Our performance data

Each year, we measure our ESG performance and report on the safety of our operations, our impact on the environment and our contribution to communities.

About our data

We began reporting voluntarily on our environmental, safety and social performance with the first Shell Report for 1997. We support transparency and share information and data in this report and on www.shell.com.

There are inherent limitations to the accuracy of environmental, safety and social performance data. We recognise that our data will be affected by these limitations, so we continue to improve data integrity by strengthening our internal controls.

We provide all non-financial data in this report on a 100% basis for companies and joint ventures where we are the operator unless otherwise stated, in line with industry practice. We believe that the operational control boundary best reflects existing regulatory requirements, as well as internal policies, for the management of potential health, safety, environmental and social impacts.

Our Scope 1 and 2 greenhouse gas emissions are calculated using two boundaries: operational control and equity. Under the operational control boundary, we report 100% of greenhouse gas emissions from the assets that we operate, regardless of how much equity we have in those assets. Under the equity boundary, we report the greenhouse gas emissions that correspond to our proportion of equity in both operated and non-operated assets. Scope 1 and 2 greenhouse gas emissions under the equity boundary for 2022 are expected to be published later in the year as an update to this report and on our corporate website.

Operations that we acquired or divested during 2022 are included only for the period in which we operated those assets.

We refer to the number of people employed on a full- and part-time basis. This includes people working in Shell subsidiaries, Shell-operated joint ventures and those seconded to non-Shell-operated joint operations, or ventures and associates. Employee metrics exclude the employees in portfolio companies, except for the metrics reflecting total employee numbers, actual number of employees by geography, percentage of women employees, and mandatory training courses.

Other data are collected from external sources, employee surveys and other internal sources as indicated. Some data in the social performance data table come from an internal survey completed by the senior Shell representative in each country. The accuracy of environmental and social data may be lower than that of data obtained through our financial systems.

We only include data in this report for 2022 that were confirmed by the end of February 2023. If incidents are reclassified or confirmed, or if significant data changes occur after preparation of this report, they will be updated in the following year's publication.

Assurance

We have clear standards and reporting requirements for our health, safety, security, environment and social performance (HSSE & SP) data.

Shell companies are required to adopt these standards, which define management roles and responsibilities, the scope of data at facilities and how data are calculated and collected. These standards are part of our HSSE & SP Control Framework.

To ensure we provide accurate information, our assurance process for HSSE & SP data is also a key element of the HSSE & SP Control Framework. Some examples of the assurance mechanisms in this process are:

- self-assessments at the facility level;
- internal audits at all levels of Shell;
- quarterly reviews and assessments of the data at all levels;
- an annual series of meetings between leaders at Group level and senior business managers to discuss outcomes and reporting parameters; and
- formal sign-off by Shell's senior country leaders.

Some acquired companies in new business sectors are not yet in full compliance with the Shell Control Framework. Following specific assessments for each of these companies, dedicated projects were put in place to achieve compliance, with regular updates on progress.

The Carbon Reporting Committee, which was formed in 2021, is tasked with ensuring that greenhouse gas emission measures – absolute emissions and carbon intensity, and associated metrics – comply with all regulatory and legal requirements.

The Report Review Panel of independent experts helps ensure our reporting is balanced, relevant and responsive to stakeholder interests.

LRQA has provided limited assurance of our net carbon intensity (measured and reported using the Net Carbon Footprint methodology), Scope 1 and Scope 2 greenhouse gas emissions data under operational control for 2022, and Scope 3 greenhouse gas emissions from energy products included in our net carbon intensity. Limited assurance means nothing has come to the verifier's attention that would indicate the greenhouse gas data and information, as presented in the Net Carbon Intensity Assertion and the Greenhouse Gas Statement/Assertion, were not materially correct. The most recent assurance statements are available at www.shell.com/ghg.

Conversions into US and Canadian dollars are based on the average exchange rates for 2022.

More in this report Our Powering Progress targets | Our standards and policies | Letter from the CEO
More on Shell websites Powering Progress – transitioning to net-zero emissions

Our standards and policies

Selected commitments, policies and frameworks

We have a number of codes, policies and assurance processes that define how we aim to operate in socially and environmentally responsible ways. These include:

- Shell General Business Principles
- Shell Code of Conduct
- Shell Ethics and Compliance Manual
- Shell Code of Ethics for Executive Directors and Senior Financial Officers
- Shell Supplier Principles
- Shell Health, Safety, Security, Environment & Social Performance Commitment and Policy
- Shell Health, Safety, Security, Environment & Social Performance Control Framework
- Health, Safety, Security, Environment & Social Performance assurance
- Shell's human rights approach
- Voluntary Principles on Security and Human Rights
- Shell's ambition to be a net-zero emissions energy business
- Environmental framework
- Biodiversity commitments
- Purchasing Policy Statement: Sustainable Sourcing of Biocomponents
- Corporate political engagement (PDF)
- Shell's principles for producing tight/shale oil and gas
- We also support a number of external voluntary codes.

Reporting standards and frameworks

Our reporting is informed by a number of standards such as the Ipieca Sustainability Reporting Guidance and the Global Reporting Initiative (GRI). In addition, we map our disclosures against the Sustainability Accounting Standards Board's Oil and Gas Exploration and Production Standard, the World Economic Forum's Stakeholder Capitalism Metrics (core) and are a founding member of and a signatory to the United Nations Global Compact. In our Annual Report, we set out our climate-related financial disclosures consistent with all of the Task Force on Climate-related Financial Disclosures' Recommendations and Recommended Disclosures. Guidance we take into account includes:

- Global Reporting Initiative
- Task Force on Climate-related Financial Disclosures
- Sustainability Accounting Standards Board
- CDP
- Ipieca
- United Nations Global Compact
- United Nations Sustainable Development Goals

More in this report Our Powering Progress targets | Letter from the CEO
More on Shell websites Powering Progress – transitioning to net-zero emissions

Our Powering Progress targets

In February 2021, Shell launched Powering Progress, which sets out our strategy to accelerate the transition of our business to net-zero emissions, purposefully and profitably. It is designed to integrate sustainability with our business strategy, in support of our purpose – to power progress together by providing more and cleaner energy solutions.

Socio-economic, political and market factors sometimes affect our portfolio choices. While no decisions have been made, existing global business targets are currently under review, as part of normal strategy evolution. We expect to provide further insights during our Capital Markets Day in June 2023. Read more in the cautionary note.

Selected targets and commitments under Powering Progress include:

Achieving net-zero emissions

Working with our customers and across sectors to accelerate the transition to net-zero emissions.

- Shell's climate target is to become a net-zero emissions energy business by 2050.
- Our targets include reducing our absolute Scope 1 and 2 emissions by 50% by 2030 compared to 2016 levels, on a net basis, and reducing the carbon intensity of the energy products we sell by 6-8% by 2023, 9-12% by 2024, 9-13% by 2025, 20% by 2030, 45% by 2035 and 100% by 2050.
- In 2022, we linked the pay of more than 16,500 staff to our target to reduce the carbon intensity of our energy products by 9-12% by 2024, compared with 2016.
- We have committed to eliminate routine gas flaring from our Upstream-operated assets by 2025.
- We have set a target to keep our methane emissions intensity for operated oil and gas assets (including liquefied natural gas) below 0.2% by 2025.

Respecting nature

Protecting the environment, reducing waste and making a positive contribution to biodiversity.

Biodiversity

- Our ambition is to have a positive impact on biodiversity.
- Our new projects in areas rich in biodiversity – critical habitats – will have a net positive impact on biodiversity, starting implementation in 2021.
- Our nature-based solution projects, which protect, transform or restore land, will have a net positive impact on biodiversity, starting implementation in 2021.
- We will replant forests, achieving net-zero deforestation from new activities, while maintaining biodiversity and conservation value, starting implementation in 2022.

Water

- Our ambition is to conserve fresh water by reducing consumption and increasing reuse and recycling.
- We will reduce the amount of fresh water consumed in our facilities, starting by reducing fresh-water consumption by 15% by 2025, compared with 2018 levels, in areas where there is high pressure on fresh-water resources.

Circular economy and waste

- Our ambition is to use resources and materials efficiently and to increase reuse and recycling.
- We are aiming for zero waste by reducing waste generated and increasing reuse and recycling in our businesses and supply chains. We aimed to set goals for waste reduction, reuse and recycling by the end of 2022.
- We will work with our suppliers and contractors to help end plastic waste in the environment:
  - By 2030, we will increase the amount of recycled plastic in Shell-branded packaging to 30% and ensure that the packaging we use for our products is reusable or recyclable.
  - We will increase the amount of recycled materials used to make our products, starting with plastics.

