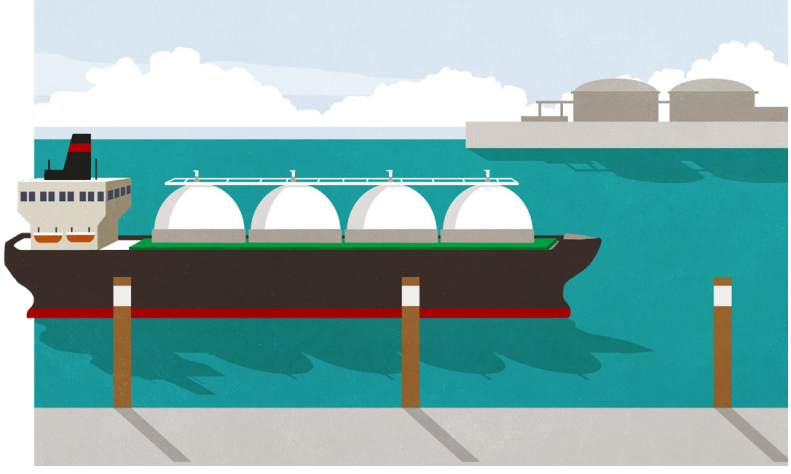
Responsible energy

Shell plc
Sustainability Report 2022



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Read the Shell Sustainability Report online at www.shell.com/sustainabilityreport or download our app:

Digital
The Sustainability Report is published in an online version at www.shell.com/sustainabilityreport. The online version includes additional information, such as an interactive GRI index to enhance usability for the reader. In the event of any discrepancy between the online and hardcopy versions, the information contained in the online report prevails. This hardcopy version is provided for the reader's convenience only.

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Sustainability at Shell

Welcome to the Shell Sustainability Report, which covers our social, safety and environmental performance in 2022. It also sets out our strategy to transition our business to net-zero emissions.

Letter from the CEO

Wael Sawan
Chief Executive Officer

Russia's invasion of Ukraine has caused huge suffering. It has also triggered instability in global energy markets and other sectors. Energy and food prices have risen, causing inflation to spiral in many countries.

Our first response to the invasion was to safeguard our staff in Ukraine and support our people in Russia. We also announced our intention to withdraw from our Russian oil and gas activities in a phased manner, aligned with government guidance. We worked with organisations in Ukraine and neighbouring countries to provide humanitarian aid. By the end of 2022, we had donated $74 million to help the people of Ukraine.

As the war caused disruption to energy supplies, we worked to ensure that people received the energy they need to keep economies running and electricity flowing. This included delivering a record 194 cargoes of liquefied natural gas (LNG) to Europe in 2022 – almost five times our usual average. I am proud of the way Shell staff in the UK and Norway, among many others, also stepped up to produce the oil and gas Europe needs.

We provided help for those struggling with the rising cost of living. In the UK, for example, we announced a £50 million package to support vulnerable energy consumers, and donated millions of pounds to charities to help households pay their energy bills. And in the Netherlands, we are contributing to a government-backed emergency fund for the same purpose.

The recent devastating earthquakes in Turkey and Syria affected many Shell people and their families, although mercifully no staff were injured. Shell has supported relief efforts with the provision of fuel, and chemicals to make foam mattresses and hand sanitiser. We have also made aid donations worth several million dollars, including matching donations made by our staff around the world.

Balanced transition

The energy and cost of living crises have highlighted the need for a balanced energy transition: one in which the world achieves net-zero emissions, while still providing a secure and affordable supply of energy. We expect that LNG will play an important role in such a transition. It provides a critical supply of energy today, and it produces fewer greenhouse gas emissions than coal when used to generate electricity.

In 2022, we made significant investments to increase production of LNG and reduce emissions from the process. We joined two major projects in Qatar, for example. Both will use carbon capture and storage, helping us to offer customers LNG with a lower carbon footprint. We also took a final investment decision to develop the Rosmari-Marjoram gas project in Malaysia, which will be mainly powered by renewable energy.

Net-zero emissions

As we invest in the energy needed today, our target to become a net-zero emissions energy business by 2050 remains at the heart of our strategy. We are making good progress. By the end of 2022, we had reduced carbon emissions from our operations by 30% compared with 2016 on a net basis, more than halfway towards our target of a 50% reduction by 2030.

We have also made progress in supporting our customers in reducing their own emissions, with further investments in wind, solar, biofuels, hydrogen, electric vehicle charging, carbon capture and storage and nature-based solutions.

For example, we won bids with our partners to build four offshore wind farms in Europe and the USA, which together have the potential to generate 7.3 gigawatts of power. We acquired Indian solar developer Sprng Energy. And in 2023, we completed the acquisition of Nature Energy of Denmark, which is Europe's biggest producer of renewable natural gas made from agricultural, industrial and household waste. In Nigeria, we acquired solar provider Daystar Power, which provides reliable power to commercial and industrial customers.

In total, around 41% of our annual spending on research and development goes on projects that contribute to decarbonisation.

Respecting nature

Powering Progress is also about respecting nature – the loss of our natural environment and climate change are interconnected and need to be tackled together. This was reinforced by both United Nations conferences on climate change (COP27) and biodiversity (COP15) in 2022.

Biodiversity, water, circular economy and waste, and air quality: these are the four areas we focus on in our commitments to respect nature.

For instance, we are working to help end plastic waste in the environment. By the end of 2022, more than 30% of Shell-owned service stations had eliminated unnecessary single-use plastic and almost 40% had completely removed single-use plastic bags.

In 2022, we announced plans to increase our global production of pyrolysis oil, made from hard-to-recycle plastics otherwise destined for landfill or incineration, by building a new pyrolysis oil upgrader in the Netherlands. Pyrolysis oil can replace traditional feedstock in our chemical plants.

Powering lives

Shell provides vital energy for homes, businesses and transport. Every year we generate jobs, revenues and taxes in the countries where we operate. In 2022, we employed around 93,000 people in more than 70 countries and spent about $41.5 billion on goods and services, 83% of which we purchased locally in the country of operation. Globally, we paid more than $13 billion to governments in taxes.

Our enterprise development programmes promote entrepreneurship, innovation and meaningful employment in our host countries. In 2022, Shell LiveWIRE trained around 2,685 people and helped create more than 2,170 jobs in 20 countries, while Shell StartUp Engine supported 50 start-ups in areas such as renewable energy and electric mobility.

While we know there is still much more to do, we are working to become one of the most diverse and inclusive organisations in the world. For example, almost one-third of our senior leadership and just under half of our graduate hires are women.

We respect human rights in our business and work hard to ensure that our joint-venture partners and supply chains follow the same principles.

We also continue to support the UN Global Compact's corporate governance principles on human rights, environmental protection, anti-corruption and better labour practices.

Safety and our core values

Although we continue to make progress in safety across our operations and within our industry, we have not been able to eliminate fatal accidents involving Shell employees and contractors. I am saddened to report that two of our contractor colleagues died in 2022, one in Nigeria and one in Pakistan.

Finally, on a personal note, I am proud to be sharing with you this, my first Shell Sustainability Report as CEO. This report shows what we have achieved so far in our work to be a sustainable business. We aim to do this work responsibly, with discipline and at pace to make a positive difference.

Wael Sawan
Chief Executive Officer

More in this report Sustainability at Shell | Our journey to achieving net zero | Our approach to respecting nature | Providing access to energy
More on Shell websites Our strategy: Powering Progress

Powering Progress

Our purpose

To power progress together by providing more and cleaner energy solutions.

Underpinned by our **core values** and our focus on **safety**

Our core values

Honesty | Integrity | Respect for people

More in this report Letter from the CEO | Sustainability at Shell | Sustainability governance | Performance overview
More on Shell websites Our strategy: Powering Progress

Our approach to sustainability

Sustainability at Shell

Powering Progress is our strategy to become a net-zero emissions energy business by 2050, purposefully and profitably, while maintaining a secure supply of energy.

It comprises: generating shareholder value, achieving net-zero emissions, powering lives, and respecting nature. It is a strategy that integrates sustainability with our pursuit of value through high performance.

Our purpose is to power progress together by providing more and cleaner energy solutions. We also expect our employees and contractors to maintain Shell's focus on safety and abide by our core values of honesty, integrity and respect for people.

Powering Progress is a strategy that combines our financial strength and discipline with a dynamic approach to our portfolio of assets and products, so we can seize the opportunities of the energy transition. Shell transforms its portfolio continuously to better meet the clean energy needs of its customers today and in the future.

Read more about what sustainability means at Shell at www.shell.com/sustainability/our-approach/sustainability-at-shell and more about our strategy at www.shell.com/powering-progress.

UN Sustainable Development Goals

We strive to play our part in helping governments and societies achieve the UN's 17 Sustainable Development Goals (SDGs). The goals were one of the considerations in the development of our Powering Progress strategy. We believe the actions we take as part of our Powering Progress strategy can help directly contribute to 13 of the SDGs, while indirectly contributing to others.

Information on how we are contributing to these SDGs can be found throughout this report and at www.shell.com/sdgs.

More in this report Our journey to achieving net zero | Our Powering Progress targets | Sustainability governance | Performance overview
More on Shell websites Our strategy: Powering Progress | What sustainability means at Shell | Commitments, policies and standards | UN Sustainable Development Goals

Sustainability governance

We have comprehensive governance structures throughout Shell, along with performance standards and other controls. These include the Shell General Business Principles, our Code of Conduct and our Health, Safety, Security, Environment and Social Performance (HSSE & SP) Control Framework. They influence the decisions made and actions taken across Shell.

The Safety, Environment and Sustainability Committee (SESCo) is one of four standing committees of the Board of Directors of Shell plc. The overall role of SESCo is to assist the Board in reviewing the policies, practices, targets and performance of Shell, primarily with respect to safety, environment including climate change, and broader sustainability.

In 2022, SESCo held five meetings. The topics discussed in depth by the Committee included personal and process safety, environmental issues, Shell's energy transition targets, remuneration metrics and the challenges faced by Shell companies in Nigeria.

The Committee also reviewed wider matters of public concern such as plastic waste, methane emissions, the flaring of natural gas, water scarcity, just transition, human rights, diversity and inclusion, and access to energy in low- and middle-income countries. The Committee engaged with external stakeholders on the topic of nature-based solutions and gained valuable insights on how Shell's approach is perceived.

SESCo continued to monitor Shell's approach to the health of its employees and contractors, in terms of mental well-being in particular. The Committee also continued to review the security risks faced by Shell and how these risks are being proactively managed.

Read more about SESCo and how Shell manages sustainability at www.shell.com/sustainability/our-approach/governance and in our 2022 Annual Report.

More in this report Our journey to achieving net zero | Our approach to safety | Energy transition | Our approach to respecting nature
More on Shell websites Our strategy: Powering Progress | Board of Directors | Sustainability governance

Performance overview

Performance in 2022

1.7
2021: 6.9
serious injuries and fatalities per 100 million working hours. See Our approach to safety

76 gCO_2e/MJ
2021: 77 gCO_2e/MJ
net carbon intensity, which measures the life-cycle emissions intensity of the portfolio of energy products sold. See Delivering our climate targets

30%
2021: 18%
reduction in our total combined Scope 1 and 2 absolute greenhouse gas emissions compared with 2016, the base year. [A] See Delivering our climate targets

66
2021: 103
operational process safety Tier 1 and 2 events. See Process safety

9.5 billion
2021: 9.1 billion
litres of biofuels went into Shell's petrol and diesel worldwide. [B] See Biofuels

139,000
2021: 87,000
public and private electric vehicle charge points operated by Shell. See Electric vehicle charging

1,790
2021: 1,479
reports to the Shell Global Helpline, where people can report potential breaches of the Code of Conduct. See Ethical leadership

32% increase
2021: 40% decrease
in the number of operational spills of more than 100 kilograms. There were 54 in 2022 compared with 41 in 2021. See Spills

33% decrease
2021: 18% increase
in flaring. Overall flaring decreased to 3 million tonnes of carbon dioxide equivalent compared with 4.5 million tonnes in 2021. See Flaring

$41.5 billion
2021: $37.5 billion
spent on goods and services from around 24,000 suppliers globally. See Supply chain

30.4%
2021: 29.5%
women in senior leadership positions. See Diversity, equity and inclusion

$182 million
2021: $94 million
spent on voluntary social investment. See Social investment

$5 billion
2021: $4.2 billion
spent in countries where gross national income is less than $15,000 a year per person. [C] See Local content

266,000
2021: 271,000
formal training days for employees and joint-venture partners. See Diversity, equity and inclusion

78,300
2021: 60,000
students participated in NXplorers, our flagship STEM programme. See STEM education

[A] From assets and activities under our operational control.
[B] Including around 3 billion litres through our joint venture Raízen.
[C] According to the UN Development Programme's Human Development Index 2021.

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

Remuneration

POWERING **PROGRESS**

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.

Performance indicators related to Shell's journey in the energy transition were part of the 2022 annual bonus scorecard (15% weighting), which applies to almost all of Shell's employees. Energy transition performance indicators were also part of the 2022 Performance Share Plan awards (10% weighting) for around 16,500 employees and the 2022 Long-term Incentive Plan awards (20% weighting) for senior executives.

From 2022, the scope of the "Shell's journey in the energy transition" measure in the annual bonus scorecard has been broadened to equally measure:

- selling lower-carbon products: the proportion of adjusted earnings in our Marketing segment coming from lower-carbon energy products, as well as non-energy products and convenience retail;
- reducing our operational emissions: greenhouse gas abatement projects that reduce our Scope 1 and 2 operational emissions; and
- partnering to decarbonise: progress in rolling out electric vehicle charge points.

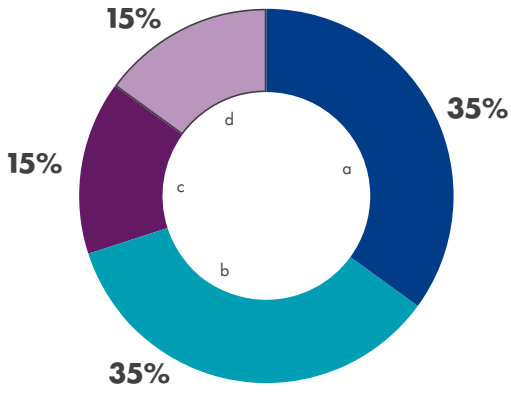
We also introduced a customer excellence measure on the annual bonus scorecard to emphasise the importance of building stronger customer relationships in the energy transition.

The annual bonus scorecard also includes a 15% weighting based on safety performance.

Our Long-term Incentive Plan (LTIP) and Performance Share Plan tie pay for around 16,500 employees directly to achieving our strategic ambitions for the energy transition. This element, vested at 180% of target based on performance to the end of 2022, reflects our progress in transitioning towards a lower-carbon future. The weight of this metric will be increased from 20% to 25% for the most senior employees for the upcoming LTIP cycle (2023-25).

Read more about remuneration in our 2022 Annual Report.

Annual bonus scorecard architecture 2023
Percentage



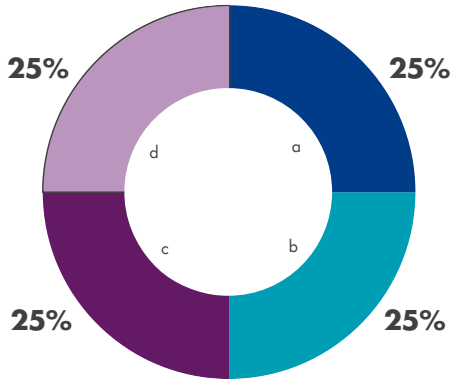
a **Cash flow from operations** (weighted 35%)

b **Operational excellence** (Asset management excellence 15%, project delivery excellence 10%, customer excellence 10%)

c **Shell's journey in the energy transition** (Selling lower-carbon products 5%, reducing operational emissions 5%, partnering to decarbonise 5%)

d **Safety** (Serious injuries and fatalities frequency 7.5%, Tier 1 and 2 process safety 7.5%)

Long-term Incentive Plan performance conditions 2023
Percentage



a **Relative cash generation (cash flow from operations/average capital employed)** (weighted 25%)

b **Relative total shareholder returns** (25%)

c **Absolute organic free cash flow** (25%)

d **Absolute energy transition** (25%)

Performance against the relative metrics is assessed against other energy majors (BP, Chevron, ExxonMobil and TotalEnergies).

More in this report Our journey to achieving net zero | Energy transition | Delivering our climate targets
More on Shell websites Our strategy: Powering Progress | Leadership | Corporate governance

About this report

Selecting the topics

The 2022 Sustainability Report, published on March 28, 2023, is our 26th such report. It details our social, safety and environmental performance in 2022.

Each year we use a structured process to select the report's content. We engage with various groups and individuals to understand specific concerns about our business and its impact, particularly relating to the environment and society. We consider the views of others such as non-governmental organisations, customers, the media, academics, investors and employees.

Input from our Report Review Panel of independent experts helps to ensure that coverage is balanced, relevant and complete.

Read more about our topic selection process at www.shell.com/sustainability/transparency-and-sustainability-reporting/sustainability-reports.

Reporting guidelines

Our reporting is informed by the guidelines developed by Ipieca, the global oil and gas industry association for advancing environmental and social performance across the energy transition, and in accordance with the Global Reporting Initiative (GRI) Standards (see the GRI content index for full details).

As a member of the World Business Council for Sustainable Development, we support the organisation's updated criteria for membership from 2022, which includes requirements for corporate transparency.

The recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) guide our reporting in our Annual Report. Our climate-related financial disclosures are consistent with all of the TCFD recommendations and recommended disclosures. We recognise the value that the recommendations bring.

More detailed information about how we report is available at www.shell.com/sustainability/transparency-and-sustainability-reporting.html.

More in this report Sustainability at Shell | About our data | Our standards and policies | GRI content index
More on Shell websites Our strategy: Powering Progress | Voluntary reporting standards and ESG ratings

Report Review Panel

We use an external review panel to strengthen our sustainability reporting. The panel helps evaluate and improve the quality and credibility of our Sustainability Report. The 2022 Report Review Panel comprised five sustainability and corporate reporting experts:

- Hilary Parsons, UK, formerly Head of Creating Shared Value Engagement, Nestlé (Chair of the Report Review Panel);
- Vanessa Zimmerman, Australia, Chief Executive Officer, Pillar Two;
- Renard Siew, Malaysia, Adviser on Climate Change, Centre for Governance and Political Studies;
- Elizabeth White, USA, Principal Strategist and Global Head Sustainability and Development Impact, Sector Economics and Impact Measurement, IFC World Bank Group; and
- Maria Pontes, UK, Director of Programmes and Partnerships, Earthwatch Europe.

The panel provided input into our 2022 topic selection process. Panel members reviewed the report, discussed Shell's reporting and spoke to relevant Shell employees before preparing their statement. The panel's mandate focused on the quality of Shell's reporting, including credibility, completeness and responsiveness. The panel is not accountable for reviewing the data in the report or material on Shell.com outside the bounds of this report. Panel members are offered an honorarium for their input.

Find out more about the panel at www.shell.com/sustainability-report-review-panel.

Report Review Panel recommendations

"Shell has provided the panel with the opportunity to review two drafts of the 2022 Sustainability Report and to provide written and verbal feedback. This feedback has been considered by Shell in producing the final version of the report.

In 2021, Shell significantly changed its approach to sustainability reporting in order to focus more on the data and less on qualitative and contextual information, which is now referenced on its website. This has resulted in a far more concise and logical report with links to further information located on Shell.com. The panel has not reviewed this additional information as it is not within our remit.

The panel welcomes this more concise approach which recognises the need to provide succinct, digestible information to stakeholders while giving them a brief explanation of context and links to further details. Following the panel's feedback last year that the 2021 report could have included more context, the panel noted an improvement in the balance between data and context over the previous year. We encourage Shell to continue to find ways of achieving this, as qualitative information helps shine light on the significance of the figures.

We note that Shell also presents some data in graphic form in order to illustrate progress on strategic priorities over time. The panel welcomed the inclusion of sections on topical issues such as the war in Ukraine and the cost of living. It also noted that the section on Respecting nature was more informative and specific – a trend the panel hopes will continue.

The panel felt that more could be done to succinctly summarise progress on targets over the year as well as any changes to significant issues. This would assist in identifying what progress had been made since the previous year. In addition, more cross-referencing of topics, such as how human rights relate to supply chain, climate change and biodiversity, would help stakeholders better understand linkages and what Shell is doing to manage these topics. Information related to the Task Force on Climate-related Disclosures could be leveraged in the report.

The panel recommends that Shell look to provide further information and data on the following:

- energy affordability and accessibility;
- the environmental, social and governance risks involved in the transition to renewable solutions (including solar) and in connection with biodiversity;
- offsets, including a breakdown and how this relates to the overall strategy;
- stakeholder engagements, particularly those related to achieving a just transition;
- involvement with the Science Based Targets initiative's social aspects, including inclusion on the social return on investment created; and
- how Shell has reviewed and prioritised its salient human rights risks."

Report Review Panel

January 31, 2023

More in this report Sustainability at Shell | About our data | Our standards and policies | GRI content index
More on Shell websites Our strategy: Powering Progress | Voluntary reporting standards and ESG ratings

Living by our core values

Our Powering Progress strategy is underpinned by our core values of honesty, integrity and respect for people, and our focus on safety. This includes our commitment to doing business in an ethical and transparent way.

Business ethics and transparency

Ethical leadership

POWERING **PROGRESS**

Powering Progress is underpinned by our core values of honesty, integrity and respect for people, and our focus on safety. This includes our commitment to doing business in an ethical and transparent way.

Our core values of honesty, integrity and respect for people underpin our work with employees, customers, investors, contractors, suppliers, non-governmental organisations, the communities where we operate and others. The Shell General Business Principles set out our core values, our responsibilities and the principles and behaviours that guide how we do business. When entering a joint venture operated by a partner, we expect them to apply standards and processes, or principles, that are substantially equivalent to our own.

Code of Conduct

The Shell Code of Conduct explains how employees, contractors and anyone else acting on behalf of Shell must behave to live up to our business principles. The Code of Conduct covers safety, anti-bribery and corruption, fair competition, human rights and other important areas.

