to create carbon ledgers. This enables a private carbon market to pair emissions-removal credits with emissions to advance net zero ambitions.

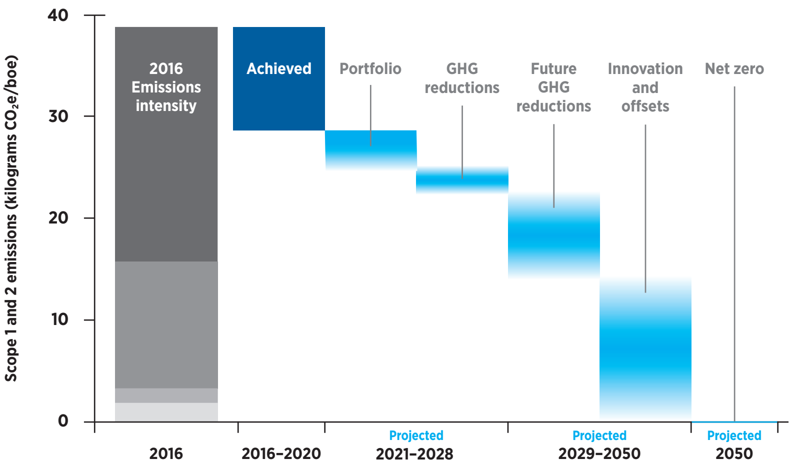
World Business Council for Sustainable Development—Carbon Transparency Pathfinder: End-to-end value-chain transparency on primary GHG emissions at a product level provides important data to help organizations make informed decisions as they work toward a lower carbon future to achieve the goals of the Paris Agreement. Within the Pathfinder, Chevron is working together with other committed stakeholders from across the value chain, independent industry bodies such as GHG Protocol, and technology companies to develop the methodological and technical infrastructure required to create such transparency.

LNG GHG value-chain emissions reporting: Pavilion Energy Trading and Chevron have signed a five-year LNG sale and purchase agreement under which each LNG cargo delivered will be accompanied by a statement of its GHG emissions.

Tracking Sustainable Aviation Fuel (SAF): Chevron, Delta Air Lines, and Google announced a memorandum of understanding to work together to track SAF test-batch emissions data using cloud-based technology. The companies hope to create a common, more transparent model for analyzing potential GHG reductions that could then be adopted by others.

*Carbon accounting refers to actions covered by the Greenhouse Gas Protocol.

Exhibit 35. Upstream Net Zero 2050 Aspiration



boe = barrels of oil-equivalent

Potential reduction opportunities 2029–2050

Source type	Reduction strategies	Supporting policy
Direct energy use: combustion	Energy management, e.g., efficiency improvements, fuel switching to lower carbon sources, CCUS, offsets	Carbon pricing, carbon-related reporting,* innovation support for technologies like CCUS, offsets
Flaring	Gas market development, operational best practices, e.g. flow assurance	Infrastructure support for gas market development
Fugitives and venting	Methane management, e.g., leak detection and repair, pressure-management systems	Equipment performance standards
Indirect energy use: imported electricity and steam	Energy management, e.g., efficiency improvements, fuel switching to lower carbon sources, CCUS, offsets	Carbon pricing, carbon-related reporting,* innovation support for technologies like CCUS, offsets

* See page 43.

We aspire to achieve net zero Upstream emissions (Scope 1 and 2) by 2050. Accomplishing this aspiration depends on continuing progress on commercially viable technology; government policy; successful negotiations for CCS and nature-based projects; availability of cost-effective, verifiable offsets in the global market; and granting of necessary permits by governing authorities.

We're taking actions to reduce the carbon intensity of our portfolio. The approach we use to drive emissions reductions in our portfolio is the marginal abatement cost curve (MACC) process. Like supply stacks, MACCs can enable a visualization of abatement opportunities, showing their relative cost and abatement potential on a similar basis. In our enterprisewide effort to aggregate opportunities, we source reduction opportunities from operated and nonoperated assets across the business. We apply both deterministic and probabilistic analysis to assess emissions-reduction opportunities, consistent with our Decision Analysis practices discussed on page 30. We use portfolio theory and efficient frontier analysis to identify a portfolio of opportunities to progress across the technology spectrum, segments, business units, and geographies.

We group reduction opportunities into the key areas of energy management; methane management, consisting of venting, fugitives, and flaring reductions; CCUS; and offsets. Any source of emissions can be offset with natural or technological removals, like nature-based solutions and CCUS. These GHG-reduction approaches can be supported by policy on carbon pricing, carbon-related reporting, support for technologies like CCUS, and offsets.

Most of our Scope 1 and 2 emissions are related to energy use, which can be reduced by energy management, for example, efficiency improvements or fuel switching to lower carbon sources (e.g., from diesel to gas).

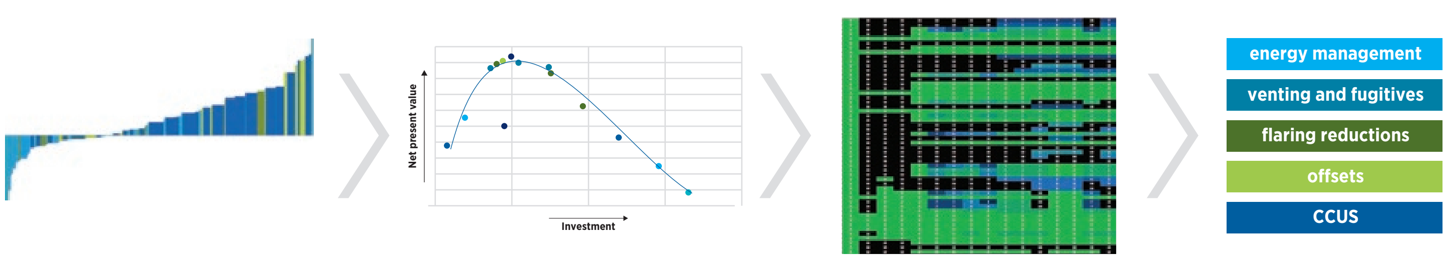
The next-largest source category of our Scope 1 emissions is from activities related to methane, including flaring, fugitive emissions, and venting. Flaring can be reduced by development of gas markets to enable gas takeaway capacity. We believe fugitive emissions can be addressed with reduction strategies like leak detection and repair programs, and can be supported by policies for equipment performance standards. Venting can be reduced by pressure-management systems.

We have identified nearly 100 GHG-abatement projects to advance to execution and plan to spend more than $300 million in 2022. We expect to spend approximately $2 billion on similar projects through 2028. When completed, the opportunities are expected to deliver approximately 4 million tonnes of emissions reductions per year.

MACC champions

Our employees are talented problem solvers, and through our MACC Champions network, we work to inspire employees across the Company to contribute ideas for carbon reduction. Working within each business unit, MACC Champions engage in partnerships with technical experts; operations teams; facilities engineers; health, environment, and safety professionals; and policy experts to source ideas for reduction opportunities and implement our lower carbon strategy.

Exhibit 36. A MACC approach to emissions reduction presents opportunities that we believe are good for investors and society



Identify reduction opportunities — Conduct probabilistic analysis and portfolio optimization — Recommend opportunities to progress — Operationalize

energy management
Emissions associated with our own energy use make up about 70 percent of our Scope 1 and 2 emissions,* which is why energy management is a key focus area. We are progressing approximately 35 projects forecasted to reduce emissions by more than 1 million tonnes of CO_2e per year once fully implemented. In addition to our internal efforts, we also support external efforts to contribute to the advancement of energy management. For example, we have a long-standing collaboration with the University of California at Davis Energy and Efficiency Institute.

Our strategy to deploy mature, renewable power-generation solutions is focused and selective. We invest in wind and solar projects that have the greatest ability to cost-efficiently lower carbon emissions. We are increasing the use of renewables in a number of our products with the aim of reducing lifecycle emissions, as well as working to provide verified, low-cost, high-quality offsets to our customers around the world in an effort to help them achieve their own lower carbon goals.

Renewable power: By sourcing more electricity from renewable sources, such as our 65 megawatt wind-power purchase agreement in the Permian Basin, we are switching to a lower carbon fuel source and working toward optimizing between purchased and self-generated power. These types of efforts can reduce the direct and indirect emissions associated with our operations and lower the overall lifecycle carbon intensity of our products.

Energy storage: Energy storage is an important component to help address intermittency with renewable generation. By combining energy storage solutions with lower carbon fuel sources, we can lower the overall carbon intensity of our products.

Algonquin

SUNPOWER®

Natron Energy

RAYGEN

SPEAR POWER SYSTEMS

Algonquin: Chevron is partnering with Algonquin Power & Utilities Corporation to co-develop renewable-power projects that provide electricity to strategic assets across our global portfolio. This builds upon our prior use of renewable power in operations in Texas and California. Under the four-year agreement, we will source 500 megawatts of existing and future electricity demand from renewables, and expect to make up to $250 million in investments by 2025. We are prioritizing opportunities in the U.S. Permian Basin (Texas and New Mexico), Argentina, Kazakhstan, and Western Australia. Projects will be jointly owned and co-developed by both parties. Algonquin will lead the design, development, and construction of the renewable-power assets. We will purchase electricity through power purchase agreements. This represents the latest, and largest, advance in our efforts to integrate renewable power in support of our operations.

RayGen: Chevron is invested in RayGen, a startup developing technology that has the potential to impact long-duration energy storage and grid stability.

Spear Power Systems: Chevron has invested in Spear Power Systems, who designs and manufactures energy storage system solutions for marine, aircraft, and industrial applications.

SunPower: Chevron and our partner SunPower completed construction in 2020 on a solar power project that supplies our Lost Hills production facilities in California with solar energy. We expect that the project will provide more than 1.4 billion kilowatt-hours of solar energy over the potential 20-year term of the agreement.

Natron Energy: Chevron's investments in battery technology include Natron Energy, which is developing a new generation of sodium-ion battery products that offer potential performance advantages over current technologies.

*Year-end 2020.

methane management

Methane management is critical in the journey to a lower carbon future. We've set a 2028 methane target of 2 kilograms CO_2-equivalent per barrel, which is a 50 percent reduction from our 2016 baseline.

We're also expanding our methane-detection capabilities to help us focus on the best opportunities to further lower emissions. In addition to traditional ground sensors, we're deploying airborne sensors using satellites, aircraft, and drones to achieve broader coverage. Better methane-detection capability is critical to the world's effort to reduce carbon emissions, and our work with industry and academic partners is an important contribution to the accuracy and credibility of global methane reporting.

Examples include Tengizchevroil (TCO), where we're using satellite technology to survey the production facilities. In the Permian Basin, we're collaborating in aerial flyovers that cover thousands of sites. In the DJ Basin, we're partnering in a university study that includes modeling, aerial flyovers, and site visits to validate and improve methane detection. We're also developing aerial campaigns for the Gulf of Mexico and Argentina.

Reducing flaring is also a focus area. We're working to reduce overall flaring by more than 60 percent. We're also proud to be a signatory to the World Bank's Zero Routine Flaring by 2030 initiative.

We flare natural gas only when necessary for safety and operational purposes and in areas where pipelines and other alternatives for transporting gas do not exist. Since 2016, we have reduced flaring across Chevron by more than 40 percent. In the Permian Basin, we are an industry leader in reducing flaring. We consider gas-takeaway availability in development planning, just as we would a permitting condition. This integrated approach to operations promotes gathering and takeaway systems that operate reliably, efficiently, and in coordination with production teams, resulting in some of the lowest methane intensities among those operating in the Permian Basin.

Internationally, we also look at ways to reduce flaring. For example, our Angola LNG joint venture was built to provide a use for associated gas. We have reduced flaring GHG emissions from our operated assets in Angola by more than 80 percent since 2016, contributing to the elimination of routine gas flaring in the country.

The Environmental Partnership: Chevron is a founding partner of The Environmental Partnership, an industry initiative aimed at accelerating the adoption of practices that reduce methane emissions. To date, companies in this initiative have conducted more than 184,000 leak-detection surveys and replaced more than 13,000 pneumatic controllers with lower- or non-emitting technologies. In December 2020, The Environmental Partnership adopted a program to advance best practices that reduce flare volumes, promote beneficial use of associated gas, improve flare reliability and efficiency when flaring does occur, and collect data to calculate flare intensity as the key metric to gauge progress from year to year.

Project ASTRA: Advancing Next Generation Methane Innovation: Chevron is a participant in Project ASTRA, a partnership led by the University of Texas at Austin that aims to demonstrate a novel approach to measuring methane emissions from oil and gas production sites, using advanced technologies to help minimize releases into the atmosphere. Project ASTRA will establish a sensor network that will leverage advances in methane-sensing technologies, data sharing, and data analytics to provide near-continuous monitoring.

World Bank's Zero Routine Flaring Initiative: Chevron endorsed the World Bank's Zero Routine Flaring Initiative, which brings together governments, oil companies, and development institutions that agree to cooperate to eliminate routine flaring by no later than 2030.

Collaboratory to Advance Methane Science (CAMS) and Methane Emissions Technology Evaluation Center (METEC): Chevron is a founding member of CAMS, a joint industry project to conduct peer-reviewed research around methane emissions. Chevron also serves on the Industrial Advisory Board of the METEC, a facility that provides realistic oil-field settings to test new methane detection and abatement technologies and supports the Methane Guiding Principles.

