



update to climate change resilience

a framework for decision making

human energy®



February 2019

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“We take our corporate responsibility seriously. I am pleased that Chevron is providing this update to its previous reports on climate risks. In prior engagements with stockholders, I have reinforced the important role the Board plays in overseeing Chevron’s management of climate change risks and its assessment of opportunities.”

— Dr. Ronald D. Sugar
Lead Director

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 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” 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. 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; changing refining, marketing and chemicals margins; the company’s ability to realize anticipated cost savings and expenditure reductions; actions of competitors or regulators; timing of exploration expenses; timing of crude oil liftings; the competitiveness of alternate-energy sources or product substitutes; technological developments; the results of operations and financial condition of the company’s suppliers, vendors, partners and equity affiliates, particularly during extended periods of low prices for crude oil and

natural gas; 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 start-up 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 and terrorist acts, crude oil production quotas or other actions that might be imposed by the Organization of Petroleum Exporting Countries, or other natural or human causes beyond the company’s control; changing economic, regulatory and political environments in the various countries in which the company operates; general domestic and international economic and political conditions; 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 other pending or future litigation; the company’s future acquisition or disposition 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 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 19 through 22 of the company’s 2017 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.

chairman's letter

**for nearly 140 years, chevron has provided
affordable, reliable, ever-cleaner energy
to improve lives and power the world forward**



**“Chevron’s greatest resources
are the ingenuity, creativity
and innovation of our people.
Throughout this report, we
profile some of these innovators
working to solve challenges
and shape the future of energy.
It’s our goal to win in any
energy environment by delivering
industry-leading returns and
superior stockholder value.”**

This year, Chevron celebrates an important milestone—our 140th anniversary of enabling human progress. We are proud of Chevron’s historic past, and are committed to upholding our legacy by providing the affordable, reliable, ever-cleaner energy that improves people’s lives.

As more energy, and more forms of energy, are required to power the world forward, Chevron will remain focused on improving current sources and scaling future solutions to deliver greater human benefit with less environmental impact. Just as we have successfully navigated the energy transitions that have occurred since our company’s founding nearly a century and a half ago, Chevron will continue to lead in the transition into the next energy future.

This update highlights work we are doing to address climate change risks to our business and new opportunities we’re pursuing. It incorporates responses to some of the thoughtful insights stockholders have shared with us during our engagements. This update builds on our two prior climate change reports: *Managing Climate Change Risks: A Perspective for Investors*, published in March 2017; and *Climate Change Resilience: A Framework for Decision Making*, published in March 2018.

Thank you for investing in Chevron. We look forward to ongoing conversations on how we are managing climate risks to our business and taking on new opportunities to reduce greenhouse gas emissions and develop lower-carbon energy.

Michael K. Wirth
Chairman of the Board and
Chief Executive Officer
February 2019

chevron at a glance

we take great pride in enabling human progress by developing the energy that improves lives and powers the world forward

Chevron is one of the world's leading integrated energy companies. Our success is driven by our people and our collective commitment to delivering industry-leading results and superior stockholder value in any business environment. We do this by operating efficiently, applying advanced technologies, capturing new high-return opportunities, and executing with excellence in a socially and environmentally responsible manner. We explore for, produce and transport crude oil and natural gas; refine, market and distribute transportation fuels and lubricants; manufacture and sell petrochemicals and additives; and develop and deploy technologies that enhance business value in every aspect of the company's operations.

total assets*
\$253.9 billion

sales and other operating revenues**
\$158.9 billion

net oil-equivalent daily production**
2.93 million barrels

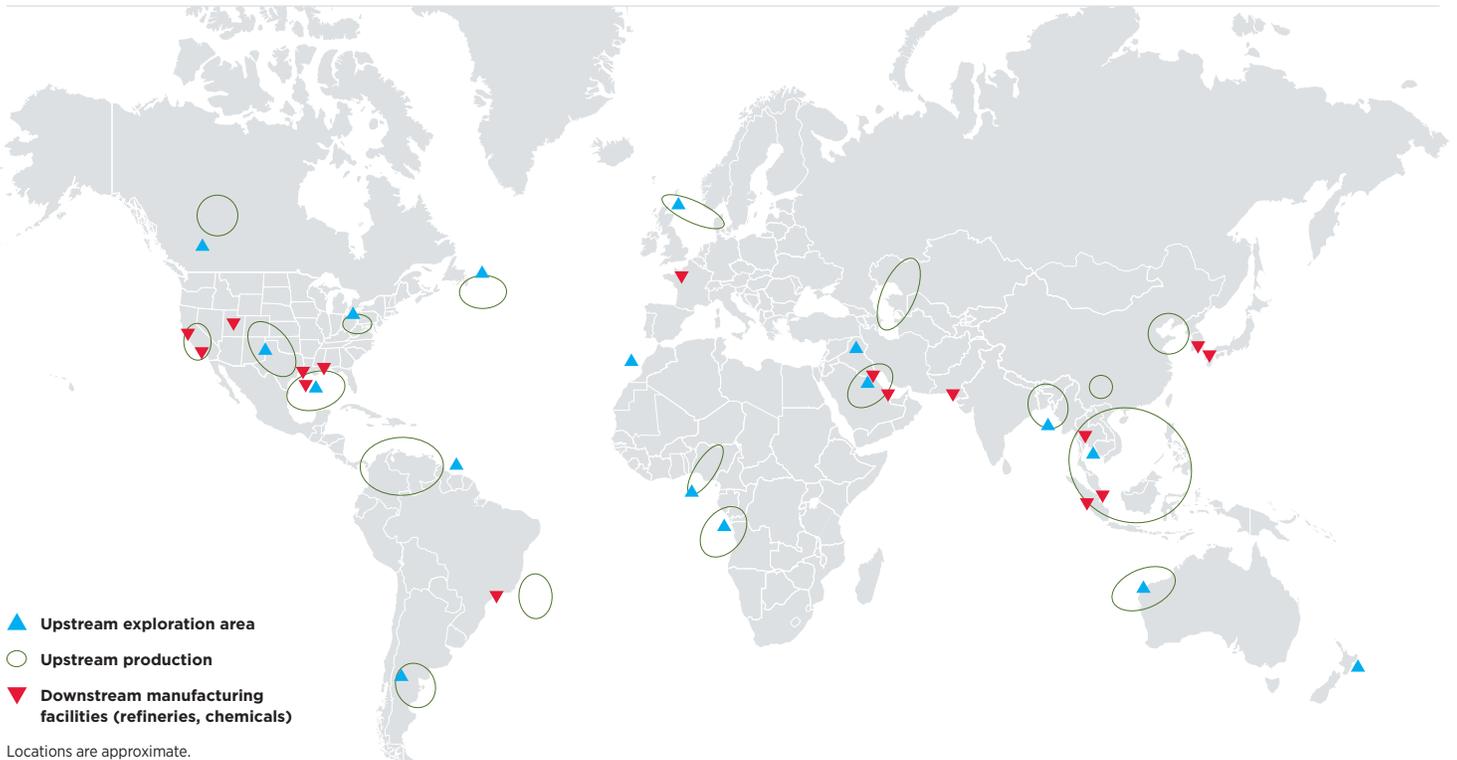
net oil-equivalent proved reserves*
12.1 billion barrels

daily refining capacity*
1.6 million barrels

daily refined product sales**
2.7 million barrels

* At December 31, 2018.
** Year ended December 31, 2018.