Shell employees, contractors and third parties can report any potential breaches of the Code of Conduct confidentially through several channels, including anonymously through a global helpline, operated by an independent provider. The three most frequent categories of alleged Code of Conduct breaches raised via the Shell Global Helpline in 2022 related to harassment, conflict of interest and protection of assets. We maintain a stringent no retaliation policy to protect any person making an allegation in good faith.

In November 2022, we issued the Do the Right Thing guidelines, which bring clarity and consistency to how we manage serious violations of our Code of Conduct. The guidelines help staff to know when to report breaches of the Code of Conduct and feel safe and protected about doing so.

In 2022 there were:

1,790
reports to the Shell Global Helpline

183
confirmed breaches of the Code of Conduct

216
employees or contractor staff subject to disciplinary action

53
people dismissed

Anti-bribery and corruption

Shell has rules on anti-bribery and corruption in its Code of Conduct and Ethics and Compliance Manual. Contractors and consultants are also required to act consistently with our Code of Conduct when working on our behalf.

Shell has around 24,000 suppliers worldwide (see Supply chain). Although our largest suppliers often have their own anti-bribery and corruption training programmes, smaller companies may lack the resources. We offer free training in anti-bribery and anti-corruption practices to selected suppliers and contractors. This training is available in 14 languages. In 2022, we offered training to 503 third-party companies in 23 countries.

Read more at www.shell.com/sustainability/transparency-and-sustainability-reporting/transparency-and-anti-corruption.

Protecting personal data

Shell respects the privacy of individuals and recognises that personal data belong to the individual.

We maintain a data privacy programme, a comprehensive governance structure and established reporting lines to ensure consistent levels of data protection across the Group. Our staff and contractors receive clear guidance and training on the importance of managing data privacy risks.

Whenever we acquire a company, we work to ensure they follow our privacy compliance framework and information management standards. Some of our acquired companies in new business sectors are not yet in full compliance with the Shell Control Framework. We assess each company and put in place projects for them to achieve compliance, and provide regular updates on their progress.

In 2021, Shell's large file transfer system, supplied by a third party, was hacked by cyber criminals. The incident resulted in Shell Turkey paying an administrative penalty in 2022 of around €13,000 to the Turkish data protection authority.

Read more about Shell data privacy rules in our Annual Report and at www.shell.com/privacy.

Cyber security

Shell is subjected to frequent cyber attacks. We continually measure and improve our cyber-security capabilities to reduce the likelihood of successful breaches. Our employees and contract staff receive regular mandatory training to protect our IT systems from threats.

Read more about information technology and cyber security in our 2022 Annual Report.

More in this report Letter from the CEO | Working with our suppliers | Collaborations and stakeholder engagement | Tax transparency
More on Shell websites Our strategy: Powering Progress | Code of Ethics | Our values

Collaborations and stakeholder engagement

Shell continues to value and recognise the importance of engagement and co-operation with its stakeholders.

We work with governments, non-governmental organisations (NGOs), coalitions, industry bodies, academic institutions, national oil and gas companies and other businesses. We do this in compliance with antitrust rules and regulations. These collaborations include individual conversations, working together on a project or areas of advocacy, or sponsoring a particular group or event. These efforts help us to learn, share best practice, achieve specific objectives, set future goals and build trust with our stakeholders.

The Chair, certain Board committees and Non-executive Directors traditionally visit a number of Shell operations and overseas offices. The visits are designed to provide Directors with first-hand insights into portfolio positions and opportunities to engage directly with stakeholders including employees, partners, communities and NGOs.

Our broader businesses regularly engage with stakeholders throughout the year and in the build-up to or during many Shell projects or activities.

Read more about our efforts to understand and engage with our stakeholders in our 2022 Annual Report.

Read more about collaborations and stakeholder engagement at www.shell.com/sustainability/our-approach/working-in-partnership.

More in this report Managing our impact on people | Letter from the CEO | Protecting biodiversity | Social investment
More on Shell websites Our strategy: Powering Progress | External voluntary codes | Human rights

Political engagement

Shell engages with governments, regulators and policymakers to help shape comprehensive policy, legislation and regulation. We advocate our positions on matters which affect us, our employees, customers, shareholders or local communities, in accordance with our values and the Shell General Business Principles.

In the European Union (EU) and the USA, we report expenditure associated with our lobbying activities, which includes estimated percentages of industry association costs, in line with the requirements and guidelines set out in the EU Transparency Register and the US Lobbying Disclosure Act respectively. There are different rules for which costs should be reported in these two submissions and we are required to comply with the appropriate requirements for each jurisdiction. These submissions are publicly available:

- In the EU, Shell's reported estimated annual costs related to activities covered by the register were €5,500,000 to €5,999,999 in 2022.
- In the USA, Shell's reported expenses related to lobbying practices were $6,660,000 in 2022.

In 2022, we continued to advocate our policy positions on climate and the energy transition and provided updates about our advocacy on our website. For example, we supported a range of policy measures within the EU's Fit for 55 package, and supported the US Inflation Reduction Act that contains various clean energy provisions. As well as many other events, we attended the UN Climate Change Conference (COP27) and UN Biodiversity Conference (COP15) as observers, to listen and learn.

Our Climate and Energy Transition Lobbying Report provides an overview of our lobbying in 2022 and that of some of our key industry associations. Read the report and further information about our advocacy and political engagement approach at www.shell.com/advocacy.

More in this report Letter from the CEO | Tax transparency
More on Shell websites Powering Progress – transitioning to net-zero emissions | Advocacy and political activity | Payments to governments

Tax transparency

Our tax strategy is designed to support Powering Progress through our commitment to transparency, compliance and open dialogue with our stakeholders, from governments to civil society. Our strategy and actions reflect our values and principles.

Tax revenues enable governments to pay for public services, such as education, health care and transport. In 2022, Shell paid $68.2 billion to governments: we paid $13.4 billion in corporate income taxes and $8.2 billion in government royalties, and collected $46.6 billion in excise duties, sales taxes and similar levies on our fuel and other products on behalf of governments.

We also made other payments to governments, including $15.1 billion in production entitlements, $2.6 billion in fees and $221 million in bonuses.

New taxes, such as the EU solidarity contribution and the UK Energy (Oil and Gas) Profits Levy, were introduced in 2022.

Shell publishes a Tax Contribution Report annually which sets out the corporate income tax that Shell companies paid in countries and locations where they have a taxable presence. Our latest Tax Contribution Report includes a breakdown of our total tax contribution in 21 countries where we have key business activities, an increase from five in the previous year. We hope to expand this disclosure to include our other tax jurisdictions in the future.

We regularly engage with policymakers to support the development of tax rules and regulations based on sound tax policy principles. In this way, we hope to contribute to the development of fair, effective and stable tax systems. We also provide constructive input to industry groups and international organisations, such as the Extractive Industries Transparency Initiative, the B Team Responsible Tax Working Group and the international business network Business at OECD.

For instance, Shell has worked with the largest employers' organisation in the Netherlands, VNO-NCW, on an initiative to improve tax governance and transparency for companies whose securities are listed in that country. In May 2022, VNO-NCW published the Tax Governance Code (TGC), which Shell helped initiate and develop. Given the scale of our activities in the Netherlands, we have voluntarily signed up to the TGC.

Read more about our approach to tax at www.shell.com/sustainability/transparency-and-sustainability-reporting/shells-approach-to-tax.html.

Read our latest Tax Contribution Report at www.shell.com/tax-contribution-report and our Payments to Governments report at www.shell.com/payments.

More in this report Political engagement
More on Shell websites Powering Progress – transitioning to net-zero emissions | Tax Contribution Report 2021 | Shell's approach to tax | Payments to governments

Our response to the war in Ukraine

On March 8, 2022, Shell announced its intention to withdraw from its involvement in all Russian hydrocarbons including crude oil, petroleum products, gas and liquefied natural gas, in a phased manner, aligned with government guidance, and in compliance with sanctions, applicable laws and regulations of the countries in which it operates (see www.shell.com/media-statements).

In May 2022, Shell sold Shell Neft LLC to PJSC LUKOIL and, in doing so, has exited all its downstream business (including services stations, fuels supply and lubricants) in Russia. Also in May 2022, Shell's share in the Gydan energy exploration venture was transferred to our joint-venture partner, GazpromNeft. Gydan is in the exploration phase with no production.

In September 2021, Shell signed a binding novation agreement to take over a GasTerra gas supply contract with Gazprom Export LLC (Gazprom), with the transfer to take effect from October 1, 2022. Upon transfer, a payable to Gazprom was recorded with a corresponding receivable from GasTerra. The gas supply contract terminated in December 2022.

On March 3, 2023, Shell announced that it had completed the sale of its interest in Salym Petroleum Development Limited Liability Company to a subsidiary of GazpromNeft for which an agreement was signed on December 22, 2022.

Shell holds a 27.5% interest (minus one share) in Sakhalin Energy Investment Company Ltd (SEIC). On June 30, 2022, a Russian Presidential Decree was passed requiring the transfer of all licences, rights and obligations of SEIC into a newly created Russian company (LLC) that would assume the rights and obligations of SEIC. The decree stated that the foreign shareholders would be invited to apply for shares in that entity equivalent to their shareholding in SEIC. Shell formally advised the Russian Federation that it would not apply for shares in the LLC, that it objected to the purported transfers from SEIC to the LLC and that it reserved all rights and remedies.

Read more about our withdrawal from Russian oil and gas activities in Note 6 in our 2022 Annual Report.

Helping our staff and the people of Ukraine

Our aim is to ensure the safety of our staff and contractors in Ukraine and to support relief efforts. We offered assistance to our staff in Ukraine fleeing the war and continue to pay the salaries of those mobilised for military service. We work to keep our retail sites open in Ukraine and vital energy supplies moving. Shell only operates in territories controlled by the Ukrainian authorities. We have also provided support to our staff in Russia as they faced the uncertainty of Shell's withdrawal by, for instance, transferring employees of Shell Neft to the new owner.

By the start of 2023, the overall amount of our humanitarian donations for the Ukraine war had reached $74 million. Our focus has been to support the people of Ukraine by working with aid organisations in Ukraine and in bordering countries, where refugees have headed in their millions.

As part of our initial efforts in Ukraine and Poland after the invasion, we pledged nearly $11 million to several humanitarian and aid organisations in Ukraine and Poland, of which $3 million was humanitarian aid to our global disaster relief partner, Mercy Corps, to help meet the immediate needs of those affected by the war in Ukraine. In addition, Shell has matched employee donations to Mercy Corps.

In March 2022, we purchased a cargo of Russian crude oil to be refined into products like petrol and diesel. Despite being made with security of supplies at the forefront of our thinking and being in compliance with applicable laws, we quickly recognised that it was not the right decision and apologised. The profits from the crude oil bought on the spot market after the conflict started were donated to the Embassy of Ukraine in the UK for its WithUkraine humanitarian aid programme ($30 million), while another $30 million was donated to the UN World Food Programme to support the people impacted by the conflict in Ukraine.

Read more about our response to the war in Ukraine at www.shell.com/war-in-ukraine-shell-response and in our 2022 Annual Report.

Our business activities in both Russia and Ukraine in terms of financial data before the invasion are disclosed in our Tax Contribution Report 2021.

Safety

Our approach to safety

POWERING **PROGRESS**

Powering Progress is underpinned by our core values of honesty, integrity and respect for people, and our focus on safety.

Safety is central to our Powering Progress strategy. We aim to do no harm to people and to have no leaks across our operations. We call this our Goal Zero ambition.

We seek to improve safety by focusing on the three areas where the safety risks associated with our activities are highest: personal, process and transport. We strive to reduce risks and to minimise the potential impact of any incident, with a particular emphasis on the risks with the most serious consequences if something goes wrong.

In 2020, we started a multi-year process of refreshing our approach to safety for all employees and contractors. In 2022, as part of this approach, we focused on conducting detailed change impact assessments across the Shell Group to assess the extent to which our new safety principles are being integrated. We completed 49 of 52 assessments of assets, projects, functions and businesses within Shell (we aim to complete the remaining assessments in 2023). In addition, seven non-operated ventures elected to embed elements of our refreshed approach to safety in their improvement plans.

We work closely with our contractors to build a strong safety culture at the frontline. In 2022, we completed construction of the Shell Polymers Monaca polyethylene production facility in Pennsylvania, USA, with more than 67 million exposure hours without fatality or serious injury. During the building of a floating production storage and offloading vessel for our Shell-operated Penguins field (Shell interest 50%) in the UK North Sea, the China Offshore Oil Engineering Company's fabrication yard in China achieved more than 16 million hours without fatality or serious injury.

As of January 1, 2022, we have adopted the industry Life-Saving Rules of the International Association of Oil & Gas Producers. During the year, mandatory e-learning on the new rules was completed by around 126,000 staff and contractors.

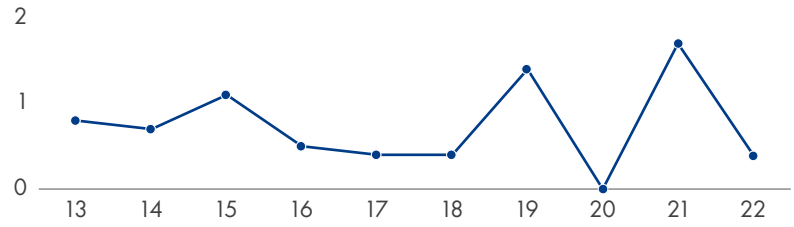
Read more about our approach to safety and how we work with our contractors at www.shell.com/sustainability/safety/our-approach.

More in this report Preparing for emergencies | Letter from the CEO
More on Shell websites Powering Progress – transitioning to net-zero emissions | Safety | HSSE materials for contractors

Personal safety

Fatal accident rate

Fatal accident rate (FAR)
Number per 100 million hours



Serious injuries and fatalities

The number of serious injuries and fatalities decreased to eight in 2022 from 32 in 2021.

Regrettably, however, two of our contractor colleagues in Shell-operated ventures lost their lives in 2022 during the course of their work for Shell. One contractor colleague in Nigeria died from injuries sustained during a fire. In Pakistan, a contractor colleague died during road transport activities under the operational control of Shell.

The Shell organisation feels these losses deeply. We are determined to learn from these incidents and do everything possible to prevent anything similar from happening again. We continue to work closely with our contractors to help build a strong safety culture at the frontline.

Serious injury and fatality frequency (SIF-F) [A] [B]
Number per 100 million hours

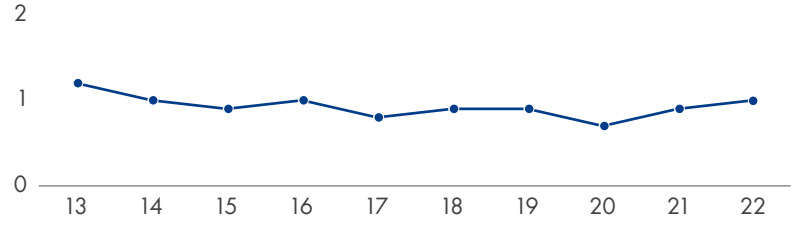
[A] Defined as a serious work-related injury or illness, including those that resulted in fatality or a life-altering event. Life-altering event is defined as a long-term or permanent injury or illness with significant impact on daily activities. Examples of SIF include, but are not limited to, permanent 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.
[B] 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.

To strengthen our efforts to protect people from harm, we measure the number of serious injuries and fatalities per 100 million working hours. This allows us to focus our efforts to prevent serious injuries and fatalities on the most critical events. In 2022, the number of serious injuries and fatalities per 100 million working hours (SIF-F) was 1.7, compared with 6.9 in 2021.

In 2022, the International Association of Oil & Gas Producers adopted the SIF classification criteria with minimal changes to define the industry "fatality and permanent impairment" injury classification, which Shell also follows.

Total recordable case frequency

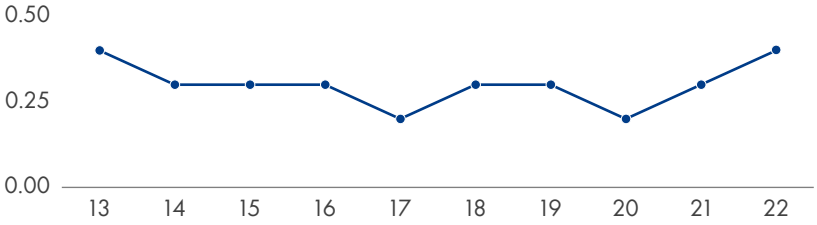
Total recordable case frequency (TRCF)
Number per million hours



In 2022, the number of injuries per million working hours – the total recordable case frequency – was 1.0, an increase from 0.9 in 2021. The increase was related to lost time injuries at a newly acquired company in the USA.

Lost time injury frequency

Lost time injury frequency (LTIF)
Number per million hours



The level of injuries that led to time off work in 2022 increased to 0.4 cases per million hours compared with 0.3 in 2021. The increase was related to lost time injuries at a newly acquired company in the USA.

Read more about our approach to personal safety at www.shell.com/sustainability/safety/personal-safety.

Read more about how Shell's 2022 safety performance impacted remuneration in the Directors' Remuneration Report in our 2022 Annual Report.

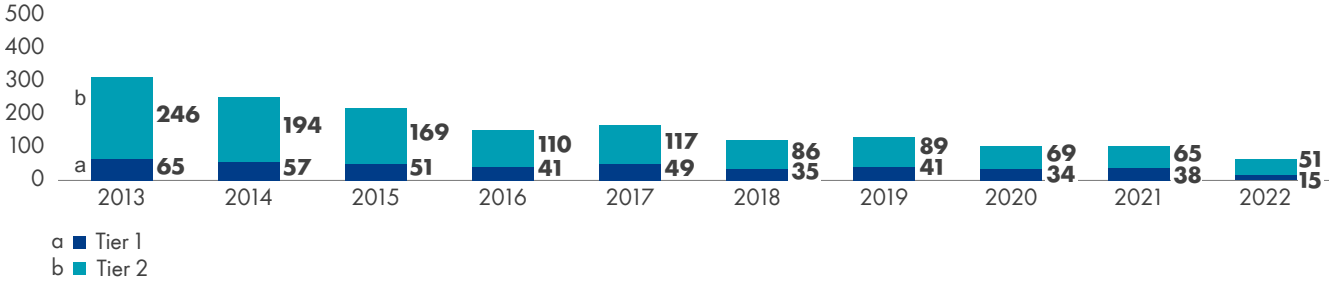
More in this report Preparing for emergencies | Letter from the CEO
More on Shell websites Driver safety | Community road safety | Life-saving rules

Process safety

Process safety management is about keeping hazardous substances in pipes, tanks and vessels so they do not cause harm to people or the environment. It starts with designing and building projects and is implemented throughout the life cycle of the facilities to ensure they are operated safely, well maintained and regularly inspected.

In line with industry standards, we measure and report process safety incidents according to significance, with Tier 1 as the most significant category.

Tier 1+2 operational process safety events, excluding sabotage [A]



[A] Process safety events are classified according to guidance from the International Association of Oil & Gas Producers and the American Petroleum Institute. In 2022, there were three Tier 1 sabotage-related events. The classification of sabotage-related process safety events is made on the best-endeavours basis.

The number of Tier 1 and 2 operational process safety events in 2022 decreased significantly compared with 2021. There were 66 events reported during the year compared with 103 in 2021. The decrease was partly due to divestments, as well as improvements in work processes and using data to enhance safety planning.

Process safety events related to sabotage and theft in Nigeria are recorded separately. In Nigeria, there were three sabotage Tier 1 events in 2022, compared with seven sabotage events in 2021.

Read more about process safety at www.shell.com/process-safety.

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

Preparing for emergencies

Having the necessary resources to deal with spills, leaks, fires and explosions, both offshore and onshore, is essential to meet our aim to do no harm to people or the environment.

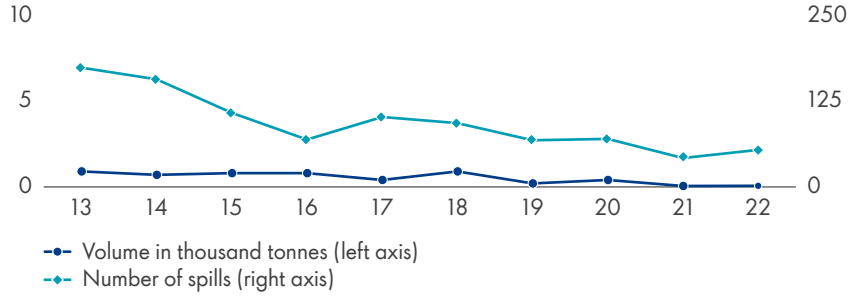
We routinely prepare and practise our emergency response to potential incidents such as a spill or a fire. This involves working closely with local emergency services and regulatory agencies to jointly test our plans and procedures. In 2022, we held four large-scale emergency response exercises to ensure we have the required preparedness at assets we operate in Brazil, Nigeria, the Philippines and the US Gulf of Mexico.

We strive to learn not only from events that have happened, but also from potential events that were prevented by our safety barriers.

Spills

We have programmes in place across our operations to reduce the number of operational spills. The volume of operational spills of oil and oil products of more than 100 kilograms to the environment (land or water) in 2022 was 0.06 thousand tonnes, an increase from 0.05 thousand tonnes reported for 2021. In 2022, the largest operational spill was a spill of around 19.5 tonnes in the Netherlands.

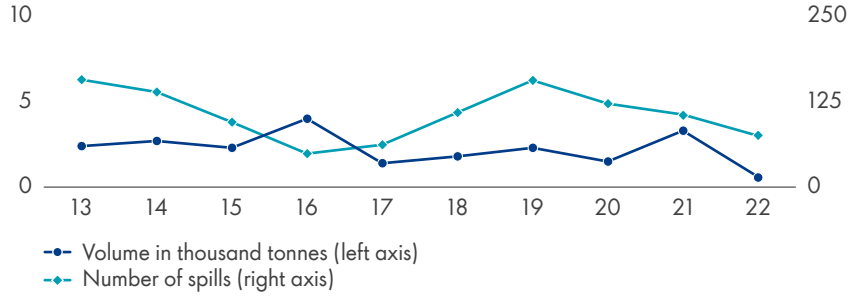
Spills - operational [A]



[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.