World Bank's Global Gas Flaring Reduction Public-Private Partnership (GGFR): Chevron is an active participant in the World Bank's GGFR voluntary standard. The GGFR recently partnered with the Payne Institute for Public Policy at the Colorado School of Mines to develop a transparent web platform to support real-time mapping and tracking of global gas flaring data. Chevron supported a $1 million commitment to this partnership through our membership in the Oil and Gas Climate Initiative (OGCI).

Oil and Gas Climate Initiative (OGCI): OGCI member companies, including Chevron, have a methane-intensity target to reduce collective average upstream methane intensity to 0.20 percent as a share of marketed gas, by 2025. As of October 2020, member companies' collective methane intensity was 0.23 percent.

chevron supports well-designed mandatory climate-related reporting

We support efforts to enhance the comparability and consistency of climate information in public disclosures. We have voluntarily reported our greenhouse gas emissions, including Scope 3 emissions from the use of our products, for nearly two decades. In addition, we have experience with a number of mandatory reporting schemes focused on GHG emissions across multiple jurisdictions, including in the United States, Canada, United Kingdom, France, Australia, Singapore, and Kazakhstan. We are working within and beyond our sector to help develop standards for emissions reporting.

Our approach is designed to facilitate carbon accounting that allows informed decision making throughout the value chain. We are partnering to support a systematic and global approach to achieve the goals of the Paris Agreement as efficiently and cost-effectively as possible.

as this area evolves, we are guided by the following considerations:

comparable

standardization enables consistent comparison across companies

consistent

information provided at appropriate intervals helps track performance

complete

reporting for scope 1, 2, and 3 emissions

accurate

a common set of assurance standards and increasing third-party views help ensure the reliability of disclosures

relevant

data at a product level enable carbon footprinting for use in day-to-day decision making

transparent

readily accessible, clearly labeled categories and identified standards

We have a long history of reporting on sustainability topics, including climate-related information, and we aim to provide transparency in our reporting on ESG topics so that we can share our progress with various stakeholders. We continuously work to enhance our reporting in line with increasing market expectations.

To find our recent climate-related ESG disclosures, visit:
***Climate Change Resilience* report, *Corporate Sustainability Report*, and the *IHS markit ESG reporting repository*.**

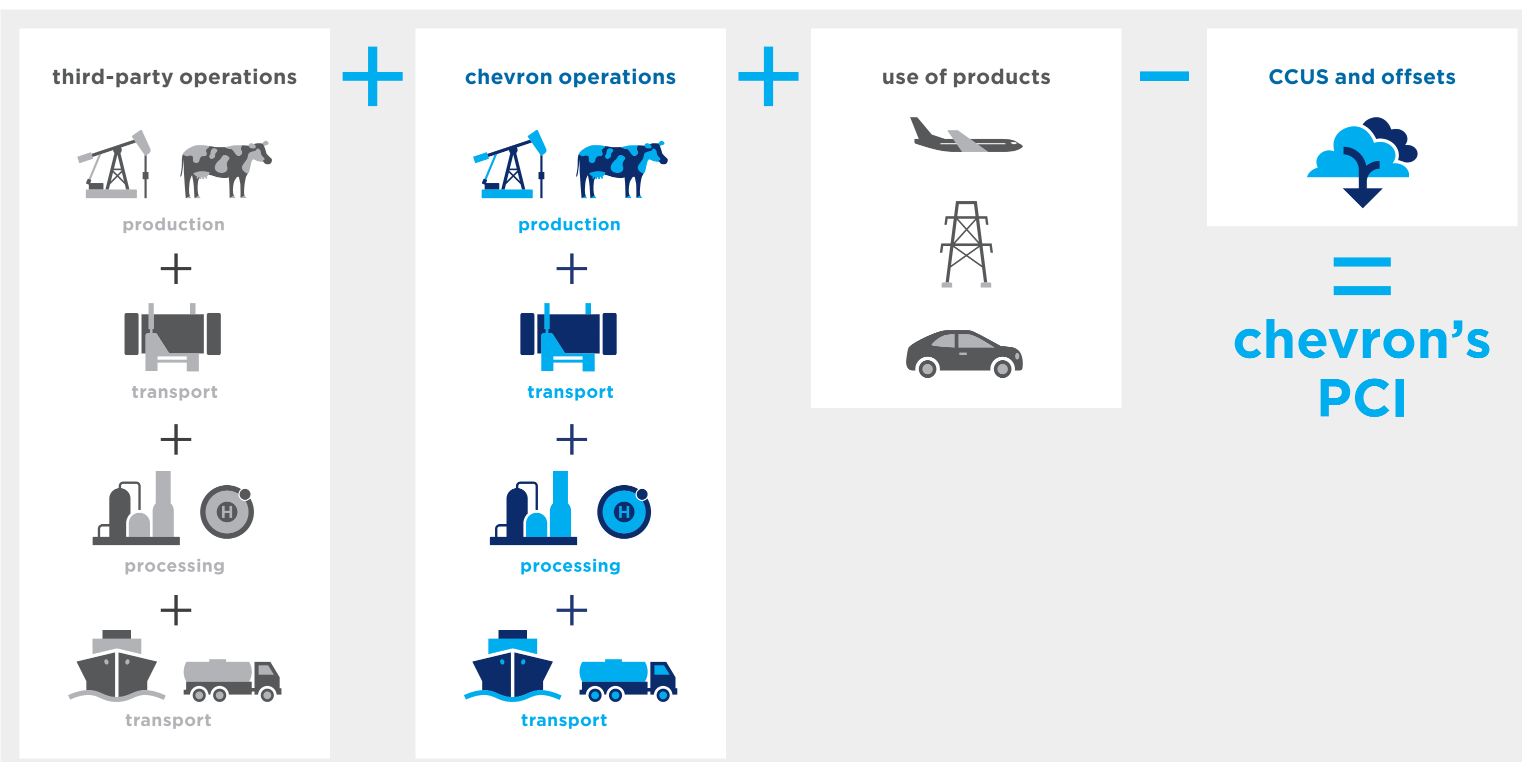
chevron's approach to portfolio carbon intensity

The portfolio carbon intensity methodology is designed to facilitate carbon-intensity accounting of a company's portfolio. It uses a representative value chain that includes emissions associated with bringing products to market, including Scope 3 emissions from the use of our products. For Chevron, the volume of emissions produced by users of its products is larger than our volume of emissions associated with either Upstream production or Downstream refining. The PCI methodology facilitates transparency and replicability in calculations and data with information taken from financial statements and emissions disclosures. This approach enables comparison of companies that may participate in different parts of the value chain and the use of real data when possible. Adopting a portfolio carbon intensity methodology provides Chevron the flexibility to grow its Upstream and Downstream businesses provided it remains an increasingly carbon-efficient operator.

chevron PCI (scope 1, 2, and 3) reduction target for 2028:

71 g CO_2e/MJ **>5%** reduction from 2016

chevron's PCI represents the full value chain carbon intensity of the products we sell, including our own emissions, emissions from third parties, and emissions from customer use of our products



We have reported emissions, including from the use of our products, for nearly two decades and we support mandatory emissions reporting. For further details, see Section 5 of Chevron's *Climate Change Resilience* report.

4.1 upstream

We strive to ensure our Upstream business provides competitive returns, regardless of commodity prices. We are focused on expanding cash and earnings margins by reducing operating costs, building efficiency into day-to-day operations, increasing reliability, lowering carbon intensity, and completing major capital projects under construction.

Our Upstream portfolio is anchored by key assets, including oil and gas in Kazakhstan, LNG in Australia, shale and tight oil in the U.S. onshore, deepwater assets in the U.S. Gulf of Mexico, and natural gas in the Eastern Mediterranean. These assets are supplemented by other competitive assets globally.

We believe that the most appropriate approach for measuring the emissions performance of an Upstream asset is GHG intensity by commodity on an equity basis—the same method we use to report production—which covers all emissions from both company-operated and nonoperated joint ventures. This is aligned with the intent to provide useful GHG information to help stakeholders make decisions. Based on a comparison of the IEA's *World Energy Outlook 2018* data, we estimate that more than 75 percent of our production of both oil and gas is below the global average carbon intensity for each commodity. Having made progress on our initial objectives, we set new, more ambitious Upstream carbon intensity–reduction targets, timed with the Paris Agreement's second stocktake in 2028, that are expected to deliver a 35 percent reduction from our 2016 baseline.

Over the next four years, we expect to allocate more than two-thirds of our Upstream capital to the six assets highlighted on the map (see Exhibit 37) to help lower our overall Upstream carbon intensity. In areas where we have ongoing production development, such as in the Permian Basin, we are working to systematically develop production with lower carbon intensity.

In the Permian Basin, we are also changing the way we consume energy and detect methane emissions. All of our operated drilling rigs and completion spreads have been converted to direct electric, natural gas, or dual-fuel power, displacing diesel use and further reducing expected emissions. We also began procuring renewable power for our operations in the Permian Basin. Initially, we started by buying 65 megawatts of wind-generated power. More recently, we have partnered with Algonquin to build an additional 120 megawatts of solar-sourced energy. As this effort continues, we believe that 70 percent of our Permian Basin power demand can be met with renewable power. As part of our global methane-detection plan, we're collaborating in aerial flyovers that cover thousands of sites. The learnings from these activities are being deployed across the Upstream portfolio to reduce carbon intensity.

$239.8 billion total Chevron assets*

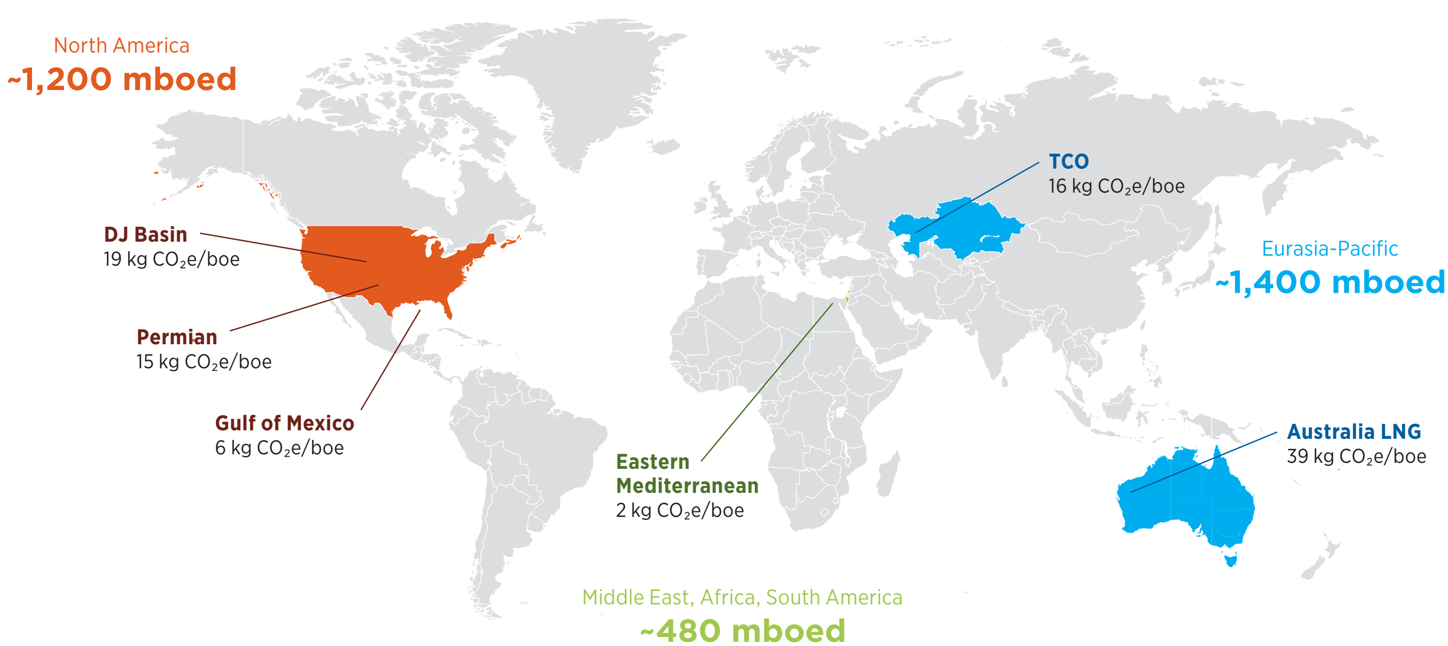
$94.5 billion Chevron sales and other operating revenues†

3.08 million barrels net oil-equivalent daily production†

11.1 billion barrels net oil-equivalent proved reserves*

*At December 31, 2020. †Year ended December 31, 2020.