Air quality

We are helping to improve air quality by reducing emissions from our operations and providing cleaner ways to power transport and industry.

Collaboration and reporting

We are strengthening external partnerships and improving transparency on performance.

- Supply chain: We will include requirements in our purchasing policies to reflect our environmental framework, and take the energy efficiency, material efficiency and sustainability of products into consideration in our purchases.
- External partnerships: We will ensure external partnerships inform key areas of development and delivery of our ambitions.
- External reporting: We will transparently report performance in our annual Sustainability Report.

Powering lives

Improving people's lives through our products and activities, contributing to local communities and championing inclusion.

- In line with our Powering Progress strategy, Shell is striving to bring reliable electricity to people in emerging markets who do not yet have it.
- Shell is working towards achieving 35% representation of women in our senior leadership positions by 2025 and 40% by 2030.
- We aim to increase racial and ethnic representation across our workforce so that we better reflect the communities in which we work and live.
- At Shell, we seek to provide a safe, caring and inclusive environment for LGBT+ and PWD (people with disabilities) staff so that they can be themselves and reach their full potential.
- By 2030, we will make our global network of service stations more inclusive and accessible to customers with physical disabilities.

More in this report Sustainability at Shell | Our journey to achieving net zero | Letter from the CEO
More on Shell websites Powering Progress – transitioning to net-zero emissions

Safety performance data

Personal safety [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Fatalities [B]	Number	**2**	8	0	7	2	SHS-3	EM-EP-320a.1	403-9
Employees	Number	**0**	0	0	3	0	SHS-3	EM-EP-320a.1	403-9
Contractors	Number	**2**	8	0	4	2	SHS-3	EM-EP-320a.1	403-9
Fatal accident rate	Number per 100 million hours	**0.4**	1.7	0.0	1.4	0.4	SHS-3	EM-EP-320a.1	403-9
Employees	Number per 100 million hours	**0.0**	0.0	0.0	1.6	0.0	SHS-3	EM-EP-320a.1	403-9
Contractors	Number per 100 million hours	**0.7**	2.9	0.0	1.2	0.6	SHS-3	EM-EP-320a.1	403-9
Serious injury, illness and fatality (SIF) [C] [D]	Number	**8**	32	23	35	–	-	-	-
Employees	Number	**0**	5	5	9	–	-	-	-
Contractors	Number	**8**	27	18	26	–	-	-	-
Serious injury, illness and fatality frequency (SIF-F) [C] [D]	Number per 100 million hours	**1.7**	6.9	6.0	7.5	–	-	-	-
Employees	Number per 100 million hours	**0.0**	2.7	2.7	4.9	–	-	-	-
Contractors	Number per 100 million hours	**2.8**	9.8	6.8	7.8	–	-	-	-
Total recordable case frequency (TRCF)	Number per million hours	**1.0**	0.9	0.7	0.9	0.9	SHS-3	EM-EP-320a.1	403-9
Employees	Number per million hours	**0.7**	0.5	0.4	0.6	0.7	SHS-3	EM-EP-320a.1	403-9
Contractors	Number per million hours	**1.1**	1.1	0.9	1.1	1.0	SHS-3	EM-EP-320a.1	403-9
Lost time injury frequency (LTIF)	Number per million hours	**0.4**	0.3	0.2	0.3	0.3	SHS-3	EM-EP-320a.1	403-9
Employees	Number per million hours	**0.4**	0.3	0.2	0.3	0.2	SHS-3	EM-EP-320a.1	403-9
Contractors	Number per million hours	**0.4**	0.4	0.3	0.3	0.3	SHS-3	EM-EP-320a.1	403-9

[A] In line with industry standards, we distinguish three contract modes. Mode 1: contractor/supplier performs work under Shell's HSSE Management System (HSSE MS); Mode 2: contractor/supplier performs work under its own HSSE MS, which is materially equivalent to Shell's HSSE MS; Mode 3: contractor/supplier performs work under its own HSSE MS. Also in line with industry standards, we report on safety performance only for contract modes 1 and 2. We have updated some of our historical figures following a review of the data.

[B] Includes fatal occupational injuries and illnesses except for those related to COVID-19. There were two COVID-19-related occupational illnesses in 2020 that resulted in death (0 employees, 2 contractors) and one COVID-19-related fatality in 2021 (0 employees, 1 contractor).

[C] Defined as a serious work-related injury or illness, including those that resulted in fatality or a life-altering event. Life-altering event is defined as a long-term or permanent injury or illness with significant impact on daily activities. Examples of SIF include, but are not limited to, permanent total disability, amputation of a body part (full or partial), reduced bodily mobility (full or partial), third-degree burns, impaired vision, hearing, sense of taste or smell.

[D] Data before 2019 are not available. The number of SIF cases for 2019 and 2020 reflects the best estimate. Combined workforce SIF frequency for 2019-20 was adjusted to account for some uncertainty in the number of SIF cases.

Road transport safety [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Road transport safety performance							SHS-4	-	-
Severe motor vehicle incident frequency rate [B]	Number of severe motor vehicle incidents per 100 million kilometres driven	**3.1**	1.7	2.1	3.5	3.1	SHS-4	-	-
Number of severe motor vehicle incidents [B]	Number	**14**	8	10	20	19	SHS-4	-	-
Number of road-transport-related fatalities (employees and contractors)	Number	**1**	0	0	2	0	SHS-4	-	-
Kilometres driven	Million km	**456**	473	471	579	605	SHS-4	-	-

[A] In line with industry standards, we distinguish three contract modes. Mode 1: contractor/supplier performs work under Shell's HSSE Management System (HSSE MS); Mode 2: contractor/supplier performs work under its own HSSE MS, which is materially equivalent to Shell's HSSE MS; Mode 3: contractor/supplier performs work under its own HSSE MS. Also in line with industry standards, we report on safety performance only for contract modes 1 and 2.

[B] Severe motor vehicle incident is defined as a motor vehicle incident resulting in a fatality, serious injury or a rollover of a vehicle.

Process safety [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Operational process safety events [B] [C]	Number	**66**	103	103	130	121	SHS-6	EM-EP-540a.1	-
Tier 1	Number	**15**	38	34	41	35	SHS-6	EM-EP-540a.1	-
Upstream	Number	**3**	7	10	7	6	SHS-6	EM-EP-540a.1	-
Integrated Gas, Renewables and Energy Solutions	Number	**2**	2	3	1	0	SHS-6	EM-EP-540a.1	-
Downstream	Number	**9**	29	20	32	28	SHS-6	EM-EP-540a.1	-
Other	Number	**1**	0	1	1	1	SHS-6	EM-EP-540a.1	-
Tier 2	Number	**51**	65	69	89	86	SHS-6	EM-EP-540a.1	-
Upstream	Number	**1**	13	14	22	23	SHS-6	EM-EP-540a.1	-
Integrated Gas, Renewables and Energy Solutions	Number	**10**	4	3	7	6	SHS-6	EM-EP-540a.1	-
Downstream	Number	**38**	46	49	59	54	SHS-6	EM-EP-540a.1	-
Other	Number	**2**	2	3	1	3	SHS-6	EM-EP-540a.1	-

[A] We have updated some of our historical figures following a review of the data.

[B] Process safety events are classified according to guidance from the International Association of Oil & Gas Producers and the American Petroleum Institute.

[C] In 2022, there were three Tier 1 sabotage-related events (not included in the above data). The classification of sabotage-related process safety events is made on the best-endeavours basis.

Health

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Total recordable occupational illness frequency (TROIF) (employees only) [A]	Number per million hours	**0.2**	0.4	0.2	0.5	0.4	SHS-3	EM-EP-320a.1	403-10

[A] Does not include COVID-19-related occupational illnesses. There were 122 COVID-19-related employee occupational illnesses in 2022.

Security [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Using armed security	% of countries	**16**	14	14	20	21	SHS-7	-	-
Using armed company security	% of countries	**1**	3	1	1	3	SHS-7	-	-
Using armed contractor security	% of countries	**9**	8	8	11	10	SHS-7	-	-

[A] Data obtained from an internal survey completed by the senior Shell representative in each country.

