SUSTAINABILITY REPORT 2019

ROYAL DUTCH SHELL PLC

DELIVERING ENERGY RESPONSIBLY

sabotage of pipelines, as well as illegal oil refining. We also have programmes in place to reduce the number of operational spills over the long term. In 2019, we continued to carry out vital work to clean up Bodo, an area badly affected by oil spills.

Being responsible is also about behaving ethically. Our employees must show absolute integrity every day. They must meet the ethical standards that Shell, and society, expects. Our standards are set out in Shell's business principles and code of conduct. We are very clear that it is not sufficient for Shell's actions and behaviour merely to be legally sound. We must take a broad view that also considers the wider implications of our commercial choices and our stakeholders' view of them. We spent a lot of time in 2019 reinforcing the standard of behaviour we expect. For example, all senior executives completed a mandatory ethical leadership programme. I strongly believe all leaders must set the tone from the top.

SUSTAINABLE ENERGY FUTURE

The second area we focus on is to help shape a more sustainable energy future.

That is why we are taking action to provide lower-carbon products to help customers reduce their emissions. These are products that people rely on to live their lives, in their homes and businesses, and for transport.

We continue to work towards delivering on our Net Carbon Footprint ambition to cut the intensity of the greenhouse gas emissions of the energy products we sell by about 50% by 2050, and 20% by 2035 compared to our 2016 levels, in step with society as it moves towards meeting the goals of the Paris Agreement. In 2019, we set shorter-term targets for 2021 of 2-3% lower than our 2016 baseline Net Carbon Footprint. In early 2020, we set a Net Carbon Footprint target for 2022 of 3-4% lower than our 2016 baseline. We will continue to evolve our approach over time.

We are taking action to achieve this ambition. In 2019, we continued to offer lower-emission energy products, including natural gas, biofuels, hydrogen and renewable power. We increased our investment in natural ecosystems that produce carbon credits to help drivers in two key markets, the Netherlands and the UK, to offset their carbon emissions. And we increased our use of detection and repair programmes at our gas production sites to reduce leaks of methane, a potent greenhouse gas.

Of course, the task of tackling climate change is bigger than any single company. Everyone on the planet, from consumers, to businesses, to governments, must play their part in reducing greenhouse gas emissions. Everyone must work together. One form of collaboration is for businesses like Shell, which supply energy, to work alongside businesses that use energy, to decarbonise their sector. The shipping industry is one sector where such an approach could have a huge impact. For example, the Getting to Zero Coalition brings together more than 90 companies to find a way to put a commercially viable net-zero emissions ship to sea by 2030.

CONTRIBUTION TO SOCIETY

The third area of sustainability for us – and it is a critical one – is to make a positive contribution to society.

Meeting society's expectations involves playing a positive role in communities where we operate and in wider society. We do this by creating jobs, developing talent and using local suppliers. We also invest in education programmes to equip young aspiring engineers and scientists with the tools and skills needed to become future innovators.

In 2019, we made further progress in providing energy to people who would otherwise go without basics such as electric lighting. We made several investments to help provide reliable electricity across Africa, Asia and beyond. This supports the effort to help to achieve universal access to clean, affordable energy, one of the many UN sustainable development goals to which we contribute.

Contributing to society also means gaining and maintaining people's trust. We do this by being as open as we can about what we do and why we do it. For example, we are being increasingly transparent about the industry groups we are part of. In 2019, we published the Industry Associations Climate Review, which assessed for the first time Shell's alignment with 19 industry associations on climate-related policy. We also published our first Tax Contribution Report in 2019, which presents Shell's approach to tax and explains how our business activities are taxed globally.

This Sustainability Report details our activities during 2019. The report builds on our actions on sustainability and transparency. We are a founding member of the UN Global Compact and we also continue to support its corporate governance principles on human rights, environmental protection, anti-corruption and better labour practices.

Once again, I would like to thank the members of the independent Report Review Panel, who help us provide more balanced, relevant and responsive reporting.

This report shows much progress. But Shell must further step up efforts on all fronts, from climate change to ethical leadership to greater transparency. We must continue to make a real contribution to people's lives. We can only do this by keeping our approach to sustainability at the heart of the way we do business.

Ben van Beurden
Chief Executive Officer

MANAGING GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS

We are taking action to manage the emissions from our own operations and the emissions from the energy we use in our operations.

Improving the energy efficiency of our facilities is one of the ways to help us achieve our Net Carbon Footprint ambition to cut the intensity of the greenhouse gas (GHG) emissions of the energy products we sell by around half by 2050, in step with society's progress to align with the goal of the Paris Agreement.

We require projects and facilities that produce more than 50,000 tonnes of GHG emissions a year to have a GHG and energy management plan in place.

These plans help drive our emissions performance through various actions. This includes using more energy-efficient equipment, installing power from renewable sources and considering carbon capture and storage in the design of our new and largest projects.

GHG and energy management plans must include the sources of GHG emissions, as well as a forecast of expected emissions at the site for at least 10 years. Projects under development that are expected to have a material GHG footprint must meet carbon performance standards or industry benchmarks.

During development, projects are expected to evaluate relevant low-carbon technologies and options to remove GHG emissions. To assess the resilience of proposed projects, we consider factors such as potential costs associated with operational GHG emissions.