overview of upstream and downstream portfolios



executive summary

we believe that managing climate change risks to our business is an important element of returning value to stockholders, and we are continuing our strong governance and increasing our actions and investments

Since our March 2018 *Climate Change Resilience* report, we have continued our strong governance, taken additional actions and made new investments. Aligned with the framework outlined by the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD), we are updating our 2018 report with respect to Section 1: Governance Framework, Section 4: Actions and Investments, and Section 5: Metrics. See Section 6 Update: About This Report, on [Page 21](#).

continuing our strong governance

In response to ongoing discussions with stockholders, we are providing more voluntary disclosure on our governance related to climate change issues. This includes information on the multiple avenues for the Board of Directors and executive leadership to exercise their oversight responsibilities with respect to climate change risks to our business. In 2018, the Board and executive management engaged with both internal and external experts with diverse views on energy transition and climate change issues. The Board established new methane and flaring performance measures for inclusion in the Chevron Incentive Plan (CIP) Scorecard, a component of management and workforce variable compensation. We also created an Environmental, Social and Governance (ESG) engagement team.

increasing our actions and investments

We took concrete steps to lower our greenhouse gas (GHG) emissions and address climate change risks to and opportunities in our business. We joined the Oil and Gas Climate Initiative (OGCI) and committed \$100 million to its \$1 billion+ fund investing in technologies to reduce GHG emissions within the oil and gas value chain. Chevron employees worked to increase energy efficiency, reduce methane emissions, decrease water consumption, develop biofuels, apply innovative technology and identify lower-carbon investment opportunities. We also continued to invest in companies developing technologies for lowering GHG emissions and for capitalizing on lower-carbon opportunities.



in summary

We continue our voluntary reporting on climate-related issues to detail our strong governance, thorough risk management, resilient strategies, and targeted actions and investments. In this update, we share additional information on our governance, as well as recent actions and investments.

section 1 update

governance framework

we continue our strong governance to ensure chevron maintains an effective framework for managing the company's performance and mitigating risks to our business

In our March 2018 report, we detailed the structure of our Board- and executive-level oversight, including committees. We also highlighted the qualifications of our Board of Directors. Over the course of 2018:

- We engaged with internal and external experts with diverse views on energy transition and climate issues.
- We continued our Enterprise Risk Management process.
- Our Board established new methane and flaring performance measures.
- We created a dedicated ESG engagement team.

a duty to stockholders

We have a fiduciary duty to our stockholders. Many of our stockholders have their investments managed through index or other funds, such as pension funds, and many of these funds consider how climate change risks to their investments are managed. Through reports like this one, and ongoing engagements, we aim to assist fund managers in meeting their obligations. We strive to have honest conversations about governance, risk management, strategic actions and investments, and metrics related to GHG emissions. We believe such activities support our fiduciary duty to stockholders. Our nearly 140 years of experience inform us that this thoughtful approach, combined with prudent action, best positions us to deliver value to stockholders.



\$100 invested in chevron in 1985 would be worth \$5,160 in 2018*

1.1 board-level committees

Chevron's Board of Directors has four standing committees, all of which discuss climate change, consistent with their respective charters. These committees are: Public Policy, Audit, Board Nominating and Governance, and Management Compensation. Each committee comprises only independent Directors. Outside experts of differing viewpoints are engaged to enable the Board to consider the risks to our business arising from climate change. The Board and its committees also have access to Chevron subject matter experts and receive briefings on climate change-related issues, such as the policy and regulatory landscape, technology and adaptation. In addition to the oversight roles of the Public Policy, Audit, and Board Nominating and Governance committees detailed in our March 2018 report, the Management Compensation Committee approves the annual CIP Scorecard's performance measures, including the achievement of GHG-related performance measures announced in this update, which will affect management and workforce variable compensation.

In addition, the Board and its committees annually review the Enterprise Risk Management (ERM) process, which assists the Board of Directors and executive leadership in overseeing risks related to key strategic decisions for the company. In our March 2018 report, we detailed how the ERM process aims to address climate change in a comprehensive manner by integrating its potential risks into multiple ERM categories.

* Assumes stock purchase date of January 1, 1985, at close price on December 31, 1984, dividends reinvested when paid, and an ending investment value based on close of market on December 31, 2018. Adjusted for stock splits.



“As the chair of the Public Policy Committee, I see it as my role to help lead a discussion with my fellow Directors that challenges our thinking and Chevron management’s views on how policy will develop, how quickly it will happen and the options we are considering. The Public Policy Committee benefits from briefings on stockholder engagements—the briefings help us understand stockholders’ concerns and key questions. In addition, hearing from outside experts as well as Chevron experts assists us in developing our thinking.”

— **Dr. Wanda M. Austin**
Public Policy Committee Chair

1.1.1 New performance measures related to climate change

The full Board, and each committee, considered metrics that could be used to aid in achieving progress on managing climate change risks to our business. In light of increasing demand for energy, Chevron’s competitive advantages, evolving climate policies, and the importance of energy to human progress and economic development, the Board focused on how Chevron can meet future energy demands in an affordable, reliable, ever-cleaner way. To align employee—including management—incentives with achieving progress on climate-related issues, the Board set Upstream intensity reduction metrics of 25 to 30 percent for flaring and 20 to 25 percent for methane emissions for the 2016–2023 time period. These new performance measures will be added to the CIP Scorecard, our annual variable pay program that affects approximately 45,000 employees. See the Section 4 Update: Actions and Investments, on [Page 8](#) of this document for more information on Chevron’s two new performance measures.

1.2 executive-level committees

Under the oversight of the Board, Chevron’s Executive Committee is composed of executive officers of Chevron. The Enterprise Leadership Team (ELT) and Global Issues Committee (GIC) 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 our objectives. The ELT oversees our ERM process. The ELT meets monthly. At these meetings, the ELT receives briefings from Chevron subject matter experts on topics such as geopolitical risk, technology changes, the policy landscape, market conditions and energy transitions. It also consults outside experts to discuss climate change issues. In addition to these topical discussions, the ELT reviews carbon cost forecasts, which are incorporated into all business units’ plans and, as appropriate, their carbon management plans. You can read more about business planning on [Page 25](#) of our March 2018 report.

1.2.2 Global Issues Committee

The GIC oversees the development of Chevron’s policies and positions with respect to issues of global significance, including climate change, and recommends appropriate actions to respond. The GIC receives updates from subject matter experts on an array of climate change–related issues, such as carbon policy developments around the world, political developments, technological opportunities, and stockholder and stakeholder positions. The committee also reviews competitors’ climate change–related actions to understand how our peers are responding to the risks and opportunities of climate change.

1.2.3 ESG engagement team

The GIC oversees our stockholder engagement plan related to environmental, social and governance issues. In 2018, we created a dedicated team to engage on ESG issues with investors, with other stakeholders—including framework developers such as the TCFD and the Sustainability Accounting Standards Board (SASB)—and with rating agencies. The ESG engagement team and, when appropriate, senior executives, subject matter experts and our Lead Director, regularly conduct in-depth discussions with investors and stakeholders. We aim to engage annually with our top 50 investors and other key stakeholders. Chevron gains valuable feedback during these engagements, and this feedback is shared with the Board and relevant Board committees. The ESG engagement team regularly briefs the GIC on its efforts.