Exhibit 37. The six assets below represent two-thirds of our spend over the next four years*



*Production and intensity values shown are for 2020.
mboed = thousands of barrels of oil-equivalent per day

chevron's approach to upstream carbon intensity

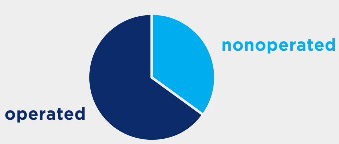
Upstream carbon intensity (UCI) includes emission-intensity metrics for oil production, gas production, flaring, and methane. These UCI metrics are equity-based, which means that they include our pro rata share of emissions both from the assets that Chevron operates and from our nonoperated joint ventures, as well as emissions up to point of sale.

our approach is designed to facilitate carbon accounting that reduces our own emissions and also sets a framework that facilitates achieving global reductions as efficiently and cost-effectively as possible

chevron UCI (scope 1 and 2) reduction targets for 2028:

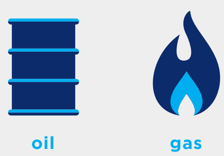
24	kg CO_2e/boe for oil (global industry averages 46)	**40%** reduction from 2016
24	kg CO_2e/boe for gas (global industry averages 71)	**26%** reduction from 2016
2	kg CO_2e/boe for methane and a global methane-detection campaign	**53%** reduction from 2016
0	routine flaring by 2030 and 3 kg CO_2e/boe for overall flaring	**66%** reduction from 2016

equity basis



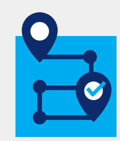
aligned with financial reporting

commodity basis



aligned with end use, enabling value-chain reporting

up to point of sale

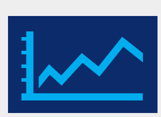


aligned with influence/ control to incentivize action along the value chain

verifiable

aligned with accurate value-chain emissions reporting

tradable



aligned to offer the marketplace premium lower carbon products

updated every 5 years

aligned with Paris Agreement's global stocktake updates (2023, 2028)

4.2 downstream

We seek to grow earnings across the Downstream & Chemicals value chain by making targeted investments in higher-return segments while strengthening our refining and marketing value chains.

The targeted investments are designed to strengthen our value chain, eliminate costs, and improve efficiencies. We continually examine ways to meet demand and policy changes.

Chevron's Downstream portfolio is focused in areas of manufacturing strength on the U.S. West Coast, on the U.S. Gulf Coast, and in Asia. We have created tightly integrated value chains in the markets where we operate and are well positioned to supply growing markets. As our focus is on value, not volume, we will continue to improve our operations, lower carbon intensities, and grow margins across the value chain. In our petrochemicals business, our portfolio focus is on world-scale facilities, proprietary technology, and low-cost feedstocks.

Although complex refineries tend to have a higher carbon intensity when measured on a throughput basis, sometimes referred to as a "simple barrel" basis, they play an important role in transforming crude into high-value products. Based on data from the IEA's *World Energy Outlook 2018*, approximately 25 percent of our refinery capacity is below the global average of refinery throughput carbon intensity, which is expected when using a throughput basis and taking into account our portfolio of complex refineries. To communicate our performance transparently, for Scope 1 and 2 we have set a 1 to 2 percent emissions intensity–reduction target on a throughput basis (see page 61) from 2016 to 2023 and a 2 to 3 percent reduction target from 2016 to 2028.

Renewable fuels
Our renewable fuels business is linked to existing assets, infrastructure, and markets. We are building a business based on capital-efficient production, strong marketing, and feedstock partnerships. We are focused on the U.S. West Coast, where there's strong policy enablement, and expect to expand to the U.S. Gulf Coast and select markets in Asia, where we have a significant presence and expect policy support to increase over time. We participate in renewable diesel and SAF production and partnerships for renewable natural gas (RNG), compressed natural gas (CNG), and renewable base oil.

Exhibit 38. Optimizing Downstream & Chemicals value chains to maximize value

chevron's approach to refining carbon intensity

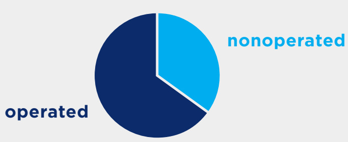
Refining carbon intensity (RCI) focuses on refining emissions, as the majority of Chevron's Downstream emissions are from our refining business. RCI is throughput-based and captures Chevron's equity refining emissions and estimates of emissions associated with third-party processing of purchased feedstocks. Chevron's refining business has a long history of energy efficiency, and our 2028 target represents numerous projects to improve on our strong performance in addition to projects executed before the 2016 baseline year.

our approach is designed to facilitate carbon accounting that reduces our own emissions, and also sets a framework that facilitates achieving reductions as efficiently and cost-effectively as possible

chevron RCI (scope 1 and 2)* reduction target for 2028:

36 kg CO_2e/BOE for global refineries **2%–3%** reduction from 2016

equity basis



aligned with financial reporting

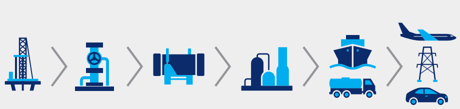
comprehensive

captures all processing emissions, including third-party hydrogen production and intermediate processing

comparable

enables consistent comparisons across refiners

value chain approach



enables footprinting the liquid fuels value chain

focused on refining

specifically targets emissions from refining operations

updated every 5 years

aligned with Paris Agreement's global stocktake updates (2023, 2028)

*See page 61.

renewable fuels

Renewable fuels are an important product that can help reduce the lifecycle carbon intensity of transportation fuels while meeting the world's growing energy needs.

We co-process biofeedstock in our own facilities, partner with others for RNG and CNG, and have an equity stake in producing renewable base oil.

Co-processing biofeedstock: We are co-processing biofeedstock at our El Segundo, California, refinery and recently produced our first SAF there. Next year, we expect to increase capacity to 10 thousand barrels per day (mbd) of renewable diesel. Sixty percent of our U.S. terminals are now capable of renewable or biodiesel distribution.

Leveraging our existing refining system and other anticipated actions, we expect to have the capacity to produce roughly 100 mbd of renewable diesel and SAF by 2030. We expect all of our U.S. diesel sales to have renewable or biodiesel content by the end of the decade.

RNG and CNG: RNG and CNG projects capture methane that is currently emitted to the atmosphere and turn it into a valuable fuel, with negative carbon intensity on a lifecycle basis under the California Low Carbon Fuel Standard. Our primary focus is on lower lifecycle carbon intensity gas from dairy feedstocks with farms that have the scale and proximity to natural-gas pipelines to enable a commercial project. Chevron completes the value chain by getting the natural gas to customers. We expect to diversify our feed mix over time, likely to include wastewater and landfill gas.

In renewable natural gas, we're ahead of our plan to grow RNG production tenfold by 2025, and we intend to produce over 40 billion British thermal units (BTUs) per day by 2030.

Renewable base oil: We continue to lead in the development of renewable base oil through our patented technology and majority ownership in Novvi, a California-based company that engages in the development, production, marketing, and distribution of high-performance base oils. Together, Chevron and Novvi leverage the complementary technologies of Chevron's expertise in hydroprocessing and Novvi's innovative use of renewable feedstocks to enable us to integrate this renewable base oil into our lubricant product lines. We've developed the first commercially viable renewable automotive engine oil—Havoline Pro-RS®—with lifecycle emissions that are 35 percent lower than conventional motor oil of equal viscosity. To date, we have a portfolio of patents, including some that target fuel economy, electric vehicle fluids, and equipment life extension, all using renewable base oil.

We're aiming to have renewable content available in all of our key lubricant product lines near the end of the decade. Finally, we intend to license the technology to drive market scale and expect to produce and/or license 100,000 tonnes per year by 2030.

BUNGE gevo® GETTING TO ZERO COALITION ANG® | B6 CALIFORNIA BIOENERGY Helping dairies fuel a renewable future Clean Energy® BRIGHTMARK REIMAGINE WASTE

Brightmark LLC: Chevron and Brightmark LLC announced the formation of a joint venture, Brightmark RNG Holdings LLC, to develop projects across the United States to produce RNG. The joint venture will fund the construction of infrastructure and the commercial operation of dairy biomethane projects in multiple states, from which we will purchase RNG and market the volumes for use in vehicles operating on renewable compressed natural gas.

Clean Energy Fuels Corporation: Chevron has partnered with California natural-gas retailer Clean Energy Fuels Corporation on Adopt-a-Port, an initiative that provides truck operators serving the ports of Los Angeles and Long Beach with RNG. Truck operators participating in the program agree to fuel up at the Clean Energy stations supplied by Chevron. Truck operators and their import and export customers will help local communities by reducing smog-forming NO_x emissions by 98 percent, compared with diesel trucks.

Getting to Zero Coalition: Chevron has joined more than 120 companies in the Getting to Zero Coalition, a partnership between the Global Maritime Forum, the Friends of Ocean Action, and the World Economic Forum. It brings together participants from across the shipping value chain to get commercially viable deep-sea zero-emissions vessels into operation by 2030 to support the International Maritime Organization's ambition to reduce GHG emissions from shipping by at least 50 percent by 2050.

American Natural Gas LLC: Chevron and Mercuria signed a definitive agreement to form a joint venture to own and operate a network of 60 compressed natural-gas stations across the United States.

CalBio: Chevron has partnered with CalBio and dairy farmers to form a joint-venture company, CalBioGas LLC, which produces and markets biomethane as a fuel for heavy-duty trucks and buses. These efforts mitigate dairy methane emissions and reduce waste. In 2020, we announced the first renewable natural-gas production from dairy farms in the California Central Valley.

Gevo: Chevron and Gevo announced a letter of intent to jointly invest in building and operating one or more new facilities that would process inedible corn to produce SAF, which can lower the lifecycle carbon intensity of fuels used in the aviation industry.

Bunge: We announced a memorandum of understanding with Bunge North America Inc. of a proposed 50/50 joint venture to help us meet the demand for lower lifecycle carbon intensity fuels and develop renewable feedstocks. Upon finalization of the joint venture, the partnership would establish a reliable supply chain from farmer to fueling station and double the current facility capacities from 7,000 tons per day by the end of 2024.

4.3 new energies

Our New Energies organization is focused on areas where we believe we can build competitive advantages and that target sectors of the economy that cannot be easily electrified. Hydrogen, CCUS, and offsets are at the core of this strategy and are an important part of addressing climate change. These businesses support Chevron's efforts to reduce its GHG emissions and are also expected to become high-growth opportunities with the potential to generate accretive returns.

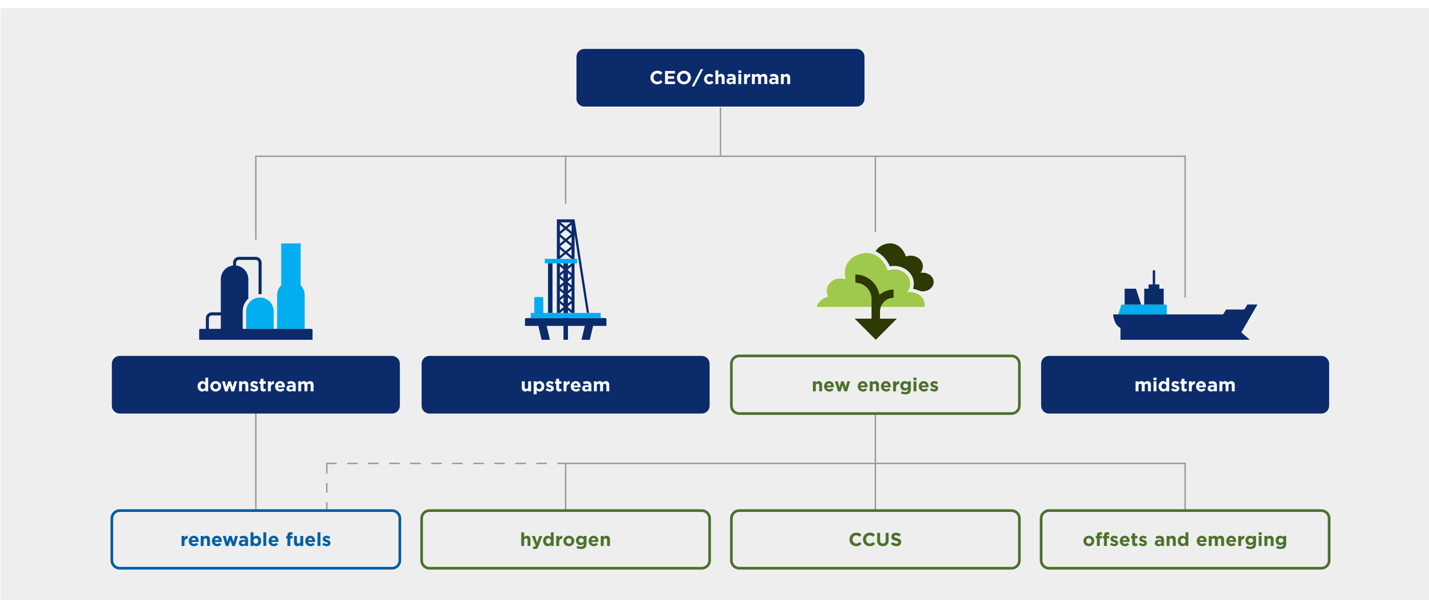
We have the capabilities, assets, and customer relationships that we believe are a platform for rapid growth in the years to come. We bring a unique set of capabilities to each of these areas. Our existing assets span the value chain and are in areas where we can grow demand based on cost-competitive supply combined with appropriate policy support. We have strong relationships with key customers and partners, which will be critical in developing economic projects that can scale quickly across a complex value chain.