More in this report Our Powering Progress targets | Greenhouse gas and energy data | Letter from the CEO
More on Shell websites Our strategy: Powering Progress | Our approach | Transport safety | Community road safety

Greenhouse gas and energy data

Net carbon intensity (NCI)

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
NET CARBON INTENSITY [A] [B]									
Net carbon intensity	gCO_2e/MJ	**76**	77	75	78	79	-	-	-
Estimated total energy delivered by Shell	Trillion (10^12) MJ	**16.29**	17.89	18.40	21.05	22.00	-	-	-
Share of energy delivered per energy product type [C] [D] [E]									
Oil products and gas-to-liquids	%	**44**	45	47	56	55	-	-	-
Gas	%	**22**	25	21	17	21	-	-	-
Liquefied natural gas	%	**20**	18	19	18	16	-	-	-
Biofuels	%	**1**	1	1	1	1	-	-	-
Power	%	**12**	12	12	9	7	-	-	-
Total estimated greenhouse gas emissions covered by the net carbon intensity calculation [F] [G]	Million tonnes CO_2e	**1,240**	1,375	1,384	1,646	1,731	-	-	-
Carbon intensity of energy products type [H] [I]									
Oil products and gas-to-liquids	gCO_2e/MJ	**91**	91	89	89	88	-	-	-
Gas	gCO_2e/MJ	**65**	66	67	66	67	-	-	-
Liquefied natural gas	gCO_2e/MJ	**70**	70	70	71	71	-	-	-
Biofuels	gCO_2e/MJ	**39**	41	38	39	37	-	-	-
Power	gCO_2e/MJ	**58**	66	48	57	62	-	-	-

[A] The net carbon intensity calculation uses Shell's energy product sales volume data, as disclosed in the Annual Report and Sustainability Report. This excludes certain contracts held for trading purposes and is reported net rather than gross. Business-specific methodologies for net volumes have been applied to oil products, pipeline gas and power. Paper trades that do not result in physical product delivery are excluded. Retail sales volumes from markets where Shell operates under trademark licensing agreements are also excluded from the scope of Shell's net carbon intensity metric.

[B] Acquisitions and divestments are included in the actual performance tracking with the target and baseline year unchanged. Note that acquisitions and divestments could have a material impact on meeting the targets.

[C] Percentage of delivered energy may not add up to 100% because of rounding.

[D] Total volume of energy products sold by Shell, aggregated on an energy basis, with electricity represented as fossil equivalents. This value is derived from energy product sales figures disclosed by Shell in the Annual Report and the Sustainability Report.

[E] Lower heating values are used for the energy content of the different products. A fossil-equivalence approach is used to account for electrical energy, in order to assess electrical energy on the same basis as our other energy products.

[F] Total CO_2e emissions estimated using Shell's Net Carbon Footprint value and the estimate of total delivered energy. Note, this estimated value is calculated from the portfolio average intensity value, which is determined in Shell's Net Carbon Footprint calculation. Total CO_2e emissions are only intended to give an indication of the scope of the emissions included within Shell's Net Carbon Footprint and do not represent an inventory of emissions. Carbon offsets were included in the total estimated GHG emissions covered by the Net Carbon Footprint calculation.

[G] These numbers include well-to-wheel emissions associated with energy products sold by Shell, on an equity boundary basis; they also include the well-to-tank emissions associated with the manufacturing of energy products by others that are sold by Shell. Emissions associated with the manufacturing and use of non-energy products are excluded.

[H] Emissions included in the carbon intensity of power have been calculated using the market-based method.

[I] The carbon intensity of biofuels reflects the global average for biofuels sold by Shell for 2022.

Sales of gas and power [A] [B]

	Unit	2022	2021	2020	2019 [A]	2018	Ipieca	SASB	GRI
Gas	TBtu	**2,876**	3,630	3,009	2,720	3,246	-	-	-
Power	TWh	**243**	247	252	207	179	-	-	-

In certain cases, prior to 2019, it was not possible to disaggregate sales of Shell and third-party gas volumes. To avoid double-counting these sales volumes were not included in the above figures.

[A] From 2019, gas and power sales volumes are reported based on a revised methodology. Sales volumes reported exclude those related to pure trading activities.

[B] For 2018-2021, table shows sales of gas and power produced by third-parties. From 2022, Shell's own power generation is also included.

Scope 1 GHG emissions (operational control) [A] [B] [C] [D]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Direct GHG emissions (Scope 1)	Million tonnes CO_2e	**51**	60	63	70	71	CCE-4	EM-EP-110a.1	305-1
Carbon dioxide (CO_2)	Million tonnes	**49**	58	61	67	69	CCE-4	EM-EP-110a.1	305-1
Methane (CH_4)	Thousand tonnes	**40**	55	67	91	92	CCE-4	EM-EP-110a.1	305-1
Nitrous oxide (N_2O)	Thousand tonnes	**1**	1	1	1	1	CCE-4	EM-EP-110a.1	305-1
Hydrofluorocarbons (HFCs)	Tonnes	**26**	25	30	29	31	CCE-4	EM-EP-110a.1	305-1
Sulphur hexafluoride (SF_6)	Tonnes	**0.01**	0.01	0.01	0.01	0.03	CCE-4	EM-EP-110a.1	305-1
Perfluorocarbons (PFC)	Tonnes	**0**	0	0	0	0	CCE-4	EM-EP-110a.1	305-1
Nitrogen trifluoride (NF_3)	Tonnes	**0**	0	0	0	0	CCE-4	EM-EP-110a.1	305-1
Scope 1 emissions by business									
Upstream	Million tonnes CO_2e	**8.3**	11.7	12.8	12.9	14.8	CCE-4	EM-EP-110a.1	305-1
Integrated Gas	Million tonnes CO_2e	**14.7**	15.5	14.1	16.3	13.0	CCE-4	EM-EP-110a.1	305-1
Downstream	Million tonnes CO_2e	**27.3**	32.6	35.8	40.2	42.7	CCE-4	EM-EP-110a.1	305-1
Refining [E]	Million tonnes CO_2e	**14.6**	20.1	23.4	28.0	29.1	CCE-4	EM-EP-110a.1	305-1
Chemicals	Million tonnes CO_2e	**11.5**	11.0	10.8	10.5	11.6	CCE-4	EM-EP-110a.1	305-1
Other Downstream [F]	Million tonnes CO_2e	**1.2**	1.4	1.6	1.8	2.1	CCE-4	EM-EP-110a.1	305-1
Other [G]	Million tonnes CO_2e	**0.2**	0.2	0.2	0.2	0.8	CCE-4	EM-EP-110a.1	305-1
Scope 1 emissions by country									
USA	Million tonnes CO_2e	**10**	13	16	19	20	CCE-4	EM-EP-110a.1	305-1
Middle East	Million tonnes CO_2e	**8**	9	9	9	10	CCE-4	EM-EP-110a.1	305-1
Netherlands	Million tonnes CO_2e	**7**	7	7	7	7	CCE-4	EM-EP-110a.1	305-1
Singapore	Million tonnes CO_2e	**4**	5	6	6	7	CCE-4	EM-EP-110a.1	305-1
Australia	Million tonnes CO_2e	**5**	5	4	7	4	CCE-4	EM-EP-110a.1	305-1
Canada	Million tonnes CO_2e	**4**	5	5	6	6	CCE-4	EM-EP-110a.1	305-1
Nigeria	Million tonnes CO_2e	**3**	5	5	4	4	CCE-4	EM-EP-110a.1	305-1
Germany	Million tonnes CO_2e	**3**	3	3	3	4	CCE-4	EM-EP-110a.1	305-1
Malaysia	Million tonnes CO_2e	**2**	2	3	2	3	CCE-4	EM-EP-110a.1	305-1
United Kingdom	Million tonnes CO_2e	**2**	2	2	2	2	CCE-4	EM-EP-110a.1	305-1
International waters	Million tonnes CO_2e	**1**	1	1	2	2	CCE-4	EM-EP-110a.1	305-1
Rest of the world	Million tonnes CO_2e	**1**	2	3	3	4	CCE-4	EM-EP-110a.1	305-1