1.3 board qualifications

Our Board of Directors comprises members who bring to the Board relevant skills and qualifications, including leadership, operations, environmental, policy, regulatory and finance skills. Their experience comes from the academic, business and technology sectors. This diverse set of perspectives helps ensure that the Board challenges itself and management on the risks and opportunities related to climate change. Each Director is committed to improving Chevron's environmental performance while delivering value to stockholders.

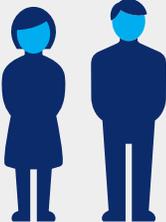
1.4

in summary: continued strong governance

We frequently reassess our governance structure to ensure that Chevron maintains an effective framework for managing the company's performance and assessing the risks to its business. In 2018, we enhanced engagement with both internal and external experts on climate change issues; we continued to integrate climate issues into our ERM process; the Board established new methane and flaring performance measures; and we created an ESG engagement team.

director skills and qualifications

number of directors
with relevant skills



- CEO/senior exec./leader of significant business operations: **9**
- Science/technology/engineering/research/academia: **9**
- Government/regulatory/legal/public policy: **9**
- Finance/financial disclosure/financial accounting: **11**
- Global business/international affairs: **10**
- Environmental: **8**

At January 17, 2019.

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
Chief Executive Officer,
Northrop Grumman Corporation (3, 4)



Wanda M. Austin

Retired President and
Chief Executive Officer,
The Aerospace Corporation (2, 3)



John B. Frank

Vice Chairman,
Oaktree Capital Group, LLC (1)



Alice P. Gast

President,
Imperial College London (2, 3)



Enrique Hernandez Jr.

Chairman, Chief Executive
Officer and President,
Inter-Con Security Systems Inc. (2, 4)



Charles W. Moorman IV

Retired Chairman and
Chief Executive Officer,
Norfolk Southern Corporation (1)



Dambisa F. Moyo

Chief Executive Officer,
Mildstorm LLC (1)



Inge G. Thulin

Executive Chairman and Retired
President and Chief Executive Officer,
3M Company (1)



D. James Umpleby III

Chairman and
Chief Executive Officer,
Caterpillar Inc. (3, 4)



Debra Reed-Klages

Retired Chairman, Chief Executive
Officer and President,
Sempra Energy (2, 4)

Skills and qualifications: ● CEO/senior executive/leader of significant business 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: Charles W. Moorman IV, Chair (2) Public Policy: Dr. Wanda M. Austin, Chair
(3) Board Nominating and Governance: Ronald D. Sugar, Chair (4) Management Compensation: Enrique Hernandez Jr., Chair

section 4 update

actions and investments

we increased our actions to address potential climate change risks to our business and we furthered our investment in technologies that could reduce emissions

In our March 2018 report, we highlighted the prudent, practical and cost-effective actions we are taking as part of our commitment to addressing climate change risks to our business. In 2018, we:

- Joined the OGCI, and its investment fund.
- Established new CIP Scorecard GHG intensity performance measures.
- Continued our support of the United Nations Sustainable Development Goals.
- Focused on lower-carbon measures like CCUS, biofuels, methane management and energy efficiency, as well as reduction of our water consumption.
- Launched \$100 million Future Energy Investment Fund.

4.1 oil and gas climate initiative

We joined the OGCI, a global collaboration focused on the industry's efforts to address climate change issues. We also joined OGCI Climate Investments, which plans to invest more than \$1 billion in technologies and businesses that will reduce GHG emissions across the oil and gas value chain. Chevron has pledged \$100 million in investment through OGCI Climate Investments, in addition to the \$100 million Chevron Future Energy Fund launched in 2018.

4.2



corporate scorecard performance measures

Chevron aims to reduce emissions intensity while improving our operations and supporting the objectives of society as expressed in the Paris Agreement. To this end, we are establishing two equity-based GHG intensity reduction performance measures to reduce GHG emissions intensity from 2016 to 2023: a 25 to 30 percent flaring intensity reduction and a 20 to 25 percent methane emissions intensity reduction. Assigning 2016 as the baseline year aligns with the year the Paris Agreement was ratified. Designating 2023 as the end measurement year also aligns with the Paris Agreement, which calls for the first global emissions "stocktake" in 2023 and every five years thereafter. We are applying these performance measures not just in our operations but on an equity basis across all our assets. These performance measures will be included in our CIP Scorecard, which affects variable compensation for our workforce.

A portion of the variable compensation of Chevron's approximately 45,000 incentive plan-eligible employees around the world will be tied to reducing GHG emissions intensity through our flaring and methane metrics.

our view on how the paris agreement works and what chevron is doing to respond

The 2016 Paris Agreement aims to limit global warming to less than 2 degrees Celsius above preindustrial levels. As noted by the Intergovernmental Panel on Climate Change's *Special Report: Global Warming of 1.5°C*, there are many ways to limit global warming. Under the Paris Agreement, each country may pursue its own strategies for achieving its Nationally Determined Contributions.

Under credible third-party projections, all forms of energy, including oil and gas, will be required to meet the world's growing energy demand. Even in a low-carbon scenario like the International Energy Agency's (IEA) Sustainable Development Scenario, oil and gas would be approximately 48 percent of the world energy mix in 2040 (IEA, *World Energy Outlook 2018*).

In line with the aims of the Paris Agreement, Chevron supports the use of metrics to address climate change, while also maintaining our ability to supply affordable, reliable, ever-cleaner energy to meet global demand. Chevron also supports well-designed market-based mechanisms as an efficient way to advance lower-carbon outcomes while protecting energy reliability and economic prosperity. But Chevron does not support establishing targets associated with the use of Chevron's products (emissions related to the energy demand of consumers). We believe that compelling select oil and gas producers to unilaterally reduce their production or change their portfolios to align with a possible future energy mix does not advance the goals of the Paris Agreement. Doing so could result in companies like Chevron diverting resources away from their competitive strengths and could lead to less efficient companies—ones that may be less socially and environmentally responsible and may not be subject to public company oversight—increasing their share of fossil fuel production. This would neither serve the interests of our stockholders nor result in progress related to the Paris Agreement. **It is our view that a decrease in overall fossil fuel emissions is not inconsistent with continued or increased fossil fuel production by the most efficient producers. Our strategy is to be among the most efficient producers. We support market-based mechanisms and set the performance measures outlined in this report consistent with this strategy and our view of the Paris Agreement.**

4.3 sustainable development goals

In September 2015, all 193 United Nations member states adopted 17 Sustainable Development Goals (SDGs), setting a global agenda for overcoming poverty, protecting the planet, and promoting peace and prosperity.

Chevron contributes to the SDGs primarily by safely developing affordable, reliable, ever-cleaner energy (SDG 7, Affordable and Clean Energy). Consistent with SDG 13, Climate Action, we are working to reduce our GHG emissions intensity and further our lower-carbon efforts. In addition, numerous other SDGs could not be met without affordable, reliable, ever-cleaner energy:

our products enable human progress and help solve global challenges

Overcoming poverty, protecting the planet and promoting prosperity are all dependent on affordable, reliable, ever-cleaner energy. We're proud to contribute to the U.N.'s SDGs.