There were 54 operational spills of more than 100 kilograms in 2022, compared with 42 in 2021.

Spills - sabotage [A] [B]



[A] All spill volumes and numbers are for hydrocarbon spills of more than 100 kilograms into 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 occurred in Nigeria except in 2015 (0.005 thousand tonnes) and 2016 (0.001 thousand tonnes).

In 2022, all of the spills caused by sabotage and theft were in Nigeria. The number of these spills decreased to 75 in 2022 from 106 in 2021, while the volume of these spills declined to 0.6 thousand tonnes from 3.3 thousand tonnes in 2021 (see Spill response and prevention in Nigeria).

Read about our emergency response procedures at www.shell.com/process-safety.

More in this report Spill response and prevention in Nigeria | Our approach to safety | Letter from the CEO
More on Shell websites Our strategy: Powering Progress | Our approach | Process safety

Spill response and prevention in Nigeria

In the Niger Delta, over the last 12 years, the total number of operational hydrocarbon spills and the volume of oil spilled from them into the environment have been significantly reduced.

Most oil spills in the Niger Delta region continue to be caused by crude oil theft, the sabotage of oil and gas production facilities, illegal oil refining, and the distribution of illegally refined products.

In 2022, the Shell Petroleum Development Company of Nigeria Limited (SPDC), as operator of the SPDC joint venture (SPDC JV, Shell interest 30%) [A], reported 10 operational spill incidents of more than 100 kilograms of crude oil, more than the 9 reported in 2021. The volume of around 0.01 thousand tonnes was less than the 0.03 thousand tonnes recorded in 2021.

[A] Unless otherwise stated, all activities reported for or as relating to SPDC in this section should be understood as SPDC acting as the operator of the SPDC JV. SPDC, as the corporate entity, owns 30% of the JV.

In 2022, about 88% of the oil spills of more than 100 kilograms from the SPDC-operated facilities were caused by the illegal activities of third parties. In 2022, the volume of crude oil spills of more than 100 kilograms caused by sabotage was around 0.6 thousand tonnes (75 incidents), compared with around 3.3 thousand tonnes (106 incidents) in 2021. The decreased number of incidents in 2022 correlates with a shutdown of production for about six months because of an unprecedented increase of crude oil theft from the Trans Niger Pipeline, which is operated by SPDC on behalf of the SPDC JV. SPDC continues to work with the government security agencies to maintain surveillance and address illegal activities of third parties, primarily along the SPDC JV pipeline and its operational areas.

By the end of 2022, a total of 311 steel cages had been installed to protect wellheads, including 38 that had been upgraded with CCTV. This compared with a total of 283 installed cages at the end of 2021. In 2022, of 732 registered attempts to breach them, 47 were successful.

Spill response and prevention in Nigeria

Spills in 2022	Clean-up	Prevention
Number of operational spills: 10 Volume of operational spills: 10 tonnes	Average days before joint investigations commence: two days in 2022, improved from six days in 2016	Illegal theft points removed: 468 in 2022, 1,390 in total since 2016
Number of spills caused by third-party interference and other illegal activities: 75, 88% of the total	Average days to complete the recovery of surface oil: around one week in 2022, improved from 13 days in 2016	Steel cages installed to protect wellheads: 311
Volume of spills caused by third-party interference and other illegal activities: less than 600 tonnes, 99% of the total volume	Number of sites remediated: 230 in 2022, 776 in total since 2016	Breaches of steel cages in 2022: 47 out of 732 attempts

SPDC has an ongoing programme to appraise, maintain and replace key sections of pipelines and flow lines to reduce the number of operational spills. In 2022, around 27 kilometres of pipelines and flow lines were replaced.

Regardless of the cause of a spill, SPDC cleans up and remediates areas affected by spills originating from its facilities. With operational spills, it pays compensation to affected people and communities. In 2022, the time needed to complete the recovery of free-phase oil – oil that forms a separate layer and is not mixed with water or soil – remained at around one week.

SPDC continues to review its portfolio options for onshore oil in Nigeria and has reduced its licences in this area by half in the past decade.

For more detailed information on spills in Nigeria in 2022 and our response see www.shell.com.ng/oil-spills. Read more on spill prevention and response in Nigeria at www.shell.com.ng/environment.

More in this report Contributing to Nigeria's economy | Preparing for emergencies | Our approach to safety
More on Shell websites Our strategy: Powering Progress | Oil spill data | Shell Nigeria | Shell Nigeria | Nigeria Briefing Notes

Transport safety

Transporting large numbers of people, products and equipment by road, rail, sea and air poses safety risks. We seek to reduce these risks by developing best-practice standards within Shell. We also work with specialist contractors, industry bodies, non-governmental organisations and governments to find ways of reducing transport safety risks.

Safety at sea

We operate a global fleet of 25 tankers, liquefied natural gas carriers and the world's first liquefied hydrogen carrier, the Suiso Frontier. We are one of the world's largest charterers of oil and gas vessels. We also run safety checks (assurance) for more than 70,000 voyage proposals annually, enabling Shell's businesses to play a vital role in providing energy security safely. The last serious injury or fatality on a Shell-operated vessel was in 2015.

Air safety

In 2022, our owned and contracted aircraft flew more than 35,000 hours and safely carried around 266,000 Shell employees and contractors to destinations all over the world. In addition, remotely piloted aircraft, also called drones, safely completed around 1,000 hours of survey and inspection flights.

Road transport safety performance

In 2022, Shell employees and contractors drove around half a billion kilometres on business in more than 50 countries, which is broadly in line with 2021. There was one fatality in Pakistan when a contractor colleague died during road transport activities under the operational control of Shell. The number of severe motor vehicle incidents increased from 8 in 2021 to 14 in 2022.

Data show that around 75% of vehicle incidents are related to fatigue or distraction. In 2022, we installed fatigue and distraction detection devices in around 2,400 vehicles operated by Shell or its contractors in countries where road transport risks are highest. The devices alert drivers if they detect fatigue or distraction.

Read more about transport safety at www.shell.com/sustainability/safety/transport-safety.

More in this report Process safety | Our approach to safety | Letter from the CEO
More on Shell websites Our strategy: Powering Progress | Transport safety | Community road safety

Product stewardship

We work to ensure our products – such as fuels, lubricants and chemicals – are safe throughout their life cycle. In 2022, we carried out more than 500 risk assessments for products and additives. We also published and distributed around 110,000 safety data sheets to customers in about 180 countries.

Read more about product stewardship at www.shell.com/product-stewardship.

More in this report Circular economy and waste | Driving innovation | Letter from the CEO
More on Shell websites Our strategy: Powering Progress | Product stewardship

Achieving net-zero emissions

Our Powering Progress strategy focuses on working with our customers and across sectors to accelerate the transition to net-zero emissions.

Energy transition

Our journey to achieving net zero

POWERING **PROGRESS**

Working with our customers and across sectors to help 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.

Shell supports the more ambitious goal of the Paris Agreement, which is to limit the rise in global average temperature this century to 1.5 degrees Celsius above pre-industrial levels.

Our target is to become a net-zero emissions energy business by 2050. We also have short-, medium- and long-term targets to reduce our carbon intensity, measured using our net carbon intensity metric. We believe these targets are aligned with a 1.5°C pathway derived from the scenarios used in the IPCC Special Report on Global Warming of 1.5°C, most of which show the global energy system reaching net zero between 2040 and 2060.

Becoming a net-zero emissions energy business means that we are reducing emissions from our operations and from the fuels and other energy products, such as electricity, that we sell to our customers. It also means capturing and storing any remaining emissions using technology, protecting natural carbon sinks and providing high-quality carbon credits to our customers to compensate for hard-to-abate emissions.

We follow the Greenhouse Gas Protocol's Corporate Accounting and Reporting Standard, which defines three scopes of greenhouse gas emissions:

- Scope 1: direct greenhouse gas emissions from sources under Shell's operational control.
- Scope 2: indirect greenhouse gas emissions from the generation of purchased energy consumed by Shell assets under operational control.
- Scope 3: other indirect greenhouse gas emissions, including emissions associated with the use of energy products sold by Shell.

Scope 3 emissions from the energy products we sell account for most of the total emissions we report.

In October 2021, in support of our 2050 net-zero emissions target, we set a target to reduce Scope 1 and 2 absolute emissions from assets and activities under our operational control (including divestments) by 50% by 2030, compared with 2016 levels on a net basis (including carbon credits).

We have also established remuneration policies which are designed to support us in achieving our short-term climate targets.

Read more about our climate targets at www.shell.com/energy-and-innovation/the-energy-future/what-is-shells-net-carbon-footprint-ambition/faq.html and in our 2022 Annual Report and 2022 Energy Transition Progress Report.

Assessing climate-related risks

Shell has identified climate change and the associated energy transition as a material risk. The risk could potentially result in changes to the demand for our products, our operational costs, supply chains, markets, the regulatory environment, our licence to operate and litigation.

As Shell has operations both onshore and offshore, the potential physical impacts of climate change are important for us to manage. We take climate variability into consideration in the design and operation of our assets and infrastructure to minimise the risk of adverse incidents to our employees and contractors, the communities where we operate, our equipment and infrastructure.

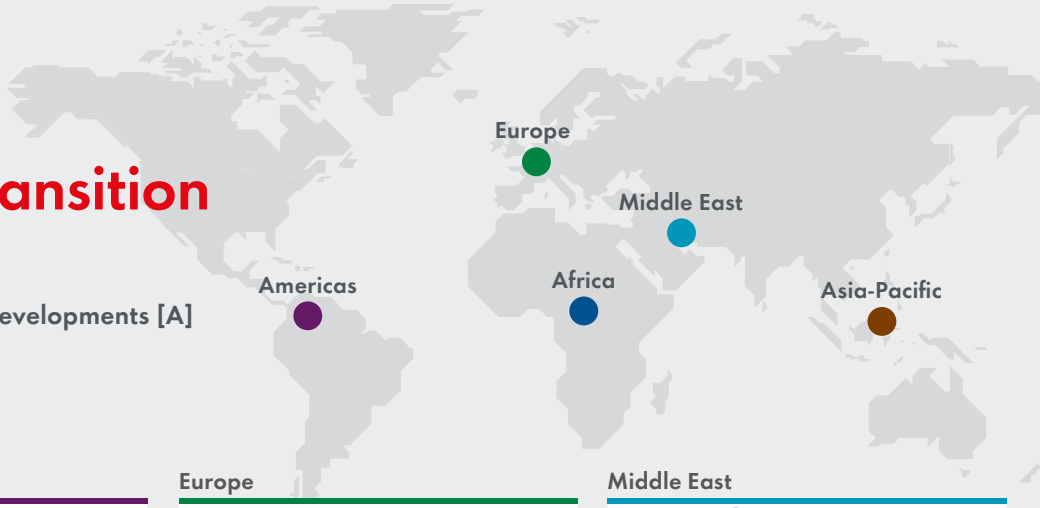
Projects under development that are expected to have a material greenhouse gas impact must meet our internal carbon performance standards or industry benchmarks. Our performance standards are used for measuring a project's average lifetime greenhouse gas intensity or energy efficiency per asset type. Applying these criteria ensures that our projects can compete and prosper in the energy transition. An exception process is in place to manage specific incidental cases.

Read more about Shell's material climate-related risks and opportunities in our 2022 Annual Report.

More in this report Our Powering Progress targets | Managing greenhouse gas emissions | Letter from the CEO | Performance overview
More on Shell websites Powering Progress – transitioning to net-zero emissions | Our climate target | Our climate target: frequently asked questions

Energy transition in action

A selection of 2022 developments [A]



Americas

Brazil	Carbonext
	Raízen
Canada	Chemicals Park Scotford
Trinidad and Tobago	Colibri
USA	New York Bight
	Shell Polymers Monaca
	Aera Energy
	Deer Park Refinery
	Mobile Refinery
	Shell Energy
	Savion (acquired Dec. 2021)

Europe

Denmark	Nature Energy
Italy	solar-konzept Italia
Germany	SBRS
Netherlands	Hollandse Kust west
	Holland Hydrogen I
	Shell Energy Retail
Norway	Northern Lights
Spain	Green Tie Capital
	Webatt Energia
United Kingdom	ScotWind
	Four solar projects

Africa

Nigeria	Daystar Power

Middle East

Qatar	North Field East and South

Asia-Pacific

Australia	Powershop
	WestWind
	Kondinin Energy
China	Electrolyser
India	Sprng Energy
Malaysia	Baram Delta
	Rosmari-Marjoram
Philippines	Malampaya
Russia	Salym
Singapore	EcoOils

Key

Electricity | Biofuels | Hydrogen | Liquefied natural gas | Divestments | Carbon capture and storage | Carbon credits (including nature-based solutions) | Chemicals

[A] These developments include acquisitions, investments, projects and divestments/withdrawals, at various stages of maturity and with different levels of Shell interest, from minority investment to full ownership.

More in this report Our journey to achieving net zero | Providing lower-carbon electricity | Carbon capture and storage
More on Shell websites Nature based solutions | Carbon capture and storage

Delivering our climate targets

Investing in net zero

In 2022, we invested $8.2 billion in low-carbon energy and non-energy products, around a third of our total cash capital expenditure [A] of $25 billion. Of that, we invested $4.3 billion in low-carbon energy solutions, an increase of 89% compared with the previous year. This includes capital spending on biofuels, hydrogen and charging for electric vehicles, as well as wind and solar power [B]. The remaining $3.9 billion was invested in non-energy products such as chemicals, lubricants and convenience retail, which do not produce emissions when they are used by our customers. Our investment in non-energy products decreased by 9% compared with 2021.

These investments advance a central part of our strategy, which is to sell more products with low-carbon emissions to help both Shell and our customers meet their climate targets. See our 2022 Energy Transition Progress Report and 2022 Annual Report to learn more about our investments in energy in 2022.

[A] Please refer to the Shell Annual Report and Accounts 2022 for the definition of cash capital expenditure.
[B] The $4.3 billion investment does not include the acquisition of Nature Energy for around $2 billion, which closed at the beginning of 2023.

Net carbon intensity

Shell's net carbon intensity is the average intensity, weighted by sales volume, of the energy products sold by Shell. It is tracked, measured and reported using the Net Carbon Footprint methodology. We express our net carbon intensity as the grams of CO_2 equivalent per megajoule (gCO_2e/MJ) produced for each unit of energy delivered to, and used by, a consumer.

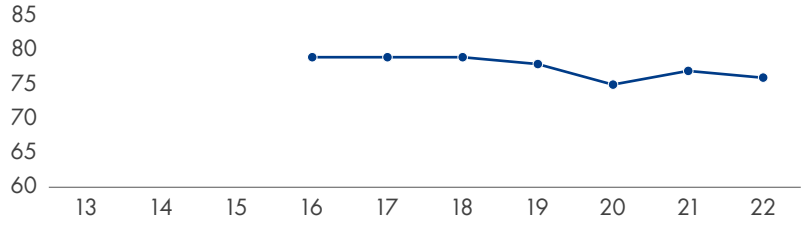
In 2022, Shell's net carbon intensity was 76 gCO_2e/MJ, a 1.3% decrease from the previous year and a 3.8% reduction compared with 2016, the reference year. The decrease in our net carbon intensity in 2022 was primarily due to an increased proportion of renewable power and corresponding reduction in the carbon intensity of our power sales. Our 2022 net carbon intensity includes 4.1 million tonnes of emissions offset through the use of carbon credits, compared with 5.1 million tonnes that were included in our 2021 net carbon intensity. The net carbon intensity only includes carbon credits that are retired against energy products.

The biggest driver for reducing our net carbon intensity is increasing the sales of, and demand for, low-carbon energy.

We undertake external verification of our net carbon intensity annually, and we have received third-party limited assurance on our net carbon intensity for the period 2016 to 2022 by LRQA. Limited assurance means nothing has come to the verifier's attention that would indicate the net carbon intensity data and information, as presented in the Net Carbon Intensity Assertion, were not materially correct.

Read more about our Net Carbon Footprint methodology in our 2022 Annual Report and at www.shell.com/ncf.

Net carbon intensity [A] [B]
Grams of CO_2 equivalent per megajoule (gCO_2e/MJ)

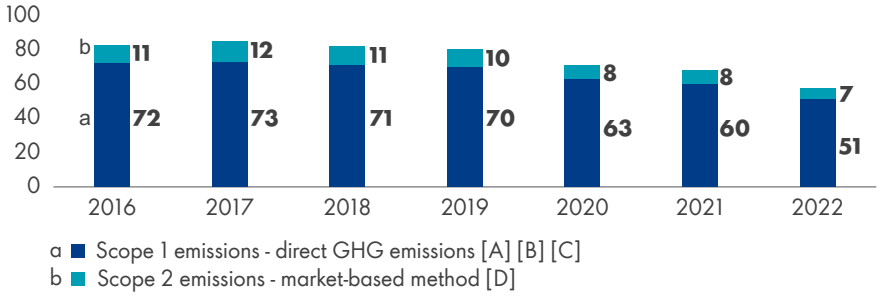


[A] The net carbon intensity calculation uses Shell's energy product sales volume data, as disclosed in the Annual Report and Sustainability Report. This excludes certain contracts held for trading purposes and is reported net rather than gross. Business-specific methodologies for net volumes have been 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 carbon intensity metric.
[B] Acquisitions and divestments are included in the actual performance tracking, with the target and reference year unchanged. Note that acquisitions and divestments could have a material impact on meeting the targets.

Absolute emissions reduction performance

In 2022, our total combined Scope 1 and 2 absolute greenhouse gas emissions (from assets and activities under our operational control) were 58 million tonnes on a CO_2 equivalent basis, a 15% reduction compared with 2021, and a 30% reduction compared with 2016, the base year. Our Scope 3 emissions from energy products included in our net carbon intensity were 1,174 million tonnes of CO_2 equivalent.

Scope 1 and 2 emissions under operational control
Million tonnes CO_2e



[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 on the accuracy of such data. Oil and gas industry guidelines (Ipieca, API and 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 the IPCC's Fifth Assessment Report.
[C] GHG emissions in this table do not include carbon credits.
[D] We estimated the uncertainty of our 2022 Scope 2 GHG emissions to be around 7%.

More in this report Managing greenhouse gas emissions | Our Powering Progress targets | Letter from the CEO | Performance overview
More on Shell websites Our strategy: Powering Progress | Our climate target | Our climate target: frequently asked questions

Managing greenhouse gas emissions

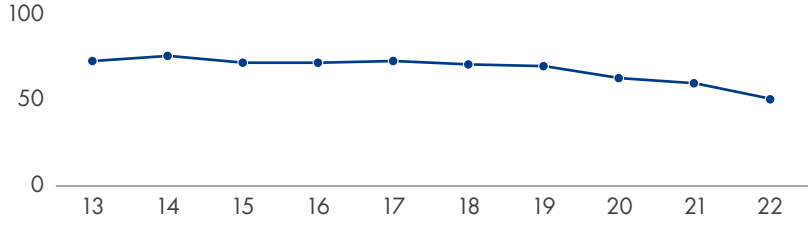
Greenhouse gas emissions

Greenhouse gas emissions performance

In 2022, our total combined Scope 1 and 2 absolute greenhouse gas emissions (from assets and activities under our operational control) were 58 million tonnes on a CO_2 equivalent basis, a 15% reduction compared with 2021 and a 30% reduction compared with 2016, the base year. Our Scope 3 emissions from energy products included in our net carbon intensity were 1,174 million tonnes of CO_2 equivalent.

Our direct (Scope 1) greenhouse gas emissions decreased from 60 million tonnes of CO_2 equivalent in 2021 to 51 million tonnes of CO_2 equivalent in 2022.

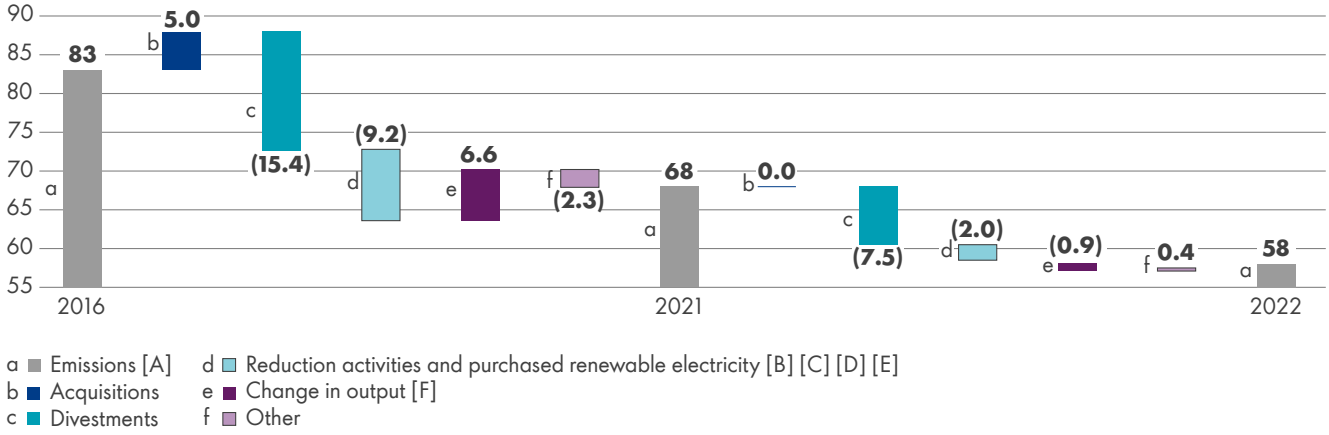
Direct greenhouse gas emissions
Million tonnes CO_2 equivalent



The reduction was achieved by divestments in 2021 and 2022 (including the Deer Park and Puget Sound refineries in the USA); the handover of operations in OML 11 in Nigeria in 2022; the shutdown or conversion of existing assets, including the shutdown of some units at the Shell Energy and Chemicals Park Singapore; and greenhouse gas abatement projects and the purchase of renewable electricity. These decreases were partly offset by the commissioning of Shell Polymers Monaca, our new polyethylene production facility, in the USA.