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Scope 1 emissions by source									
CO_2 emissions	Million tonnes	**49**	58	61	67	69	CCE-4	EM-EP-110a.2	305-1
Combustion	Million tonnes	**41**	47	50	53	54	CCE-4	EM-EP-110a.2	305-1
Flaring	Million tonnes	**4**	5	4	7	6	CCE-4	EM-EP-110a.2	305-1
Venting and process	Million tonnes	**4**	6	6	8	9	CCE-4	EM-EP-110a.2	305-1
Fugitives	Million tonnes	**0**	0	0	0	0	CCE-4	EM-EP-110a.2	305-1
CH_4 emissions	Thousand tonnes	**40**	55	67	91	92	CCE-4	EM-EP-110a.2	305-1
Combustion	Thousand tonnes	**6**	7	11	13	13	CCE-4	EM-EP-110a.2	305-1
Flaring	Thousand tonnes	**12**	19	15	19	18	CCE-4	EM-EP-110a.2	305-1
Venting and process	Thousand tonnes	**16**	22	29	44	45	CCE-4	EM-EP-110a.2	305-1
Fugitives	Thousand tonnes	**6**	7	12	15	16	CCE-4	EM-EP-110a.2	305-1
Other greenhouse gases	Million tonnes CO_2e	**0.2**	0.2	0.3	0.3	0.3	CCE-4	EM-EP-110a.2	305-1
Methane (CH_4) emissions									
Methane emissions in CO_2 equivalent [H]	Million tonnes CO_2e	**1.0**	1.4	1.7	2.3	2.3	CCE-4	EM-EP-110a.1	305-1
Methane emissions intensity - assets with marketed gas	%	**0.05**	0.06	0.06	0.08	0.08	CCE-4	EM-EP-110a.1	305-1
Methane emissions intensity - assets without marketed gas	%	**0.01**	0.01	0.01	0.01	0.01	CCE-4	EM-EP-110a.1	305-1
Upstream flaring [I]									
GHG emissions from flaring	Million tonnes CO_2e	**3.0**	4.5	3.8	5.9	5.2	CCE-4	EM-EP-110a.2	305-1
Total hydrocarbons flared	Million tonnes	**0.8**	1.3	1.1	1.8	1.5	CCE-4	EM-EP-110a.2	305-1
Nigeria	Million tonnes	**0.4**	0.8	0.6	0.7	0.6	CCE-4	EM-EP-110a.2	305-1
Rest of the world	Million tonnes	**0.4**	0.4	0.5	1.2	1.0	CCE-4	EM-EP-110a.2	305-1
Total hydrocarbons flared - routine	Million tonnes	**0.1**	0.2	0.3	0.5	0.6	-	-	-
Total hydrocarbons flared - non-routine	Million tonnes	**0.7**	1.0	0.8	1.4	0.9	-	-	-
Upstream flaring intensity [J]	%	**0.6**	0.8	0.6	0.9	0.8	-	-	-
GHG emissions from exported energy [K]	Million tonnes CO_2e	**2**	3	3	3	3	CCE-4	EM-EP-110a.2	305-1

[A] Greenhouse gas emissions (GHG) comprise carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride. The data are calculated using locally regulated methods where they exist. Where there is no locally regulated method, the data are calculated using the 2009 API Compendium, which is the recognised industry standard under the GHG Protocol Corporate Accounting and Reporting Standard. There are inherent limitations to the accuracy of such data. Oil and gas industry guidelines (Ipieca/API/IOGP) indicate that several sources of uncertainty can contribute to the overall uncertainty of a corporate emissions inventory. We have estimated the overall uncertainty for our direct GHG emissions to be around 3% for 2022.

[B] GHG emissions were calculated using global warming potential (GWP) factors from the IPCC's Fourth Assessment Report. For comparison, our Scope 1 emissions would have been 51 million tonnes in 2022 if we were to use GWPs from IPCC's Fifth Assessment Report.

[C] GHG emissions in this table do not include carbon credits.

[D] Split by business or country may not add up to the total due to rounding.

[E] Includes Scotford Upgrader and Quest Carbon Capture and Storage. Excludes CO_2 captured and sequestered by Quest, but Scope 1 and 2 GHG emissions from operating Quest are included.

[F] Includes emissions from other Downstream assets and activities (e.g. shipping, lubricants and trading & supply).

[G] Includes emissions from assets and activities reported by the Projects & Technology business and Global Functions.

[H] Methane emissions were converted to CO_2 equivalents using GWPs from the IPCC's Fourth Assessment Report. For comparison, our methane emissions would have been 1.1 million tonnes in CO_2 equivalents in 2022 if we were to use GWPs from IPCC's Fifth Assessment Report.

[I] Includes Upstream and Integrated Gas businesses.

[J] Calculated as total hydrocarbons flared divided by sum of total oil and gas wellhead production, LNG and GTL production x 100%.

[K] GHG emissions related to energy production (in the form of electricity, heat or steam) that was exported to another facility or public grid. This is a subset of our Scope 1 GHG emissions.

Scope 2 GHG emissions (operational control) [A] [B]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Scope 2 emissions - market-based method	Million tonnes CO_2e	**7**	8	8	10	11	CCE-4	-	305-2
Scope 2 emissions - location-based method	Million tonnes CO_2e	**8**	9	10	11	11	CCE-4	-	305-2
Scope 2 emissions by business (market-based method)									
Upstream	Million tonnes CO_2e	**0.5**	0.6	0.6	1.1	1.4	CCE-4	-	305-2
Integrated Gas	Million tonnes CO_2e	**1.4**	1.4	1.5	1.6	2.4	CCE-4	-	305-2
Downstream	Million tonnes CO_2e	**5.2**	5.6	6.0	6.9	6.8	CCE-4	-	305-2
Other	Million tonnes CO_2e	**0.1**	0.1	0.1	0.2	0.2	CCE-4	-	305-2
Scope 2 emissions by country (market-based method)									
USA	Million tonnes CO_2e	**2.3**	2.6	3.0	3.1	3.2	CCE-4	-	305-2
Netherlands	Million tonnes CO_2e	**1.5**	1.5	1.4	1.7	1.8	CCE-4	-	305-2
Australia	Million tonnes CO_2e	**1.4**	1.3	1.4	1.6	2.4	CCE-4	-	305-2
Canada	Million tonnes CO_2e	**1.0**	1.2	1.3	2.3	2.0	CCE-4	-	305-2
Singapore	Million tonnes CO_2e	**0.6**	0.5	0.5	0.5	0.5	CCE-4	-	305-2
Germany	Million tonnes CO_2e	**0.2**	0.2	0.3	0.3	0.4	CCE-4	-	305-2
Rest of the world	Million tonnes CO_2e	**0.2**	0.2	0.2	0.3	0.4	CCE-4	-	305-2
Scope 2 emissions by business (location-based method)									
Upstream	Million tonnes CO_2e	**0.4**	0.6	0.6	1.1	1.2	CCE-4	-	305-2
Integrated Gas	Million tonnes CO_2e	**2.4**	2.6	2.7	2.7	2.4	CCE-4	-	305-2
Downstream	Million tonnes CO_2e	**5.2**	5.5	6.1	7.1	6.8	CCE-4	-	305-2
Other	Million tonnes CO_2e	**0.2**	0.1	0.2	0.2	0.2	CCE-4	-	305-2
Scope 2 emissions by country (location-based method)									
USA	Million tonnes CO_2e	**2.3**	2.6	3.1	3.2	3.4	CCE-4	-	305-2
Australia	Million tonnes CO_2e	**2.3**	2.5	2.6	2.6	2.4	CCE-4	-	305-2
Netherlands	Million tonnes CO_2e	**1.3**	1.4	1.3	1.6	1.7	CCE-4	-	305-2
Canada	Million tonnes CO_2e	**1.0**	1.2	1.4	2.3	2.0	CCE-4	-	305-2
Singapore	Million tonnes CO_2e	**0.6**	0.5	0.5	0.5	0.5	CCE-4	-	305-2
Germany	Million tonnes CO_2e	**0.2**	0.2	0.3	0.4	0.3	CCE-4	-	305-2
Rest of the world	Million tonnes CO_2e	**0.3**	0.3	0.4	0.4	0.4	CCE-4	-	305-2

[A] Split by business or country may not add up to the total due to rounding.
[B] We estimated the uncertainty of our 2022 Scope 2 GHG emissions to be around 7% for the market-based method and 6% for the location-based method.

GHG intensities (operational control)

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Upstream and Integrated Gas GHG intensity [A]	Tonne CO_2e/tonne production	**0.179**	0.172	0.159	0.168	0.158	CCE-4	–	305-4
Upstream and Integrated Gas GHG intensity [B]	kg CO_2e/boe	**23**	22	21	22	21	CCE-4	–	305-4
Refinery GHG intensity [C]	Tonne CO_2e/ UEDC™	**0.98**	1.05	1.05	1.06	1.05	CCE-4	–	305-4
Chemical GHG intensity [D]	Tonne CO_2e/tonne production	**1.00**	0.95	0.98	1.04	0.96	CCE-4	–	305-4

[A] In tonnes of Scope 1 and Scope 2 GHG emissions per tonne of oil and gas available for sale, liquefied natural gas and gas-to-liquids production in Integrated Gas and Upstream. 2021 figure does not include Prelude Floating Liquefied Natural Gas (FLNG).