3B

people still use biomass or animal dung for indoor cooking and heating. Roughly 1 billion people have no electricity. Our products can provide a cleaner solution.



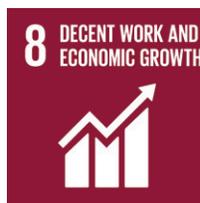
45%

of the world's population would lack adequate food supplies without the use of nitrogen fertilizers, which are largely derived from natural gas.



4.5B

people lack safely managed sanitation. Reliable energy is needed to meet this challenge.



\$167B

has been spent by Chevron on goods and services globally in the past five years.



Sycamore cogeneration plant in Kern River. Gas-fired cogeneration facilities are examples of highly efficient energy production, generating electricity from the turbine-powered generator and steam from the turbine exhaust. The electricity is exported to the utility grid, while the steam is used by Chevron for thermally enhanced oil recovery. Each unit can generate up to 75 megawatts of power and 30,000 barrels (cold water equivalent) of steam per day.



Dr. Trevor Demayo
Ph.D., M.B.A., Energy Management Engineer,
Chevron Power and Energy Management

work location: Bakersfield, California
hometown: Ottawa, Canada

Trevor Demayo's interest in sustainability has been lifelong. After earning a Ph.D. in mechanical and environmental engineering, Demayo was unsure where he could put his education to work to make the biggest impact on the world. After exploring employment with a government regulator, a national lab and an environmental monitoring company, he selected Chevron. "I chose Chevron because I wanted to work at a company where I could change our energy system," he said. Demayo is working on a project to identify GHG mitigation opportunities across the company. He recently helped develop a solar power project in California that provides low-carbon power for oil field operations. Demayo encourages young engineers and scientists interested in technology and climate change to consider a career in the energy industry. "The amount of intellectual capacity, creativity and analysis that goes into Chevron's business decisions is amazing, and knowing that we are investing in technology and energy efficiency should be appealing to anyone who wants to make a difference."

4.4

Lower-carbon energy activities

Our innovative employees apply ingenuity to solving energy challenges. In this section, we highlight some of the actions we are currently taking to promote energy efficiency; Carbon Capture, Utilization and Storage (CCUS); renewable energy; methane emissions reductions, including reduced flaring; sustainable water resources management; and, investment in developing technologies.

4.4.1 Carbon Capture, Utilization and Storage

CCUS is part of a portfolio of emerging GHG-mitigation technologies that could help manage future emissions, although the economics of this technology remain challenging. According to the IEA, CCUS is an important tool for mitigating GHG emissions and meeting the goals expressed in the Paris Agreement. CCUS is one of the key focus areas for the OGCI's \$1 billion+ investment fund, which aims to invest in projects that demonstrate commercial viability and scalability.

Chevron has invested approximately \$1.1 billion in CCUS projects, which, once operational, are expected to reduce GHG emissions by about 5 million metric tons per year, approximately the equivalent of GHG emissions attributable to 620,000 U.S. homes' annual electricity usage. In addition, Chevron has invested more than \$75 million in CCUS research and development over the past decade.



Mark Trupp
Australasia Business Unit CO₂ Injection
Subsurface Team Leader

work location: Perth, Australia
hometown: Perth, Australia

Mark Trupp has a degree in geology, with postgraduate studies in environmental science and more than 30 years of experience in oil and gas. He leads a subsurface team of expert scientists and engineers working on the Gorgon Carbon Dioxide Injection Project. Trupp describes the process of injecting reservoir carbon dioxide underground as “essentially a back-to-front oil and gas project. Rather than extracting oil and gas, we propose to safely inject greenhouse gases underground using oil and gas technology. This will prevent the release of these gases into the atmosphere.” With Gorgon injection operations due to begin in 2019, Trupp said, “Chevron has invested over 20 years studying the geology below Barrow Island as a suitable location to inject between 3.6 and 4.0 million tonnes of greenhouse gas per year, or over 100 million tonnes over the life of the injection project. Once operational, it will represent what is believed to be the world's largest greenhouse gas injection project to have been undertaken by industry.”

4.4.2 Renewable energy

As emphasized in our March 2018 report, Chevron's goal remains to continue to understand and evaluate the economic viability of renewable energy sources. We conduct internal research and collaborate with governments, businesses and academia to develop alternative and renewable energy sources. We also consider renewable energy to power our operations.

Renewable power purchase agreements

We are executing renewable power purchase agreements (PPAs) to supply energy to our operations. In 2018, we executed a PPA for solar power at our Lost Hills Field.

Renewable fuels

Biofuels, such as renewable diesel, that complement conventional transportation fuels can play an important role in reducing the carbon intensity of transportation fuels while helping meet the world's growing energy needs. In 2017, Chevron began to distribute diesel fuel containing between 6 and 20 percent renewable diesel. In 2018, Chevron began to sell renewable diesel—R99—to commercial customers.



Dr. Michelle Young
Ph.D., Biofuels Feedstocks
Technical Lead

work location: Houston, Texas
hometown: Scottsdale, Arizona

Biofuels are a calling for Michelle Young. As a process engineer with a doctorate in chemical engineering and a degree in biochemistry, Young was introduced to biofuels early in her career through research at the Georgia Institute of Technology, where she pretreated biomass to make ethanol. She now works closely with researchers to scout and test new technologies. She has evaluated a variety of potential biofuel feedstocks, including algae and other lipids, woods, grasses and trees. “It's an exciting time to be in this space, and there's a lot of energy around it,” she said.



Dr. Micah Berry
Ph.D., Biofeedstocks Project Manager,
Fuels and Product Strategy

work location: San Ramon, California
hometown: Castro Valley, California

Micah Berry works to create reliable and competitive biofuels supply chains that achieve sustainable production. Berry's biofuels work helps reduce the carbon intensity of our fuels for programs such as the California Low Carbon Fuel Standard, the U.S. Renewable Fuel Standard and international mandates to increase biofuel use. Armed with a Ph.D. in chemistry, Berry started her career at a consumer products company, then moved to a startup before she joined Chevron more than a decade ago. The common thread in her career is a love of innovation, learning new things and a desire to make a difference. “I'm very proud that I work in renewable energy for a global energy company,” she said.



Chevron is an equity investor in Novvi LLC, a California-based company that engages in the development, production, marketing and distribution of high-performance base oils from renewable sources. In 2018, Novvi and Chevron entered into an agreement to jointly develop and bring to market novel renewable base oil technologies. In 2019, Novvi is expanding their Deer Park, Texas, plant to accommodate production of these new renewable base oils. Chevron believes that the new base oil products and technology will enable Novvi and Chevron to deliver sustainable, high-performance solutions in a range of lubricant applications that will exceed what is currently commercially available.



Pacific Ethanol, Inc. is a leading producer and marketer of low-carbon renewable fuels in the United States. For more than a decade, Chevron has worked with Pacific Ethanol for fuel supply in the California market.

Pacific Ethanol is the lowest-carbon ethanol supplier in California. It owns and operates nine biorefineries across the U.S., including two in California. The plants have a combined production capacity of 605 million gallons per year—or enough to fuel 840,000 cars for a year.* Pacific Ethanol is actively exploring cutting-edge cellulosic technology and alternative grain stocks, both of which lower the carbon footprint and increase manufacturing efficiencies.