We believe innovation, technology, and policy will be key drivers of change. We begin with a portfolio of existing assets and decades of experience as a strong foundation for future growth. We've successfully managed complex joint ventures all over the world. We have deep technical expertise inside the Company and a long history of advancing and adopting external innovation. We have strong commercial capabilities and experience managing rapidly changing businesses. Chevron's credibility and reputation make us the partner of choice, bringing access to new opportunities. Managing diverse stakeholder and government interests is something we do every day.

We believe growth of our New Energies and renewable products may enable 30 million tonnes of CO_2e reductions by 2028. These total emissions reductions include both avoided emissions from use of our lower carbon products (compared with conventional fuels on a lifecycle basis) and emissions removals.

Achievement of the ambitious goals set out in this section depends on making extensive progress with independent third parties, including development of policy and regulatory support, technological advancement, successful commercial negotiations, availability of cost-effective and verifiable offsets in a global market, and the granting of necessary permits by governing authorities.

Exhibit 39. Accelerating growth in lower carbon energy



hydrogen

Chevron's approach to hydrogen envisions the use of green, blue, and gray hydrogen. We believe the use of blue and green hydrogen as a fuel source can help reduce the amount of GHG emissions entering the atmosphere. While gray hydrogen is viewed as not directly supporting decarbonization of the energy sector, we believe that early-use cases of gray hydrogen can provide key opportunities to de-risk technology, enable development of supporting infrastructure, including fueling stations, and contribute to learnings.

Chevron has been investing in hydrogen research and development for decades and holds more than 75 patents from early commercial ventures that are applicable to our future development plans. Chevron currently produces around 1 million tonnes per year of hydrogen through our traditional business and has experience in retail hydrogen going back to 2005. At our refinery in Richmond, California, excess capacity in the new hydrogen unit, combined with existing and future strategic partnerships, will be the foundation to support hydrogen demand growth in the heavy-duty transportation, industrial, and power sectors.

We're fostering transportation and industrial demand growth through original equipment manufacturer alliances and though participation in organizations such as the California Fuel Cell Partnership, the California Energy Commission's Clean Transportation Program, and the Hydrogen Council. We're developing large green hydrogen projects in the western United States and assessing development of blue hydrogen production hubs in the United States and Asia linked to existing storage assets, equity natural-gas volumes, or both.

We see the potential to produce 150,000 tonnes per year of gray, blue and green hydrogen, our equity share, by the end of this decade, and we believe we're well positioned to participate across the value chain.

Raven SR: Chevron is invested in Raven SR Inc., a renewable fuels company that plans to build modular waste-to-green hydrogen production units and renewables synthetic fuel facilities initially in California and then worldwide. Raven SR's technology makes it one of the only combustion-free, waste-to-hydrogen producers in the world.

Toyota: Chevron and Toyota Motor North America Inc. (Toyota) announced a memorandum of understanding to explore a strategic alliance to catalyze and lead the development of commercially viable, large-scale businesses in hydrogen, with the goal of advancing a functional, thriving global hydrogen economy. Chevron and Toyota are seeking to work on three main strategic priorities: collaborating on hydrogen-related public policy measures that support the development of hydrogen infrastructure; understanding current and future market demand for light-duty and heavy-duty fuel cell electric vehicles and supply opportunities for that demand; and exploring opportunities to jointly pursue research and development in hydrogen-powered transportation and storage.

Advanced Clean Energy Storage (ACES): We agreed on a framework to acquire an equity interest in ACES Delta, LLC (ACES Delta), which is a joint venture between Mitsubishi Power Americas Inc. (Mitsubishi Power) and Magnum Development, LLC (Magnum) that owns the Advanced Clean Energy Storage project. This project is expected to produce, store, and transport green hydrogen at utility scale for power generation, transportation, and industrial applications in the western United States.

Hydrogenious LOHC Technologies: In 2021, we announced an investment in Hydrogenious, whose technology has potential as a bulk hydrogen storage and transportation medium.

Cummins: Chevron and Cummins Inc. (Cummins) announced a memorandum of understanding to explore a strategic alliance for commercially viable business opportunities in hydrogen and other alternative energy sources. Chevron and Cummins intend to initially collaborate on four main objectives: advancing public policy that promotes hydrogen as a decarbonizing solution for transportation and industry; building market demand for commercial vehicles and industrial applications powered by hydrogen; developing infrastructure to support the use of hydrogen for industry and fuel cell vehicles; and exploring opportunities to leverage Cummins' electrolyzer and fuel cell technologies at one or more of Chevron's domestic refineries.

Starfire: In 2021, Chevron invested in Starfire, a Boulder, Colorado–based startup developing a modular, distributed ammonia production and cracking system. Ammonia is a promising energy carrier with an energy density comparable to fossil fuels and significantly higher than Li-ion batteries or hydrogen. Starfire designed its system to be cost-competitive.

Caterpillar: In 2021, we announced a collaboration agreement with Caterpillar to develop hydrogen demonstration projects and stationary power applications, including prime power. The goals of the collaboration are to confirm the feasibility and performance of hydrogen for use as a commercially viable alternative to traditional fuels for long-haul rail and marine vessels and to demonstrate hydrogen's use in prime power.

carbon capture, utilization, and storage
CCUS is an important emissions-removal activity that can help reduce GHG emissions.

We see CCUS opportunities in two areas: reducing the carbon intensity of our existing assets and growing our carbon capture business, primarily through hubs with third-party emitters as partners and customers. Our initial carbon capture projects have been focused on decarbonizing existing assets—such as our Gorgon Project, one of the largest sequestration projects in the world—with the capacity to store up to 4 million tonnes of CO_2 per year—providing us with key operational experience.

We are targeting 25 million tonnes of CO_2 per year in equity storage by the end of this decade. To achieve these ambitions, we're exploring several hub opportunities in the United States and abroad, each including multiple large customers and with facility nameplate capacities of between 5 million and 20 million tonnes of CO_2 per year.

Kern River Carbon Capture: Chevron was awarded a project from the DOE to pilot technology that captures CO_2 from post-combustion gas. In collaboration with Svante and the National Energy Technology Laboratory, we are planning to test the technology at our Kern River facility in San Joaquin Valley, California, with a 30-tonne-per-day plant for a six-month operational trial.

National Research Foundation: Chevron is a member of a consortium with the Singapore National Research Foundation and other companies. We are working jointly to develop the first end-to-end decarbonization process in Singapore. This collaboration is aimed at accelerating the development of a highly integrated, energy-efficient CCUS system that can lead to a low-carbon economy and potential commercial developments for Singapore, as well as help the country meet its Paris pledge.

Carbon Engineering: Chevron is invested in Carbon Engineering to accelerate the commercialization of Carbon Engineering's direct air capture (DAC) technology, which removes CO_2 directly from the air. The technology is expected to be used as a mechanism to reduce emissions from transportation and enable permanent capture of existing atmospheric CO_2.

Enterprise: We announced a framework with Enterprise Products Partners L.P. to study and evaluate opportunities for CCUS from their respective business operations in the U.S. midcontinent and Gulf Coast. Potential projects resulting from the evaluation would seek to create opportunities to capture, aggregate, transport, and sequester CO_2.

Mendota BECCS project: Chevron is collaborating with Schlumberger New Energy, Microsoft, and Clean Energy Systems to work toward developing a bioenergy with carbon capture and sequestration (BECCS) project in Mendota, California. The project is designed to utilize agricultural waste to produce renewable power while capturing and permanently storing CO_2 produced in the process in a geologic formation. The project is expected to result in net-negative emissions when fully operational, storing 300,000 tonnes of CO_2 annually.

Blue Planet: Chevron is invested in Blue Planet, which uses CO_2 as a raw material for making carbonate rocks used in place of quarried limestone in building material. In addition, we are exploring opportunities to collaborate on potential pilot projects and commercial development in key geographies.

McKittrick Carbon Capture: We recently completed FEED (front-end engineering design) for a commercial-scale project in the San Joaquin Valley, California, to capture CO_2 from a co-generation plant's gas turbine. The project combines two technologies: CarbonPoint Solutions' Semi-Closed Cycle CO_2 Concentration Technology and Carbon Clean's Advanced Rotating Packed Bed Solvent Capture Technology. If successful, this opportunity could capture as many as 218 tonnes of CO_2 per day.

offsets

In multiple lower carbon scenarios, offsets are expected to make up a notable portion of global reductions, especially in sectors that do not have cost-effective reduction opportunities or for activities that are hard to abate.

Chevron's experience in developing and using offsets dates back nearly two decades and is an important part of our operations in areas like Australia, Canada, Colombia, and California. We have a global carbon trading organization and actively participate in multiple registries and exchanges. We're also planning to invest directly in scalable, nature-based solutions—like soil carbon storage, reforestation, and mangrove restoration—generating high-quality credits.

We expect to be a portfolio supplier of offsets by providing more customers with offset-paired products.

World Bank: Chevron is party to a memorandum of understanding with the World Bank. The World Bank's goal is to enhance global climate ambitions in mitigation actions and activities to facilitate the development of carbon and climate markets and associated infrastructure based on emerging international and national regulatory frameworks. Specifically, we seek to collaborate on activities that promote the establishment by the World Bank of facilities that may generate, warehouse, acquire, sell, and/or otherwise transfer mitigation outcomes in support of the Paris Agreement.

IHS Markit: Chevron is an advisory board member of the IHS Markit Carbon Meta Registry. IHS Markit is leading a consortium of stakeholders in the global carbon markets to develop the market infrastructure needed to support the realization of Paris Agreement carbon-emissions targets. The Carbon Meta Registry will provide a network to connect voluntary and government carbon credit programs, market participants, and service providers. It will leverage distributed ledger technology and reduce the risk that credits are counted or claimed more than once.

Oil and Gas Climate Initiative (OGCI): Chevron participates in the OGCI's Natural Climate Solutions workstream, exploring ways to enhance the scientific, technological, and operational basis for a global scaling-up of NCSs.

Boomitra: Chevron is invested in Boomitra, a startup developing an agricultural technology to enable farm carbon sequestration and monetization. Boomitra has the potential to cost-effectively grow the supply of carbon offsets to meet increasing demand.

Markets for Natural Climate Solutions Initiative: Chevron is a founding member of the Markets for Natural Climate Solutions Initiative to boost climate action. NCSs provide a potentially cost-effective form of carbon management that can contribute to the goals of the Paris Agreement. In collaboration with the International Emissions Trading Association, Chevron is working with members and stakeholders on a policy roadmap and market strategy.

University of Maryland: Chevron supports the University of Maryland's modeling and analysis to promote carbon markets and transferability of emissions credits.

Institute of International Finance Taskforce on Scaling Voluntary Carbon Markets: Chevron is a consultative group member of the Institute of International Finance Taskforce on Scaling Voluntary Carbon Markets (TSVCM). A large, transparent, verifiable, and robust voluntary carbon market can help deliver carbon-reduction goals and is key to the integrity of reductions. The TSVCM brings together experts across the carbon market value chain to help build consensus on how best to scale up voluntary carbon markets.

Acorns and One Tree Planted: In collaboration with Acorns, a saving and investing app in the United States, Chevron is piloting a new program in California to have five trees planted via the One Tree Planted organization every time an Acorns account holder fills up at a Chevron gas station. While not an offset credit–generating activity, the program provides an opportunity to better understand consumer interest in offsetting emissions from use of our products.

emerging areas
We have a long history of supporting innovation through research and development, innovation ecosystems, and university partnerships. Our investments target technology in areas such as CCUS, hydrogen, energy optimization, digitization, energy storage and management, and emerging power technologies. Emerging power technologies such as fusion technology and advanced geothermal are promising lower carbon energy sources with less intermittency than other renewable sources. We believe that these technologies have the potential to change the way we produce and use energy.

Rice Alliance for Technology and Entrepreneurship: Chevron is a founding supporter of the Rice Alliance Clean Energy Technology Accelerator, which develops programs to support early-stage energy startups.

Greentown Labs: Chevron partnered with Greentown Labs, the largest climate technology startup incubator in North America, to support opening a Houston, Texas, location. This builds on our support for Greentown Labs in Boston since 2013.

MIT: Chevron is a sustaining member of the MIT Energy Initiative, which fosters new research and education to develop innovative tools, technologies, and solutions to address global energy needs and challenges.

Baseload Capital: Chevron is invested in Baseload Capital, a private-investment company focused on the development and operation of lower-temperature geothermal and heat power assets.

Zap Energy: Chevron is invested in Zap Energy, a startup developing a next-generation modular nuclear reactor with an innovative approach to advancing cost-effective, flexible, and commercially scalable fusion.

Eavor Technologies: Chevron is invested in Eavor Technologies, a company that provides a closed-loop geothermal technology for both power and direct heat markets. Eavor's innovative system has dispatchability for power load balancing, which is becoming more essential as intermittent renewables saturate more power grids.

Ocergy: Chevron is invested in Ocergy, a developer of floating offshore wind foundation technology. The investment will also fund the development of an environmental monitoring buoy that has the potential to gather data and support biodiversity.

Natel Energy: Chevron is invested in Natel Energy, a startup providing hydropower-based technology that has the potential to unlock distributed hydropowered resources and that aims to provide a reliable, dispatchable power resource to balance intermittent renewables.