[B] In kilograms of Scope 1 and Scope 2 GHG emissions per boe of oil and gas available for sale, liquefied natural gas and gas-to-liquids production in Integrated Gas and Upstream. 2021 figure does not include Prelude Floating Liquefied Natural Gas (FLNG).

[C] UEDC (Utilised Equivalent Distillation Capacity) is a proprietary metric of Solomon Associates. It is a complexity-weighted normalisation parameter that reflects the operating cost intensity of a refinery based on size and configuration of its particular mix of process and non-process facilities.

[D] Chemical GHG intensity refers to high-value chemicals, which include olefin products (ethylene and propylene) plus the contained butadiene, benzene, acetylene, and high-purity hydrogen production.

Scope 1 and 2 GHG emissions (equity boundary) [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Direct GHG emissions (Scope 1)	Million tonnes CO_2e	**82**	91	98	105	102	CCE-4	EM-EP-110a.1	305-1
Upstream	Million tonnes CO_2e	**16.3**	18.5	20.1	21.7	22.2	CCE-4	EM-EP-110a.1	305-1
Integrated Gas	Million tonnes CO_2e	**26.9**	24.5	24.2	25.9	25.2	CCE-4	EM-EP-110a.1	305-1
Downstream	Million tonnes CO_2e	**38.7**	47.6	53.2	57.3	53.8	CCE-4	EM-EP-110a.1	305-1
Other	Million tonnes CO_2e	**0.2**	0.2	0.2	0.2	0.8	CCE-4	EM-EP-110a.1	305-1
Scope 2 emissions (market-based method)	Million tonnes CO_2e	**8**	**9**	**9**	**11**	**11**	CCE-4	–	305-2
Upstream	Million tonnes CO_2e	**0.5**	0.7	0.7	1.2	1.3	CCE-4	–	305-2
Integrated Gas	Million tonnes CO_2e	**1.2**	1.1	1.0	1.1	1.8	CCE-4	–	305-2
Downstream	Million tonnes CO_2e	**6.2**	6.7	7.1	8.0	7.7	CCE-4	–	305-2
Other	Million tonnes CO_2e	**0.1**	0.1	0.1	0.2	0.2	CCE-4	–	305-2
Scope 2 emissions (location-based method)	Million tonnes CO_2e	**9**	10	10	12	11	-	-	-
Upstream	Million tonnes CO_2e	**0.5**	0.7	0.8	1.2	1.2	CCE-4	–	305-2
Integrated Gas	Million tonnes CO_2e	**1.8**	1.8	1.7	1.8	1.8	CCE-4	–	305-2
Downstream	Million tonnes CO_2e	**6.5**	7.0	7.5	8.3	7.6	CCE-4	–	305-2
Other	Million tonnes CO_2e	**0.2**	0.1	0.2	0.2	0.3	CCE-4	–	305-2

[A] Split by business may not add up to the total due to rounding.

Scope 3 GHG emissions [A] [B]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Purchased goods and services (Category 1)									
Third-party products [C]	Million tonnes CO_2e	**144**	147	147	178	190	CCE-4	-	305-3
Fuel and energy-related activities (not included in Scope 1 or Scope 2) (Category 3)									
Third-party power [D]	Million tonnes CO_2e	**115**	136	103	102	96	CCE-4	-	305-3
Downstream transport and distribution (Category 9)									
Sold own energy products [E]	Million tonnes CO_2e	**5**	6	–	–	–	-	-	305-3
Use of sold products (Category 11)									
Use of sold products [F]	Million tonnes CO_2e	**910**	1,010	1,054	1,271	1,351	CCE-4	-	305-3
Own production [G]	Million tonnes CO_2e	**332**	380	452	564	594	CCE-4	-	305-3
Third-party products [H]	Million tonnes CO_2e	**578**	630	602	708	757	CCE-4	-	305-3

[A] The values in this table reflect estimated Scope 3 emissions included in our net carbon intensity. This excludes certain contracts held for trading purposes and reported net rather than gross. Business-specific methodologies for net volumes have been applied to oil products, pipeline gas and power. Paper trades that do not result in physical product delivery are excluded. Retail sales volumes from markets where Shell operates under trademark licensing agreements are also excluded from the scope of Shell's carbon intensity metric.
[B] Estimated emissions from other Scope 3 categories are published on www.shell.com/ghg. 2022 data will be available around June 2023.
[C] This category includes estimated well-to-tank emissions from purchased third-party refined oil products, natural gas, liquefied natural gas, crude oil and biofuels.
[D] This category includes estimated well-to-wire emissions from the generation of purchased power included in our net carbon intensity.
[E] Estimated emissions from the transport and distribution of sold own oil products, crude oil, liquefied natural gas, gas-to-liquids, natural gas and biofuels.
[F] This category includes estimated emissions from the sales volumes of oil products, natural gas, liquefied natural gas, gas-to-liquids and biofuels.
[G] This category includes estimated emissions from our refinery production, natural gas, liquefied natural gas, gas-to-liquids and biofuel products.
[H] Estimated as the difference between own production and total sold products.

Other greenhouse gas data (operational control) [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Carbon capture and storage and CO_2 transfer out									
CO_2 captured and stored	Million tonnes	**0.97**	1.05	0.94	1.13	1.07	CCE-3	EM-EP-530a.1	305-5
CO_2 transferred out [B]	Million tonnes	**0.35**	0.39	0.30	0.43	0.46	CCE-3	EM-EP-530a.1	305-5
Biogenic CO_2									
Biogenic CO_2 [C]	Thousand tonnes	**7.94**	3.60	0.27	0.00	0.00	-	-	-

[A] We have updated some of our historical figures following a review of the data.
[B] CO_2 captured and transferred to another organisation (for example, sold or given for free) as product or feedstock, which is not included in our Scope 1 emissions.
[C] Direct biogenic CO_2, which is not included in our Scope 1 emissions.

Carbon credits

	Unit [B]	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Total carbon credits retired [A]									
Included in Shell's net carbon intensity target	Million carbon credits	**4.1**	5.1	3.9	2.2	0.0	-	EM-EP-530a.1	305-5
Excluded from Shell's net carbon intensity target	Million carbon credits	**1.7**	1.3	0.4	0.5	n/c	-	EM-EP-530a.1	305-5

[A] Carbon credits retired includes what Shell retires for customer solutions linked with our energy and non-energy products, Shell's corporate travel, and Shell Group and asset retirements.
[B] One carbon credit represents the avoidance or removal of one metric tonne of CO_2 equivalent.
n/c = not collected

Energy use (operational control) [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Total energy use	Million MWh	**199**	223	241	264	268	CCE-6	-	302-1
Own energy generated	Million MWh	**177**	202	219	236	240	CCE-6	-	302-1
Imported electricity	Million MWh	**19**	20	22	27	26	CCE-6	-	302-1
Imported steam and heat	Million MWh	**12**	14	14	17	15	CCE-6	-	302-1
Exported electricity	Million MWh	**7**	11	12	10	10	CCE-6	-	302-1
Exported steam and heat	Million MWh	**2**	2	2	6	3	CCE-6	-	302-1
Consumption of energy from renewable sources									
Renewable sources - onsite energy generation consumed	Million MWh	**0.017**	0.005	0.005	n/c	n/c	CCE-6	-	302-1
Renewable sources - purchased electricity	Million MWh	**2.2**	2.2	1.8	1.5	0.03	CCE-6	-	302-1
Renewable sources - purchased steam	Million MWh	**0.00**	0.00	0.00	n/c	n/c	CCE-6	-	302-1
Renewable sources - electricity exported to grid	Million MWh	**0.3**	0.4	0.4	0.4	n/c	CCE-6	-	302-1
Energy intensity									
Upstream excl. oil sands, LNG and GTL	GJ/tonne production	**1.19**	1.14	1.15	1.07	1.06	CCE-6	-	302-3
Refineries: Refinery Energy Index [B]	Index	**95.6**	96.9	96.1	94.2	94.3	CCE-6	-	302-3
Chemical plants: Chemicals Energy Intensity	GJ/tonne production	**19.3**	18.1	18.7	19.4	18.3	CCE-6	-	302-3

n/c = not collected

[A] We have updated some of our historical figures following a review of the data.

[B] Data are indexed to 2002, based on Solomon Associates Energy Intensity Index methodology.