* A gallon of ethanol has about two-thirds as much energy as a gallon of gasoline. 605 million gallons of ethanol is equivalent to about 403 million gallons of gasoline. An average car in the U.S. uses about 480 gallons of gasoline per year (12,000 miles at 25 mpg).



Already a leader in recycling, Waste Management (WM) now powers some of its trucks with gas emitted by its cargo. At Waste Management's landfill gas-to-energy facilities, methane produced by decomposing trash is captured and used as an alternative fuel. More than half of the landfill gas collected at WM facilities goes to beneficial-use projects, making it North America's leader in the space. Although much of WM's landfill gas produces electricity, the Houston-based company is also a leader in converting landfill gas into natural gas fuels. Renewable natural gas (RNG) produced from processed landfill gas now fuels more than 33 percent of the company's natural gas trucks. In 2018, Chevron and WM signed an agreement for Chevron to purchase gas produced by WM and ensure supply to WM's trucks. "Chevron is a legacy supporter of our renewable natural gas program and recently increased that support by partnering with WM Renewable Energy to purchase the RNG produced at our American landfills," said Randy Beck, senior director of renewable energy at WM. "This move furthers our commitment to each other, but more importantly, our commitment to sustainability initiatives."



**San Francisco
International
Airport**

Chevron is part of the San Francisco International Airport (SFO) landmark agreement for the use of Sustainable Aviation Fuels (SAF), a low-carbon and sustainably produced alternative to jet fuel. SFO is working with a group of eight airlines and fuel producers to expand the use of SAF at the airport in what is the first project of its kind to include fuel suppliers, airlines and airport agencies in an effort to accelerate the global transition to sustainable fuels. Airlines at SFO currently use more than 1 billion gallons of jet fuel annually, and the use of SAF could reduce GHG emissions by nearly 4.8 million metric tons per year—equivalent to the annual GHG emissions of a million cars.



Angola LNG has built one of the world's most modern liquefied natural gas processing facilities.

4.4.3 Flaring reduction

Methane accounts for about 5 percent of Chevron's total GHG emissions. Approximately a third of the 5 percent are considered fugitive emissions, or leaks from equipment and piping; of the remaining emissions, most are generated by flaring and venting.

Since 2013, Chevron has reduced flaring and associated emissions by 22 percent. We have developed internal country-specific plans to minimize gas flaring, and we are a member of the World Bank-led Global Gas Flaring Reduction Partnership. Chevron flares natural gas only when required for safety and operational purposes and in areas where pipelines and other alternatives for transporting gas do not exist.

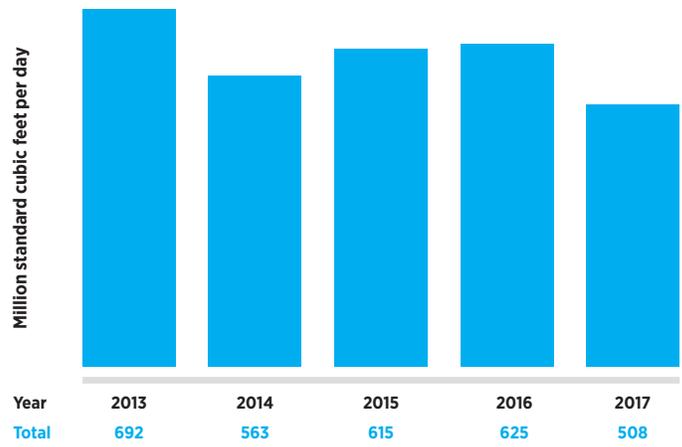


Mayomona de Miguel
Gas and Energy Management Advisor,
Southern Africa Business Unit

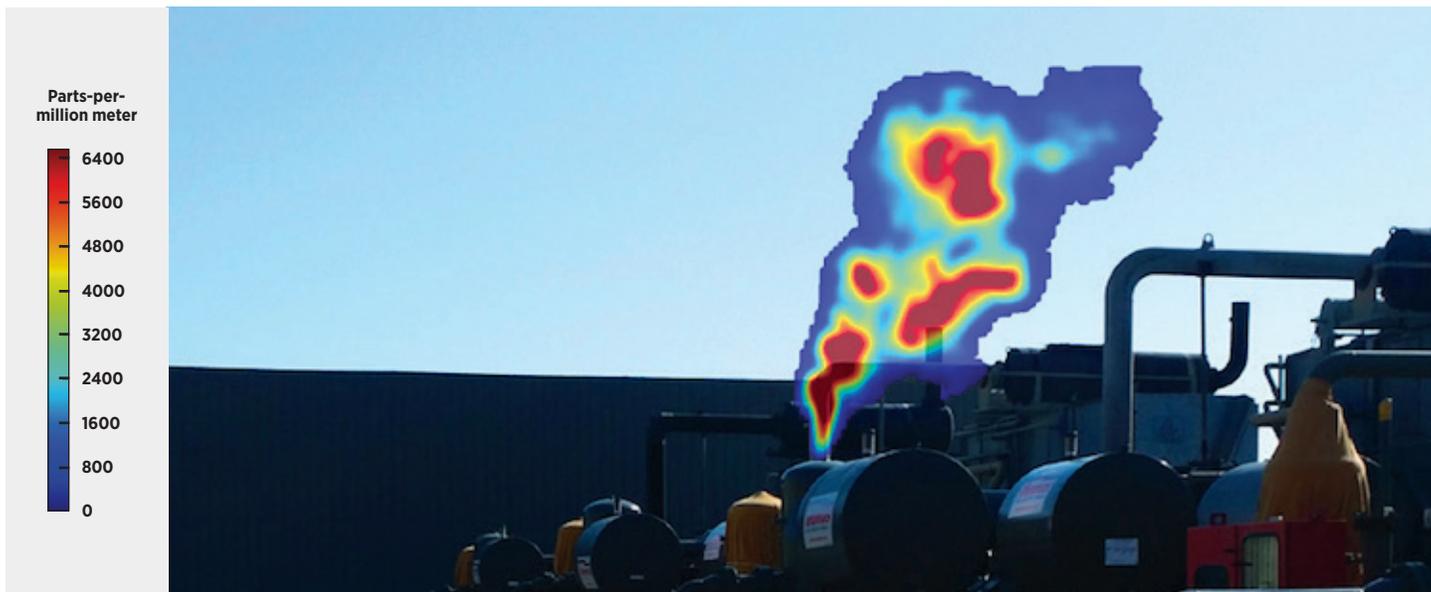
work location: Luanda, Angola
 hometown: Luanda, Angola

Mayomona de Miguel, who has worked in most major crude oil production areas in Angola, is part of the Chevron team working to apply data analytics to reduce flaring. "We have real-time data, so we can react quickly and effectively to maintain and improve the environmental performance we've achieved. The results have been fantastic," said de Miguel. Chevron Angola's most recent GHG emissions reduction efforts continued the company's legacy of environmental and technological advancement. "We have reduced flaring in our major production areas by 44 percent since 2013," he said. This sustained success is the result of investment in infrastructure that enables the elimination of routine flaring and the reduction of nonroutine flaring across 33 oil production facilities.

enterprisewide average flare gas volume rate direct, operated basis



The 2015 and 2016 enterprisewide flare gas volume rate increased due to the startup of major capital projects (MCPs). We anticipate that the enterprisewide flare gas volume rate will decrease after steady-state operations of the MCPs are achieved.