Mainspring: Chevron is invested in Mainspring Energy, a startup developing technology that has the potential to enable greater fuel flexibility and utilization of lower carbon fuels with near-zero NO_x emissions.

chevron supports innovation to advance and scale climate solutions

Chevron is investing in innovative technologies to address climate change. We also support government investment in promising pre-commercial technologies, from research to early deployment, to help deliver scalable solutions to climate change that are economic without subsidy within a carbon-pricing program.

chevron supports research, development, demonstration, and deployment for emerging technologies to address climate change

chevron supports:

- **A focus on emissions:** Public research, development, and deployment should be based on opportunity for scalable emissions reduction, supporting the most promising pre-commercial opportunities, irrespective of energy source.
- **Balanced and transparent government policies:** Policy should be balanced to enable research, development, and demonstration of promising technologies while minimizing market distortions. Policy should be transparent to build public trust and communicate benefits, costs, and trade-offs to the public.
- **Pre-commercial support:** To maximize limited public resources and minimize harmful market distortions, innovation policy should focus on advancing emerging technologies, so they become commercially scalable without subsidy within a carbon-pricing program. Subsidies for existing commercial opportunities that distort markets and create unfair competition should be avoided.
- **Scalable solutions:** Innovation policy should leverage scientific research to advance promising technologies that can offer scalable economic solutions to climate change. Policy should aim to drive down costs so these opportunities are commercially scalable.

research & development

- Chevron is investing in low-carbon technologies to enable commercial solutions. Our combined $400 million Future Energy Funds invest in promising opportunities such as carbon capture, utilization, and storage (CCUS), next-generation battery storage, hydrogen, and emerging power technologies.
- We committed $100 million to the more than $1 billion OGCI Climate Investments fund, which invests in solutions to decarbonize oil and gas, industrials, commercial transport, and buildings.
- We partner with leading researchers, such as the U.S. Department of Energy's National Laboratories and Singapore's National Research Foundation, to develop new carbon capture technologies.

demonstration

- Chevron is advancing collaborative efforts with the U.S. Department of Energy and Svante, as well as Blue Planet and others, on projects demonstrating innovative technologies to drive down carbon capture costs.
- We are investing in hydrogen fueling demonstration projects and technologies, launching the first "all in one" station accommodating hydrogen, electricity, liquefied petroleum gas, gasoline, and diesel with our affiliate GS Caltex.
- We are investing in innovative storage opportunities, including in Natron Energy, which is developing and scaling production of rapid-charging batteries for data centers, EVs, and dispatchable grid storage.

deployment

- Chevron invested more than $1 billion in CCUS, reducing emissions by nearly 5 million tonnes per year. Our Gorgon facility is one of the world's largest integrated carbon sequestration and storage projects.
- We are partnering with CalBio and Brightmark to produce and market renewable natural gas, helping reduce agricultural methane emissions while providing renewable lower carbon fuels on a lifecycle basis.
- We are investing in renewable fuels, products, and power, including sourcing over 500 megawatts of renewable generation by 2025.

chevron supports well-designed climate policy

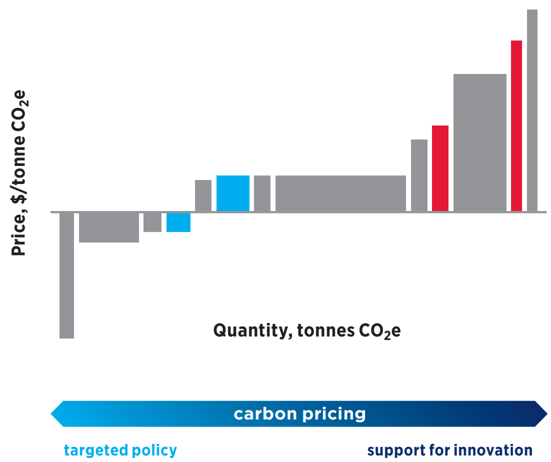
Chevron supports the Paris Agreement and is committed to addressing climate change while continuing to deliver energy that supports society. Climate policy should achieve emissions reductions as efficiently and effectively as possible, at the least cost to economies.

chevron supports carbon pricing, innovation, and efficient policies

chevron supports:

- **Global engagement:** Build up an integrated global carbon market that creates a level playing field and mitigates trade distortions. Incentivizing the lowest-cost abatement on the widest scale possible is critical to mitigating climate change.
- **Research and innovation:** Support promising precommercial technologies designed to spur innovation and mitigation across all sectors of the economy. Research, development, and deployment for pre-commercial technologies to enable scalable solutions that are economic without subsidy within a carbon-pricing program.
- **Balanced and measured policy:** Involve all sectors to maximize efficient and cost-effective reductions while allocating costs equitably, gradually, and predictably; avoid duplicative and inefficient regulations; balance economic, environmental, and energy needs.
- **Transparency:** Strive for transparency and efficiency in measuring and driving the lowest-cost emissions reductions. Policy benefits, costs, and trade-offs should be transparently communicated to the public.

marginal abatement cost curve



innovation support

Continued research and innovation are key. Investments in pre-commercial early-stage abatement technologies can enable breakthroughs that lead to scalable technologies that are commercially viable without subsidy under a carbon-pricing program.

carbon pricing

Carbon pricing should be the primary policy tool to achieve greenhouse gas emissions reduction goals. It incentivizes the most efficient and cost-effective emissions reductions while enabling support to affected communities, consumers, and businesses.

targeted policies

Regulations should be efficiently targeted to enable cost-effective lower carbon opportunities not addressed by carbon-pricing or innovation policies (e.g., apartment efficiency standards, since the owner pays for efficiency improvements, but the renter pays the utility bill).

chevron supports well-designed methane policy

Chevron is proud to be a U.S. industry leader in managing methane emissions and responsibly producing oil and gas. We believe methane emissions reductions are possible in the energy industry, and in other key sectors, through adoption of industry best practices and well-designed regulation.

chevron supports well-designed and properly enacted methane regulation, in the energy industry and in other key emitting sectors

chevron supports:

- **Performance-based regulation:** Policy should set appropriate methane metrics while providing flexibility for companies to determine the optimal way to meet those metrics.
- **Technological innovation:** Policy should flexibly incorporate new and future technologies, such as aerial and drone monitoring, that can identify and address methane emissions most effectively.
- **Industry best practices:** Methane emissions are disproportionately concentrated among a small number of operators, sites, and equipment. Reasonable minimum equipment standards help ensure all operators are working to curtail methane emissions.
- **All sectors contributing:** Improving methane performance is important for oil and natural gas (28 percent of U.S. methane emissions), as well as other sectors, which make up the remaining 72 percent. Policy should apply to all key sectors.

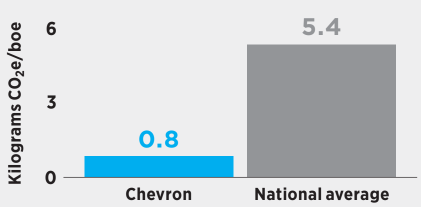
partnerships

- Chevron is a member of the Oil and Gas Climate Initiative (OGCI), which is engaged in industry-leading methane performance with a collective upstream methane intensity target of below 0.25 percent, with the ambition to achieve 0.2 percent by 2025.
- Chevron partners with CalBio and Brightmark to produce and market renewable natural gas, helping reduce agricultural methane emissions while providing lower carbon fuels, on a lifecycle basis, to our customers.
- We are a proud co-founder/chair of The Environmental Partnership, a voluntary industry effort to cut U.S. methane emissions that has conducted 184,000 leak-detection surveys and replaced more than 13,000 pneumatic controllers with low-/non-emitting technology.

performance

- In 2019, Chevron's U.S. onshore production methane intensity was 85 percent lower than the U.S. industry average.
- We continue to take action to further reduce methane emissions and have set a target to work to reduce methane intensity by 53 percent by 2028.
- Actions to support achieving this target are tied to the compensation of all our executives and nearly all of our employees worldwide.

U.S. production methane intensity



technology

- Chevron supports development of innovative technologies to reduce emissions, including through our combined $400 million Future Energy Funds and a $100 million commitment to the $1 billion OGCI Climate Investments fund.
- As part of the Collaboratory to Advance Methane Science, Chevron has worked with other operators to understand the potential for aerial leak-detection surveys in the Permian Basin.
- Chevron partnered with the NASA Jet Propulsion Laboratory to test one of the first aerial detection technologies for methane, which has been used in studies throughout the United States.

metrics

we demonstrate our commitment to transparency by reporting metrics and performance data annually*

In the *2020 Corporate Sustainability Report*, we enhanced our reporting by providing index columns to identify common reporting elements between our reported data and the related *Sustainability Accounting Standards* (2018) (SASB) and the IPIECA *Sustainability Reporting Guidance for the Oil and Gas Industry* (2020). We now also leverage the America Petroleum Institute's (API) *Template 1.0 for GHG Reporting* (June 2021) and *Guidance—API Template 1.0 for GHG Reporting* (June 2021) for organization of our reported data and provide an additional index column to identify common reporting elements between our reported data and the API template. This enhancement to our environmental, social, and governance reporting helps provide comparable information for investors and other stakeholders. We are a leader in reporting and were among the first companies to produce a report on climate change resilience and a supplemental report aligned with the Financial Stability Board's Task Force on Climate-related Financial Disclosures framework. We have also disclosed our environmental, social, and governance data, including GHG emissions data, in the IHS Markit ESG Reporting Repository to enable investors and other stakeholders to efficiently compare ESG data across sectors and reporting frameworks. We will continue to aspire to achieve real results and transparently communicate progress on our performance.

chevron GHG reporting metrics

	2016	2017	2018	2019	2020	SASB[1]	IPIECA[1]
portfolio carbon intensity (grams CO_2e/megajoule)†	74.9	73.8	73.4	72.7	71.4		
upstream carbon intensity[2,3]							CCE4: C4
Oil intensity (kilograms CO_2e/boe)	41.9	36.8	37.0	33.3	28.2		
Gas intensity (kilograms CO_2e/boe)	32.6	35.0	34.7	30.4	26.8		
Methane intensity (kilograms CO_2e/boe)	4.5	3.3	2.8	2.4	2.0		
Flaring intensity (kilograms CO_2e/boe)	8.7	7.2	6.3	4.7	3.8		
refining carbon intensity (kilograms CO_2e/boe)††§	36.6	34.5	34.9	35.9	38.6		
enabled reductions (millions of tonnes of CO_2e)	8	7	6	5	5		

Indicates restatement of data.

* Year 2020 performance data reflect varying impacts from changing market conditions and COVID-19.

† Portfolio carbon intensity is calculated as described in the methodology on pages 59–60. Inputs are collected from financial disclosures and public GHG reporting, with the exception of the biofuels component. Biofuel volumes are based on purchase data for ethanol, renewable diesel, sustainable aviation fuel, and biodiesel and production volumes for renewable natural gas in the United States, Hong Kong, Malaysia, Philippines, Thailand, and Australia. Volumes from international GS Caltex operations in South Korea are assumed to be zero. For 2016–2020, aggregate biofuel volumes used in the PCI calculation are 60,000, 58,000, 59,000, 64,000, and 57,000 barrels of oil-equivalent per day, respectively. Biofuel carbon-intensity values are based on California Air Resources Board (CARB) Low Carbon Fuel Standard (LCFS) default pathway values. For 2016–2020, the weighted-average biofuel carbon-intensity values used in the PCI calculation were 52, 54, 53, 51, and 50 grams carbon dioxide–equivalent GHG emissions per megajoule, respectively.

†† The refining carbon intensity (RCI) provides a measure of GHG released during the transformation of raw materials into refined products. The RCI is throughput-based and includes GHG emissions from Chevron's own refining operations and estimates of emissions associated with third-party processing of imported feedstocks such as hydrogen. Emissions from third-party processing of imported feedstocks are estimated using information including supplier data, industry segment averages, and engineering estimates. Emissions included in the calculation represent refinery processing only and do not include terminals or chemical, additive, base oil, and lubricant facilities not integrated into a refinery. Feedstocks include hydrogen and intermediate products that will be further refined or used in conversion units. Feedstocks do not include natural gas used as fuel or products intended solely for blending into finished products. Feedstocks are assessed on a net basis (imports minus exports).

§ The refining carbon intensity in 2020 reflects decreased refinery utilization due to demand changes associated with the COVID-19 pandemic.

footnotes are on page 68

portfolio carbon intensity, grams CO_2e/megajoule

$$\frac{\sum_i[(\text{GHG intensity})_i * (\text{Energy})_i] - \sum_j(\text{Net GHG removals})_j}{\sum(\text{Energy})_i}$$

Where: $(\text{GHG intensity})_i$ is the simplified value chain GHG intensity of marketed product_i, $(\text{Net GHG removals})_j$ is the net volume of GHG emissions stored, or offset, and $(\text{Energy})_i$ is the energy of the marketed product_i.

portfolio carbon intensity methodology note

introduction

The portfolio carbon intensity methodology is designed to facilitate carbon-intensity accounting of a company's portfolio. It uses a representative value chain that includes emissions associated with bringing products to market, including the Scope 3 emissions from their use. The PCI methodology facilitates transparency in calculations and data with information taken from financial statements and emissions disclosures. This approach enables comparison of companies that may participate in different parts of the value chain and the use of real data.