In 2022, we implemented a variety of measures to reduce the energy use and increase the energy efficiency of our operations. Examples of some of the principal measures taken in 2022 are listed in our 2022 Annual Report.

Scope 1 and Scope 2 greenhouse gas emissions changes from 2016 to 2021 and from 2021 to 2022
Million tonnes carbon dioxide equivalent (CO_2e)



[A] Total Scope 1 and Scope 2 emissions, rounded to the closest million tonnes. Scope 2 emissions were calculated using the market-based method.
[B] In addition to reductions from GHG abatement and energy efficiency projects, this category also includes reductions from the permanent shutdown of the Convent and Tabangao refineries and the impact of transformational activities at our Shell Energy and Chemicals Park in Singapore.
[C] Excludes 5.80 million tonnes of CO_2 captured and sequestered by the Shell-operated Quest CCS facility in Canada in 2016-2021. Scope 1 and 2 GHG emissions from operating Quest are included in our total emissions.
[D] Excludes 0.97 million tonnes of CO_2 captured and sequestered by the Shell-operated Quest CCS facility in Canada in 2022. Scope 1 and 2 GHG emissions from operating Quest are included in our total emissions.
[E] Of the 2,010 thousand tonnes of reduction activities and purchased renewable electricity in 2022, around 80 thousand tonnes related to purchased renewable electricity.
[F] Change in output relates to changes in production levels, including those resulting from shutdowns and turnarounds as well as production from new facilities.

Our indirect greenhouse gas emissions associated with imported energy (Scope 2, consolidated using the operational control boundary) decreased from 8 million tonnes of CO_2 equivalent in 2021 to 7 million tonnes of CO_2 equivalent in 2022 (using the market-based method), in part, due to divestments.

We undertake external verification of our greenhouse gas emissions annually by LRQA. Our Scope 1 and 2 greenhouse gas emissions from assets and activities under our operational control and the emissions associated with the use of our energy products (Scope 3) included in our net carbon intensity have been verified to a level of limited assurance. Limited assurance means nothing has come to the verifier's attention that would indicate the greenhouse gas data and information, as presented in the Greenhouse Gas Statement/Assertion, were not materially correct.

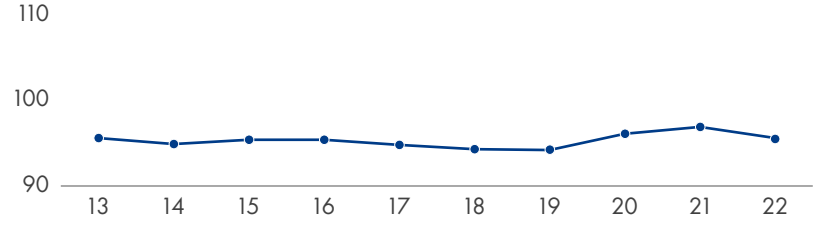
Read our most recent assurance statements at www.shell.com/ghg.

More in this report Our journey to achieving net zero | Delivering our climate targets
More on Shell websites Powering Progress – transitioning to net-zero emissions

Energy efficiency in our operations

One of the metrics we use to measure our performance is energy intensity: the amount of energy consumed for every unit of output.

Energy intensity – refining
Refinery Energy Index [A]

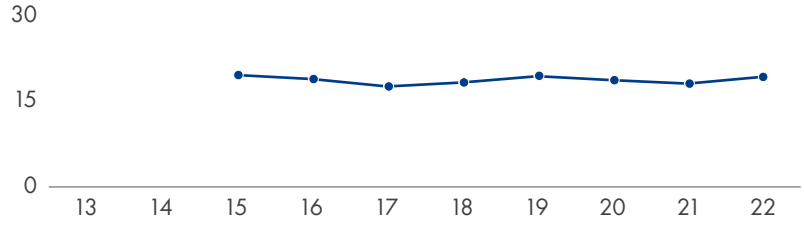


[A] Data are indexed to 2002, based on Solomon Associates Energy Intensity Index methodology.

The refinery energy intensity index decreased from 96.9 in 2021 to 95.6 in 2022, in part due to higher utilisation rates, notably at the Shell Energy and Chemicals Park Singapore and Norco refinery in the USA.

Energy intensity – chemical plants

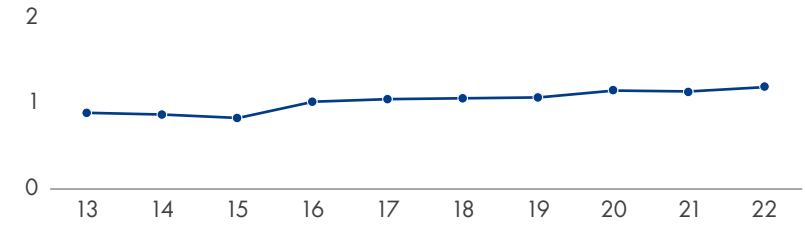
Chemical energy intensity – gigajoules per tonne of production



Chemical steam cracker energy intensity in 2022 was 19.3 gigajoules per tonne (GJ/tonne) of high-value chemical (HVC) production, up from 18.1 GJ/tonne HVC in 2021. The increase was in part due to economic under-utilisation and less demand across our sites.

Energy intensity – upstream

(Excl. liquefied natural gas and gas-to-liquids) - gigajoules per tonne of production



In 2022, the overall energy intensity for the production of oil and gas in our Upstream and Integrated Gas businesses (excluding liquefied natural gas and gas-to-liquids) increased from 1.14 in 2021 to 1.19.

More in this report Our journey to achieving net zero | Sustainability at Shell | Our standards and policies
More on Shell websites Our strategy: Powering Progress | Reducing methane emissions in shale oil and gas | Greenhouse gas emissions

Methane emissions

POWERING **PROGRESS**

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.

Methane is a potent greenhouse gas. When it is released into the atmosphere it has a much higher global warming impact than carbon dioxide. Natural gas consists mainly of methane.

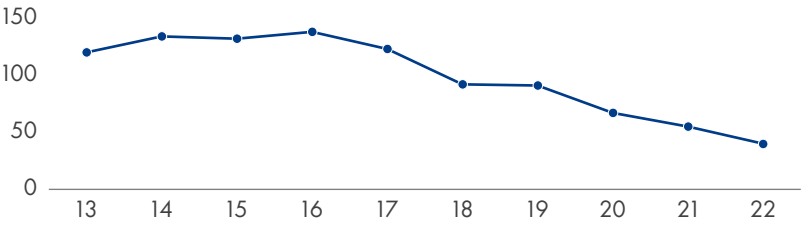
Methane emissions performance

Shell's methane emissions intensity target covers all oil and gas assets (including liquefied natural gas) for which Shell is the operator.

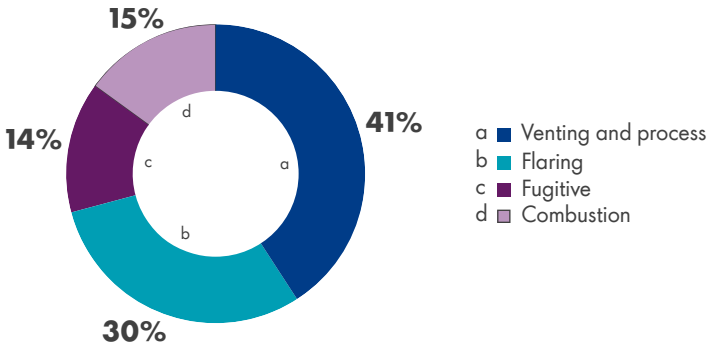
In 2022, we met our target to keep methane emissions intensity below 0.2%. Our methane emissions intensity averaged 0.05% for assets with marketed gas and 0.01% for assets without marketed gas. It ranged from below 0.01% to 0.7% in 2022, compared with below 0.01% to 1.5% in 2021.

Methane emissions

Thousand tonnes



Methane emissions by source in 2022
Percentage



In 2022, Shell's total methane emissions were 40 thousand tonnes compared with 55 thousand tonnes in 2021. The decrease was, in part, due to a shutdown of the Trans Niger Pipeline, the handover of operations in OML 11 and reduced flaring at SNEPCo (all in Nigeria), as well as the divestment of our Permian assets in the USA. Methane emissions were less than 2% of Shell's greenhouse gas emissions on a CO_2 equivalent basis in 2022. Around 65% of our reported methane emissions in 2022 came from flaring and venting in our upstream and midstream operations.

Over the last few years, we have implemented more accurate methods for calculating fugitive emissions. We also encourage industry-wide action on methane emissions reduction by participating in voluntary initiatives.

For example, we co-developed the voluntary UN-led Oil & Gas Methane Partnership (OGMP) 2.0 reporting framework and continue to implement enhanced methane emissions measurement and reporting. Under OGMP 2.0, Shell achieved Gold Standard status for the 2022 reporting year.

We participate in other multi-stakeholder groups, such as the Methane Guiding Principles (MGP) coalition, which we initiated in 2017, the Oil and Gas Climate Initiative (OGCI) and the World Bank's Zero Routine Flaring by 2030 initiative. In 2022, members of MGP, including Shell, developed an oil and gas sector toolkit, which connects policymakers and regulators with resources and institutions to support methane policy and regulation development in countries that joined the Global Methane Pledge. In 2022, OGCI launched the Aiming for Zero Methane Emissions by 2030 initiative, which Shell joined.

We continue to reduce methane emission sources across Shell-operated assets. For instance, we have reduced reported methane emissions at our QGC natural gas project in Australia by using multiple approaches to detect and prevent emissions, including reduced flaring and venting, as well as implementing more accurate methods for calculating fugitive emissions.

We also work with our joint ventures to help them develop emission monitoring programmes. For example, in 2022, we held sessions with several joint-venture partners to discuss the importance of methane emissions management and the benefits of the OGMP 2.0 reporting framework.

Read more about Shell and methane emissions at www.shell.com/energy-and-innovation/natural-gas/methane-emissions.

More in this report Our journey to achieving net zero | Managing greenhouse gas emissions | Producing oil and natural gas
More on Shell websites Our strategy: Powering Progress | Methane emissions | Reducing methane emissions in shale oil and gas | Greenhouse gas emissions | Air quality

Flaring

POWERING **PROGRESS**
We have committed to eliminate routine gas flaring from our Upstream-operated assets by 2025.

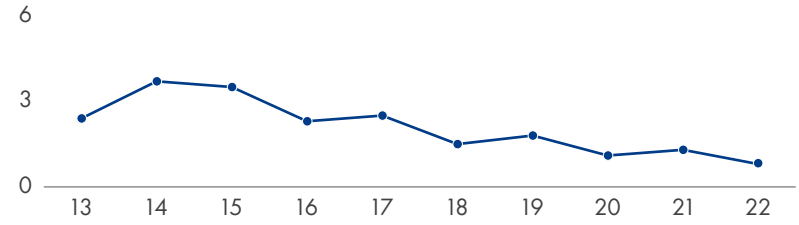
We are working to reduce flaring, which is inefficient and contributes to climate change. Routine flaring of gas occurs during normal oil production if it is not possible to use the gas or reinject it into the well. In 2021, we brought forward our target to eliminate routine flaring from our Upstream operations to 2025 from 2030. This accelerates our commitment of 2015 to end routine flaring as a signatory to the World Bank's Zero Routine Flaring by 2030 initiative.

Flaring performance

Flaring of gas in our Upstream and Integrated Gas businesses contributed around 6% to our overall direct greenhouse gas emissions in 2022.

Flaring – upstream hydrocarbons flared [A]

Million tonnes

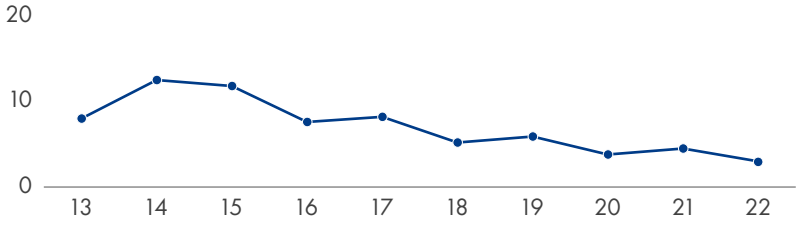


[A] Includes the Upstream and Integrated Gas businesses.

In 2022, 0.8 million tonnes of hydrocarbons were flared, which is down from 1.3 million tonnes in 2021. Also in 2022, routine hydrocarbon flaring was 0.1 million tonnes, a decrease from 0.2 million tonnes in 2021.

Flaring – upstream CO_2 equivalent [A]

Million tonnes CO_2e



[A] Includes the Upstream and Integrated Gas businesses.

In 2022, around 10% of greenhouse gas emissions from flaring occurred at facilities where there was no infrastructure to capture the gas, down from around 17% in 2021. Overall flaring decreased to 3.0 million tonnes of carbon dioxide equivalent (CO_2e) in 2022 from 4.5 million tonnes of CO_2e in 2021.

Around 50% of flaring in our Upstream and Integrated Gas facilities in 2022 occurred in assets operated by the Shell Petroleum Development Company of Nigeria Limited (SPDC) and Shell Nigeria Exploration and Production Company Limited (SNEPCo). There were reductions in flaring from SPDC-operated facilities of around 45% in 2022 compared with 2021. This was due, in part, to a shutdown of the Trans Niger Pipeline and the handover of operations in OML 11. In addition, flaring at SNEPCo-operated facilities decreased by around 60% in 2022 compared with 2021. This reduction was because a large amount of gas was flared in 2021 at the Bonga offshore production facility, as the facility continued to produce oil while repairs were being made on the gas export line.

Read more about our flaring reduction commitment at www.shell.com/inside-energy/zero-routine-flaring-by-2025.

More in this report Our journey to achieving net zero | Energy transition | Managing greenhouse gas emissions
More on Shell websites Our strategy: Powering Progress | Reducing flaring in shale oil and gas | External voluntary codes | Air quality

Sectoral decarbonisation

POWERING **PROGRESS**

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

Helping to transform energy demand is the focus of our approach to decarbonisation. To help transform demand, we are working with customers sector-by-sector across the energy system. We will change the mix of energy products we sell to our customers as their needs for energy change. This is reflected in Shell's strategy to develop a portfolio that seeks to:

- provide more electricity to customers, while also driving a shift to renewable electricity;
- develop low- and zero-carbon alternatives to traditional fuels, including biofuels, hydrogen, and other low- and zero-carbon gases;
- work with our customers across different sectors to decarbonise their use of energy; and
- address any remaining emissions from conventional fuels with solutions such as carbon capture and storage and carbon credits.

Because emissions resulting from customer use of our energy products make up most of the carbon emissions we report, we believe we can make the greatest contribution to the energy transition by increasing sales of low-carbon energy products and services.

Read more about sectoral decarbonisation at www.shell.com/energy-and-innovation/the-energy-future/cutting-carbon-together-sector-by-sector and in our 2022 Energy Transition Progress Report.

More in this report Our journey to achieving net zero
More on Shell websites Our strategy: Powering Progress | Reducing methane emissions in shale oil and gas | Greenhouse gas emissions

Carbon credits including nature-based solutions

POWERING **PROGRESS**

Our nature-based solution projects, which protect, transform or restore land, will have a net positive impact on biodiversity, starting implementation in 2021.

In order to become a net-zero emissions energy business by 2050, we are working to reduce emissions from our own operations and from the fuels and other energy products, such as electricity, we sell to our customers. For remaining emissions, we offer and use high-quality carbon credits, including from nature-based solutions.

To help us do that, we invest directly in natural ecosystem projects to increase the supply of carbon credits and help meet growing demand. We also buy carbon credits generated by other nature-based projects and by technologies such as fuel-efficient cookstoves.

Nature-based solutions protect and enhance natural ecosystems – such as forests, grasslands, wetlands and coastal zones – or improve agricultural sustainability by absorbing or preventing the release of greenhouse gases. As part of our selection criteria for nature-based solutions, we look for projects that will have a net positive impact on biodiversity (see Respecting nature).

Projects need different levels of funding at different stages of development. In 2022, we deployed $92 million: $69 million for nature-based projects and $23 million for technology-based projects that generate carbon credits.

For 2022, we retired around 5.8 million carbon credits on behalf of our customers, of which 4.1 million credits are included in our net carbon intensity and 1.7 million credits are associated mainly with the sale of non-energy products and Shell's business travel (one carbon credit represents the avoidance or removal of 1 tonne of CO_2). These numbers exclude direct carbon trading activities. We carefully source and screen the credits we purchase and retire from the market, and work with certification standards and rating agencies to check that our requirements are met.

In 2022, we acquired a minority stake in Carbonext, Brazil's largest developer of REDD+ projects (REDD+ is a framework created by the UNFCCC Conference of the Parties to guide activities that reduce emissions from deforestation and forest degradation). Carbonext is currently working on the protection of two million hectares of Amazon rainforest.

We are also supporting a forest conservation project in the Philippines, where we are working with universities and local organisations to restore more than 10,000 hectares of deforested land.

We offer customers the opportunity to purchase high-quality carbon credits with the Shell fuel they buy to help compensate for the CO_2 emissions generated by the extraction, refining, distribution and use of the product. This offer is available to our fleet customers in 21 countries and to retail customers at more than 4,000 service stations in nine countries. In 2022, we delivered 11 carbon-compensated liquefied natural gas (LNG) cargoes to customers across the globe, and for the first time, a greenhouse gas–neutral LNG cargo in line with the framework of the International Group of Liquefied Natural Gas Importers (GIIGNL).

Read more about nature-based solutions at www.shell.com/energy-and-innovation/new-energies/nature-based-solutions.

More in this report Our journey to achieving net zero | Carbon capture and storage | Managing greenhouse gas emissions | Energy transition
More on Shell websites Our strategy: Powering Progress | Nature-based solutions

Carbon capture and storage

Shell's ambition is to work with governments, customers and partners to unlock the potential for CCS to reduce emissions where there are currently no scalable low-carbon alternatives. In 2022, Shell's operating costs for, and investment in, CCS opportunities amounted to around $220 million, an increase of 51% on 2021.

By the end of 2022, our Quest CCS project at Scotford in Canada (Shell interest 10%) had captured and safely stored more than 7.5 million tonnes of CO_2 since it began operating in 2015. We are exploring the possibility of increasing CCS capacity at Scotford, initially by 750,000 tonnes per year, through our proposed Polaris project and Atlas Carbon Sequestration Hub.

In Australia, the Gorgon CCS project (Shell interest 25%, operated by Chevron), reported it had stored more than 7 million tonnes of CO_2 by the end of October 2022. Despite these significant emission reductions, Gorgon has captured and stored less CO_2 than required to fulfil its regulatory obligations. In 2022, Chevron confirmed it had purchased carbon credits to address the shortfall. In addition, the joint venture aims to invest AUD 40 million in lower-carbon projects in Western Australia. Gorgon started operating in 2019 and is the largest CCS operation in the world.

In 2022, our Northern Lights CCS joint venture (Shell interest 33.3%) in Norway signed a letter of intent to provide Yara, the crop nutrition company, with CO_2 transport and storage services. As of 2024, some 800,000 tonnes of CO_2 per year are expected to be captured, compressed and liquefied at a Yara ammonia and fertiliser plant in the Netherlands. The CO_2 will then be transported to Norway for permanent storage 2,600 metres below the seabed in the North Sea.

During the year, we signed agreements with various companies and governments to jointly explore developing CCS projects in Brunei, China, Japan, Malaysia, South Korea, the USA and Western Australia.

Read more about our CCS projects at www.shell.com/ccs.

CCS projects

Project	CO_2 source	Country	Shell involvement	Shell interest	Total capacity (100%), million tonnes per annum	Shell-operated
CCS facilities in operation						
Quest	Bitumen upgrading	Alberta, Canada	Technical developer, operator, JV partner	10%	1 mtpa	Yes
Gorgon	CO_2 in gas	Australia	JV partner	25%	Up to 4 mtpa	No
Technology Centre Mongstad test and research facility	Gas-fired power, refining and chemical production	Norway	JV partner	8.7%	Test site	No
CCS projects under construction						
Northern Lights (Phase 1)	Industrial sources	Norway	JV partner	33.3%	1.5 mtpa	No
CCS projects pre-FID options						
Acorn (initial)	Industrial sources	Scotland, UK	Technical developer, JV partner	30%	Around 6 mtpa	No
Aramis (initial)	Industrial sources	Netherlands	JV partner	25%	5 mtpa	No – transport Yes – storage
Polaris	Refining and chemical production	Alberta, Canada	Operator	TBC	0.75 mtpa	Yes
Atlas	Refining, chemicals and industrial sources	Canada	Operator	TBC	10 mtpa	Yes
South Wales Industrial Cluster	Industrial sources	Wales, UK	Operator JV partner	TBC	1.5 mtpa	Yes
Pernis CO_2 capture (for transport and storage by the third-party Porthos project)	Refining and chemical production	Netherlands	CO_2 capture	100%	1.15 mtpa (Shell capacity)	Yes – capture No – transport and storage
Pernis SPeCCS CO_2 capture expansion	Refining and chemical production	Netherlands	CO_2 capture	100%	0.5 mtpa (Shell capacity)	TBC
Asia-Pacific CCS hub	Refining and chemical production and industrial sources	Asia-Pacific		TBC		
US Gulf Coast (Phase 1)	Refining and chemical production	USA	Operator	100%	2 mtpa	Yes
Liberty (Phase 1)	Chemical production	USA	TBC	100%	1.7 mtpa	TBC
Daya Bay	Refining and chemical production	China	JV partner	TBC	10 mtpa	TBC
Northern Carnarvon (Angel)		Australia	JV partner	20%	5 mtpa	TBC

Note: JV = joint venture; FID = final investment decision; TBC = to be confirmed.

More in this report Our journey to achieving net zero | Carbon credits including nature-based solutions | Energy transition
More on Shell websites Our strategy: Powering Progress | Carbon capture: the technology we cannot afford to ignore

Providing lower-carbon electricity

Integrated power

We are building an integrated power business spanning generation, trading, storage and supply to power homes, businesses and vehicles.