We use estimates of future carbon costs that are specific to each country. This is an important part of our efforts to stay in step with society's progress toward the goals of the Paris Agreement. These estimates were developed using the current Nationally Determined Contributions (NDCs) submitted by countries as part of the Paris Agreement. By 2050, our estimates for all countries increase to $85 a tonne of GHG emissions.

They are the first NDCs under the Paris Agreement and are scheduled to be revised every five years. Therefore, as countries update their NDCs, we expect to update our estimates too. Accordingly, we believe they are a more accurate reflection of society's current implementation of the Paris Agreement. The UN believes the current NDCs are consistent with limiting the average global temperature rise to around three degrees Celsius above pre-industrial levels. In coming decades, we expect countries to tighten these NDCs to meet the goals of the Paris Agreement.

We have also developed and implemented a comprehensive CO_2 and energy management information system that supports our facilities, for example, by analysing real-time data to highlight maintenance gaps and monitor performance.

Greenhouse gas emissions performance

Our direct GHG emissions decreased from 71 million tonnes of CO_2 equivalent in 2018 to 70 million tonnes of CO_2 equivalent in 2019. The main reasons for the decrease were divestments (for example, in Argentina, Canada, Iraq, Malaysia, Norway and the UK). These decreases were partly offset by the start-up of the Prelude floating liquefied natural gas facility in Australia.

A Shell employee inspects equipment for potential methane leaks at a facility in Pennsylvania, USA.

ENVIRONMENTAL DATA

Environmental performance data

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Greenhouse gas (GHG) emissions										
Total GHG emissions										
Net Carbon Footprint (gCO_2e/MJ)	78	79	79	79						
Direct GHG emissions (Scope 1) (million tonnes CO_2 equivalent) [A]	70	71	73	70	72	76	73	72	74	76
Carbon dioxide (CO_2) (million tonnes)	67	68	70	67	68	73	71	69	71	72
Methane (CH_4) (thousand tonnes) [P]	91	92	123	138	132	134	120	102	143	128
Nitrous oxide (N_2O) (thousand tonnes)	1	1	1	1	1	1	1	1	1	2
Hydrofluorocarbons (HFCs) (tonnes) [P]	29	31	22	21	20	16	18	23	22	23
Energy indirect GHG emissions (Scope 2) (million tonnes CO_2 equivalent) [B]	10	11	12	11	9	10	10	9	10	9
GHG emissions associated with exported energy (subset of direct GHGs)	3	3	3	3	2	3				
Use of our refinery and natural gas products (Scope 3 Category 11) (million tonnes CO_2 equivalent) [Q]	576	599	579	600	560	600	600	580	570	670
GHG emissions breakdown by business (Scope 1 and 2)										
Scope 1 – Upstream (million tonnes CO_2 equivalent)	12.9	14.8	19.6	18.7						
Scope 1 – Integrated Gas (million tonnes CO_2 equivalent)	16.3	13.0	12.0	13.7						
Scope 1 – Downstream (million tonnes CO_2 equivalent)	40.3	42.2	41.1	37.6						
Scope 2 – Upstream [B] (million tonnes CO_2 equivalent)	1.1	1.4	1.4	1.4						
Scope 2 – Integrated Gas [B] (million tonnes CO_2 equivalent)	1.6	2.4	2.4	2.0						
Scope 2 – Downstream [B] (million tonnes CO_2 equivalent)	7.3	6.8	7.5	7.3						
GHG intensity by Business										
Upstream and Integrated Gas GHG intensity	0.168	0.158	0.166	0.166						
Refinery GHG intensity	1.06	1.05	1.14	1.18						
Chemical GHG intensity	1.04	0.96	0.95	0.99						
Flaring										
Flaring (upstream) (million tonnes CO_2 equivalent) [C] [P]	5.9	5.2	8.2	7.6	11.8	12.5	8.0	7.7	10.7	10.6
Flaring (upstream) (million tonnes hydrocarbon flared) [C] [P]	1.8	1.5	2.5	2.3	3.5	3.7	2.4	2.3	3.4	3.5
Nigeria [D] [P]	0.7	0.6	0.8	0.5	0.9	1.2	1.2	1.5	2.0	2.4
Rest of the world [E]	1.2	1.0	1.7	1.8	2.6	2.5	1.1	0.8	1.4	1.0
Energy intensity										
Upstream excl. oil sands, LNG and GTL (gigajoules per tonne production) [C] [F]	1.07	1.06	1.05	1.02	0.83	0.87	0.89	0.83	0.75	0.74
Refineries: Refinery Energy Index [G]	94.4	94.3	94.8	95.4	95.4	94.9	95.6	98.4	100.8	101.8
Chemical plants: Chemicals Energy Intensity	19.7	18.3	17.6	18.9	19.6					
Acid gases and VOCs										
Sulphur oxides (SO_x) (thousand tonnes SO_2) [P]	65	74	81	83	88	97	99	113	136	139
Nitrogen oxides (NO_x) (thousand tonnes NO_2)	108	111	107	113	104	146	144	147	146	159
Volatile organic compounds (VOCs) (thousand tonnes) [P]	55	59	95	153	131	151	89	89	129	147