2017 corporate responsibility report

performance data

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performance data

These tables include our quantitative environmental, safety and social performance data. For complete reporting, including performance data, visit chevron.com/reporting.

Environmental performance[1]	2017	2016	2015	2014	2013
Accidental release prevention and response					
Petroleum spills to land and water (volume in thousand barrels)[2]	**3.4**	**0.7**	**0.8**	**0.8**	**2.1**
Total volume recovered	3.1	0.3	0.6	0.4	1.4
Petroleum spills to land and water (number of spills)[2]	**59**	**62**	**63**	**79**	**133**
Spills of significance (number of spills)[3]	**13**	**7**	**14**		
Natural resources – water					
Fresh water withdrawn (million cubic meters)[4]	**74**	**80**	**78**	**85**	**93**
Fresh water consumed (million cubic meters)[4]	**73**	**79**	**77**		
Nonfresh water withdrawn (million cubic meters)[4]	**41**	**36**	**43**	**41**	**37**
Wastewater					
Average oil concentration in discharges to surface water (parts per million)[5]					
Upstream	8	9	10	9	10
Refining	1	1	1	1	2
Total amount of oil discharged to surface water (thousand metric tons)[5]					
Upstream	0.9	1.2	1.3	1.3	1.3
Refining	0.04	0.04	0.04	0.05	0.08

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Environmental performance,[1] continued	2017	2016	2015	2014	2013
Greenhouse gas					
Equity basis					
Direct GHG emissions (Scope 1), equity basis (million metric tons of CO_2-equivalent)[6, 7, 8]	**56**	**58**	**58**	**56**	**57**
GHG emissions from imported electricity and steam (Scope 2), equity basis (million metric tons of CO_2-equivalent)[6, 8]	**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)[6, 8]	**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)[6, 9]	**376**	**364**	**368**	**358**	**363**
Operated basis					
Direct GHG emissions (Scope 1), operated basis (million metric tons of CO_2-equivalent)[6, 7, 8]	**63**	**64**	**66**	**66**	**69**
GHG emissions from imported electricity and steam (Scope 2), operated basis (million metric tons of CO_2-equivalent)[6, 8]	**5**	**6**	**6**	**6**	**6**
Methane emissions, direct, operated basis (million metric tons of CO_2-equivalent)[8]	**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)[8]	**31**	**33**	**34**	**34**	**36**
Upstream direct GHG emissions (Scope 1), operated basis (million metric tons of CO_2-equivalent)[8]	**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)[8]	**36**	**36**	**35**	**37**	**38**
Refining direct GHG emissions (Scope 1), operated basis (million metric tons of CO_2-equivalent)[8]	**15**	**15**	**15**	**15**	**15**
Average flare gas volume rate, direct, operated basis (million standard cubic feet per day)[10]	**508**	**625**	**615**	**563**	**692**
Energy efficiency					
Total energy consumption, operated assets and non-operated joint venture refineries (trillion BTUs)[11]	**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)[11]	**854**	**876**	**913**	**970**	**929**
Total energy consumption, operated assets	690	708	750	785	735
Manufacturing Energy Index (Refining) (no units)[11]	**85.0**	**84.6**	**85.2**	**87.6**	**88.8**
Upstream Energy Intensity (thousand BTUs per barrel of oil-equivalent)[11]	**303**	**308**	**330**	**341**	**344**

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Environmental performance,[1] continued	2017	2016	2015	2014	2013
Energy efficiency, continued					
Pipeline Energy Intensity (BTUs per barrel of oil-equivalent-mile)[11]	13	20	24	29	31
Shipping Energy Intensity (BTUs per metric ton–mile)[11]	39	43	32	49	51
Non-Manufacturing Energy Index (Oronite, Lubricants, etc.) (no units)[11]	77	75	79	86	82
Air emissions					
Total volatile organic compounds (VOCs) emitted (thousand metric tons)[12]	200	147	144	134	147
Total sulfur oxides (SO_x) emitted (thousand metric tons)[12]	56	66	84	112	141
Total nitrogen oxides (NO_x) emitted (thousand metric tons)[12]	159	148	148	138	147
Waste					
Hazardous waste generated (million metric tons)[13]	0.4	0.6	0.7	1.0	0.9
Hazardous waste disposed of (million metric tons)[13]	0.3	0.4	0.3	0.8	0.8
Hazardous waste recycled (million metric tons)[13]	0.1	0.3	0.4	0.1	0.1
Fines and settlements					
Number of environmental, health and safety fines paid and settlements entered into, equity basis[14]	101	102	135	292	284
Cost of environmental, health and safety fines paid and settlements entered into, equity basis (millions of dollars)[14]	$40.5	$6.7	$3.9	$57.1	$119.2