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Other environmental data

Air emissions [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Acid gases and volatile organic compounds									
Sulphur oxides (SOx)	Thousand tonnes	**36**	32	36	65	74	ENV-5	EM-EP-120a.1	305-7
Upstream	Thousand tonnes	**3**	4	4	15	19	ENV-5	EM-EP-120a.1	305-7
Integrated Gas	Thousand tonnes	**2**	2	3	4	4	ENV-5	EM-EP-120a.1	305-7
Downstream	Thousand tonnes	**30**	26	29	47	51	ENV-5	EM-EP-120a.1	305-7
Other	Thousand tonnes	**0**	0	0	0	0	ENV-5	EM-EP-120a.1	305-7
Nitrogen oxides (NOx)	Thousand tonnes	**93**	105	118	108	111	ENV-5	EM-EP-120a.1	305-7
Upstream	Thousand tonnes	**48**	55	60	40	41	ENV-5	EM-EP-120a.1	305-7
Integrated Gas	Thousand tonnes	**13**	14	12	13	10	ENV-5	EM-EP-120a.1	305-7
Downstream	Thousand tonnes	**31**	36	46	55	58	ENV-5	EM-EP-120a.1	305-7
Other	Thousand tonnes	**1**	1	0	1	2	ENV-5	EM-EP-120a.1	305-7
Volatile organic compounds (VOCs)	Thousand tonnes	**38**	45	47	55	59	ENV-5	EM-EP-120a.1	305-7
Upstream	Thousand tonnes	**10**	17	17	17	25	ENV-5	EM-EP-120a.1	305-7
Integrated Gas	Thousand tonnes	**7**	8	8	15	6	ENV-5	EM-EP-120a.1	305-7
Downstream	Thousand tonnes	**20**	21	22	23	29	ENV-5	EM-EP-120a.1	305-7
Other	Thousand tonnes	**0**	0	0	0	0	ENV-5	EM-EP-120a.1	305-7
Ozone-depleting emissions									
CFCs/halons/trichloroethane	Tonnes	**0.0**	0.0	0.0	0.0	0.0	ENV-5	-	305-6
Hydrochlorofluorocarbons (HCFCs)	Tonnes	**2**	2	6	8	9	ENV-5	-	305-6

[A] Split by business may not add up to the total due to rounding.

Spills of more than 100 kg to the environment

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Spills [A]									
Sabotage spills – number [B]	Number	**75**	106	122	156	109	ENV-6	EM-EP-160a.2	306-3
Sabotage spills – total volume [B]	Thousand tonnes	**0.6**	3.3	1.5	2.3	1.8	ENV-6	EM-EP-160a.2	306-3
Sabotage spills - recovered volume	Thousand tonnes	**0.3**	3.0	1.0	n/c	n/c	ENV-6	EM-EP-160a.2	306-3
Operational spills – number	Number	**54**	42	70	68	93	ENV-6	EM-EP-160a.2	306-3
Nigeria [C] [D]	Number	**10**	9	12	8	15	ENV-6	EM-EP-160a.2	306-3
Rest of the world	Number	**44**	33	58	60	78	ENV-6	EM-EP-160a.2	306-3
Operational spills - total volume [E]	Thousand tonnes	**0.06**	0.05	0.4	0.2	0.9	ENV-6	EM-EP-160a.2	306-3
Nigeria [C]	Thousand tonnes	**0.01**	0.03	0.03	0.03	0.4	ENV-6	EM-EP-160a.2	306-3
Rest of the world	Thousand tonnes	**0.06**	0.02	0.4	0.2	0.5	ENV-6	EM-EP-160a.2	306-3
Operational spills - recovered volume	Thousand tonnes	**0.04**	0.03	0.1	n/c	n/c	ENV-6	EM-EP-160a.2	306-3
Nigeria [C]	Thousand tonnes	**0.00**	0.02	0.01	n/c	n/c	ENV-6	EM-EP-160a.2	306-3
Rest of the world	Thousand tonnes	**0.04**	0.01	0.1	n/c	n/c	ENV-6	EM-EP-160a.2	306-3
Hurricane spills – number [F]	Number	**0**	2	0	0	0	ENV-6	EM-EP-160a.2	306-3
Hurricane spills – total volume [F]	Thousand tonnes	**0.00**	0.03	0	0	0	ENV-6	EM-EP-160a.2	306-3
Hurricane spills - recovered volume	Thousand tonnes	**0.00**	0.01	0	n/c	n/c	ENV-6	EM-EP-160a.2	306-3

n/c - not collected

[A] All spill volumes and numbers are for hydrocarbon spills of more than 100 kilograms to the environment (land or water). We have updated some of our historical figures following a review of the data.

[B] All sabotage- and theft-related spills in 2018-22 occurred in Nigeria.

[C] Nigeria includes SPDC onshore operations and SNEPCo offshore operations.

[D] Nigeria includes SPDC onshore operations (10 operational spills in 2022) and SNEPCo offshore operations (zero operational spills in 2022).

[E] Split between Nigeria and the rest of the world may not add up to the total due to rounding.

[F] This category reflects the spills caused by exceptional natural events, such as hurricanes and earthquakes. 2021 data reflect the impact of Hurricane Ida.

Water use and discharge

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Water use and discharge [A]									
Fresh water withdrawn	Million cubic metres	**156**	166	171	192	199	ENV-1	EM-EP-140a.1	303-3
Fresh water consumed	Million cubic metres	**111**	122	127	145	147	ENV-1	EM-EP-140a.1	303-5
Fresh water consumed in high water stress areas [B]	Million cubic metres	**18**	22	22	25	25			
Fresh water returned [C]	Million cubic metres	**45**	44	45	46	53	ENV-1	EM-EP-140a.1	303-3
Fresh water withdrawn by business									
Upstream	Million cubic metres	**16**	9	6	8	11	ENV-1	EM-EP-140a.1	303-3
Integrated Gas	Million cubic metres	**4**	4	3	4	4	ENV-1	EM-EP-140a.1	303-3
Downstream	Million cubic metres	**134**	151	159	177	182	ENV-1	EM-EP-140a.1	303-3
Other	Million cubic metres	**3**	2	3	3	3	ENV-1	EM-EP-140a.1	303-3
Fresh water withdrawn by country									
USA	Million cubic metres	**71**	84	92	108	109	ENV-1	EM-EP-140a.1	303-3
Canada	Million cubic metres	**20**	21	21	23	24	ENV-1	EM-EP-140a.1	303-3
Singapore	Million cubic metres	**17**	20	19	22	22	ENV-1	EM-EP-140a.1	303-3
Netherlands	Million cubic metres	**15**	16	16	17	16	ENV-1	EM-EP-140a.1	303-3
Germany	Million cubic metres	**13**	13	13	12	14	ENV-1	EM-EP-140a.1	303-3
Rest of the world	Million cubic metres	**20**	12	10	11	15	ENV-1	EM-EP-140a.1	303-3
Fresh water withdrawn by source									
Surface	Million cubic metres	**84**	91	94	98	102	ENV-1	EM-EP-140a.1	303-3
Ground	Million cubic metres	**24**	18	18	18	21	ENV-1	EM-EP-140a.1	303-3
Public utilities [D]	Million cubic metres	**49**	57	60	76	77	ENV-1	EM-EP-140a.1	303-3
Other [E]	Million cubic metres	**0**	0	0	0	0	ENV-1	EM-EP-140a.1	303-3
Produced water disposed	Million cubic metres	**58**	**81**	**88**	**92**	**96**	ENV-1	EM-EP-140a.2	–
Produced water reinjected	Million cubic metres	**2**	17	21	21	22	ENV-1	EM-EP-140a.2	–
Produced water discharged	Million cubic metres	**40**	47	51	51	49	ENV-1	EM-EP-140a.2	–
Produced water exported for disposal or reuse	Million cubic metres	**16**	16	16	19	25	ENV-1	EM-EP-140a.2	–
Oil in effluents to surface environment	Thousand tonnes	**0.9**	**1.0**	**1.4**	**1.3**	**1.4**	ENV-2	EM-EP-140a.2	–
Oil in produced water	Thousand tonnes	**0.6**	0.7	0.9	0.9	0.9	ENV-2	EM-EP-140a.2	–

[A] Fresh water figures do not include once-through cooling water. Breakdown may not add up to the total due to rounding.

[B] At the end of 2022, four of our major facilities were located in areas where there is a high level of water stress based on analysis using water stress tools, including the World Resources Institute's Aqueduct Water Risk Atlas and a local assessment. The facilities are: Pearl gas-to-liquids (GTL) plant in Qatar, Shell Energy and Chemicals Park and the Jurong Island chemical plant in Singapore and the Tabangao import terminal in the Philippines.