We serve more than 2 million customers with renewable electricity, gas and smart home technology in Australia, Germany, the Netherlands, the UK and the USA. In 2022, we sold 243 terawatt-hours of electricity, which is enough to meet the annual needs of Australia or Spain. In 2022, we invested $3.5 billion cash capital expenditure in our Renewables and Energy Solutions business, which exceeded our aim of $3 billion.

Lower-carbon electricity has a big role to play in reducing greenhouse gas emissions. We won bids with our partners to build four offshore wind farms in the Netherlands, the UK and the USA, and we extended our onshore wind activities into Australia and the Philippines. We also acquired solar power businesses in India, Italy and Spain, energy retail interests in Australia, and expanded our electric vehicle operations globally.

Find out more about our Renewables and Energy Solutions business in our 2022 Annual Report.

Read more about lower-carbon and renewable power at www.shell.com/res.

More in this report Providing access to energy | Energy transition
More on Shell websites Powering Progress – transitioning to net-zero emissions | Electricity | Wind power | Solar

Wind

We have wind power interests in operation, under construction or under development in several countries, including onshore in the Netherlands and the USA and off the coasts of the Netherlands, Norway, South Korea and the USA.

In 2022, we extended our onshore wind power activities into Australia and the Philippines. We also won bids with our partners to build four offshore wind farms in the Netherlands, the UK and the USA, which together have the potential to generate around 7.3 gigawatts of power (Shell's share 3.75 gigawatts).

At the end of 2022, Shell's share of total installed capacity from onshore and offshore wind was 307 megawatts alternating current (MWac), with a further Shell share of 789 MWac under construction. This is 160 MWac less than in 2021 due to the temporary shutdown of our Brazos onshore wind farm in Texas for refurbishment and to increase its generating capacity to 182 MWac.

Read more about wind power at www.shell.com/wind.

Wind projects at the end of 2022

Project	Type	Country	Shell interest	Total capacity (100%), MWac	Shell-operated	Planned start up
Wind projects in operation						
Mulanur, Tamil Nadu	Onshore	India	100%	300	Yes	
Khageshree, Gujarat	Onshore	India	100%	197.5	Yes	
Whitewater Hill, CA	Onshore	USA	50%	62	No	
Cabazon Pass, CA	Onshore	USA	50%	41	No	
Blauwwind	Offshore	Netherlands	20%	732	JV-operated	
NoordzeeWind	Offshore	Netherlands	100%	108	JV-operated	
TetraSpar	Floating wind	Norway	46%	4	JV-operated	
Wind projects under construction						
Brazos Repower [A]	Onshore	USA	100%	182	Yes	TBC
Pottendijk (wind)	Onshore	Netherlands	100%	50	Yes	2023
Atlantic Shores - Project 1	Offshore	USA	50%	1,509	JV-operated	2025+
SouthCoast Wind	Offshore	USA	50%	1,200	JV-operated	2025+
CrossWind	Offshore	Netherlands	80%	759	JV-operated	2023
Ecowende	Offshore	Netherlands	60%	760	JV-operated	2026

[A] Brazos Repower represents the complete replacement of the Brazos turbines, increasing capacity from 160 MW to 182 MW.

More in this report Providing access to energy | Energy transition
More on Shell websites Powering Progress – transitioning to net-zero emissions | Electricity | Wind power | Solar

Solar

We are expanding our solar photovoltaic power generation capability by investing in the development and operation of solar projects, including at our own sites.

In 2022, we increased our solar power activities significantly through acquisitions in India, Italy, Spain and the UK. We started production at three new solar power plants: one in Queensland, Australia and two in the Netherlands, which can generate up to 144 megawatts direct current (MWdc) and 80 MWdc respectively. We also started to build a 50 MWdc solar power plant in the Netherlands as part of our first hybrid solar and wind project.

In 2022, our share of installed solar power capacity was 1,914 MWac, with 340 MWac under construction. Figures exclude Silicon Ranch (Shell interest 44.3% as at the end of 2022, non-operated), the US solar power developer.

Read more about solar power at www.shell.com/energy-and-innovation/new-energies/solar.html.

Solar projects at the end of 2022

Project	Country	Shell interest	Total capacity (100%), MWac	Shell-operated	Planned start up
Solar projects in operation [A]					
Sprng Energy	India	100%	1,192	Yes	
Cleantech Solar	Asia	24%	450	No	
Sohar Solar Quabas	Oman	100%	25	Yes	
Sas van Gent	Netherlands	100%	24	Yes	
Moerdijk	Netherlands	100%	20	Yes	
Heerenveen	Netherlands	100%	10	Yes	
Emmen	Netherlands	100%	9	Yes	
Solar projects under construction and committed for sale [A]					
Sprng Energy	Asia	100%	575	Yes	2024
Gangarri	Australia	100%	120	Yes	2023
Cleantech Solar AUC	Asia-Pacific	25/49%	106	No	2023-24
Koegorspolder Tractaatweg	Netherlands	100%	30	Yes	2023
Sluiskil	Netherlands	100%	23	Yes	2023
Pottendijk (solar)	Netherlands	100%	42	Yes	2023
Madison Fields [B]	USA	100%	180	Yes	2024
Martin County [B]	USA	100%	200	Yes	2026
Marion County [B]	USA	100%	100	Yes	2025
Calhoun County [B]	USA	100%	125	Yes	2028
Kiowa County [B]	USA	100%	100	Yes	2028

[A] Figures exclude Silicon Ranch (Shell interest 44.3% as at the end of 2022, non-operated), the US solar power developer.
[B] Not yet under construction.

More in this report Providing access to energy | Energy transition
More on Shell websites Powering Progress – transitioning to net-zero emissions | Electricity | Wind power | Solar

Fuelling mobility

Biofuels

Shell aims to be a material and profitable supplier of sustainable low-carbon fuels to help decarbonise harder-to-abate sectors including aviation, marine and commercial road transport.

We produce and supply low-carbon fuels such as biodiesel, bioethanol, renewable natural gas (also known as RNG, biogas or biomethane), renewable diesel (also known as hydro-treated vegetable oil or HVO) and sustainable aviation fuel (SAF) to help lower the carbon emissions from transport.

These fuels can be blended with existing fuels, such as diesel, petrol and aviation fuel, and do not require costly investment in new infrastructure, which means they are a practical option for reducing transport emissions.

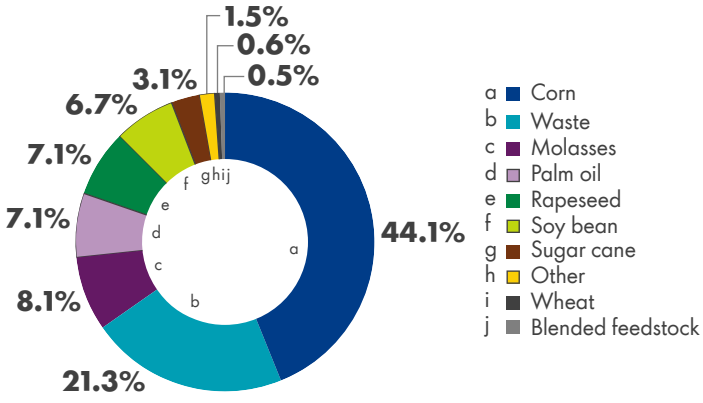
Shell is one of the world's largest traders and blenders of biofuels. In 2022, around 9.5 billion litres of biofuels went into Shell's petrol and diesel worldwide, compared with 9.1 billion litres in 2021. This included around 3 billion litres through our joint venture Raízen (Shell interest 44%, not Shell-operated) in Brazil, compared with 3.2 billion litres in 2021.

Raízen is one of the world's largest biofuel producers, with one of the lowest CO_2 biofuels available today. In 2022, Raízen produced around 3 billion litres of ethanol from sugar cane and about 26 million litres of second-generation cellulosic ethanol made from inedible agricultural waste. In 2022, we signed a long-term agreement to buy 3.25 billion litres of sugar-cane cellulosic ethanol from Raízen, which will be produced at five new plants that Raízen intends to build.

One of our priorities is to increase our low-carbon fuels production capacity. In the Netherlands, we are building one of Europe's largest biofuel production facilities, which will produce up to 820,000 tonnes per year of low-carbon fuels from predominantly waste feedstocks. The facility is expected to come online in 2025.

To support our biofuel production capacity, we are also investing in new feedstocks. In 2022, we acquired EcoOils, which uses its recycling technology to turn waste into spent bleaching earth oil, an advanced biofuel feedstock that can be used to produce sustainable low-carbon fuels.

Global biocomponent purchase by feedstock [A] [B]
Percentage



[A] Does not include purchases by Raízen.
[B] Percentage may not add up to 100% because of rounding.

Sustainability of biofuels

We purchase biocomponents to produce biofuels, blend into fuels and/or to trade. Certain biofuel feedstocks are considered higher risk with regard to human rights, biodiversity or the release of carbon into the atmosphere. To help mitigate these risks, all the palm oil, sugar cane and South American soy feedstock we purchase is certified as sustainable under credible sustainability standards like the Round Table on Responsible Soy Association, the Roundtable on Sustainable Palm Oil and Bonsucro. We have also committed not to use crude palm oil or its derivatives in any of our biofuel refineries.

Read more about biofuels and also our approach to the sustainable sourcing of biocomponents at www.shell.com/biofuels.

Sustainable aviation fuel

We continue to take steps to expand our production capacity, invest in promising technologies and increase demand for SAF. In 2022 we signed a non-binding memorandum of understanding with Lufthansa to supply SAF for its aircraft at airports worldwide; we started supplying SAF in

Singapore, the first company to do so, for customers in South-east Asia; and together with Accenture and American Express Global Business Travel, we launched one of the world's first blockchain solutions for SAF to help companies decarbonise their business air travel.

Read more about SAF at www.shell.com/business-customers/aviation/the-future-of-energy/sustainable-aviation-fuel.

Renewable natural gas and bioLNG

We produce renewable natural gas from agricultural residues and manure. It can be used instead of natural gas (as renewable compressed natural gas or bioLNG) in vehicles and shipping to reduce CO_2 emissions by 50-100% over the life cycle of the fuel, compared with fossil fuels.

In the USA, we already operate one renewable natural gas (RNG) production facility in Oregon and are building three more in Idaho and Kansas. In early 2023, we completed the acquisition of Europe's largest RNG producer, Nature Energy of Denmark, which produces RNG from agricultural, industrial and household waste.

Read about LNG and bioLNG at www.shell.com/energy-and-innovation/natural-gas/lng-for-transport/lng-for-road.

Read about renewable natural gas at www.shell.com/energy-and-innovation/new-energies/low-carbon-fuels.

More in this report Our journey to achieving net zero | Driving innovation
More on Shell websites Powering Progress – transitioning to net-zero emissions | Low carbon fuels | Hydrogen

Electric vehicle charging

Shell aims to become a global leader in electric vehicle charging, meeting customer needs at home, at work or on the road.

At the end of 2022, we operated around 139,000 public and private electric vehicle charge points, including more than 27,000 public charge points at Shell forecourts, on-street locations and at destinations like supermarkets. This is a considerable increase on last year's figures of around 86,000 and 8,000 respectively.

During the year, we offered electric vehicle charging under the Shell Recharge brand in more than 25 countries in Asia, Europe, the Middle East and the Americas. We also formed or expanded collaborations with a range of partners, including electric vehicle manufacturers, retail destinations, real estate owners, cities and municipalities. And we extended our capabilities in electric vehicle charging through the acquisitions of Cable Energía, a provider of destination charging in Spain and Portugal, and SBRS, a provider of charging solutions for commercial electric vehicles, including e-buses, e-trucks and e-vans.

Read about electric vehicle charging at www.shell.com/electric-vehicle-charging.

More in this report Our journey to achieving net zero | Driving innovation
More on Shell websites Powering Progress – transitioning to net-zero emissions | Low carbon fuels | Hydrogen

Hydrogen

Hydrogen is a versatile energy carrier that can play a significant role in the transition to a lower-carbon world. We are investing in producing decarbonised hydrogen for our own facilities and, in the future, for customers in industry and mobility where direct electrification is challenging.

In 2022, we took the final investment decision to build Holland Hydrogen I in the Netherlands, which will be Europe's largest renewable hydrogen plant once operational in 2025. The 200 megawatt electrolyser will produce up to 80 tonnes of renewable hydrogen per day for the Shell Energy and Chemicals Park Rotterdam, where it will partially decarbonise our production of energy products like petrol, diesel and jet fuel. The plant will be powered by renewable energy from the Hollandse Kust (noord) offshore wind farm, which is 80% owned by Shell.

Shell owns and operates a 10 megawatt electrolyser in Germany and is a joint-venture partner in a 20 megawatt electrolyser (Shell interest 47.5%) in China. They can produce 1,300 tonnes and 3,000 tonnes of hydrogen per year respectively from renewable electricity.

We are also expanding our network of hydrogen refuelling stations. By the end of 2022, there were around 50 hydrogen refuelling stations at Shell-branded outlets in the USA (California), Canada, Germany and the Netherlands.

Read about hydrogen at www.shell.com/energy-and-innovation/new-energies/hydrogen.html.

More in this report Our journey to achieving net zero | Driving innovation
More on Shell websites Powering Progress – transitioning to net-zero emissions | Low carbon fuels | Hydrogen

Driving innovation

In 2022, we spent $1,067 million on research and development (R&D), compared with $815 million in 2021. We also started work on more than 250 R&D projects with universities, compared with more than 180 in 2021.

Our R&D activities are key to achieving our net-zero emissions target. In 2022, our R&D expenditure on projects that contributed to decarbonisation was around $440 million, representing about 41% of our total R&D spend, compared with around 40% in 2021. This includes expenditure on reducing greenhouse gas emissions:

- for our customers through renewable power generation, storage, e-mobility and other electrification solutions;
- from our own operations, for example, by improving energy efficiency and electrification;
- from the fuels and other products we sell to our customers – for example, biofuels, synthetic fuels and products made from low-carbon electricity, and hydrogen produced using renewable sources;
- by carbon capture, utilisation and storage applied to hydrogen production from natural gas and other carbon emissions; and
- by researching nature-based solutions to offset emissions.

Examples of R&D activities other than decarbonisation include safety, performance products such as lubricants and polymers, robotics, automation and artificial intelligence.

In 2022, we opened our Energy Transition Campus Amsterdam, formerly one of our six Shell Technology Centres. The campus provides offices, laboratories and testing facilities for start-ups, research institutions, academia and companies to work together on solutions for lower-carbon energy. Around 1,000 people from 50 countries are currently working on projects at the campus.

One such project is a collaboration between Shell and Dow to electrify steam cracking furnaces with renewable energy. Steam cracking is one of the most carbon-intensive processes in petrochemical production. The project could reduce Scope 1 emissions associated with cracking furnaces by 90% compared with conventional crackers.

Read more about technology and innovation at www.shell.com/energy-and-innovation/the-role-technology-plays/technology-for-a-sustainable-energy-industry.

More in this report Sectoral decarbonisation | Fuelling mobility
More on Shell websites Powering Progress – transitioning to net-zero emissions

Respecting nature

Our Powering Progress strategy means respecting nature by protecting the environment, reducing waste and making a positive contribution to biodiversity.

Our approach to respecting nature

We realise there is growing urgency to protect and enhance biodiversity, preserve water quality and availability, improve air quality and use resources more efficiently. Nature loss and climate change are interconnected and need to be tackled together. This was recognised in 2022 at the UN Climate Change Conference (COP27), and also at the UN Biodiversity Conference (COP15) where a landmark Global Biodiversity Framework was agreed.

As a business, we rely on nature for resources such as land, water and materials for our operations. We recognise that our activities can have an impact on nature through discharges and emissions to the environment, and through changes to the use of land, water and oceans.

Respecting the environment and local communities has been an integral part of the way we do business for many years, as set out in the Shell General Business Principles and Shell Commitment and Policy on Health, Security, Safety, the Environment and Social Performance.

Respecting Nature is part of our Powering Progress strategy. Our commitments focus on four priority areas: biodiversity (land and marine environments), water, circular economy and waste, and air quality. They set out our ambitions for 2030 and later, as well as our shorter-term goals.

We have included these commitments in our performance management and reporting systems and have been working to define baselines and track progress. Our Executive Committee is accountable for delivery of our Respecting Nature goals.

Our purchasing policies include requirements that reflect our environmental framework and take the energy efficiency, material efficiency and sustainability of products into consideration in our purchases (see Supply chain).

We will continue to seek opportunities to go further. Our environmental ambitions will be underpinned by collaboration with our supply chain and transparent reporting.

Read more about our approach at www.shell.com/sustainability/environment.

More in this report Sustainability at Shell | Protecting biodiversity | Social investment
More on Shell websites Our strategy: Powering Progress | Respecting nature

Environmental collaborations

POWERING **PROGRESS**

- Our ambition is to strengthen external partnerships and improve transparency on performance.
- We will ensure that external partnerships inform key areas of development and delivery of our ambitions.

We work with external parties to enable a positive impact on the environment. Collaboration can help us to reduce waste, improve circularity of materials and help ensure local communities benefit from our presence.

Existing collaborations and new partnerships are key to implementing our Respecting Nature ambitions and commitments. For more than 20 years, we have worked with our global environmental partners the International Union for Conservation of Nature and Earthwatch. They provided input on the development of our Respecting Nature commitments and continue to support their implementation.

We work with Earthwatch to help Shell staff develop their sustainability leadership skills and deepen their understanding of our Respecting Nature ambitions. In 2022, more than 3,500 staff were trained in 20 countries.

We are a founding member of the World Business Council for Sustainable Development, have a seat on the executive committee, co-chair the Energy programme and participate in several groups related to nature including biodiversity, plastic waste, circular economy and nature-based solutions.

Shell is a Vice Chair of Ipieca, the global oil and gas industry association for advancing environmental and social performance across the energy transition. Shell chairs Ipieca's overall Environmental Working Group and is active in all workstreams on climate, nature, people and sustainability.

We are a signatory of the Business for Nature Call to Action.

Transparency and standards

We are a member of the Taskforce on Nature-related Financial Disclosures Forum, which aims to develop a risk management and disclosure framework for organisations to report and act on evolving nature-related risks.

In 2022, we joined the Science Based Targets Network Corporate Engagement Program and are helping to make its guidance for setting science-based targets easy to use and implement.

Our major installations are certified to independent environmental management system standards, such as ISO 14001 or equivalent systems required by local regulations. Major installations include crude oil and natural gas terminals, gas plants, manned offshore production platforms, refineries and chemical manufacturing facilities. Of these, 100% were certified at the end of 2022. Read more about the certification of our major installations in our 2022 Annual Report.

More than 45% of our offices and laboratories in our real estate portfolio have been certified as sustainable by Leadership in Energy and Environmental Design (LEED), a leading green building rating system.

Read more about our environmental partners at www.shell.com/sustainability/our-approach/environmental-and-community-partners.

More in this report Sustainability at Shell | Protecting biodiversity | Social investment
More on Shell websites Working in partnership

Protecting biodiversity

POWERING **PROGRESS**

- 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.

Our approach

Our ambition to have a positive impact on biodiversity builds on our earlier commitment not to explore for or develop oil and gas resources in natural and mixed World Heritage Sites.

We continue to develop new ways to measure how we are improving biodiversity. These are being incorporated into our processes and systems, including those for nature-based solutions and reforestation. We are working with external experts, such as the International Union for the Conservation of Nature (IUCN) and Earthwatch, to help develop and define our approach and the way we measure our progress. We are also using contemporary techniques such as environmental DNA in our surveys.

We aim to minimise the impact of our onshore and offshore projects on biodiversity and ecosystems, whether life on land or life below water. We apply the mitigation hierarchy, a decision-making framework that involves a sequence of four key actions: avoid, minimise, restore and offset. We assess the potential impact of projects on biodiversity and local communities as part of our impact assessment process (see Respecting human rights and Embedding sustainability into our activities).

All potential new projects are screened to determine if they are located in a critical habitat. If we decide to progress a project that is in a critical habitat, we develop a biodiversity action plan. This sets out actions needed to follow the mitigation hierarchy and, where there is impact, the actions needed to achieve net positive impact. Building a net positive impact is achieved over time, for example, as trees grow or species multiply.

In Australia in 2022, we partnered with Monash University on a four-year restoration programme for Browse Island. The project aims to improve the population and resilience of seabirds, the hatchling survival rate of the green turtle and the health of the reef.

In 2022, we continued to collaborate with the IUCN, non-governmental organisations and other energy companies to develop guidelines for mitigating the impact of solar and wind projects on biodiversity.

For more on our environmental stewardship see www.shell.com/powering-progress/powering-progress-in-action.

Critical habitats

At the end of 2022, eight of our new projects, which commenced after we made our Powering Progress commitments in February 2021, were wholly or partly located in critical habitats. Of these, four already have a biodiversity action plan in place or under way to work towards a net positive impact. Plans are under development for the remaining projects.

Nature-based solutions

Nature-based solution projects that we invest in follow the requirements of the Climate, Community and Biodiversity Standards (CCB) or their equivalent. The voluntary CCB standards set out criteria for having a positive impact on climate change, local communities and biodiversity. The projects are audited by independent third parties. At the end of 2022, our projects were still in the development phase; we continue to work towards certification.

In Australia, Select Carbon, a wholly owned Shell company, operates projects that are registered under Australian carbon market regulations. (See Carbon credits, including nature-based solutions).

Deforestation

Deforestation occurs when forests are converted to non-forest uses. We use the definition of forest used by the Food and Agriculture Organization of the United Nations.

In 2022, around 145 hectares were deforested as a result of our new activities. We work with partners and stakeholders to develop robust and credible plans unique to each reforestation project.

Read more about biodiversity at www.shell.com/sustainability/environment/biodiversity.

More in this report Sustainability at Shell
More on Shell websites Our strategy: Powering Progress | Biodiversity

Circular economy and waste

Managing waste

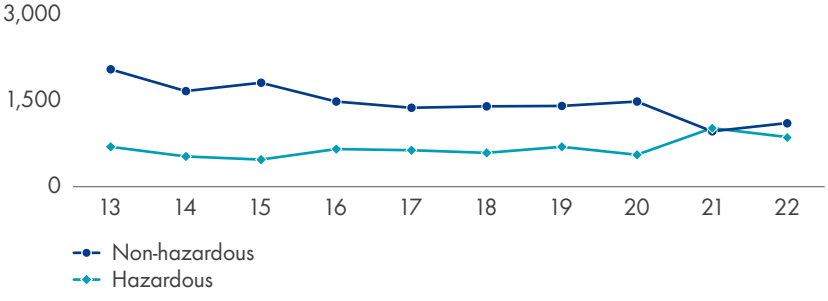
POWERING **PROGRESS**

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.