Supply chain[15,16]	2017	2016	2015	2014	2013
Total goods and services spending (billions of dollars)	$24.8	$27.3	$35.8	$40.9	$38.8
Total goods and services spending with U.S.-based businesses (billions of dollars)	$11.2	$10.7	$13.5	$15.4	$15.3
Total goods and services spending with U.S.-based small businesses (billions of dollars)	$1.6	$1.7	$2.1	$2.3	$2.4
Total goods and services spending with U.S.-based woman- and minority-owned businesses (billions of dollars)	$0.6	$0.5	$0.7	$0.9	$0.9

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Global employee diversity[17]	2017	2016	2015	2014	2013
Number of regular employees at year-end	48,596	51,953	58,178	61,456	61,345
Number of service station employees at year-end	3,298	3,248	3,316	3,259	3,205
Number of U.S. employees at year-end	22,048	23,418	26,448	28,666	28,974
Percent U.S. employees represented by unions	11	11	10	10	10
Percent women in total workforce	25	24	24	25	24
Percent women represented at mid-level and above	16	15	14	14	13
Percent women and non-Caucasian men represented at senior executive levels	34	31	31	31	30
Percent employees working in their home country	95	94	93	92	91
Percent workforce in North America	44	45	45	46	46
Percent workforce in Asia-Pacific	28	28	29	29	29
Percent workforce in Africa	14	14	13	13	13
Percent workforce in Europe/Middle East	8	7	7	6	6
Percent workforce in South America	3	4	4	4	4

U.S. Equal Employment Opportunity Commission statistics[17]	2017	2016	2015	2014	2013
Percent minorities among total employees	39	38	37	36	36
Percent women among total employees	30	30	30	30	29
Percent minorities among executives and senior managers	16	13	13	12	12
Percent minorities among first- and mid-level managers	32	30	29	29	27
Percent women among executives and senior managers	19	18	17	16	16
Percent women among first- and mid-level managers	29	29	28	29	28
Percent minorities among professionals (women and men)	35	35	35	34	33
Percent women among professionals	33	33	33	32	32

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Health and safety performance[18]	2017	2016	2015	2014	2013
Total Recordable Incident Rate (incidents per 200,000 work-hours)[19]					
Workforce	0.13	0.14	0.18	0.18	0.21
Benchmark	0.26	0.26	0.23	0.33	0.35
Employees	0.09	0.10	0.10	0.10	0.15
Benchmark	0.23	0.24	0.24	0.28	0.29
Contractors	0.15	0.16	0.20	0.21	0.23
Benchmark	0.28	0.27	0.22	0.36	0.38
Lost-Time Incident Frequency (Days Away From Work incidents and fatalities per million work-hours)[19]					
Workforce	0.09	0.10	0.10	0.11	0.13
Benchmark	0.25	0.28	0.28	0.36	0.38
Employees[20]	0.08	0.10	0.10	0.06	0.14
Benchmark	0.28	0.32	0.38	0.39	0.42
Contractors	0.10	0.11	0.10	0.12	0.12
Benchmark	0.23	0.25	0.23	0.35	0.36
Days Away From Work Rate (incidents per 200,000 work-hours)[19]					
Workforce	0.016	0.017	0.019	0.021	0.020
Benchmark	0.048	0.051	0.054	0.070	0.072
Employees[20]	0.012	0.018	0.020	0.011	0.026
Benchmark	0.054	0.063	0.075	0.077	0.083
Contractors	0.018	0.016	0.018	0.023	0.018
Benchmark	0.045	0.044	0.044	0.067	0.067
Number of work-related fatalities					
Workforce	6	10	3	3	16
Employees	2	1	0	0	2
Contractors	4	9	3	3	14
Work-related fatal accident rate (work-related employee or contractor fatalities per 100 million work-hours)[19]					
Workforce	1.32	2.03	0.51	0.49	2.71
Benchmark	0.85	2.23	0.63	0.78	1.84
Employees	1.77	0.82	0.00	0.00	1.44
Contractors	1.17	2.44	0.67	0.63	3.11
Work-related fatal incident rate (work-related incidents with employee or contractor fatalities per 100 million work-hours)	**1.32**	**0.81**	**0.51**	**0.49**	**1.02**
Motor Vehicle Crash Rate (workforce vehicle incidents per million miles driven)[21]	**0.04**	**0.03**	**0.02**	**0.04**	**0.04**
Number of process safety Tier 1 events (ANSI/API Recommended Practice 754 guidance)[22,23]	**22**	**22**	**29**	**19**	**36**
Upstream	14	16	18	15	22
Downstream and chemicals	7	6	10	3	10
Midstream	1	0	1	1	4

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notes to pages 1 through 5

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

2 Chevron reports petroleum spills to land and water to conform to the 2015 IPIECA Reporting Guidance. Spills to land and water that are greater than or equal to one barrel are included. Spills to secondary containment and chemical spills are excluded.