[C] Defined as fresh water returned to a fresh-water source.

[D] Includes imported steam.

[E] Includes harvested rainwater and surface run-off collected for use.

Waste management [A]

	Unit	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Waste									
Total waste disposed	Thousand tonnes	**1,982**	1,993	2,049	2,113	1,999	ENV-7	–	306-5
Hazardous waste disposed	Thousand tonnes	**868**	1,025	558	698	592	ENV-7	–	306-5
Upstream	Thousand tonnes	**112**	345	122	90	36	ENV-7	–	306-5
Integrated Gas	Thousand tonnes	**19**	9	26	52	15	ENV-7	–	306-5
Downstream	Thousand tonnes	**646**	650	403	552	537	ENV-7	–	306-5
Other	Thousand tonnes	**91**	20	7	4	4	ENV-7	–	306-5
Non-hazardous waste disposed	Thousand tonnes	**1,114**	969	1,491	1,414	1,407	ENV-7	–	306-5
Upstream	Thousand tonnes	**128**	193	214	252	278	ENV-7	–	306-5
Integrated Gas	Thousand tonnes	**26**	96	18	23	17	ENV-7	–	306-5
Downstream	Thousand tonnes	**886**	607	1,235	1,116	1,095	ENV-7	–	306-5
Other	Thousand tonnes	**74**	73	24	24	17	ENV-7	–	306-5
Waste beneficially reused, recycled or recovered [B]	Thousand tonnes	**457**	399	448	441	419	ENV-7	–	306-4
Upstream	Thousand tonnes	**59**	81	97	58	57	ENV-7	–	306-4
Integrated Gas	Thousand tonnes	**8**	36	15	25	12	ENV-7	–	306-4
Downstream	Thousand tonnes	**384**	276	332	354	328	ENV-7	–	306-4
Other	Thousand tonnes	**6**	7	4	4	3	ENV-7	–	306-4

[A] Split by business: may not add up to the total due to rounding.
[B] Not included in the total waste disposed.

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Social performance data

To ensure that the data are read and interpreted in context, the data below should be read in conjunction with the relevant narratives in our Sustainability Reports, Annual Reports, Diversity Pay Gap Reports, Shell.com and any other sources referenced.

Our people

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Employees (thousand) [A]	**93**	83	88	87	82	-	-	2-7
Our people by geographical area [A]								
Africa	**4**	4	4	4	–	-	-	2-7
Asia	**32**	30	31	31	–	-	-	2-7
Europe	**30**	27	28	27	–	-	-	2-7
North America	**23**	18	20	21	–	-	-	2-7
Oceania	**3**	2	3	2	–	-	-	2-7
South America	**1**	1	2	2	–	-	-	2-7
[i] **Staff forums and grievance procedures**								
% countries with staff access to staff forum, grievance procedure or other support system	**100**	100	100	100	100	SOC-12	EM-EP-210a.3	103-2
Integrity								
Code of Conduct violations [B]	**183**	181	216	263	370	GOV-1	EM-EP-540a.2	102-17

[A] All metrics throughout this section exclude the employees in portfolio companies, except for the metrics reflecting total employee numbers and actual number of employees by geography. The employee numbers for 2021 and 2020 reflect headcount in the Shell HR system and full-time equivalent numbers for portfolio companies, which maintain their own HR systems.

[B] Code of Conduct violations represent the number of reported incidents in the Shell Global Helpline (excluding queries or customer service queries) that have been investigated and closed during the relevant period and where the allegation was found to be (at least partially) true.

[i] Data obtained from an internal survey completed by the senior Shell representative in each country.

Training

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Training days for employees and joint-venture partners (thousand) [A]	**266**	271	234	373	315	SOC-7	-	404-1
Respect in the Workplace training completion rate % [B]	**99.0**	97.7	–	–	–	-	-	-
Conscious Inclusion training completion rate % [B]	**98.0**							

[A] Training days metric excludes the employees in portfolio companies, which maintain their own HR systems.

[B] These are the DE&I mandatory training that must be taken annually for two years by all employees including portfolio companies and contractors. Completion rate refers to 100% of nominated learners minus the % of nominated learners that did not complete their training within the designated period as at December 31

Diversity, equity and inclusion [A]

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Gender								
Board of Directors (% women)	**55.0**	50.0	38.0	42.0	45.0	SOC-5	-	405-1
Board of Directors (% men)	**45.0**	50.0	62.0	58.0	55.0	SOC-5	-	405-1
Executive Committee (% women)	**22.2**	25.0	12.5	12.5	12.5	SOC-5	-	405-1
Executive Committee (% men)	**77.8**	75.0	87.5	87.5	87.5	SOC-5	-	405-1
In senior executive leadership positions (% women) [B] (Ambition: 30%, then gender equality)	**25.4**	27.3	–	–	–	SOC-5	-	405-1
In senior executive leadership positions (% men)	**74.6**	72.7	–	–	–	SOC-5	-	405-1
In senior leadership positions (% women) [C] (Ambition: 35% by 2025; 40% by 2030)	**30.4**	29.5	27.8	26.4	24.0	SOC-5	-	405-1
In senior leadership positions (% men)	**69.6**	70.5	72.2	73.6	76.0	SOC-5	-	405-1
In management positions (% women)	**27.9**	27.2	25.5	24.5	23.7	SOC-5	-	405-1
In management positions (% men)	**72.1**	72.8	74.5	75.5	76.3	SOC-5	-	405-1
In professional positions (% women)	**35.1**	34.3	33.1	30.8	29.9	SOC-5	-	405-1
In professional positions (% men)	**64.8**	65.7	66.9	69.2	70.1	SOC-5	-	405-1
Employees overall (% women) [A]	**33.0**	33.0	32.0	31.0	31.0	SOC-5	-	405-1
Employees overall (% men) [A]	**67.0**	67.0	68.0	69.0	69.0	SOC-5	-	405-1
Graduate hires (% women) (Ambition: 50% every year) [D]	**49.1**	55.1	51.3	44.8	45.8	SOC-5	-	401-1; 405-1
Graduate hires (% men) [D]	**50.9**	44.9	48.7	55.2	53.9	SOC-5	-	401-1; 405-1
Experienced hires (% women) [E]	**40.3**	43.5	39.4	38.9	40.9	SOC-5	-	401-1; 405-1
Experienced hires (% men) [E]	**59.6**	56.5	60.6	61.1	59.1	SOC-5	-	401-1; 405-1
Promotions (% women)	**40.1**	43.7	38.6	39.8	–	SOC-5	-	-
Promotions (% men)	**59.9**	56.3	61.4	60.2	–	SOC-5	-	-
Turnover (% voluntary resignation)	**5.0**	4.4	2.6	3.5	3.6	SOC-6	-	401-1
Turnover (% women voluntary resignation of total women employees)	**6.2**	5.7	3.4	4.7	4.6	SOC-6	-	401-1
Turnover (% men voluntary resignation of total men employees)	**4.5**	3.8	2.3	3.0	3.2	SOC-6	-	401-1
Race/ethnicity [F]								
Board of Directors (Ambition: Maintain or exceed Parker Review recommendation of one director by 2021)	**1**	1	–	–	–	-	-	405-1
Executive Committee (number of ethnic minority) [G]	**1**							
Employees (USA only) [H]								
Asian %	**13.7**	13.0	–	–	–	SOC-5	-	405-1
Black or African American %	**8.7**	8.4	–	–	–	SOC-5	-	405-1
Hispanic Latino %	**11.9**	11.8	–	–	–	SOC-5	-	405-1
White %	**63.5**	65.0	–	–	–	SOC-5	-	405-1
Other racial and ethnic groups % [I]	**2.2**	1.8	–	–	–	SOC-5	-	405-1