Intent: The PCI methodology provides a framework for transparent and consistent comparisons of the mix of energy products provided by a company, inclusive of elements of Scope 1, 2, and 3 emissions. The methodology is broadly applicable to oil and gas companies involved in exploration and production, refining, or marketing activities.

PCI definition: Estimated energy-weighted average GHG emissions intensity from a simplified value chain from the production, refinement, distribution, and end use of marketed energy products per unit of energy delivered.

Units: Grams of carbon dioxide–equivalent GHG emissions per megajoule of energy delivered (g CO_2e/MJ) on a higher-heating-value basis to align with prior frameworks on gas value chain emissions and with heating values commonly used in commercial contracts.*

Scope: The PCI is calculated on an annual basis as the weighted-average GHG intensity of energy delivered across gas, natural gas liquid (NGL), oil, biofuel, hydrogen, and lower carbon power products. Carbon removals are deducted from total lifecycle emissions estimates.

The following energy products (*i*) are included in the PCI methodology:

- **Gas:** piped gas, LNG, and third-party-traded volumes
- **Natural gas liquids:** NGLs from Upstream, refining, and third-party-traded volumes
- **Oil:** crude oil, refined products (gasoline, diesel, jet fuel, fuel oil, and other petroleum products), and third-party-traded volumes
- **Biofuels:** ethanol, renewable diesel, biodiesel, sustainable aviation fuel, and renewable natural gas
- **Hydrogen:** gray hydrogen, blue hydrogen, and green hydrogen that are externally marketed
- **Lower carbon power:** external sales of wind, solar, and geothermal power

The following removals (*j*) are included in the PCI methodology calculation:

- **Carbon capture, utilization, and storage** removes CO_2 either directly from the atmosphere or from streams that would be released to the atmosphere. It does not include CO_2 produced from naturally occurring reservoirs that is used for enhanced oil recovery.
- **High-quality offsets** include nature-based solutions.

For traditional hydrocarbon products (gas, NGL, and oil), marketed volumes are based on the business segment (production, refined products, or marketing) with the largest overall commodity volume, inclusive of all traded volumes.

Chemicals and other business lines that do not primarily supply energy products are excluded from this calculation.

*Several prior product-intensity frameworks have used lower heating value for intensity calculations.

methodology and data sources

Traditional hydrocarbon products: The intent of the framework is to capture value chain emissions associated with the maximum hydrocarbon product volume for a company among their production, refining, and marketing activities. For all products that a company produces or refines, the PCI methodology uses the company's equity GHG emissions and corresponding GHG intensity. To estimate the emissions for marketed products that the company does not produce or refine, the PCI methodology uses industry-average segment factors from the International Energy Agency's *World Energy Outlook*. Hydrocarbon transportation emissions are estimated in the PCI using IEA *World Energy Outlook* estimates for transportation emissions from oil and gas. Emissions associated with end use of marketed products are based on industry-standard combustion factors and assume all sold energy products are combusted, although this is not the case (e.g., plastics and lubricants). Exhibit 40 below shows a graphical depiction of the value chain approach for the refined-product value chain.

Biofuels, hydrogen, and lower carbon power: GHG emissions are calculated based on third-party lifecycle assessments and the energy provided by Chevron in the most recent year. Lifecycle assessment data sources include California Air Resources Board (CARB) LCFS Pathway Certified Carbon Intensities for similar feedstocks and pathways, a Hydrogen Council report on a lifecycle assessment for hydrogen decarbonization pathways, and harmonized lifecycle assessments of electricity generation from the National Renewable Energy Laboratory and the Intergovernmental Panel on Climate Change Working Group 1.

The model does not adjust for the energy efficiency gains associated with some applications of electricity and hydrogen relative to existing hydrocarbon infrastructure. For example, CARB estimates that energy provided as electricity to an electric vehicle is 3.4 times more efficient than energy provided by gasoline to an internal combustion engine. Model updates could be made in the future, if supported by the end use of electricity or hydrogen products.

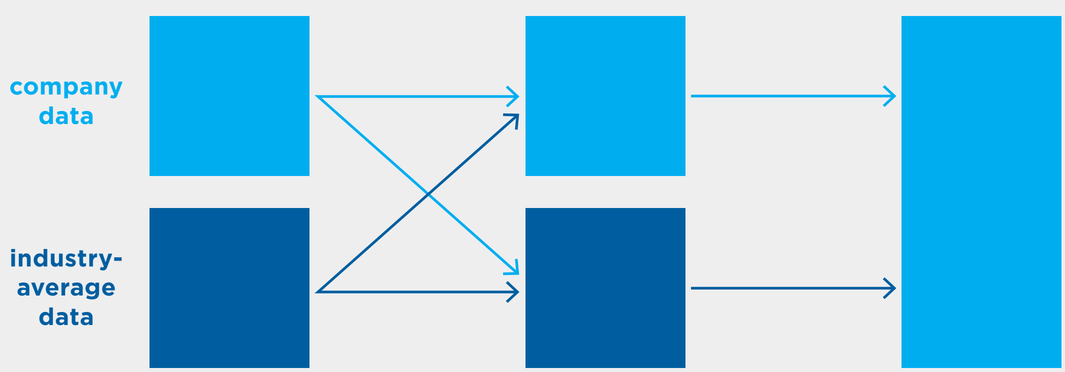
CCUS: Net GHG removal emissions associated with CCUS represent the volume of emissions that would be permanently sequestered underground or utilized in other products with a deduction for supply chain emissions associated with capture, transport, or storage. CCUS projects that reduce Scope 1 and 2 emissions would reduce the production, refining, or other sectoral intensity and would not be double-counted as removals; for example, CO_2 captured by an integrated CCS plant would already be accounted for in the facility's Scope 1 emissions intensity.

Offsets: Offsets that are retired by the company or on behalf of customers for use of product provided by the company are deducted from the total emissions in the metric.

Improvements over time: Methodologies and emissions factors may be updated in future years to reflect additional information or data that become available. For example, updates may include updated industry averages, primary data from third-party producers/refiners, and adjustments to energy efficiency assumptions, if warranted, based on the end-use applications for volumes of energy marketed by the company.

Exhibit 40. This depicts the PCI approach for the refined-product value chain.

activity	production	transportation	refining	transportation	end use
% of total	10%	<1%	15%	<1%	75%



Percentages shown are based on data from IEA, *World energy outlook 2018*, November 2018, iea.org/reports/world-energy-outlook-2018.

upstream carbon intensity, kilograms CO_2e/boe

upstream oil intensity

$$\frac{\left(\text{Direct emissions (Scope 1)} + \text{Indirect emissions associated with imported electricity and steam (Scope 2)} - \text{Emissions associated with exported electricity and steam}\right)}{\text{Net production of liquids}}$$

← Allocated to liquids on a production basis (boe)

upstream gas intensity

$$\frac{\left(\text{Direct emissions (Scope 1)} + \text{Indirect emissions associated with imported electricity and steam (Scope 2)} - \text{Emissions associated with exported electricity and steam}\right)}{\text{Net production of gas (including LNG and GTL)}}$$

← Allocated to gas on a production basis (boe)

upstream flaring intensity

$$\frac{\text{Direct flaring emissions as } CO_2e \text{ (Scope 1)}}{\text{Net production of gas and liquids (including LNG and GTL)}}$$

upstream methane intensity

$$\frac{\text{Direct methane emissions as } CO_2e \text{ (Scope 1)}}{\text{Net production of gas and liquids (including LNG and GTL)}}$$

refining carbon intensity, kilograms CO_2e/boe

$$\frac{\left(\text{Refinery direct GHG emissions (Scope 1)} + \text{Refinery indirect GHG emissions associated with imported electricity and steam (Scope 2)} + \text{Third-party processing emissions associated with imported feedstocks* (a type of Scope 3)} - \text{Emissions associated with exported electricity and steam (a type of Scope 3)}\right)}{\text{Crude + Other feedstocks, including bio-based feedstocks}}$$

The refining carbon intensity (RCI) metric provides a measure of GHG released during the transformation of raw materials into refined products.

The RCI is throughput-based and includes GHG emissions from Chevron's own refining operations and estimates of emissions associated with third-party processing of imported feedstocks such as hydrogen.*†

The metric is on an equity basis.

LNG = liquefied natural gas GTL = gas-to-liquid

*Emissions from third-party processing of imported feedstocks are estimated using information including supplier data, industry segment averages, and engineering estimates. Emissions included in the calculation represent refinery processing only and do not include terminals or chemical, additive, base oil, and lubricant facilities not integrated into a refinery. Feedstocks include hydrogen and intermediate products that will be further refined or used in conversion units. Feedstocks do not include natural gas used as fuel or products intended solely for blending into finished products. Feedstocks are assessed on a net basis (imports minus exports).

† Emissions associated with the production of hydrogen can account for 25 percent of total refinery emissions, and more than half of the hydrogen used in U.S. refining is imported from a third party. ("Available and emerging technologies for reducing greenhouse gas emissions from the petroleum refinery industry," US EPA Office of Air and Radiation 2010 and U.S. Energy Information Administration, *EIA-820 Annual Refinery Report* and *EIA-810 Refinery and Blender Net Input*).

enabled reductions, million tonnes CO_2e/year

$$\sum_i [(\text{GHG intensity}_{fossil\ fuel} - \text{GHG intensity}_i) * (\text{Energy})_i] + \sum_j (\text{Net GHG removals})_j$$

Where: *GHG Intensity*$_{fossil\ fuel}$ is the average intensity of displaced fossil fuel that is calculated in the PCI methodology, $(\text{GHG intensity})_i$ is the simplified lifecycle GHG intensity of energy product_i, $(\text{Energy})_i$ is the energy of the marketed low-carbon product_i (e.g., biofuels, hydrogen), and $(\text{Net GHG removals})_j$ is the net volume of GHG emissions stored.

enabled emissions-reductions methodology note

Enabled emissions reductions are the estimated avoided emissions relative to fossil fuel use primarily associated with biofuels, hydrogen, CCUS, and offsets that the Company has marketed in the most recent calendar year, regardless of whether the Company retained rights to the emissions-reduction attributes.

Over time, new energy products may be added to the calculation, along with associated volume information. Avoided emissions associated with natural gas–fired power generation via co-generation or coal-fired power generation displacement are excluded from this calculation for purposes of simplicity.

For biofuels and hydrogen products, the enabled emissions reductions are calculated based on the lifecycle GHG savings relative to the same amount of energy provided by diesel fuel. Where appropriate, energy efficiency factors are used to calculate the volumes of displaced fossil fuels. More details on emissions factors and calculation assumptions are available in the PCI methodology note (see pages 59–60).

Net GHG removal emissions associated with CCUS and offsets represent the volume of emissions that would be sequestered or utilized in other products. GHG emissions associated with CCUS or offset value chains would be netted from the reductions associated with the activity.

equity emissions[2,4,5]

	2016	2017	2018	2019	2020	API	SASB[1]	IPIECA[1]
direct GHG emissions (Scope 1)[6,7,8,9]						1		
direct GHG emissions (Scope 1) – all GHGs (million tonnes CO_2e)[10]	**64**	**63**	**66**	**62**	**54**	**1.1**		**CCE4: C1/A1**
Upstream – all GHGs (million tonnes CO_2e)[11]	**31**	**27**	**28**	**27**	**23**	**1.1.1**	**EM-EP-110a.1**	**CCE4: C3**
CO_2 (million tonnes)	27	24	25	24	21			
CH_4 (million tonnes CH_4)[12]	0.17	0.12	0.10	0.10	0.08			
CH_4 (million tonnes CO_2e)[12]	4.1	3.0	2.5	2.4	2.1	1.1.1.1		
Other GHGs (million tonnes CO_2e)	0.1	0.1	0.1	0.1	0.1			
Upstream flaring – all GHGs (subset of Scope 1) (million tonnes CO_2e)[11]	**7**	**5**	**5**	**5**	**4**	**1.1.1.2**	**EM-EP-110a.2**	**CCE7: C4**
CO_2 (million tonnes)	6	5	5	4	3			
CH_4 (million tonnes CH_4)[12]	0.03	0.02	0.02	0.01	0.01			
CH_4 (million tonnes CO_2e)[12]	0.7	0.5	0.5	0.4	0.3			
Other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			
Volume of flares (mmscf)	100,000	80,000	70,000	60,000	50,000	1.1.1.3		CCE7: A1
Midstream – all GHGs (million tonnes CO_2e)	**2**	**2**	**2**	**1**	**1**	**1.1.2**	**EM-MD-110a.1**	**CCE4: C3**
CO_2 (million tonnes)	1	2	2	1	1			
CH_4 (million tonnes CH_4)[12]	<0.01	<0.01	<0.01	<0.01	<0.01	1.1.2.1		
CH_4 (million tonnes CO_2e)[12]	<0.1	<0.1	<0.1	<0.1	<0.1			
Other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			
Downstream – all GHGs (million tonnes CO_2e)[13]	**21**	**21**	**20**	**19**	**18**	**1.1.3**	**EM-RM-110a.1**	**CCE4: C3**
CO_2 (million tonnes)	21	20	20	19	18			
CH_4 and other GHGs (million tonnes CO_2e)	0.1	0.1	0.1	0.1	0.1			
Liquified Natural Gas (LNG) – all GHGs (million tonnes CO_2e)	**4**	**7**	**9**	**8**	**7**	**1.1.4**	**EM-EP-110a.2**	**CCE4: C3**
CO_2 (million tonnes)	4	7	9	8	7			
CH_4 and other GHGs (million tonnes CO_2e)	0.2	0.4	0.5	0.3	0.2			
Chemicals – all GHGs (million tonnes CO_2e)[14]	**5**	**5**	**5**	**5**	**4**			**CCE4: C3**
CO_2 (million tonnes)	5	5	5	5	4			
CH_4 and other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			
Other – all GHGs (million tonnes CO_2e)[15]	**2**	**1**	**2**	**1**	**1**			**CCE4: C3**
CO_2 (million tonnes)	2	1	2	1	1			
CH_4 and other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			