Of the 3.4 thousand barrels of petroleum spilled to land and water, 1.9 were spilled as a result of events outside Chevron's operational control, such as sabotage.

3 The 13 spills of significance that Chevron experienced in 2017 ranged in size from 0.01 to 1.7 thousand barrels. Of the 5.3 thousand barrels spilled in total, 4.8 were spilled to secondary containment.

Corrections were made to the number of spills of significance reported for 2015 and 2016.

For purposes of conforming to the 2015 IPIECA Reporting Guidance, Chevron defines a spill of significance as a process safety Tier 1 loss-of-primary containment (LOPC) event (as defined by American National Standards Institute/American Petroleum Institute [ANSI/API] Recommended Practice [RP] 754) with a consequence of a release of material greater than the threshold quantities described in Table 1 of ANSI/API RP 754 in any one-hour period. Spills to secondary containment, regardless of actual environmental impact, are included, as are chemical spills. Releases to air are excluded.

4 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. Refer to Page 17 of this report for additional information.

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.

5 Oil concentration is determined by the sampling of effluent streams, using methods required or recommended by regulatory agencies or authorities, where applicable. Chevron reports the total cumulative amount of oil discharged to surface water excluding spills, which are reported separately.

6 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.

7 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.

8 2017 direct GHG emissions, on both an equity and operated basis, decreased primarily due to reductions in flaring and asset divestments. Refer to Page 13 of this report for additional information.

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 (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride, perfluorocarbons and hydrofluorocarbons—are included in Chevron's Scope 1 emissions. CO_2, CH_4 and N_2O 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.

9 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).

10 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).

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11 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. 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).

12 VOC and NO_x emissions increased in 2017 due to the startup of major capital projects. SO_x emissions decreased due to reductions in flaring and refinements made in data collection processes.

Refinements were made in the data reporting for 2016 NO_x and VOC emissions.

For compiling and reporting air emissions data, Chevron follows regulatory definitions of VOC. SO_x emissions include SO_2 and SO_3, reported as SO_2-equivalent. NO_x emissions include NO and NO_2 (reported as NO_2-equivalent) and exclude N_2O.

Additional air emissions data can be found at chevron.com/air.

13 Hazardous waste generated, disposed of and recycled decreased due to differences in the types of activities conducted by our operations in 2017.

To conform to the 2015 IPIECA Reporting Guidance, and where appropriate information and data exist, our hazardous waste numbers starting in 2015 exclude remediation waste generated, disposed of and recycled.

Hazardous waste amounts are quantified using methods required or recommended by regulatory agencies or authorities, where applicable. In other instances, similar methods are used, including direct measurement onsite or at the point of shipping, engineering estimates, and process knowledge. Chevron follows the regulatory definitions of hazardous waste applicable to the jurisdictions in which we operate, including *de minimis* specifications (below which hazardous waste quantities do not need to be reported).

14 Data are based on information that was received from the regulatory agency and recorded internally prior to the publication of this report.

15 This section reflects data collected as of March 19, 2018.

16 Historical data have been restated to exclude spending that is ultimately shared with our partners.

17 Global Employee Diversity data and data from the U.S. Equal Employment Opportunity Commission have been rounded to the nearest integer for 2017 and previous years.

18 This section reflects Chevron data collected as of March 12, 2018.

19 Health and safety performance rates include both injury- and illness-related incidents. The API's *Benchmarking Survey of Occupational Injuries, Illnesses and Fatalities in the Petroleum Industry* data are used as industry benchmarks.

20 The 2016 Lost-Time Incident Frequency and Days Away From Work Rates were revised due to two incidents reclassified as Days Away From Work incidents.

21 Data include catastrophic and major incidents only.

22 Process safety Tier 1 (LOPC) events are unplanned or uncontrolled releases resulting in consequences equivalent to those specified by ANSI/API RP 754 and *International Oil & Gas Producers (IOGP) Report 456: Process Safety Recommended Practice on Key Performance Indicators*.

23 2013 Tier 1 event count was revised based on revision of the fire cost threshold to align with industry guidelines.

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