Rebellion Photonics' Gas Cloud Imaging technology provides gas detection videos and images of methane and other gases. The color scale corresponds to gas concentration.

4.4.4 Managing fugitive methane emissions

We continue to design, construct and operate our facilities with an eye toward reducing emissions from our operations and limiting fugitive emissions. We monitor and verify the integrity of our wells and production equipment with regular inspections and safety tests. To more efficiently track fugitive emissions, we use infrared cameras in select oil and gas operations to help pinpoint and remedy leaks. We continue to test and deploy new innovations to improve our capacity to detect and reduce emissions.

Our leadership in this area includes being a founding member of the American Petroleum Institute–led Environmental Partnership.

We have retrofitted or replaced more than 1,000 continuous high-bleed pneumatic controllers from our onshore U.S. facilities with low-emitting or non-continuous-bleed technologies to reduce emissions. In addition to making operational commitments, Chevron has participated in workshops to share best practices with other operators and has taken action to implement the lessons learned from these workshops.

In addition, Chevron provides financial and technical support to research efforts, including the Collaboratory to Advance Methane Science and the OGCI. Chevron also continues to serve on the Industrial Advisory Board of the Methane Emissions Test and Evaluation Center (METEC), a Colorado State University and U.S. Department of Energy advanced research facility.



Chevron was an early partner of Rebellion Photonics in its efforts to develop and deploy innovative gas imaging technology, which currently is used primarily as an early warning system for gas loss of containment. In addition to being a customer, Chevron has provided Rebellion Photonics with technical expertise to help scale up its product, make it more reliable and improve the user experience. Chevron is currently working with Rebellion Photonics to apply its technology to methane detection, to enable further reductions in emissions.



Dr. Beverly Coleman
Ph.D., Air Technology Engineer,
Energy Technology Company

work location: San Ramon, California
hometown: Austin, Texas

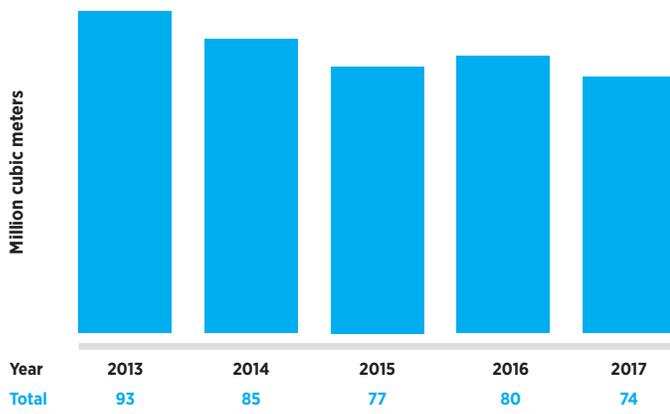
Beverly Coleman's training as a Ph.D. environmental engineer helped prepare her to deploy advanced technology to identify and track the invisible. That is exactly what she does as an air quality researcher for Chevron's Energy Technology Company. She plays an integral role in deploying automated gas imaging technology at Chevron, enabling the detection of dozens of gases quickly, accurately and safely. In 2014, Coleman also piloted Chevron's first automated gas detection camera, a system that has now been deployed at many of the company's facilities around the world. "Most industrial gases can't be seen with the naked eye," she said. "This technology enables the visualization of gas from up to a mile away. It not only shows you where the gas is, but also can identify the kind of gas." Coleman relishes the challenges of her job. "I love to research technologies and practices that I believe will help meet our facilities' needs so that we can be prepared for the challenges ahead. I enjoy working on cutting-edge technologies."

4.4.5 Managing water resources

Water plays a critical role in both the development and processing of oil and natural gas. Chevron strives to conserve, reuse and recycle water in water-constrained areas.

Chevron monitors the amount of both fresh and nonfresh water withdrawn across the enterprise, as shown in Section 5: Metrics, on Page 18. From 2013 through 2017, Chevron’s withdrawal of fresh water decreased by 20 percent.

enterprisewide fresh water withdrawn



In 2016, we withdrew a greater amount of fresh water than in 2015 due to increased cooling needs and a leak that we subsequently repaired at our Pascagoula Refinery, and insufficient recycled water being available at our Richmond Refinery. 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, nor does it include water that is brought to the surface when extracting oil and gas.



Asha Kailasam
Water Strategy Project Manager,
Mid-Continent Business Unit

work location: Houston, Texas
hometown: Chennai, India

Before earning an M.B.A. and a master of science degree in the United States, Asha Kailasam studied mechanical engineering in India. Today Kailasam oversees Chevron’s water use throughout its operations, from worker drinking water to oil and gas production and water disposal. Much of her day-to-day work revolves around deploying water recycling units for use in hydraulic fracturing and analyzing new water treatment technologies to further improve Chevron’s sustainable management of this valuable resource. It is Chevron’s focus on sustainable water management that makes Kailasam especially passionate about her work. She believes that “[a] low-cost technology breakthrough would have a tremendous impact across the entire industry.”

Managing water use in hydraulic fracturing

Chevron strives to reduce the amount of fresh water used in our hydraulic fracturing operations. Hydraulic fracturing involves injecting a mixture of fluids under high pressure into deep shale formations, creating hairline cracks through which previously inaccessible oil and natural gas molecules can flow. For hydraulic fracturing in the Permian Basin, Chevron endeavors, whenever possible, to use brackish water, which is not suitable for human consumption or agricultural use. As shown in the chart below, more than 95 percent of the water used in our well completions in the Permian Basin is from brackish water sources.

water use in well completions permian basin



Water recycling at our refineries

We also partner with local communities to reuse water. For over a decade, Chevron has provided capital and operational funding to the East Bay Municipal Utility District for a facility in Richmond. Over the past three years, more than 40 percent of the water used by the Richmond Refinery was recycled water, making it the largest user of recycled water in the San Francisco Bay Area. Refer to chevron.com/water for additional success stories related to water management.

Through conservation, reuse and recycling, our operations promote the efficient use of water in water-constrained areas.

4.5 chevron technology ventures

We believe that meeting a growing demand for energy requires a broad mix of energy sources and unprecedented advances in technology. Chevron Technology Ventures (CTV) helps make that happen by pursuing new business solutions and innovative technologies that have the potential to enhance the way Chevron produces and delivers affordable, reliable, ever-cleaner energy. CTV fosters innovation outside and inside Chevron, supporting vibrant startup ecosystems externally and championing technology integration and innovation internally.

CTV has actively managed an investment portfolio since 1999. In 2018, CTV announced the launch of its Future Energy Fund. With an initial commitment of \$100 million, the Chevron Future Energy Fund was established to invest in breakthrough technologies that enable the ongoing transition to a greater diversity of energy sources, advancing carbon emission reductions from oil and gas, as well as exploring other efficient and low-carbon energy value chains. For example, as highlighted on this page and on [Page 17](#), CTV has invested in ChargePoint, Natron Energy and Carbon Engineering.



-chargepoint+

ChargePoint, based in Campbell, California, has built the world's leading electric vehicle charging network and offers a comprehensive suite of charging solutions across Europe and North America as well as in Asia and Australia. ChargePoint is the only charging technology company in the market that designs, develops and manufactures hardware and software solutions in every EV-charging category: at home, at work, around town and on the road. Leading EV hardware makers and other partners rely on the ChargePoint network to make data available via mobile apps as well as online and through vehicle navigation systems. ChargePoint plans to build its network across Europe and North America, as well as to improve driver experience and expand fleet solutions in anticipation of continued rapid growth in electrified transportation.