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
In senior leadership positions (USA only) [C]						SOC-5	-	405-1
Asian %	**10.1**	10.5	–	–	–	SOC-5	-	405-1
Black or African American %	**8.8**	7.9	–	–	–	SOC-5	-	405-1
Hispanic Latino %	**5.7**	7.5	–	–	–	SOC-5	-	405-1
White %	**74.0**	73.2	–	–	–	SOC-5	-	405-1
Other racial and ethnic groups % [I]	**1.3**	0.8	–	–	–	SOC-5	-	405-1
Employees (UK only) % of those who self-identified [J] [K]								
Asian %	**14.5**	13.1	–	–	–	SOC-5	-	405-1
Black %	**3.7**	3.4	–	–	–	SOC-5	-	405-1
Mixed %	**2.4**	2.4	–	–	–	SOC-5	-	405-1
White %	**76.5**	78.5	–	–	–	SOC-5	-	405-1
Other ethnic minority background %	**3.0**	2.6	–	–	–	SOC-5	-	405-1
In senior leadership positions (UK only) % of those who self-identified [C][L]								
Asian %	**12.3**	10.8	–	–	–	SOC-5	-	405-1
Black %	**1.5**	1.1	–	–	–	SOC-5	-	405-1
Mixed %	**2.0**	1.7	–	–	–	SOC-5	-	405-1
White %	**81.8**	83.5	–	–	–	SOC-5	-	405-1
Other ethnic minority background %	**2.5**	2.8	–	–	–	SOC-5	-	405-1
LGBT+								
Global Workplace Pride Benchmark - measures LGBTIQ+ inclusion practices of internationally active employers	**Ambassador [M]**	Advocate [N]	Advocate [N]	Advocate [N]	–	-	-	-
Human Rights Campaign Foundation's Corporate Equality Index 2022 - Rating Workplaces on equality and inclusion for LGBTQ+ employees (USA only) (% of 100)	**100**	100	100	100	100	-	-	-
Disability inclusion and enABLEment								
Workplace accessibility (number of locations)	**81**	86	83	83	–	–	-	–
Age group (employees)								
Under 30 years old %	**14.0**	13.0	14.0	14.0	–	SOC-5	-	405-1
Between 30-50 years old %	**64.0**	65.0	64.0	71.0	–	SOC-5	-	405-1
Above 50 years old %	**22.0**	22.0	22.0	15.0	–	SOC-5	-	405-1

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Average pay gap - gender and ethnicity								
Average gender pay gap (UK) [O]	**from 11.7% to 20.7%**	17.8	18	18.7	–	SOC-5	-	405-2
Average ethnicity pay gap (UK) [P]	**from -1.3% to 18.7%**	21.9	8.5	–	–	SOC-5	-	-
Parental leave								
Global minimum standard for maternity leave of 16 weeks	**Yes**	Yes	Yes	Yes	Yes	SOC-5	-	401-3
Employee sentiment - diversity, equity and inclusion (DE&I) indicator [Q]								
Shell People Survey DE&I Index (out of 100 points) / compared to top-quartile benchmark for the relevant year	**82 / 84**	80 / 84	–	–	–	-	-	-

[A] All metrics throughout this section exclude the employees in portfolio companies except for the percentage of employees by gender.
[B] The total number of senior executive leadership positions may change from year to year, and our focus is on representation as a % of this total group. Senior executive leadership positions include the Executive Committee.
[C] The total number of senior leadership positions may change from year to year, and our focus is on representation as a % of this total group. Senior leadership is a Shell measure based on salary group levels.
[D] All graduate hires provided data or declared their gender in 2022.
[E] 0.1% of experienced hires did not provide data or chose not to declare in 2022. Experienced hires include all types of hiring except graduate hires.
[F] In addition to Board representation, we have included race and ethnicity data for the USA and UK in line with our Powering Lives commitments.
[G] As ethnic declaration is voluntary, eight out of nine Executive Committee members declared their race and ethnicity.
[H] Employees in the USA at Compensation Grade 10 and above.
[I] "Other racial and ethnic groups" includes the following: American Indian or Alaskan Native; Native Hawaiian or other Pacific Islander; two or more races.
[J] Employees in the UK at Compensation Grade 10 and above.
[K] As ethnic declaration is voluntary, ethnicity declaration rate is not 100% and all calculations are based on a declaration rate of 82.7% in the UK as of December 2022. The 17.3% of our workforce who have not provided data or have chosen not to declare their ethnicity were not included in our calculations.
[L] As ethnic declaration is voluntary, ethnicity declaration rate is not 100% and all calculations are based on a declaration rate of 71.5% for employees in senior leadership positions in the UK as of December 2022. The 28.5% of our senior leadership workforce who have not provided data or have chosen not to declare their ethnicity were not included in our calculations.
[M] "Ambassador" organisations are defined by Workplace Pride as well advanced in their LGBTIQ+ Workplace Inclusion journeys.
[N] "Advocate" organisations are defined by Workplace Pride as breaking new ground for LGBTIQ+ inclusion in their activities around the world and setting the tone for change beyond the workplace in society at large.
[O] The average pay of all men and all women for "Shell in the UK", which includes Shell Energy Retail Limited, is defined in the Shell UK 2022 Diversity Pay Gap report. It excludes bonuses using methodology consistent with the UK's Advisory, Conciliation and Arbitration Service managing gender pay reporting guidance. The guidance was updated in February 2019, and the data snapshot was taken on April 5, 2022. This is different to equal pay which means paying men and women the same salary for performing equivalent work. Shell in the UK has had equal pay for many years, and we conduct regular pay equity analysis to monitor this on an ongoing basis. Please read the Shell UK 2022 Diversity Pay Gap for full context. For 2022 separate figures for each employing company in scope are reported, rather than a single aggregated figure.
[P] The difference in average pay between "Ethnic Minority" and "non-Ethnic Minority" employees is expressed as a percentage of average "non-Ethnic Minority" pay for "Shell in the UK", which includes Shell Energy Retail Limited. It excludes bonuses following the same methodology as our UK gender pay gap reporting. Please read the Shell UK 2022 Diversity Pay Gap for full context. For 2022 separate figures for each employing company in scope are reported, rather than a single aggregated figure.
[Q] Response rate for Shell People Survey was 87% in 2022; 83% in 2021; 86% in 2020; 85% in 2019.

Human rights

		2022	2021	2020	2019	2018	Ipieca	SASB	GRI
[i]	**Child labour (% countries with procedures in place)**								
	Own operations	**100**	100	100	100	100	SOC-4	EM-EP-210a.3.	408-1
	Contractors and suppliers	**100**	100	100	100	100	SOC-4	EM-EP-210a.3.	408-1
[i]	**Forced labour (% countries with procedures in place)**								
	Own operations	**100**	100	100	100	100	SOC-2	EM-EP-210a.3	409-1
	Contractors and suppliers	**100**	100	100	100	100	SOC-2	EM-EP-210a.3	409-1

[i] Data obtained from an internal survey completed by the senior Shell representative in each country.

[$]

Contracting and procurement

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Estimated expenditure on goods and services in lower-income countries ($ billion) [A] [B]	**5.0**	4.2	4.5	5.7	4.1	SOC-14	-	204-1

[A] Estimated expenditure in countries where gross national income amounts to less than $15,000 a year per person (source: UN Development Programme's Human Development Index 2021).

[B] This figure only includes the amount spent on goods and services by Shell Group companies.

Social investment [A]

		2022	2021	2020	2019	2018	Ipieca	SASB	GRI
[$]	Estimated voluntary social investment (equity share) ($ million)	**182**	94	156	116	113	SOC-13	-	203-1
[$]	Estimated social investment spend (equity share) in lower-income countries ($ million) [B]	**92**	72	87	84	102	SOC-13	-	203-1

[A] Social investment spending varies from year to year depending on business climate, locations and types of activities under way. This is voluntary social investment and does not include social investments made through contractual agreements with host governments, voluntary work by Shell employees or donations of equipment.

[B] Estimated voluntary social investment spending in countries where gross national income amounts to less than $15,000 a year per person (source: UN Development Programme's Human Development Index 2021).

[$] Social investment and contracting and procurement data collected via our financial system.

Tax and other payments to governments

	2022	2021	2020	2019	2018	Ipieca	SASB	GRI
Total taxes paid and collected ($ billion)	**68.2**	58.7	47.3	61.3	64.1	GOV-4	-	201-1
Corporate income taxes	**13.4**	6.0	3.4	7.8	10.1	GOV-4	-	201-1
Royalties	**8.2**	6.6	3.5	5.9	5.8	GOV-4	-	201-1
Excise duties, sales taxes and similar levies	**46.2**	46.1	40.4	47.6	48.2	GOV-4	-	201-1
Total other payments to governments ($ billion)	**17.9**	12.8	8.2	12.5	17.9	GOV-4	-	201-1
Production entitlements	**15.1**	10.5	7	10.3	14.3	GOV-4	-	201-1
Bonuses	**0.22**	0.15	0.02	0.3	0.9	GOV-4	-	201-1
Fees	**2.6**	2.1	1.2	1.9	2.7	GOV-4	-	201-1

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