equity emissions table continues on page 64

footnotes are on page 68

equity emissions,[2,4,5] cont.	2016	2017	2018	2019	2020	API	SASB[1]	IPIECA[1]
direct GHG emissions (Scope 1) – all GHGs (million tonnes CO_2e),[10] cont.								
Emissions associated with exported electricity and steam (million tonnes CO_2e)[16]	**1**	**1**	**1**	**1**	**1**			**CCE4: C3/A6**
Upstream (million tonnes CO_2e)[11]	<1	<1	<1	<1	<1			
Midstream (million tonnes CO_2e)	0	0	0	0	0			
Downstream (million tonnes CO_2e)[13]	<1	<1	<1	<1	<1			
LNG (million tonnes CO_2e)	0	0	0	0	0			
Chemicals (million tonnes CO_2e)[14]	0	0	0	0	0			
Other (million tonnes CO_2e)[15]	1	1	1	1	<1			
indirect GHG emissions from imported energy (Scope 2)[6,17]						**2**		
indirect GHG emissions from imported electricity, heat, steam, and cooling (Scope 2, market-based)[10]	**3**	**3**	**3**	**2**	**4**	**2.1**		**CCE4: C2/C3**
Upstream – all GHGs (million tonnes CO_2e)[11]	1	1	1	1	1	2.1.1		
Midstream – all GHGs (million tonnes CO_2e)	<1	<1	<1	<1	<1	2.1.2		
Downstream – all GHGs (million tonnes CO_2e)[13]	2	1	1	1	1	2.1.3		
LNG – all GHGs (million tonnes CO_2e)	0	0	0	0	0	2.1.4		
Chemicals – all GHGs (million tonnes CO_2e)[14]	<1	<1	<1	<1	1			
Other – all GHGs (million tonnes CO_2e)[15]	<1	<1	<1	<1	<1			
third-party verification[18]						**6**		
Assurance level	**Limited**	**Limited**	**Limited**	**Limited**	**Limited**	**6.1**		
Assurance provider	**ERM CVS**	**ERM CVS**	**ERM CVS**	**ERM CVS**	**ERM CVS**	**6.2**		
additional GHG reporting								
Indirect GHG emissions – all other (Scope 3)[10,19]								**CCE4: A2**
Use of sold products – production method (million tonnes CO_2e)	364	377	396	412	412			
Use of sold products – throughput method (million tonnes CO_2e)	355	365	380	382	372			
Use of sold products – sales method (million tonnes CO_2e)	598	613	628	639	583			

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operated emissions[2,4,5]

	2016	2017	2018	2019	2020	API	SASB[1]	IPIECA[1]
direct GHG emissions (Scope 1)[6,7]						1		
direct GHG emissions (Scope 1) – all GHGs (million tonnes CO_2e)[10]	**66**	**67**	**68**	**63**	**56**	**1.1**		**CCE4: C1/A1**
Upstream – all GHGs (million tonnes CO_2e)[11]	**43**	**37**	**35**	**34**	**30**	**1.1.1**	**EM-EP-110a.1**	**CCE4: C3**
CO_2 (million tonnes)	37	32	32	31	28			
CH_4 (million tonnes CH_4)[12]	0.24	0.17	0.14	0.12	0.11			
CH_4 (million tonnes CO_2e)[12]	6.0	4.2	3.5	3.0	2.7	1.1.1.1		
Other GHGs (million tonnes CO_2e)	0.1	0.1	0.1	0.1	0.1			
Upstream flaring – all GHGs (subset of Scope 1) (million tonnes CO_2e)[11]	**13**	**9**	**9**	**8**	**6**	**1.1.1.2**	**EM-EP-110a.2**	**CCE7: C4**
CO_2 (million metric tons)	12	8	8	7	5			
CH_4 (million tonnes CH_4)[12]	0.06	0.04	0.03	0.02	0.02			
CH_4 (million tonnes CO_2e)[12]	1.5	0.9	0.8	0.6	0.4			
Other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			
Volume of flares (mmscf)	190,000	140,000	130,000	100,000	90,000	1.1.1.3		CCE7: A1
Midstream – all GHGs (million tonnes CO_2e)	**2**	**2**	**2**	**1**	**1**	**1.1.2**	**EM-MD-110a.1**	**CCE4: C3**
CO_2 (million tonnes)	1	2	2	1	1			
CH_4 (million tonnes CH_4)[12]	<0.01	<0.01	<0.01	<0.01	<0.01	1.1.2.1		
CH_4 (million tonnes CO_2e)[12]	<0.1	<0.1	<0.1	<0.1	<0.1			
Other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			
Downstream – all GHGs (million tonnes CO_2e)[13]	**16**	**16**	**15**	**14**	**14**	**1.1.3**	**EM-RM-110a.1**	**CCE4: C3**
CO_2 (million tonnes)	16	16	15	14	14			
CH_4 and other GHGs (million tonnes CO_2e)	0.1	0.1	0.1	0.1	0.1			
LNG – all GHGs (million tonnes CO_2e)	**3**	**11**	**13**	**11**	**9**	**1.1.4**	**EM-EP-110a.2**	
CO_2 (million tonnes)	3	10	12	11	9			
CH_4 and other GHGs (million tonnes CO_2e)	0.1	0.7	0.8	0.4	0.3			
Chemicals – all GHGs (million tonnes CO_2e)[14]	**<1**	**<1**	**<1**	**<1**	**<1**			**CCE4: C3**
CO_2 (million tonnes)	<1	<1	<1	<1	<1			
CH_4 and other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			
Other – all GHGs (million tonnes CO_2e)[15]	**2**	**1**	**2**	**1**	**1**			**CCE4: C3**
CO_2 (million tonnes)	2	1	2	1	1			
CH_4 and other GHGs (million tonnes CO_2e)	<0.1	<0.1	<0.1	<0.1	<0.1			

operated emissions table continues on page 66

operated emissions,[2,4,5] cont.

	2016	2017	2018	2019	2020	API	SASB[1]	IPIECA[1]
direct GHG emissions (Scope 1) – all GHGs (million tonnes CO_2e),[10] cont.								
Emissions associated with exported electricity and steam (million tonnes CO_2e)[16]	**2**	**1**	**1**	**1**	**1**			**CCE4: C3/A6**
Upstream (million tonnes CO_2e)[11]	<1	<1	<1	<1	<1			
Midstream (million tonnes CO_2e)	0	0	0	0	0			
Downstream (million tonnes CO_2e)[13]	<1	<1	<1	<1	<1			
LNG (million tonnes CO_2e)	0	0	0	0	0			
Chemicals (million tonnes CO_2e)[14]	0	0	0	0	0			
Other (million tonnes CO_2e)[15]	1	1	1	1	<1			
indirect GHG emissions from imported energy (Scope 2)[6,17]						**2**		
indirect GHG emissions from imported electricity, heat, steam, and cooling (Scope 2, market-based)[10]	**2**	**2**	**2**	**1**	**1**	**2.1**		**CCE4: C2/C3**
Upstream – all GHGs (million tonnes CO_2e)[11]	1	1	1	1	1	2.1.1		
Midstream – all GHGs (million tonnes CO_2e)	<1	<1	<1	<1	<1	2.1.2		
Downstream – all GHGs (million tonnes CO_2e)[13]	1	1	1	<1	<1	2.1.3		
LNG – all GHGs (million tonnes CO_2e)	0	0	0	0	0	2.1.4		
Chemicals – all GHGs (million tonnes CO_2e)[14]	<1	<1	<1	<1	<1			
Other – all GHGs (million tonnes CO_2e)[15]	<1	<1	<1	<1	<1			
GHG mitigation						**3**		
Carbon capture, utilization, and storage (CCUS) – all GHGs (million tonnes CO_2e)[20]	0	<1	<1	1	3	3.1.1		CCE3: A6
Renewable Energy Credits (RECs for indirect emissions) – all GHGs (million tonnes CO_2e)[21]	0	0	0	<1	<1	3.1.2		CCE3: A7
Offsets – all GHGs (million tonnes CO_2e)[22]	4	4	3	1	2	3.1.3		
additional GHG reporting								
Indirect GHG emissions – all other (Scope 3)[10,19]								**CCE4: A2**
Use of sold products – production method (million tonnes CO_2e)	539	608	617	622	588			
Use of sold products – throughput method (million tonnes CO_2e)	341	386	406	411	392			

Indicates restatement of data.

operated other environmental metrics[2]

	2016	2017	2018	2019	2020	API	SASB[1]	IPIECA[1]
other environmental metrics								
Energy efficiency								**CCE6**
Total energy consumption, operated assets and nonoperated joint-venture refineries (trillion BTUs)	830	833	928	910	851			CCE6: C1
Total energy consumption, operated assets and nonoperated joint-venture refineries (million gigajoules)	876	879	980	960	898			CCE6: C1
Total energy consumption, operated assets (trillion BTUs)	671	677	766	752	700			CCE6: C1
Total energy consumption, operated assets (million gigajoules)	708	715	808	794	739			CCE6: C1
Manufacturing Energy Index (Refining) (no units)[23]	85	85	85	85	88			CCE6: A4
Upstream Energy Intensity (thousand BTUs per barrel of oil-equivalent)	312	315	358	362	340			CCE6: A2
Pipeline Energy Intensity (BTUs per barrel of oil-equivalent-mile)	20	13	10	8	10			CCE6: A2
Shipping Energy Intensity (BTUs per metric ton–mile)	43	70	75	70	69			CCE6: A2
Non-Manufacturing Energy Index (Oronite, Lubricants, etc.) (no units)[24]	75	75	74	67	71			CCE6: A3
Natural resources – water[25]								**ENV1**
Fresh water withdrawn (million cubic meters)	80	72	71	70	63		EM-EP-140a.1 EM-RM-140a.1	ENV1: C1
Fresh water consumed (million cubic meters)	79	71	70	69	62		EM-EP-140a.1 EM-RM-140a.1	ENV1: C2
Nonfresh water withdrawn (million cubic meters)	36	41	39	45	34			ENV1: A4

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notes to pages 58–67

1 We provide index columns to identify common reporting elements between our current reporting data and the related *Sustainability Accounting Standards* (2018) (SASB) and the IPIECA *Sustainability Reporting Guidance for the Oil and Gas Industry* (2020). The indices are based solely on Chevron's interpretation and judgment and do not indicate the application of definitions, metrics, measurements, standards, or approaches set forth in the SASB framework and IPIECA standards. Please refer to the relevant footnotes for information about Chevron's data-reporting basis.

2 Unless otherwise noted, data collected as of September 2, 2021.

3 Emissions reported are net (Scope 1 and 2). The emissions included in the metrics generally represent Chevron's equity share of emissions from Upstream, including LNG, which are emissions from operated and nonoperated joint-venture (NOJV) assets based on Chevron's financial interest. The scope may include sources outside traditional scoping of equity emissions, including captive emissions from processes like drilling and completions, and tolling agreements up to the point of third-party custody transfer of the oil or gas product. For oil and gas production intensity metrics, production is aligned with net production values reported in the Chevron Corporation *Supplement to the Annual Report*, which represent the Company's equity share of total production after deducting both royalties paid to landowners and a government's agreed-upon share of production under a Production Sharing Agreement. Chevron's equity-share emissions include emissions associated with these excluded royalty barrels in accordance with IPIECA guidance. Also in accordance with IPIECA guidance, Chevron's equity-share emissions do not include emissions associated with royalty payments received by the Company. Allocation of emissions between oil and gas is based on the fraction of production represented by liquids or gas. Flaring and methane intensities use the total of liquids and gas production. Oil and gas production intensities use liquids production and natural gas production, respectively.

4 The World Resources Institute/World Business Council for Sustainable Development *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (2015) defines three "scopes" that Chevron uses to report GHG emissions.

5 Table leverages the American Petroleum Institute's (API) *Template 1.0 for GHG Reporting* (June 2021) and *Guidance—API Template 1.0 for GHG Reporting* (June 2021) for organization and contains an index column to identify common reporting elements. The use of this reporting format and index column does not indicate the application of all of the definitions, metrics, measurements, standards, or approaches set forth in the template and guidance.

6 Numbers in table may not sum due to rounding.

7 Scope 1 includes direct emissions. Direct GHG emissions related to production of energy in the form of electricity or steam exported or sold to a third party are included in the reported Scope 1 emissions to align with IPIECA's *Sustainability Reporting Guidance for the Oil and Gas Industry* (2020). Chevron's Scope 1 includes emissions of six Kyoto GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride, perfluorocarbons, and hydrofluorocarbons. Calculation methods are based on API's *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry* (2009) or, where relevant, local regulatory reporting methodologies.