Mark Nelson

Vice President, Midstream, Strategy, Policy

fuels for transport in 2100

In my role, I engage with some of the leading thinkers on climate change. This year, during a session at the Bipartisan Policy Center in Washington, D.C., I was asked about Chevron's view on fuels for various means of transportation beyond 2100.

I shared that we regularly perform deep-dive analyses of trends in transportation that could fundamentally change the type and quantity of fuel our customers demand. Recently, we took a look at personal mobility, including several emerging dynamics, such as:

- Trends in vehicle ownership and new models of shared mobility.
- Technology advancements in autonomous vehicles.
- Investments in public transit infrastructure.
- Alternative vehicle adoption and charging infrastructure deployment.
- Urban planning that favors walking and cycling.
- Government ambitions to ban new internal combustion engine vehicle sales.
- Interaction with other markets, such as offsets.

Broadening and deepening our perspective has enabled Chevron to identify potential opportunities to be more responsive to our customers' current and future demands.



Carbon Engineering is an innovative British Columbia-based company advancing Direct Air Capture (DAC) technology, which can remove CO₂ directly from the atmosphere, and is working on applying this technology to industrial-scale plants. Carbon Engineering's Air to Fuels™ technology uses air, water and renewable energy to convert CO₂ captured via DAC into lower-carbon-intensity fuels that can be used in all the conventional ways—powering cars, trucks and airplanes—without any redesign or retrofit. The company's value proposition extends across an emerging value chain as it works to commercialize the next generation of carbon capture technology while also advancing carbon conversion, through which emissions can be transformed to valuable end products that supply existing global markets.



Natron Energy

Natron Energy was founded in 2012 as a spin-out of research at Stanford University. The developer of a new generation of sodium-ion battery products based on a novel electrode chemistry, the company serves energy storage applications that include critical backup power systems, material handling, behind-the-meter application and renewables support. Natron's battery offers higher performance advantages over incumbent technologies, including improved power density, faster recharge and significantly longer cycle life, compared to lithium-ion storage. Widespread resource availability and lower cost further support the company's value proposition. Natron Energy plans to adapt its battery technology, originally developed for data center and utility-scale applications, to meet the power requirements of the emerging and dynamic electric vehicle market.



Jesse Teichman
Investment Manager,
Chevron Technology Ventures

work location: Houston, Texas
hometown: Denver, Colorado

Jesse Teichman is paid to explore the future. As an investment manager for CTV, he is a key player in determining where to invest the \$100 million Future Energy Fund. "We're not looking to address only today's challenges, we're looking ahead to the emerging technologies that will direct where the energy industry is going." Teichman is excited about what the future holds for a rapidly evolving energy market. "Through our investments, we're gaining a much richer understanding of where these business models may lead and what potential opportunities may arise for Chevron."

4.6

in summary: increased actions and greater investments

Chevron is a leader in improving how affordable, reliable, ever-cleaner energy is developed and delivered to meet global demand. In 2018, our innovative workforce continued to act to lower our GHG emissions intensity and improve our operations. We also invested in companies addressing GHG emissions challenges and progressing lower-carbon technologies.

section 5 update

metrics

performance data from 2017 corporate responsibility report

Environmental performance ¹	2017	2016	2015	2014	2013
Greenhouse gas					
Equity basis					
Direct GHG emissions (Scope 1), equity basis (million metric tons of CO ₂ -equivalent) ^{2, 3, 4}	56	58	58	56	57
GHG emissions from imported electricity and steam (Scope 2), equity basis (million metric tons of CO ₂ -equivalent) ^{2, 4}	4	4	4	5	5
GHG emissions from exported electricity and steam, equity basis (a type of Scope 3 emissions) (million metric tons of CO ₂ -equivalent) ^{2, 4}	4	4	5	5	5
GHG emissions from third-party use of our products, equity basis (a type of Scope 3 emissions) (million metric tons of CO ₂) ^{2, 5}	376	364	368	358	363
Operated basis					
Direct GHG emissions (Scope 1), operated basis (million metric tons of CO ₂ -equivalent) ^{2, 3, 4}	63	64	66	66	69
GHG emissions from imported electricity and steam (Scope 2), operated basis (million metric tons of CO ₂ -equivalent) ^{2, 4}	5	6	6	6	6
Methane emissions, direct, operated basis (million metric tons of CO ₂ -equivalent) ⁴	4	6	6	6	7
Upstream GHG emissions intensity, direct, operated basis (metric tons of CO ₂ -equivalent per 1,000 barrels of oil-equivalent production) ⁴	31	33	34	34	36
Upstream direct GHG emissions (Scope 1), operated basis (million metric tons of CO ₂ -equivalent) ⁴	45	45	47	47	52
Refining GHG emissions intensity, direct, operated basis (metric tons of CO ₂ -equivalent per 1,000 barrels of crude oil and other refinery feed) ⁴	36	36	35	37	38
Refining direct GHG emissions (Scope 1), operated basis (million metric tons of CO ₂ -equivalent) ⁴	15	15	15	15	15
Average flare gas volume rate, direct, operated basis (million standard cubic feet per day) ⁶	508	625	615	563	692
Energy efficiency					
Total energy consumption, operated assets and non-operated joint venture refineries (trillion BTUs) ⁷	809	830	865	920	881
Total energy consumption, operated assets	654	671	711	744	697
Total energy consumption, operated assets and non-operated joint venture refineries (million gigajoules) ⁷	854	876	913	970	929
Total energy consumption, operated assets	690	708	750	785	735
Manufacturing Energy Index (Refining) (no units) ⁷	85.0	84.6	85.2	87.6	88.8
Upstream Energy Intensity (thousand BTUs per barrel of oil-equivalent) ⁷	303	308	330	341	344
Pipeline Energy Intensity (BTUs per barrel of oil-equivalent-mile) ⁷	13	20	24	29	31
Shipping Energy Intensity (BTUs per metric ton-mile) ⁷	39	43	32	49	51
Non-Manufacturing Energy Index (Oronite, Lubricants, etc.) (no units) ⁷	77	75	79	86	82
Natural resources – water					
Fresh water withdrawn (million cubic meters) ⁸	74	80	78	85	93
Fresh water consumed (million cubic meters) ⁸	73	79	77		
Nonfresh water withdrawn (million cubic meters) ⁸	41	36	43	41	37

footnotes are on Page 19

notes to page 18

1 This section reflects 2017 data collected as of April 13, 2018. All data are reported on an operated basis unless otherwise noted.

2 The World Resources Institute/World Business Council for Sustainable Development *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* defines three “scopes” that Chevron uses to report GHG emissions. Scope 1 includes direct emissions from sources within a facility. Scope 2 includes indirect emissions from electricity and steam that Chevron imports. Scope 3 includes all other indirect emissions. Chevron reports information related to two types of Scope 3 emissions: emissions associated with electricity and steam that Chevron exports to third parties and emissions from third-party use of our products.