At the end of 2022, we had completed 24 waste assessments at major production facilities across Shell in order to identify the largest waste streams, share learnings and develop plans to reduce the quantity of waste disposed. We aim to do this by reducing waste generation and increasing reuse, recycling and recovery. As we continue to develop these plans, we will update our goals for waste reduction, reuse and recycling.

Waste disposal
Thousand tonnes



In 2022, we disposed of 1,982 thousand tonnes of hazardous and non-hazardous waste, which is relatively flat compared with 1,993 thousand tonnes in 2021. We also sent 457 thousand tonnes of residual materials for reuse, recycling or beneficial use as a raw material in another process. For example, waste that might otherwise go to landfill can be incinerated to generate energy.

Find out more about waste and our circular economy approach at www.shell.com/sustainability/environment/circular-economy-and-waste.

More in this report Sustainability at Shell | Our approach to respecting nature
More on Shell websites Our strategy: Powering Progress | Circular economy and waste

Plastics

POWERING **PROGRESS**

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.

Shell supports the need for improved circularity of global plastics markets and encourages reduction, reuse and recycling of plastics. We are a founding member of the Alliance to End Plastic Waste, which helps governments to assess and improve waste collection and waste management. In 2021, we set a commitment to work with our suppliers and contractors to help end plastic waste in the environment.

Due to market factors, such as lack of available feedstock and progress in technology development, Shell's ability to profitably meet its 1 million tonne plastic waste ambition by 2025 is unfeasible. Consequently, we expect to provide further insights later in 2023.

Reducing, reusing and recycling our packaging

We continue to explore ways to reduce, reuse and recycle packaging across our supply chains and introduce sustainable packaging.

In 2022, more than 30% of Shell-owned service stations had eliminated unnecessary single-use plastic including cutlery, straws and stirrers; and almost 40% had completely removed single-use plastic bags. In China and North America, our bag-in-box lubricants use 89% less plastic than 1-litre plastic bottles; and in Europe, around two-thirds of the packaging used for our Shell Car Care products (screenwash, wax, shampoo, coolant and others) is recyclable.

Recycling plastic waste as chemical feedstock

We are focusing on chemical recycling where we break down hard-to-recycle plastics into raw materials through a technique called pyrolysis. The pyrolysis oil can then be used as feedstock in our chemical plants, replacing traditional hydrocarbon feedstock. This contributes to our circular economy ambition and prevents waste that would otherwise have gone to landfill or incineration.

In 2022, we announced plans to build a new pyrolysis oil upgrader at the Shell Chemicals Park Moerdijk in the Netherlands. The plant, which is expected to start operating in 2024, will have the capacity to produce up to 50,000 tonnes of pyrolysis oil per year.

We are also building a pyrolysis oil upgrader, with a production capacity of 50,000 tonnes per year, at our Shell Energy and Chemicals Park Singapore. Along with our joint-venture partner BlueAlp, we are building two hard-to-recycle plastic waste conversion units in the Netherlands, which are designed to convert more than 30,000 tonnes of plastic waste a year into pyrolysis oil. All three facilities are expected to start production in 2024. Shell companies also have pyrolysis oil agreements with companies in Europe, Singapore and the USA.

Find out more about how we transform plastic waste into chemical feedstock at Chemical recycling: tackling plastic waste | Shell Global.

Discover more about waste and our circular economy approach at www.shell.com/sustainability/environment/circular-economy-and-waste.

More in this report Sustainability at Shell | Product stewardship | Driving innovation
More on Shell websites Our strategy: Powering Progress | Plastic waste

Conserving water resources

POWERING **PROGRESS**

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.

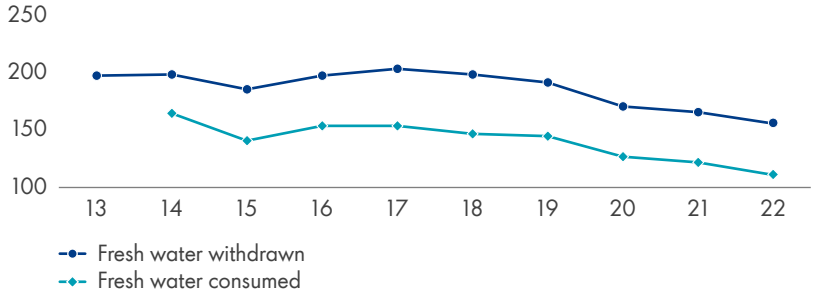
We are making steady progress in reducing our fresh-water consumption in water-stressed areas.

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 local assessments. The facilities are: the Pearl GTL (gas-to-liquids) plant in Qatar, the Shell Energy and Chemicals Park Singapore, the Shell Jurong Island chemical plant in Singapore and the Tabangao Import Terminal in the Philippines.

In 2022, these four facilities consumed 18 million cubic metres of fresh water, compared with 22 million cubic metres in 2021 and our 2018 baseline of 25 million cubic metres. This reduction was mainly the result of decreased water use at the Shell Energy and Chemicals Park Singapore, following the decommissioning of some processing units, and the conversion of the Tabangao refinery in the Philippines to a terminal.

Fresh water withdrawn and consumed [A]

Million cubic metres



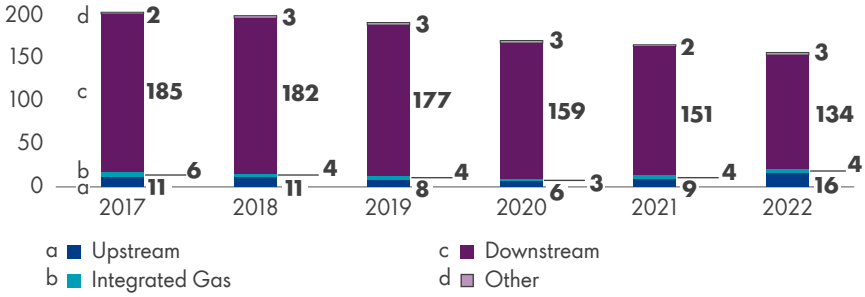
[A] Fresh water figures do not include once-through cooling water.

In 2022, our overall intake of fresh water decreased to 156 million cubic metres, compared with 166 million cubic metres in 2021. This reduction was mainly the result of divestments and the shutdown of some units at the Shell Energy and Chemicals Park Singapore and Jurong Island Singapore.

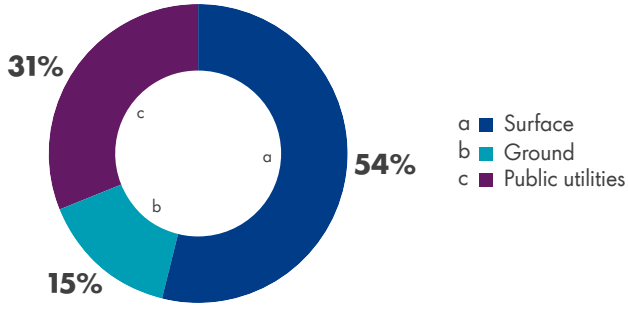
Around 85% of our fresh-water intake in 2022 was used for manufacturing oil products and chemicals, with the rest mainly used for oil and gas production.

In 2022, we continued to review our water use and stewardship. We are applying procedures across our businesses to improve water efficiency and reduce fresh-water use. This has involved detailed water circularity assessments at six Shell sites in Australia, Germany, India, Malaysia and the Netherlands. The assessments taught us that water stewardship principles can be applied at our onshore facilities. We expect to update our approach in 2023.

Fresh water withdrawn by business
Million cubic metres



Fresh water withdrawn by source
Percentage



Of our fresh-water intake in 2022, 31% was from public utilities, such as municipal water supplies. The rest was taken from surface water, such as rivers and lakes (54%) and groundwater (around 15%).

Waste water and produced water

We track low-level concentrations of oil, grease and other hydrocarbons in water returned to the environment from the day-to-day running of our facilities (referred to as "discharges to surface water"). We work to minimise these discharges according to local regulatory requirements and our own standards. Where possible, we look for ways to treat water from our operations using natural solutions, such as constructed wetlands.

In 2022, the combined total of hydrocarbons discharged to surface water across all our facilities decreased to 0.9 thousand tonnes, compared with 1.0 thousand tonnes in 2021. Most of the reduction was the result of shutdowns of some units at the Shell Energy and Chemicals Park Singapore and shutdowns or improving water quality issues at offshore production platforms in the UK and the US Gulf of Mexico.

In 2022, we disposed of 58 million cubic metres of produced water, which represents a decrease of 28% from 81 million cubic metres in 2021. This reduction was mainly due to the divestment of Permian assets in the USA and the shutdown of facilities, including offshore production platforms in the UK.

Find out more about water use at www.shell.com/sustainability/environment/water.

More in this report Sustainability at Shell | Our approach to respecting nature
More on Shell websites Our strategy: Powering Progress | Water

Air quality

POWERING **PROGRESS**

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

Cleaner transport options

We are developing a range of lower-emission choices for customers – from electric vehicle charging points to hydrogen – to help people and companies use lower-emission modes of transport. For heavy-duty road transport, we offer liquefied natural gas as a fuel and gas-to-liquids products, which help reduce sulphur emissions, particulates and nitrogen oxide compared with oil-based products.

Sulphur oxide, nitrogen oxide and volatile organic compound emissions

We follow our own standards and those of local regulators to manage airborne pollutants in our oil and gas production and processing, including emissions of nitrogen oxides, sulphur oxides and volatile organic compounds.

Our sulphur oxide (SOx) emissions in 2022 increased to 36 thousand tonnes, compared with 32 thousand tonnes in 2021. The increase was mainly because of turnarounds (restarting production after scheduled service shutdowns) at the Shell Energy and Chemicals Park Singapore and Sarnia refinery in Canada.

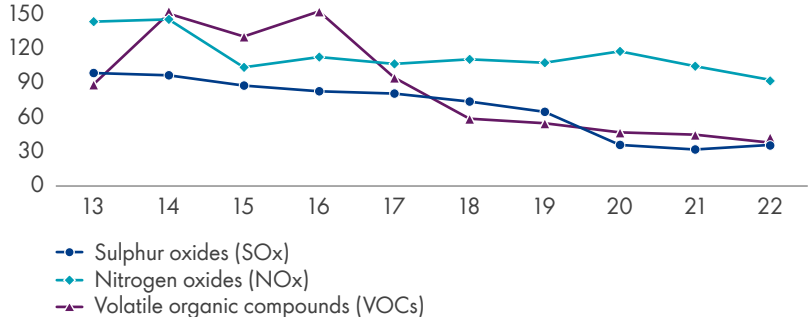
Our nitrogen oxide (NOx) emissions decreased from 105 thousand tonnes in 2021 to 93 thousand tonnes in 2022, because of, in part, the handover of operations in OML 11 in Nigeria, the divestment of Permian assets in the USA and fewer ships operated by Shell.

Our emissions of volatile organic compounds decreased to 38 thousand tonnes in 2022 from 45 thousand tonnes in 2021. The reductions were, in part, due to the divestment of Permian assets in the USA, the shutdown of the Trans Niger Pipeline and handover of operations in OML 11 in Nigeria, and reduced flaring in upstream assets in the UK.

To find out more about air quality, visit www.shell.com/sustainability/environment/air-quality.

Acid gases and volatile organic compounds

Thousand tonnes

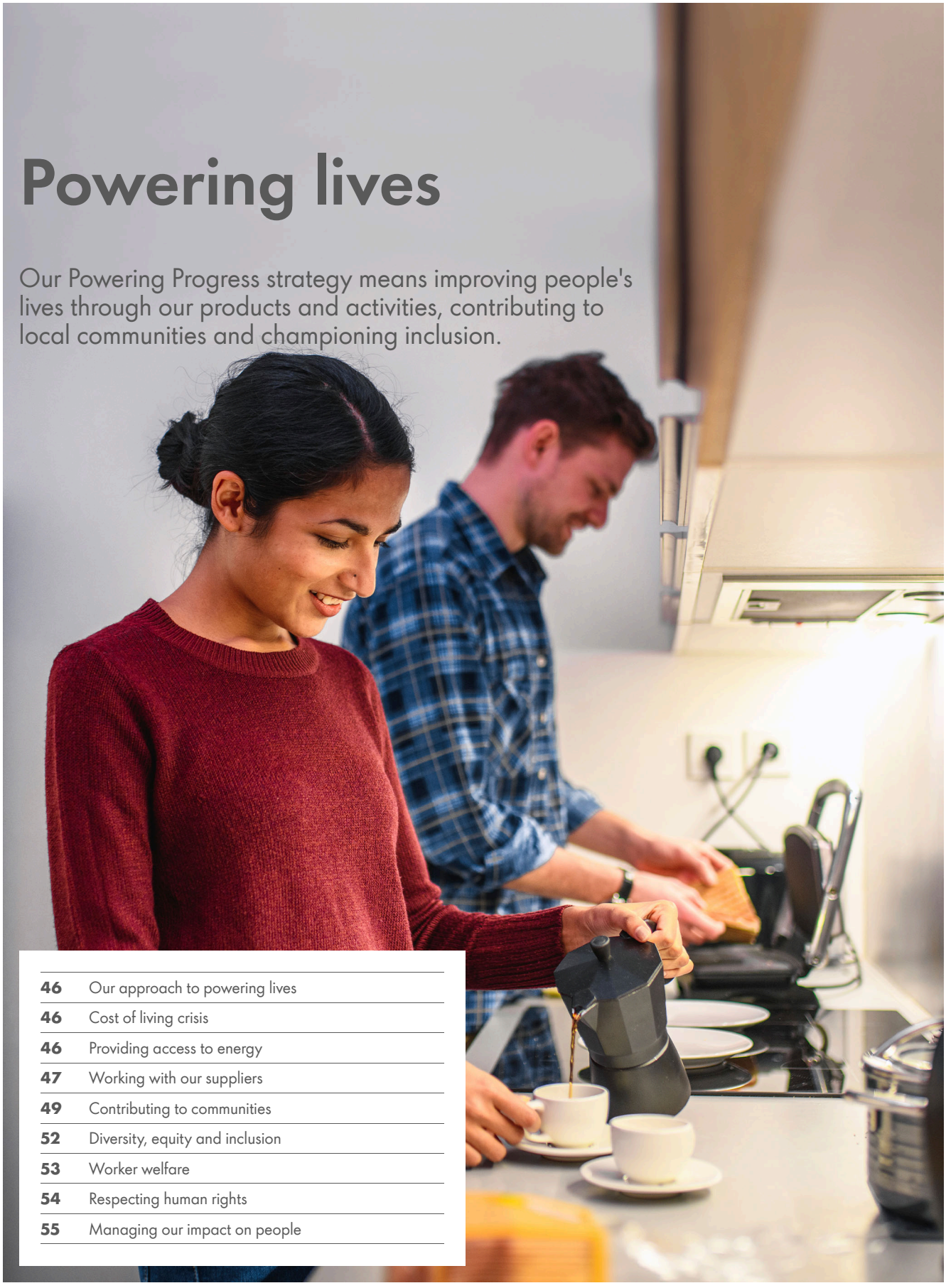


More in this report Sustainability at Shell | Our approach to respecting nature

More on Shell websites Our strategy: Powering Progress | Methane emissions | Greenhouse gas emissions | Reducing methane emissions in shale oil and gas | Air quality

Powering lives

Our Powering Progress strategy means improving people's lives through our products and activities, contributing to local communities and championing inclusion.



Our approach to powering lives

Shell is dedicated to making a positive impact on people around the world, and Powering Lives explains how we do that.

People's lives are better with energy. It provides things like warmth and light, cooked food and transport. We deliver this for millions of people around the world every day and are working to provide energy to those who don't yet have it.

We also want to help communities benefit from having us as their neighbour. We generate millions of jobs, pay billions in tax each year and support start-ups, local businesses and education programmes. And we champion human rights in communities, companies and organisations we work with. This includes activities such as advancing worker welfare and shaping an inclusive world so that everyone can be themselves.

More in this report Providing lower-carbon electricity | Letter from the CEO | Our Powering Progress targets
More on Shell websites Access to energy

Cost of living crisis

The cost of food, energy and other everyday essentials has been rising across the world since 2021, causing hardship for many people.

Although combating inflation is the responsibility of government, not companies, we realise that millions of families are struggling to make ends meet. That is why in some countries, where we supply electricity and gas to homes, we are working with government and social partners to help households in distress pay or reduce their energy bills.

In the UK, for instance, we announced a £50 million package to support some of the UK's most vulnerable energy consumers. This includes a £20 million hardship fund for Shell Energy Retail customers that need help to clear energy debts, and £150 for customers who already receive a government home heating grant during the winter. We also provide Shell shop vouchers for fuel and/or grocery items for those most in need, and are donating millions of pounds to UK charities that are helping those at the sharpest end of the crisis.

In the Netherlands, we are contributing to a government-backed emergency fund for people who cannot pay their energy bills. We are also working with several energy relief organisations to help low-income households and small businesses lower their energy use.

Globally, we are working with governments to ensure there is enough energy to meet demand after Russia's invasion of Ukraine. This includes delivering a record 194 cargoes of liquefied natural gas to Europe in 2022 – almost five times our usual average – to help maintain supply, and investing in new natural gas production and lower-carbon energies.

More in this report Letter from the CEO

Providing access to energy

POWERING **PROGRESS**

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.

Around 775 million people in the world have no electricity, according to the International Energy Agency, and millions more have unreliable power supply.

Investing in energy access

Shell is striving to bring reliable electricity to people in emerging markets who do not yet have it.

We are working to improve the reliability of existing power supply to on-grid customers and to provide first power to off-grid customers and communities.

We are seeking strategic partnerships with governments, utilities, developers, banks and investors to address local challenges and opportunities, and progress towards achieving our ambition to power emerging markets.

In 2022, we acquired Daystar Power, a provider of solar power to businesses in West Africa. The investment helps expand our energy business into developing markets like those in Africa where more lower-carbon electricity is needed.

Read more about our commercial energy access business at www.shell.com/emerging-markets-power.

Social programmes

Separate to our commercial ambition, we invest in social programmes that benefit communities where we work. Through these voluntary initiatives, we work with partner organisations to help individuals and communities access reliable electricity.

In 2022, we continued to develop programmes to improve access to energy in Ethiopia, Mozambique, Nigeria, Pakistan and South Africa.

Read more about how our social investment programmes help to increase access to energy at www.shell.com/sustainability/communities/access-to-energy.

More in this report Providing lower-carbon electricity | Letter from the CEO | Our Powering Progress targets
More on Shell websites Building an energy access business | Access to energy

Working with our suppliers

Supply chain

POWERING **PROGRESS**

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.

Shell aims to work with suppliers, including contractors, that behave in an economically, environmentally and socially responsible manner, as set out in our Shell General Business Principles and Shell Supplier Principles. In 2022, we spent around $41.5 billion on goods and services from around 24,000 suppliers globally.

We continually work with our suppliers to find ways to reduce greenhouse gas emissions across our supply chains. In 2021, we rolled out a new digital platform, Shell Supplier Energy Transition Hub, free of charge to our supply chain and any other interested company. The platform enables them to set emission ambitions and track performance, share best practice and exchange emissions data with their own supply chains. By the end of 2022, 1,039 of our suppliers had joined the platform, 460 of which have already set emission reduction targets. This is more than a fourfold increase on 2021 in both instances.

Read more about how we work with contractors and suppliers at www.shell.com/business-customers/shell-for-suppliers.

More in this report Respecting human rights | Preparing for emergencies | Energy transition
More on Shell websites Our strategy: Powering Progress | Shell for suppliers | Supplier Principles

Local content

We want to make a positive difference to countries and local communities where we operate. We do this by creating jobs, training people, supporting local businesses and buying goods and services from local suppliers – collectively referred to as local content.

Shell local content activities in 2022

$41.5 billion
spent globally on goods and services

61%
spent in Canada, Germany, the Netherlands, the UK and the USA

$5 billion
spent in countries where gross national income is less than $15,000 a year per person [A]

89.8%
spent in these low-income countries with local suppliers

[A] According to the UN Development Programme's Human Development Index 2021.

In 2022, 83.3% of the $41.5 billion we spent on goods and services was purchased from suppliers based in the same country of operation, also called local procurement. About 61% of our procurement was in Canada, Germany, the Netherlands, the UK and the USA, of which 81.9% was spent with local suppliers in these countries.

We estimate that around $5 billion was spent in countries that, according to the UN Development Programme's Human Development Index 2021, have a gross national income of less than $15,000 a year per person. In these countries, Shell companies spent around 89.8%, or about $4.6 billion, with local suppliers.

In 2022, we initiated and completed a local content measurement and reporting project with Ipieca, the global oil and gas industry association, that provides guidance for operators, contractors and governments on how to best measure the impacts and outcomes of local content practices. The guidelines will be rolled out throughout the industry in 2023.

We have also developed a new self-assessment guide that enables us to employ best local content practice throughout the duration of new projects. We began applying the guide in 2022 on the Holland Hydrogen I project in the Netherlands, which will be Europe's largest renewable hydrogen plant when production starts in 2025.

Discover more about how we work to support the countries in which we operate in the Community skills and entrepreneurship section and at www.shell.com/sustainability/communities/local-employment-and-enterprise.