8 Where limited emissions information is available for NOJVs, Chevron's equity share of total CO_2-equivalent (CO_2e) emissions is allocated to Scope 1 CO_2 emissions.

9 Chevron's equity-share emissions for Loma Campana concession excluded for 2016–2018 and included for 2019–2020. Chevron's equity-share emissions for CalBioGas LLC and Brightmark RNG Holdings LLC NOJVs excluded for 2020.

10 Chevron identified common reporting elements between our current reporting data and the related September 2020 World Economic Forum (WEF) sustainability metrics from the white paper *Measuring Stakeholder Capitalism Towards Common Metrics and Consistent Reporting of Sustainable Value Creation*. This identification is based solely on Chevron's interpretation and judgment. This identification does not indicate the application of definitions, metrics, measurements, standards, or approaches set forth in the WEF sustainability metrics.

11 Consistent with June 2021 API template and guidance, Liquefied Natural Gas (LNG)-related data that Chevron previously reported as part of Upstream data are now reported separately.

12 As governments update their Global Warming Potentials (GWPs), we anticipate updating methane data reporting in our environmental tables and the associated performance evaluation. For transparency, and to enable stakeholders to make their own calculations based on their preferred timeline and GWPs, we provide methane emissions data and intensity performance as a mass of methane as well as its conversion under the AR4 100-year GWP to a CO_2-equivalent. Although we strive to provide consistent data from our operated and nonoperated assets, some nonoperated assets may provide their data only on a CO_2e basis. Given the common industry practice of using the AR4 100-year GWP, we have assumed that those nonoperated assets that did not provide methane mass data use a 100-year GWP of 25. We continue to work with our joint-venture partners to provide information on a standardized basis to increase transparency.

13 Downstream includes emissions from refineries and terminals. Chemical and base oil facilities located within refineries are included in refinery emissions.

14 Chemicals includes emissions from stand-alone chemical, additive, and lubricant facilities.

15 Other emissions include GHG emissions from Chevron Power and Energy Management, Corporate Aviation, Chevron Environmental Management and Real Estate Company, and North American Data Center.

16 Exported emissions are direct GHG emissions related to production of energy in the form of electricity or steam that are exported or sold to a third party.

17 Scope 2 includes indirect emissions from imported electricity and steam. CO_2, CH_4, and N_2O are accounted for in Chevron's Scope 2 emissions. Scope 2 emissions are accounted for using the market-based approach as described in the World Resources Institute's *GHG Protocol Scope 2 Guidance* (2015).

18 Annual third-party verification covers Chevron's total Scope 1 and total Scope 2 equity emissions, as first reported in Chevron's *Corporate Sustainability Report* for each reporting year, but generally does not cover subsequent restatements and does not include Chevron equity-share emissions for Chevron Phillips Chemical Company LLC. In the course of normal business processes, Chevron seeks limited assurance of prior-year total Scope 1 and total Scope 2 GHG emissions data for publication in its *Corporate Sustainability Report*.

19 Chevron calculates emissions from third-party use of our products in alignment with methods in Category 11 of IPIECA's *Estimating Petroleum Industry Value Chain (Scope 3) Greenhouse Gas Emissions* (2016). Emissions are based on aggregate production, throughput, and sales numbers that include renewable fuels.

20 CCUS includes both CO_2 sold to third parties and CO_2 (and other gas) injected for carbon storage.

21 RECs are credits generated from renewable electricity generation within the United States that are retired by the Company.

22 Offsets are credits generated from the avoidance or reduction of GHG emissions or the removal of GHGs from the atmosphere that are purchased/developed and retired by the Company, excluding RECs. Includes offsets retired in compliance programs. For programs with multiyear compliance periods, offsets are apportioned according to the compliance obligation for each year.

23 Refining performance is measured by the Manufacturing Energy Index (MEI), which is calculated using the Solomon Energy Intensity Index methodology. MEI includes operated assets and NOJV refineries.

24 Energy performance for Chemicals, Americas, and International Fuels & Lubricants is measured by the Non-Manufacturing Energy Index, which is the energy required to produce Chevron products compared with the energy that would have been required to produce the same products in 1992 (the index's base year).

25 Fresh water withdrawn from the environment is defined per local legal definitions. If no local definition exists, fresh water is defined as water extracted, directly or indirectly, from surface water, groundwater, or rainwater that has a total dissolved solids concentration of less than, or equal to, 2,000 mg/L. Fresh water withdrawn does not include effluent or recycled/reclaimed water from municipal or other industrial wastewater treatment systems, as this water is reported under nonfresh water withdrawn. Nonfresh water withdrawn could include seawater, brackish groundwater or surface water, reclaimed wastewater from another municipal or industrial facility, desalinated water, or remediated groundwater used for industrial purposes. Produced water is excluded from fresh water withdrawn, fresh water consumed, and nonfresh water withdrawn.

climate-related disclosure

Chevron recognizes climate change is a growing area of interest for our investors and stakeholders. The table below shows how the disclosures in this report align with the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures, as the TCFD has described the categories, and where the relevant information can be found in this report. Further information can be found in Chevron's 2020 Annual Report on Form 10-K, *Climate Change Resilience: A Framework for Decision Making* (2019), and Chevron's Corporate Sustainability reports.

TCFD recommendation*		disclosure	location
Governance			
Disclose the organization's governance around potential climate-related risks and opportunities.	(a) Describe the organization's governance around potential climate-related risks and opportunities.	Board oversight	1.1
		Public Policy and Sustainability Committee	1.1.1
		Other Board-level committees	1.1.2–1.1.4
		Director qualifications and nominating process	1.1.4
	(b) Describe management's role in assessing and managing potential climate-related risks and opportunities.	Executive management of climate risks	1.2
		Global Issues Committee	1.2.2
		Chevron Strategy & Sustainability organization	1.3
Strategy			
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy, and financial planning where such information is material.	(a) Describe the potential climate-related risks and opportunities the organization has identified over the short, medium, and long terms.	Chevron's strategic and business planning processes	3.1–3.4
	(b) Describe the impact of potential climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Business planning	3.5
		Capital-project approvals	3.5
		Our portfolio	4
	(c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2° C or lower scenario.	The resilience of our portfolio under the IEA's NZE 2050 and the IPCC's AR5 RCP8.5	3.6
Risk management			
Disclose how the organization identifies, assesses, and manages potential climate-related risks.	(a) Describe the organization's processes for identifying and assessing potential climate-related risks.	Physical risk	2.1
		Transition risk	2.2
	(b) Describe the organization's processes for managing potential climate-related risks.	Physical risk	2.1
		Transition risk	2.2
	(c) Describe how processes for identifying, assessing, and managing potential climate-related risks are integrated into the organization's overall risk management.	Risk management	2
Metrics and targets			
Disclose the metrics and targets used to assess and manage potential climate-related risks and opportunities where such information is material.	(a) Disclose the metrics used by the organization to assess potential climate-related risks and opportunities in line with its strategy and risk management process.	Lower carbon strategy and investments	4.3
	(b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions estimates and the potential related risks.	Approach to Scope 3	4
		Metrics	5
	(c) Describe the targets used by the organization to manage potential climate-related risks and opportunities and performance against targets.	Lower carbon strategy and investments	4.3

*See Section 6: About This Report.

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section 6

about this report

This report covers our owned and operated businesses and does not address the performance or operations of our suppliers, contractors, and partners unless otherwise noted. In the case of certain joint ventures for which Chevron is the operator, we exercise influence but not control. Thus, the governance, processes, management, and strategy for those joint ventures are known to differ from those detailed in this report. On October 5, 2020, we announced the completion of the acquisition of Noble Energy, Inc. (Noble); the integration of Noble operations into our operations is ongoing. This report does not speak to Noble's historic governance, risk management, strategy approaches, or emissions performance unless specifically referenced. All financial information is presented in U.S. dollars unless otherwise noted.

This report contains forward-looking statements relating to the manner in which Chevron intends to conduct certain of its activities, based on management's current plans and expectations. These statements are not promises or guarantees of future conduct or policy and are subject to a variety of uncertainties and other factors, many of which are beyond our control, including government regulation and oil and gas prices. See the Forward-Looking Statements Warning on page 72 of this report.

Therefore, the actual conduct of our activities, including the development, implementation, or continuation of any program, policy, or initiative discussed or forecasted in this report, may differ materially in the future. As with any projections or estimates, actual results or numbers may vary. Many of the standards and metrics used in preparing this report continue to evolve and are based on management assumptions believed to be reasonable at the time of preparation but should not be considered guarantees. The statements of intention in this report speak only as of the date of this report. Chevron undertakes no obligation to publicly update any statements in this report.

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As used in this report, the term *Chevron* and such terms as *the Company*, *the Corporation*, *their*, *our*, *its*, *we*, and *us* may refer to one or more of Chevron's consolidated subsidiaries or affiliates or to all of them taken as a whole. All of these terms are used for convenience only and are not intended as a precise description of any of the separate entities, each of which manages its own affairs.

this report and additional information on how we view and address potential climate change–related issues can be found at chevron.com/sustainability/environment/energy-transition

forward-looking statements warning

CAUTIONARY STATEMENTS RELEVANT TO FORWARD-LOOKING INFORMATION FOR THE PURPOSE OF "SAFE HARBOR" PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

This report contains forward-looking statements relating to Chevron's energy transition plans and operations that are based on management's current expectations, estimates, and projections about the petroleum, chemicals, and other energy-related industries. Words or phrases such as "anticipates," "expects," "intends," "plans," "targets," "forecasts," "projects," "believes," "seeks," "schedules," "estimates," "positions," "pursues," "may," "could," "should," "will," "budgets," "outlook," "trends," "guidance," "focus," "on schedule," "on track," "is slated," "goals," "objectives," "strategies," "opportunities," "poised," "potential," "ambitions," "aspires," and similar expressions are intended to identify such forward-looking statements. These statements are not guarantees of future performance and are subject to certain risks, uncertainties, and other factors, many of which are beyond the company's control and are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in such forward-looking statements. Our ability to achieve the goals, targets, and aspirations outlined in this report depends on making extensive progress with independent third parties, including development of policy and regulatory support, technological advancement, successful commercial negotiations, availability of cost-effective and verifiable offsets in a global market, and the granting of necessary permits by governing authorities. The reader should not place undue reliance on these forward-looking statements, which speak only as of the date of this report. Unless legally required, Chevron undertakes no obligation to update publicly any forward-looking statements, whether as a result of new information, future events, or otherwise.

Among the important factors that could cause actual results to differ materially from those in the forward-looking statements are: changing crude oil and natural-gas prices and demand for our products, and production curtailments due to market conditions; crude oil production quotas or other actions that might be imposed by the Organization of Petroleum Exporting Countries (OPEC) and other producing countries; technological advancements; changes to government policies in the countries in which the company operates; development of large carbon capture and offsets markets; public health crises, such as pandemics and epidemics, and any related government policies and actions; changing economic, regulatory, and political environments in the various countries in which the company operates; general domestic and international economic and political conditions; changing refining, marketing, and chemicals margins; the company's ability to realize anticipated cost savings, expenditure reductions, and efficiencies associated with enterprise transformation initiatives; actions of competitors or regulators; timing of exploration expenses; timing of crude oil liftings; the competitiveness of alternate-energy sources or product substitutes; the results of operations and financial condition of the company's suppliers, vendors, partners, and equity affiliates; the inability or failure of the company's joint-venture partners to fund their share of operations and development activities; the potential failure to achieve expected net production from existing and future crude oil and natural-gas development projects; potential delays in the development, construction, or startup of planned projects; the potential disruption or interruption of the company's operations due to war, accidents, political events, civil unrest, severe weather, cyber threats, terrorist acts, or other natural or human causes beyond the company's control; the potential liability for remedial actions or assessments under existing or future environmental regulations and litigation; significant operational, investment, or product changes required by existing or future environmental statutes and regulations, including international agreements and national or regional legislation and regulatory measures to limit or reduce greenhouse gas emissions; the potential liability resulting from pending or future litigation; the company's future acquisitions or dispositions of assets or shares or the delay or failure of such transactions to close based on required closing conditions; the potential for gains and losses from asset dispositions or impairments; government-mandated sales, divestitures, recapitalizations, industry-specific taxes, tariffs, sanctions, changes in fiscal terms, or restrictions on scope of company operations; foreign currency movements compared with the U.S. dollar; material reductions in corporate liquidity and access to debt markets; the receipt of required Board authorizations to pay future dividends; the effects of changed accounting rules under generally accepted accounting principles promulgated by rule-setting bodies; the company's ability to identify and mitigate the risks and hazards inherent in operating in the global energy industry; and the factors set forth under the heading "Risk Factors" on pages 18 through 23 of the 2020 Annual Report on Form 10-K. Other unpredictable or unknown factors not discussed in this report could also have material adverse effects on forward-looking statements.

our energy-transition approach

set ambitions that favor results

advance a lower carbon future

promote transparency

drive commercial solutions

build partnerships to achieve impact

learn more > chevron.com/sustainability/environment/energy-transition

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