3 Direct GHG emissions related to *production* of energy in the form of electricity or steam exported or sold to a third party have been included in the reported Scope 1 emissions to conform to the 2015 IPIECA Reporting Guidance.

4 2017 direct GHG emissions, on both an equity and operated basis, decreased primarily due to reductions in flaring and asset divestments.

Methane emissions decreased in 2017 due to a change in calculation methodology in our Thailand operations and asset divestments.

Refinements were made in the data reporting for 2015 and 2016 equity and operated GHG emissions.

All six Kyoto GHGs—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride, perfluorocarbons and hydrofluorocarbons—are included in Chevron’s Scope 1 emissions. CO₂, CH₄ and N₂O are accounted for in Chevron’s Scope 2 emissions and in Chevron’s Scope 3 emissions related to the electricity and steam that Chevron exports to third parties.

The following entities are not currently included in the 2017 Chevron corporate GHG inventory: Chevron Phillips Chemical Co., the Caspian Pipeline Consortium, a polyethylene pipe plant and a valve plant in Kazakhstan, and other nonoperated assets in which Chevron has an equity interest of 16 percent or less. Emissions from the Wheatstone asset have been included in the inventory where Chevron has operational control, as defined by Australia’s *National Greenhouse and Energy Reporting Act 2007*.

Information regarding GHG emissions from Chevron Phillips Chemical Company LLC can be found at cpchem.com.

Additional GHG emissions data can be found at chevron.com/ghgmanagement.

5 Chevron calculated emissions from third-party use of our products by multiplying total 2017 Upstream liquids and gas production by emissions factors from API’s *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry* (2004, 2009).

6 The 2017 enterprisewide flare gas volume rate decreased due to improvements made in equipment reliability and lower production in our IndoAsia business unit.

The 2016 average flare gas volume rate has been restated to correct an error.

In 2017, 15 percent of Chevron’s total direct (Scope 1) operated GHG emissions were from process emissions and vented sources, as defined by API’s *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry* (2004, 2009).

7 Total energy consumption and intensity decreased primarily due to asset divestments and four cogeneration plants that were not operating in 2017.

The 2016 energy data have been restated to correct an error and account for additional information that was received after the publication of the 2016 Corporate Responsibility Report.

Refining energy performance is measured by the Manufacturing Energy Index (MEI), which is calculated using the Solomon Energy Intensity Index methodology. The MEI includes operated assets and nonoperated joint venture refineries.

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

8 Fresh water withdrawn totals decreased in 2017 (relative to prior years) in part due to leaks that were repaired and asset divestments. In addition, our operations in the Permian Basin continued their transition to the use of brackish water in lieu of fresh water for well completions. This transition contributed to an enterprisewide decrease in fresh water withdrawn and an increase in nonfresh water withdrawn as drilling activities increased in 2017.

2016 fresh water withdrawn, fresh water consumed and nonfresh water withdrawn have been restated to reflect additional information that was received after the 2016 Corporate Responsibility Report was published.

Produced water is excluded from fresh water withdrawn, fresh water consumed and nonfresh water withdrawn.

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.

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 our March 2018 report and this update align with the recommendations of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD), as the TCFD has described the categories, and

where the relevant information can be found in our March 2018 report and this update. Further information can be found in Chevron's 2017 Annual Report Form 10-K, *Climate Change Resilience: A Framework for Decision Making (2018)*, *Managing Climate Change Risks: A Perspective for Investors (2017)* and Chevron's Corporate Responsibility Reports.

TCFD recommendation*	disclosure	location		
Governance				
Disclose the organization's governance around climate-related risks and opportunities.	(a) Describe the Board's oversight of climate-related risks and opportunities.	Board-level committees	1.1 (Update)	
		Public Policy Committee	1.2.1	
		Other Board-level committees	1.2.1	
		Board member qualifications	1.3 (Update)	
	(b) Describe management's role in assessing and managing climate-related risks and opportunities.	Executive-level committees	1.2 (Update)	
		Enterprise Leadership Team	1.2.1 (Update)	
	Global Issues Committee	1.2.2 (Update)		
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 climate-related risks and opportunities the organization has identified over the short, medium and long terms.	Chevron's strategic and business planning processes	3.2	
	(b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.	Managing Chevron's portfolio	3.3	
		Business planning	3.3.1	
		Capital project approvals	3.3.2	
	(c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Testing resilience of Chevron's portfolio against the IEA's Sustainable Development Scenario	3.4	
Risk management				
Disclose how the organization identifies, assesses and manages climate-related risks.	(a) Describe the organization's processes for identifying and assessing climate-related risks.	Operational risk	2.1.1	
		Physical risk	2.1.2	
		Geopolitical and legislative risk	2.1.3	
		Strategic risk	2.1.4	
	(b) Describe the organization's processes for managing climate-related risks.	Operational risk	2.1.1	
		Physical risk	2.1.2	
		Geopolitical and legislative risk	2.1.3	
		Strategic risk	2.1.4	
	(c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	Integration of climate change into risk management	2.1	
	Metrics and targets			
	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	(a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Metrics	5 (Update)
		(b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions, and the related risks.	Metrics	5 (Update)
(c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.		Corporate Scorecard performance measures	4.2 (Update)	

*References to March 2018 report and this update. See Section 6 Update: About This Report.

section 6 update

about this report

This update supplements our March 2018 *Climate Change Resilience: A Framework for Decision Making* report. It should be considered with our entire 2018 report, including our approach to Risk Management and Strategy in Sections 2 and 3 of the March 2018 report. As with our other performance measures, we will report on annual progress toward the methane and flaring performance measures announced in this update as part of our Annual Proxy Statement starting in 2020. We will also continue to assess our risk management process and develop our strategies, including testing our portfolio. Aligned with the TCFD, we may update 2018's voluntary climate change report regarding those elements as warranted.

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. 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 Forward-Looking Statements Warning [at the beginning 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.

This report contains information from third parties, such as the IEA. Chevron makes no representation or warranty as to the third-party information. This report also includes reference to other entities and their trademarks. Where necessary, Chevron received permission to cite third-party sources and incorporate third-party trademarks, but the information, data and trademarks remain under the control and direction of the third parties. Where Chevron has used information, such as displaying data from third parties in graphical form, it has noted the source.

This report contains terms used by the TCFD, as well as information about how the disclosures in this report align with the recommendations of the TCFD as the TCFD has described the categories. In doing so, Chevron does not intend to and is not endorsing or adopting these phrases or recommendations. In using these terms and referencing the recommendations, Chevron is not obligating itself to use the terms in the way defined by the TCFD, nor is it obligating itself to comply with any specific recommendations or to provide any specific disclosure. Chevron makes no representation or warranty as to the TCFD's use or definition of specific terms or recommendations. For example, with respect to the use of the term "material," individual companies are best suited to determine what information is "material" under the long-standing U.S. Supreme Court definition of that term and whether to disclose this information in U.S. Securities and Exchange financial filings.

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.

The terms "update" and "report" are used to refer collectively to this update and our March 2018 report.



**this report and additional
information on how
we view and address
climate change-related
issues can be found at
[chevron.com/climatechange](https://www.chevron.com/climatechange)**

learn more > [chevron.com/climatechange](https://www.chevron.com/climatechange)



Chevron Corporation

6001 Bollinger Canyon Road, San Ramon, CA 94583-2324 USA
www.chevron.com

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