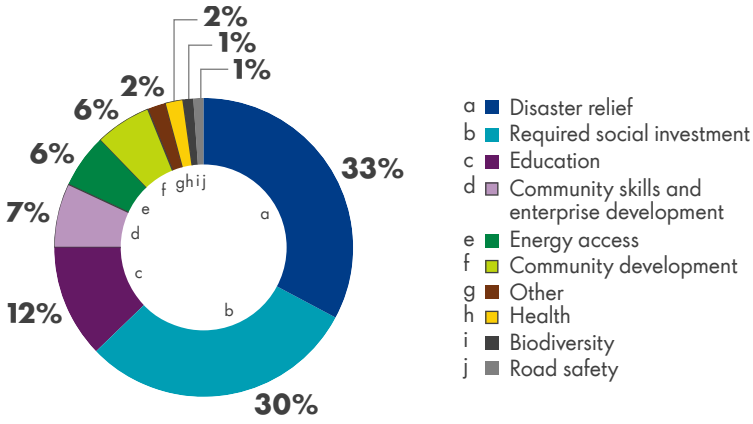
More in this report Respecting human rights | Preparing for emergencies
More on Shell websites Our strategy: Powering Progress | Shell for suppliers | Supplier Principles

Contributing to communities

Social investment

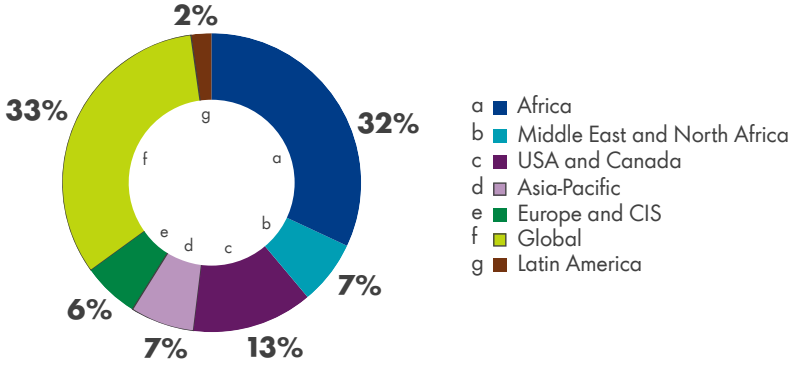
Our activities contribute to economies through taxes, jobs and business opportunities. We also make social investments in areas determined by local community needs and priorities. These investments are sometimes voluntary, sometimes required by governments, or part of a contractual agreement. In 2022, we spent almost $260 million on social investment, of which 30% was required by government regulations or contractual agreements. We spent the remaining $182 million (70%) on voluntary social investment.

Social investment – by theme
Percentage



Around $92 million of our total social investment spend in 2022 was in countries that, according to the UN Development Programme's Human Development Index 2021, have a gross national income of less than $15,000 a year per person.

Social investment – by region
Percentage



Find out more about our social investment at www.shell.com/sustainability/communities.

More in this report Providing access to energy | Community skills and entrepreneurship
More on Shell websites Our strategy: Powering Progress | People and communities | Working with communities | Generating prosperity for countries and communities

Community skills and entrepreneurship

Our community skills and entrepreneurship programmes benefit local communities where we operate by creating employment opportunities and contributing to economic development, while adding value to our supply chain.

In 2022, around 32,000 people participated in, and more than 4,000 businesses were supported by, our skills development programmes, which helped more than 2,300 people gain employment and/or improve their livelihoods after the training.

Shell has two global entrepreneurship programmes – Shell LiveWIRE and Shell StartUp Engine.

Shell LiveWIRE helps entrepreneurs in 20 countries start and/or grow their businesses. In 2022, Shell LiveWIRE trained about 2,685 people around the world and helped create more than 2,170 jobs. The programme supported 892 existing businesses and some 145 new businesses, with 123 Shell LiveWIRE-supported businesses entering our supply chain in 2022. The programme celebrated its 40th anniversary in 2022.

Shell StartUp Engine is a global innovation programme for entrepreneurs in the energy industry. It supports early-stage start-ups in areas such as renewables, energy storage, smart grids and electric mobility. In 2022, the programme supported 39 start-ups in Brazil, France, the Netherlands (as New Energy Challenge), Singapore, the UAE and the UK. We also collaborated with Microsoft and AVL to deliver the Shell StartUp Engine Social Impact Programme, which supported 11 mobility-related start-ups across Europe.

Find out more about community skills and entrepreneurship in the Local content section and at www.shell.com/sustainability/communities/local-employment-and-enterprise.

More in this report Social investment | Providing access to energy
More on Shell websites
Our strategy: Powering Progress | Supporting enterprise development and entrepreneurs | Local employment and enterprise | Buying locally and encouraging local suppliers

A just transition

Shell supports the Paris Agreement on climate change, which recognises the importance of a just transition. A just transition means a fairer distribution of the costs and benefits of the world's transition to a net-zero emissions energy system.

Our ambition is to contribute to a just transition by making a positive impact on our workforce, the communities where we operate and our customers. This is part of our strategic goal of powering lives. In 2022, Shell UK pledged £100 million to help communities in the UK develop skills and find jobs linked to the energy transition. This includes establishing educational skill centres with the aim of helping 15,000 people find employment by 2030.

We continue to help our own staff learn new skills needed for the energy transition. In 2022, around 4,000 Shell employees – up from 1,700 in 2021 – completed courses on a range of subjects, including hydrogen production, carbon capture and storage, and greenhouse gas and energy management.

We continue to work with governments and partners, such as Energy for a Just Transition, facilitated by Business for Social Responsibility, and Ipieca's Just Transition Task Force.

We also remain committed to respecting human rights, as set out in the United Nations Universal Declaration of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work (see Our approach to human rights).

You can read more about our approach at shell.com/justtransition.

Education in science, technology, engineering and maths

We actively support science, technology, engineering and maths (STEM) through a range of programmes in more than 20 countries. NXplorers, our flagship STEM programme, aims to help young people develop creative thinking to bridge the skills gap. NXplorers is now active in 19 countries, and engaged more than 78,000 students in 2022.

In 2022, we extended our STEM programme in India to cover all age groups from grade 7 to university level to help students gain the skills and confidence to engage in world issues. In the UK, our year-long Girls in Energy course taught some 300 young women about energy and career opportunities in the energy industry. And in Malaysia we worked with the Ministry of Education to make our STEM programme available to students across the country.

Read more about our contribution to STEM at www.shell.com/sustainability/communities/education.

More in this report Community skills and entrepreneurship | Providing access to energy
More on Shell websites Our strategy: Powering Progress | Education

Contributing to Nigeria's economy

Shell's Nigerian businesses support the development of local communities and companies. The businesses in which Shell has interests employed more than 2,500 people directly in 2022 and provided jobs for many others in supplier networks. In 2022, the Shell Petroleum Development Company joint venture (SPDC JV), Shell Nigeria Exploration and Production Company (SNEPCo) and Shell Nigeria Gas (SNG) awarded contracts worth $1.9 billion to Nigerian-registered companies.

Social and economic contribution of Shell companies in Nigeria

2,500
people employed by Shell, plus more than 10,000 contractors

97%
employees in Nigeria who are Nigerian

$1.36 billion
royalties and corporate taxes paid to the Nigerian government in 2022 (SPDC $450 million and SNEPCo $907 million)

$1.9 billion
worth of contracts were awarded to Nigerian-registered companies

17
health-care projects supported by the SPDC [A] JV and SNEPCo [B]

3,500+
university grants awarded by the SPDC JV and SNEPCo since 2016

[A] The Shell Petroleum Development Company of Nigeria Limited (SPDC), which has a 30% interest in the SPDC joint venture (SPDC JV) and produces oil and gas in the Niger Delta.
[B] The Shell Nigeria Exploration and Production Company Limited (SNEPCo), which operates in the deep waters of the Gulf of Guinea.

In 2022, the SPDC JV, SNEPCo and SNG invested $5.6 million in education programmes. More than 3,000 secondary school grants, 3,500 university grants and 990 cradle-to-career scholarship grants have been awarded since 2016.

In 2022, Shell Petroleum Development Company Limited (SPDC) and SNEPCo paid $1.36 billion in royalties and corporate taxes to the Nigerian government (SPDC $450 million, SNEPCo $907 million). Between them, the SPDC JV, SNEPCo and SNG also contributed $34.29 million in direct social investment. Social investment was mainly in projects related to community, health, education, road safety and enterprise programmes. These projects are often implemented in partnership with local authorities.

In addition, $56.13 million has been earmarked to be paid in 2023 by the SPDC JV and SNEPCo for a statutory contribution to Host Communities Development Trusts (HCDTs), which will benefit Nigerian communities. The SPDC JV is transitioning from its existing global memorandum of understanding (GMoU) agreements to the HCDTs in compliance with the Petroleum Industry Act of 2021. Outstanding tranche payments due to communities under the GMoU agreements will be transferred to the HCDTs. The SPDC JV has engaged extensively within its communities, with regulators and across the industry, to support this transition.

In 2021, we launched Shell Energy Nigeria, which aims to supply gas and reliable energy for power generation and industrial use across the country. In 2022, we acquired Daystar Power, a provider of solar power to businesses in West Africa.

Read more about Shell's economic contribution in Nigeria at www.shell.com.ng/nigeria-briefing-notes.

More in this report Spill response and prevention in Nigeria | Our approach to safety | Providing access to energy
More on Shell websites Our strategy: Powering Progress | Shell Nigeria | Nigeria Briefing Notes | Buying locally and encouraging local suppliers

Diversity, equity and inclusion

POWERING **PROGRESS**

We are focusing on removing barriers and creating equality of opportunity in four strategic priority areas: gender; race and ethnicity; lesbian, gay, bisexual and transgender (LGBT+); and disability inclusion and enABLEment, as set out in our Powering Lives commitments to diversity and inclusion.

- 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.

Employee engagement and dialogue

We want to make Shell an attractive employer. We seek to do so by offering career progression tools, such as individual development plans; flexible working options; global minimum maternity leave of 16 weeks and, from January 2023, at least 8 weeks paid parental leave for non-birthing parents; initiatives and programmes to help create a supportive working environment for employee well-being; and engagement with employees through multiple forums and channels.

The Shell People Survey is one of the key tools we use to measure employee engagement, motivation, affiliation and commitment to Shell. In 2022, the survey attained its highest ever response rate of 87% (up 3.4 percentage points from 2021). The average employee engagement score rose three points to 78 out of 100. Shell employees have access to senior leaders, local employee forums and employee resource groups. The Shell Global Helpline is available for employees to raise concerns or dilemmas, anonymously if they wish.

Read more about employee engagement in our 2022 Annual Report.

Diversity, equity and inclusion

Our ambition is to become one of the world's most diverse and inclusive organisations, a place where everyone – including employees, customers, partners and suppliers – feels valued, respected and has a strong sense of belonging. This ambition underpins our strategy and makes us a stronger organisation.

We are focusing on removing barriers and creating equality of opportunity in four strategic priority areas:

Gender

At the end of 2022, 55% of our Board of Directors and 22% of our Executive Committee were women.

We are working towards achieving 35% women in our senior leadership positions by 2025 and at least 40% by 2030. At the end of 2022, 30.4% of senior leadership were women, up from 29.5% in 2021.

In 2022, 40% of experienced hires were women compared with 44% in 2021. Our graduate hires have consistently been 48% or 49% women since 2019, against our 50% ambition. In 2022, 49% of our graduate hires were women, compared with 55% in 2021.

Our overall representation of women in Shell was 33% at the end of 2022.

Race and ethnicity

We aim to increase racial and ethnic representation across our workforce so that we better reflect, and support equity in, the communities where we work. We are focusing on the Netherlands, the UK and the USA, as these are the Shell hubs where we see the most significant opportunities for representation and inclusion of minority employees (see shell.com/dei for details).

At the end of 2022, Shell had one director from a minority ethnic group on its Board of Directors. At the time of publication of this report, Shell plc's Board has three members from a minority ethnic background, which exceeds the UK's Parker Review recommendation of at least one. In addition, one of our Executive Committee members identifies as being from a minority ethnic group.

LGBT+

We are working to advance lesbian, gay, bisexual and transgender plus (LGBT+) inclusion within Shell and the communities where we work. We promote equal opportunity and create an environment where people feel included, regardless of sexual orientation.

We benchmark our initiatives externally. In 2022, we were recognised as well advanced in LGBT+ workplace inclusion in the Workplace Pride Global 2022 Benchmark. We also received a 100% score from the Human Rights Campaign Corporate Equality 2022 Index and have been awarded top score every year since 2016.

Disability inclusion and enABLEment

We aim to create an inclusive, psychologically safe and accessible environment where people with disabilities can excel. We provide support and make adjustments for people with disabilities during the recruitment process and throughout their careers with Shell. This includes equal access to valuable educational resources, training programmes and emphasis on personal and professional development.

Our Global enABLEment Coalition, made up of leaders from our Employee Resource Groups, helps to shape and drive the enABLEment strategy across Shell. We now have 15 enABLE employee resource groups around the world. Our workplace accessibility service covers 81 locations worldwide to ensure that all employees have access to reasonable workplace adjustments so that they can work effectively.

We are also providing a better experience for our customers with physical disabilities through an app, delivered by fuelService, that allows any customer with a disability to alert stations in advance and request assistance. As of December 2022, Shell offered the service at almost 7,800 stations in 10 countries.

Read more about diversity, equity and inclusion in our Annual Report and at www.shell.com/DEI.

Our people in 2022

93,000
employees at December 31, 2022

>70
countries and territories in which we operate

55%
women on the Board of Directors

22%
women on the Executive Committee

30%
women in senior leadership positions

33%
women employees

266,000
formal training days for employees, joint venture partners and contractors

10,076
experienced people joined Shell (40% women, 60% men)

332
graduate hires joined Shell (49% women, 51% men)

More in this report Respecting human rights | Ethical leadership | Our Powering Progress targets
More on Shell websites Our strategy: Powering Progress | Contributing to a diverse, equitable and inclusive world | Shell UK Diversity Pay Gap Report 2022

Worker welfare

Our approach is informed by the 10 Building Responsibly Worker Welfare Principles. We also work with our partners and industry peers to include worker welfare in industry standards, guidance and best practice. This helps raise expectations and levels of consistency across the industry.

In 2022, we continued to take steps to improve our approach to worker welfare. We co-created a worker welfare workstream within the Ipieca supply chain working group to improve worker welfare in our industry. Our senior leadership conducted site visits in multiple countries to encourage workers to speak freely and to provide remedies and create a culture of trust and care. In Malaysia, for example, we visited 17 onshore and offshore sites in 2022 and conducted an anonymous survey of how our logistics and supply crews experience their working conditions. We received more than 300 responses. This resulted, among other things, in improved living quarters for a shipping crew by the vessel operator.

We also continued to work actively with our non-operated ventures and contractors to help improve worker welfare and labour rights across the energy industry. In China, for instance, the fabrication yard constructing production modules for LNG Canada (Shell interest 40%) achieved

20 million working hours without safety incident. The contractor worked with Shell to adopt the Building Responsibly principles, which has made a difference in worker well-being.

Our efforts to improve worker welfare are under continuous development. We know that as we drive for higher standards and consistency, we may identify situations where our expectations are not met. Our aim is to be transparent about our progress as well as the challenges we face in our operations and supply chain.

Read more about worker welfare at www.shell.com/sustainability/communities/worker-welfare.

More in this report Working with our suppliers | Diversity, equity and inclusion | Our Powering Progress targets
More on Shell websites Powering Progress – transitioning to net-zero emissions | Human rights

Respecting human rights

Our approach to human rights

Human rights are fundamental to Shell's core values of honesty, integrity and respect for people. Respect for human rights is embedded in the Shell General Business Principles and our Code of Conduct. Our approach is informed by the UN Guiding Principles on Business and Human Rights.

We work closely with other companies and organisations to improve how we apply these UN guiding principles. We focus on four priority areas where respect for human rights is critical to how we operate: communities, security, labour rights and supply chains.

In 2021 and 2022, we reviewed our salient human rights issues with the support of Business for Social Responsibility (salient human rights are those that are most at risk from our operations). We assessed potential impacts on the human rights of our stakeholders according to their potential severity, following the widely used criteria of scale, scope and irremediability. The resulting list of our salient issues is grouped into four focus areas: labour rights, supply chains, communities and security.

For each of these areas, we have systems to identify potential impacts and to avoid and mitigate them. For example, Shell's HSSE & SP Control Framework contains requirements that set out how we identify, assess and manage our impacts on communities where we operate, including any impact on human rights.

The Shell Supplier Principles outline how we expect our contractors and suppliers to respect the human rights of their workforce, and to manage the social impacts of their activities on Shell's neighbouring communities. When procuring solar panels and modules for our projects, for example, we engage extensively with our suppliers to ensure maximum transparency of our supply chain.

By the end of 2022, about 460 Shell staff had completed the human rights training course launched in 2021, which is mandatory for selected staff working in high-risk focus areas, such as social performance, human resources and contracting and procurement. We encourage all staff to do the course, regardless of their role, to build greater understanding of human rights across Shell.

Read more about our human rights policies and focus areas in our booklet Shell's approach to human rights and at www.shell.com/human-rights.

Modern slavery

Shell is opposed to all forms of modern slavery. Such exploitation is against our commitment to respect human rights as set out in the UN Universal Declaration of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work. Our approach is informed by the UN Guiding Principles on Business and Human Rights.

Read more about our approach in our statement under the UK Modern Slavery Act at www.shell.com/uk-modern-slavery-act.

Read Shell Australia's Joint Modern Slavery Statement, prepared under Australia's Modern Slavery Act 2018, at www.shell.com.au/sustainability/reporting.

Security practices

We work to maintain the safety, security and human rights of our employees, contract staff and local communities. Shell Group companies have implemented the Voluntary Principles on Security and Human Rights (VPSHR) since their development in 2000. We incorporate the VPSHR into our core security-related processes and contracts.

We carry out annual risk assessments and develop implementation plans to manage the identified risks. As part of these plans, we carry out training and awareness briefings with the security forces that we rely on in our implementation countries. We also screen private security providers on VPSHR and monitor their performance against a range of criteria.

Read more about our approach to human rights and security at www.shell.com/sustainability/transparency/human-rights and more about our implementation of the VPSHR at www.shell.com/vpshr.

More in this report Working with our suppliers | Diversity, equity and inclusion | Our Powering Progress targets
More on Shell websites Powering Progress – transitioning to net-zero emissions | Human rights

Managing our impact on people

Engaging with communities

Engaging with communities is part of our approach to managing human rights and providing access to remedy.

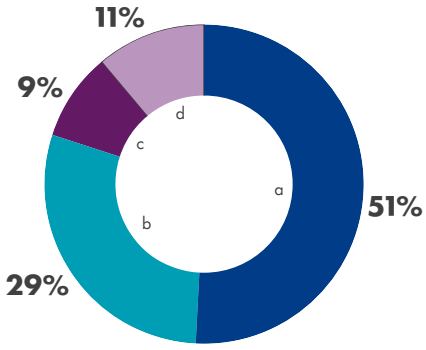
Shell's HSSE & SP Control Framework helps to ensure that we operate responsibly and avoid or minimise the negative social impacts of our operations. The requirements set out in the framework also help us to maximise benefits arising from our presence, such as local employment and contractual opportunities.

We use our online community feedback tool at many of our sites to track and respond to questions, complaints and feedback that we receive. It allows our network of 121 community engagement practitioners (CEPs) to document feedback and outcomes. The CEPs act as a bridge between local communities and our businesses. In 2022, most issues were resolved directly by the CEPs, and the remainder were resolved by site management.

In 2022, we increased the number of sites with community feedback mechanisms aligned with the effectiveness criteria of the UN Guiding Principles to 16. Several more sites have different procedures in place.

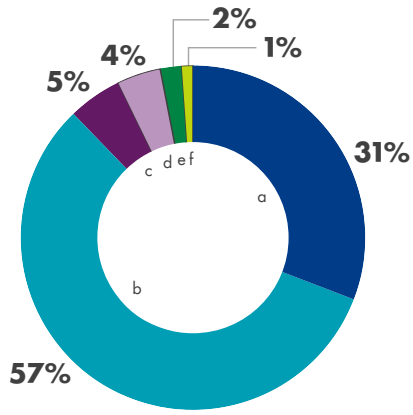
We received feedback from 108 sites in 30 countries in 2022.

Community feedback by type
Percentage



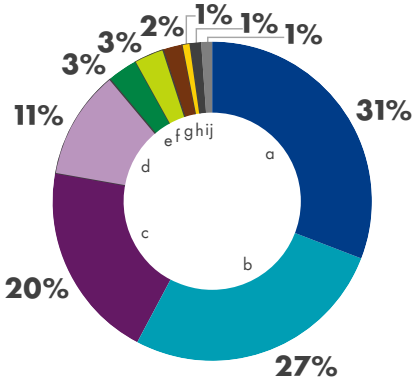
a Complaints
b Requests
c Questions
d Positive feedback

Complaints received globally by category
Percentage



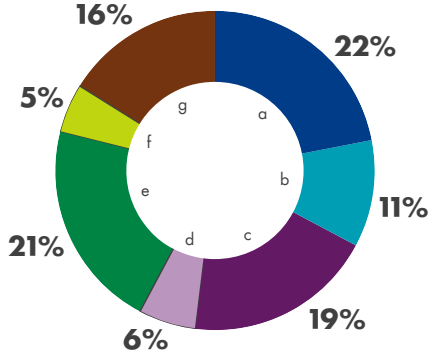
a Social
b Environment
c Business integrity, contractual and commercial
d Safety
e Health
f Security

Environmental complaints by subcategory
Percentage



a Odour
b Noise
c Light
d Flaring
e Air quality
f Dust
g Ecosystem and habitat
h Spills
i Soil and water contamination
j Other

Social complaints by subcategory
Percentage



a Land and resettlement
b Local content
c Labour
d Other
e Engagement
f Social investment
g Impact

Read more about our work with communities at www.shell.com/sustainability/communities/working-with-communities.

Indigenous Peoples

Our activities can affect Indigenous Peoples who hold specific rights for the protection of their cultures, traditional ways of life and special connections to land and water. We seek the support and agreement of Indigenous Peoples potentially affected by our activities through dialogue, culturally appropriate grievance mechanisms and impact management processes.

Shell has a public position statement on Free Prior and Informed Consent (FPIC), a principle recognised in the UN Declaration on the Rights of Indigenous Peoples. It entails open dialogue, good-faith negotiations and, where appropriate, the development of agreements that address the needs of Indigenous Peoples.

In 2022, we continued to work with Indigenous Peoples at several of our projects. At our QGC natural gas project in Australia, we are helping Traditional Owners develop a centralised database that enables them to document and manage their rich cultural heritage and increase understanding of its depth and sensitivities. We also partnered with the Waalitj Foundation to launch a scholarship programme, which in its first year funded 47 scholarships for indigenous students to pursue tertiary studies and vocational training.

In India, we are working with smallholder farmers, including those in tribal communities, to implement nature-based solution projects that help to absorb or prevent the release of greenhouse gases (see Nature-based solutions). These projects also aim to help farmers diversify their income through agroforestry and improve agricultural productivity through sustainable practices.

More in this report Community skills and entrepreneurship | Respecting human rights | Our Powering Progress targets
More on Shell websites Our strategy: Powering Progress | Working with communities

Cultural heritage

Preserving cultural heritage is an important part of our efforts to manage our social impact. Cultural heritage refers to places of archaeological, historical, cultural, artistic and religious significance. It also includes the preservation of unique environmental features, cultural knowledge and traditional lifestyles.

Our approach starts with considering how to avoid or minimise our impact on cultural heritage. This can involve carrying out archaeological assessments to inform, among other things, project design and site selection. We then develop chance-find procedures to deal with previously unknown heritage resources that may be discovered during construction. We train staff and contractors to make them fully aware of these resources to give them the authority to halt work if necessary.

In some instances, our efforts to protect cultural heritage involve distinct social and cultural groups that share ancestral ties to the land. In Brazil, we completed in 2022 a multi-year project to help 21 Quilombola communities record and reclaim their ancestral history and cultural heritage in their traditional territories. These lands were impacted by the discovery of oil and resultant worker migration in the 1970s and after.

Read more about our approach to cultural heritage at www.shell.com/sustainability/communities/working-with-communities.

More in this report Community skills and entrepreneurship | Respecting human rights | Our Powering Progress targets
More on Shell websites Our strategy: Powering Progress | Working with communities

Involuntary resettlement

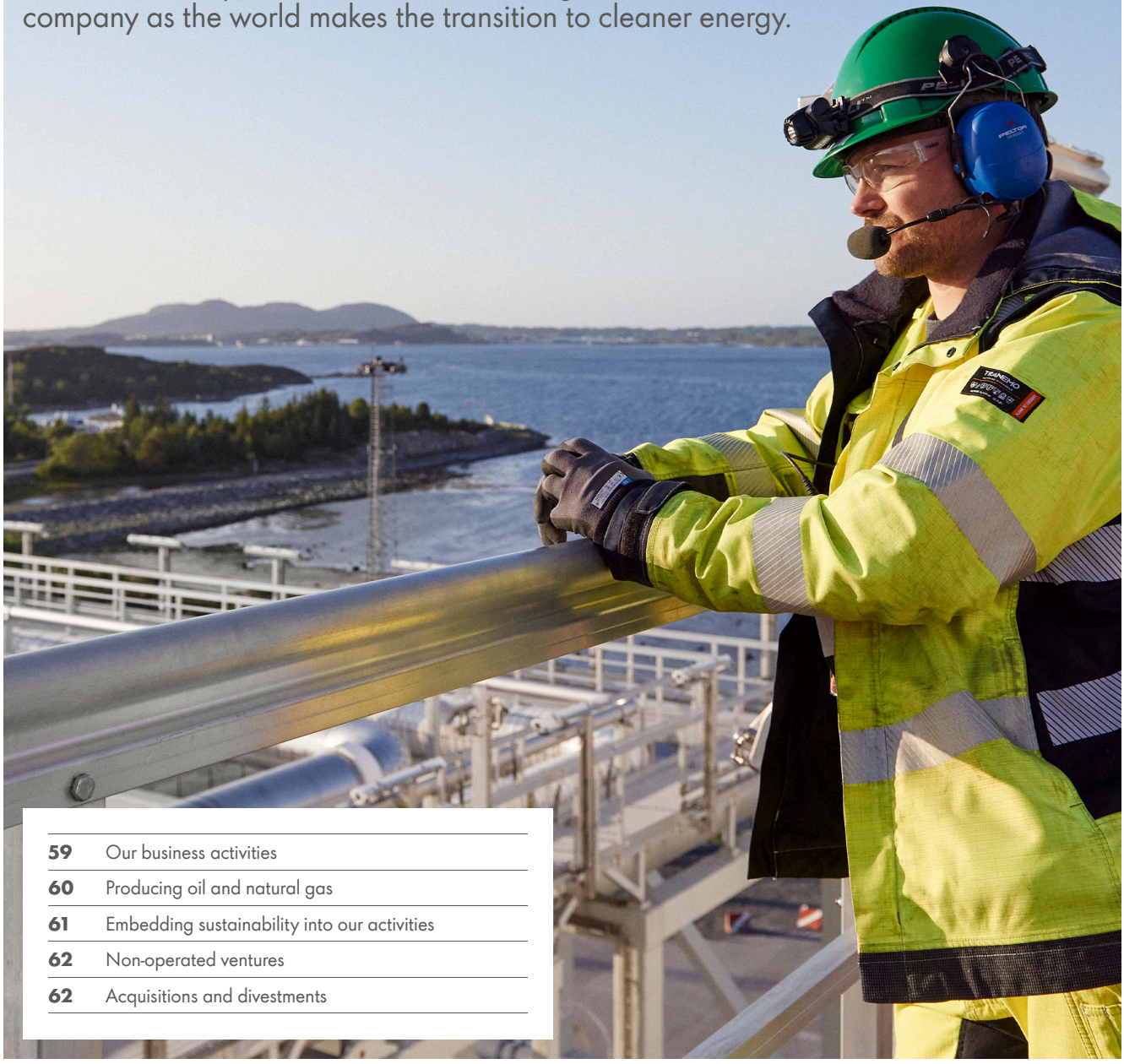
We sometimes require temporary or permanent access to areas of land or sea where people are living or working. We aim to avoid resettlement wherever possible. Where resettlement is unavoidable, we work with local communities to help them resettle and maintain, or improve, their standard of living in accordance with international standards for resettlement (notably the International Finance Corporation's Performance Standard 5 on land acquisition and involuntary resettlement). Our support may also include helping these communities to establish alternative livelihoods.

Read more about our approach to involuntary resettlement at www.shell.com/sustainability/communities/working-with-communities.

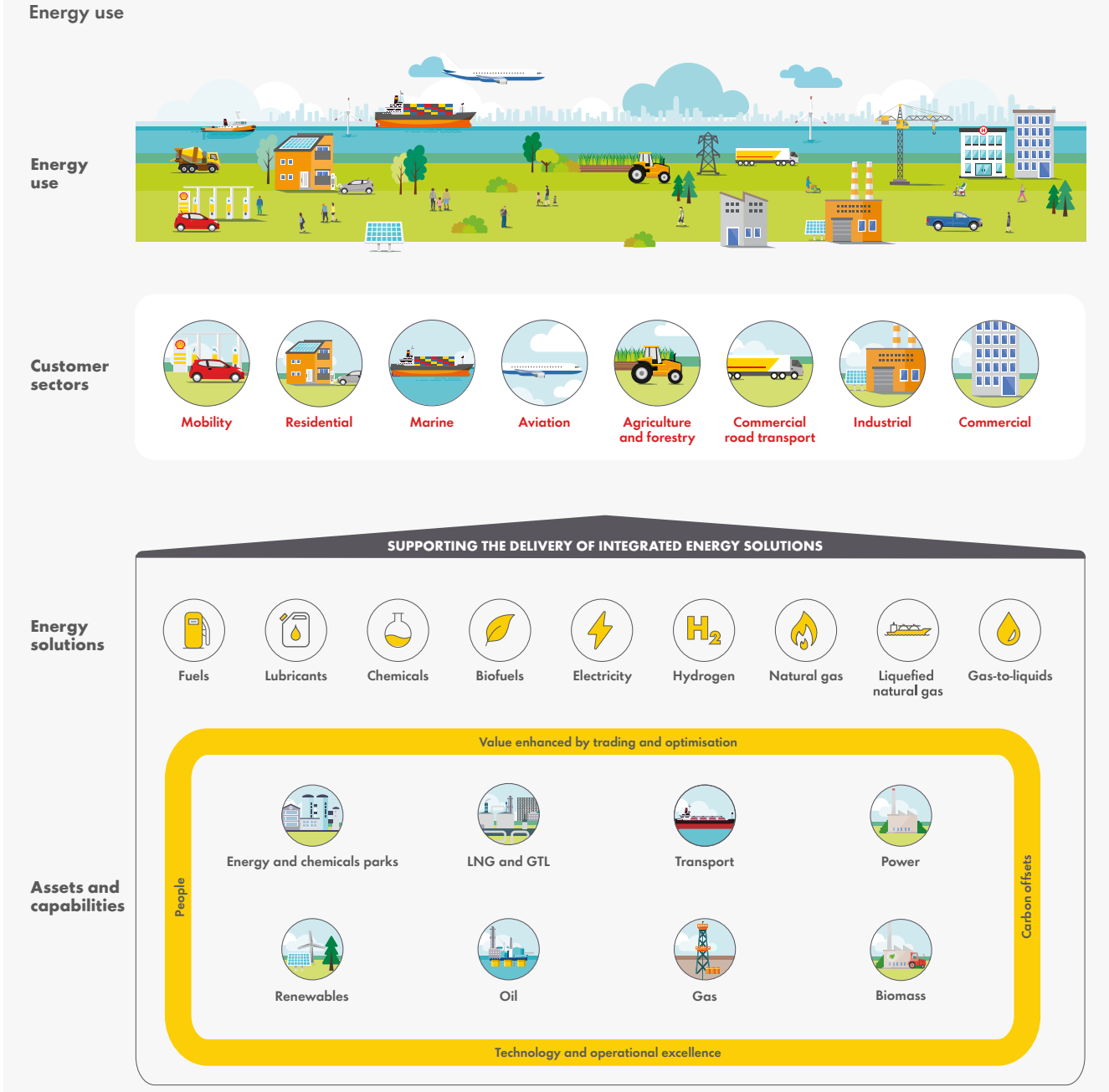
More in this report Community skills and entrepreneurship | Respecting human rights | Our Powering Progress targets
More on Shell websites Our strategy: Powering Progress | Working with communities

Generating shareholder value

Our Powering Progress strategy generates value for our shareholders. It provides the financial strength to transform our company as the world makes the transition to cleaner energy.



Our business activities



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

Producing oil and natural gas

Conventional oil and gas

The most ambitious scenarios show that as the energy system transitions, the world will continue to need oil and gas for decades.

From exploration to refining and distribution, traditional fuels continue to play a key role in the energy system. In 2022, our crude oil and natural gas liquids production available for sale was 13% lower than in the previous year. This larger than usual decline was mainly driven by portfolio changes, including the sale of our Permian business in the USA in late 2021 and derecognition of Sakhalin-related volumes in Russia.

As we transform our business, we will continue to deliver the energy the world needs today and in the decades ahead. At the same time, we are accelerating the transition to low- and zero-carbon energy, which is at the heart of our strategy.

Read more about our approach at www.shell.com/sustainability/integrating-sustainability-into-our-activities/producing-oil-and-gas-responsibly-and-efficiently.

Liquefied natural gas

As one of the world's largest suppliers of liquefied natural gas (LNG), we can ship natural gas to where it is needed. For instance, in 2022 we delivered a record 194 cargoes of LNG to Europe – almost five times our usual average – to help replace Russian gas and maintain supply for people and businesses. LNG also plays an important role in enabling countries to replace coal-fired power generation with a less carbon-intensive alternative.

In 2022, our Colibri project (Shell interest 87%) in Trinidad and Tobago started production. Colibri delivers natural gas domestically and internationally through Atlantic LNG, one of the world's largest LNG plants (Shell's interest ranges from 46% to 57.5% in each of the four trains at the facility). We are also part of the North Field East and North Field South expansion projects in Qatar, the largest LNG project ever, which will supply markets worldwide and include carbon capture and storage to reduce emissions. And, we made final investment decisions to develop offshore gas projects in the UK North Sea and, with our partners, in Australia and Malaysia. First gas is expected from these projects in the mid-2020s.

Read more about natural gas at www.shell.com/energy-and-innovation/natural-gas.

Shale oil and gas

Following the divestment of our Permian business in the USA in 2021, we have limited involvement in shale oil and gas production.

We work to unlock our remaining shale resources safely and responsibly through strict adherence to our Onshore Operating Principles for safety, air, water, footprint and community. We conduct our operations in a manner that aims to protect air quality and reduce emissions. For example, we are implementing greenhouse gas abatement projects for our facilities, such as using renewable power supply and energy efficiency improvement initiatives.

Read more about shale oil and gas production at www.shell.com/energy-and-innovation/shale-oil-and-gas.

Arctic

We do not plan to pursue new oil exploration leases offshore in the Arctic Circle.

Shell ended offshore exploration drilling operations in Alaska in 2015. We hold one licence interest in the North Slope area of Alaska. In 2020, we received regulatory approval to combine our near-shore leases in West Harrison Bay into a single unit and we are currently seeking a co-owner to operate the unit. The Nikaitchuq North prospect, in which Shell held a 50% interest, was relinquished by both Shell and ENI in 2022.

In Norway, Shell is a 10% partner in Irpa, an offshore natural gas discovery located in an area of existing gas production within the Arctic Circle. Irpa is planned as a tie-in to the existing Aasta Hansteen platform (operated by Equinor), which already supplies natural gas to the Nyhamna processing plant, where Shell is responsible for providing significant exports of gas to Europe.

We also hold several licences from our previous activities in the Canadian Arctic, although we do not plan to develop these licences. Shell exited its 50% interest in the Gydan energy venture in Russia in 2022. At the time of exit, Gydan had no production and had yet to make a commercial discovery.

Read more about our approach at www.shell.com/sustainability/integrating-sustainability-into-our-activities/producing-oil-and-gas-responsibly-and-efficiently.

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

Embedding sustainability into our activities

Projects

Safety and the impact of our activities on the environment and communities are vital considerations when we plan, design and operate our projects and facilities. The mandatory requirements in our Health, Safety, Security, Environment and Social Performance (HSSE & SP) Control Framework help to ensure projects and facilities are designed and constructed safely, responsibly and in a consistent way.

At a project level, assessing climate-related risks is an important part of making initial investment decisions. Projects under development that are expected to have a material greenhouse gas impact must meet our internal carbon performance standards or industry benchmarks. This helps to ensure that our projects can compete and prosper in the energy transition.

In 2022, we took a final investment decision to start building Europe's largest renewable hydrogen plant in the Netherlands. Once operational in 2025, the plant will produce up to 80 tonnes of renewable hydrogen per day using clean energy from an offshore wind farm partly owned by Shell. The hydrogen will supply the Shell Energy and Chemicals Park Rotterdam.

Also in 2022, we took a final investment decision to develop the Rosmari-Marjoram gas project (Shell interest 80%), which lies off Malaysia's coast. The offshore production platform will be powered mainly by solar panels and the onshore gas plant primarily by hydroelectricity from the mainland power grid.

Read more about how we embed sustainability into the life of a project at www.shell.com/sustainability/embedding-sustainability-into-projects.

Read about our major projects at www.shell.com/about-us/major-projects.

Decommissioning and restoration

Decommissioning is part of the normal life cycle of every oil and gas structure. We work hard to close and dispose of installations in a safe, efficient, cost-effective and environmentally responsible manner. This includes restoring the surroundings of platforms and facilities in line with relevant legislation, while taking our own environmental standards into account.

We have decommissioning and restoration activities under way in Brazil, Brunei, India, the Netherlands, the UK and the USA. We seek to reuse, repurpose and recycle materials in decommissioning. At the end of 2022, we reported $20 billion on our balance sheet for current and non-current decommissioning and other provisions, which is how we account for future decommissioning expenses (see our 2022 Annual Report).

Shell invests in innovative decommissioning and restoration technologies, both in-house and by funding third parties. For instance, our Local Expander technology is used throughout the industry to plug unused wells and stop methane and liquids from escaping over time. The expander is easy to deploy and typically reduces greenhouse gas emissions by at least half compared with the alternative method of plugging.

Read more about Shell's approach to decommissioning at www.shell.com/sustainability/decommissioning-and-restoration.

More in this report Our Powering Progress targets | Letter from the CEO
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Non-operated ventures

More than half of Shell's joint ventures are not operated by Shell. We do not have direct control over how these ventures embed sustainability in their operations, but seek instead to offer our support and exert a positive influence on their operations.

We expect a joint venture operated by a partner to apply standards and processes, or principles, that are materially equivalent to our own, specifically our:

- Shell General Business Principles;
- Shell Commitment and Policy on Health, Safety, Security, the Environment and Social Performance; and
- Statement on Risk Management (or a materially equivalent approach to risk and internal control).

As part of our efforts to enhance transparency and the robustness of our methane emissions data reporting, we held sessions in 2022 with several joint-venture partners to discuss the importance of methane emissions management and the benefits of the Oil & Gas Methane Partnership (OGMP) 2.0 reporting framework, of which we are a founding signatory. During the year, we were awarded Gold Standard status for our OGMP 2.0 reporting for the second consecutive year.

For more information about how we work with our joint ventures, see www.shell.com/sustainability/integrating-sustainability-into-our-activities/working-with-nonoperated-ventures.

More in this report Sustainability at Shell | Our standards and policies | Letter from the CEO
More on Shell websites Powering Progress – transitioning to net-zero emissions | Integrating sustainability into our activities

Acquisitions and divestments

Powering Progress sets out our strategy to accelerate the transition of our business to net-zero emissions, purposefully and profitably, by 2050.

We take care to invest responsibly in the energy transition and screen our investments against multiple criteria.

Before acquiring or divesting a business, we assess the counterparty's financial strength; operating culture; policies governing health, safety, security and environmental performance; ethics and compliance; and the effectiveness of its social performance programmes.

Where relevant, we also share our emission reduction plans, including how we seek to comply with regulations and implement our commitments, for the buyer's consideration as they prepare to take over ownership.

Read more about how we divest at www.shell.com/sustainability/integrating-sustainability-into-our-activities/divesting-responsibly.

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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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Cautionary note

The companies in which Shell plc directly and indirectly owns investments are separate legal entities. In this report "Shell", "Shell Group" and "Group" are sometimes used for convenience where references are made to Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to Shell plc and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. "Subsidiaries", "Shell subsidiaries" and "Shell companies" as used in this report refer to entities over which Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as "joint ventures" and "joint operations", respectively. "Joint ventures" and "joint operations" are collectively referred to as "joint arrangements". Entities over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

Forward-looking statements

This report contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "aim", "ambition", "anticipate", "believe", "could", "estimate", "expect", "goals", "intend", "may", "milestones", "objectives", "outlook", "plan", "probably", "project", "risks", "schedule", "seek", "should", "target", "will" and similar terms and phrases. There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this report, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell's products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, judicial, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; (m) risks associated with the impact of pandemics, such as the COVID-19 (coronavirus) outbreak; and (n) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this report are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Shell plc's Form 20-F for the year ended December 31, 2022 (available at www.shell.com/investor and www.sec.gov). These risk factors also expressly qualify all forward-looking statements contained in this report and should be considered by the reader. Each forward-looking statement speaks only as of the date of this report, March 28, 2023. Neither Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this report.

Shell's Net Carbon Intensity

Also, in this report we may refer to Shell's "Net Carbon Intensity", which includes Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production and our customers' carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. The use of the term Shell's "Net Carbon Intensity" is for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.

Shell's net-zero emissions target

Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, they reflect our Scope 1, Scope 2 and NCI targets over the next ten years. However, Shell's operating plans cannot reflect our 2050 net-zero emissions target and 2035 NCI target, as these targets are currently outside our planning period. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

Other business targets

Portfolio allocation affects our ability to deliver on targets we have made, and socio-economic, political and market factors sometimes change our outlooks. Existing global targets are currently under review. While no decisions have been made, to ensure our transition to a net-zero energy business is profitable, it is likely some business KPI targets may be retired, as part of normal strategy evolution and mindful of existing capital allocation in the latest Operating Plan. We expect to provide further insights during our Capital Markets Day in June 2023. All targets presented at Capital Markets Day in June will be filed with the SEC.

Forward-looking non-GAAP measures

This report may contain certain forward-looking non-GAAP measures such as cash capital expenditure and divestments. We are unable to provide a reconciliation of these forward-looking Non-GAAP measures to the most comparable GAAP financial measures because certain

information needed to reconcile those Non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of Shell, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc's consolidated financial statements.

The contents of websites referred to in this report do not form part of this report.

We may have used certain terms, such as resources, in this report that the United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov.

Additional information

As used in this Report, "Accountable" is intended to mean: required or expected to justify actions or decisions. The Accountable person does not necessarily implement the action or decision (implementation is usually carried out by the person who is Responsible) but must organise the implementation and verify that the action has been carried out as required. This includes obtaining requisite assurance from Shell companies that the framework is operating effectively. "Responsible" is intended to mean: required or expected to implement actions or decisions. Each Shell company and Shell-operated venture is responsible for its operational performance and compliance with the Shell General Business Principles, Code of Conduct, Statement on Risk Management and Risk Manual, and Standards and Manuals. This includes responsibility for the operationalisation and implementation of Shell Group strategies and policies.

CO_2 compensation does not imply that there is no environmental impact from the production and use of the product as associated emissions remain in the atmosphere. CO_2 compensation is not a substitute for switching to lower-emission energy solutions or reducing the use of fossil fuels. Shell businesses focus first on emissions that can be avoided or reduced and only then, compensate the remaining emissions.

"Carbon neutral" or "CO_2 compensated" indicates that Shell will engage in a transaction where an amount of CO_2 equivalent to the value of the remaining CO_2e emissions associated with the raw material extraction, transport, production, distribution and usage/end-of-life (if Lubricants or other non-energy product) of the product are compensated through the purchase and retirement of carbon credits generated from CO_2 compensation projects. Although these carbon credits have been generated in accordance with international carbon standards, the compensation may not be exact.

CO_2e (CO_2 equivalent) refers to CO_2, CH_4, N_2O.

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