ASSESSMENT OF SHELL’S CLIMATE STRATEGY
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INTRODUCTION

Shell ranked as the 7th biggest oil and gas producer worldwide in 2021 and as the 12th biggest oil and gas upstream developers globally. The company is the 7th biggest Liquified natural gas (LNG) terminal developer worldwide.¹

As one of the largest greenhouse gas emitters worldwide, and one of the six oil and gas majors, Shell is one of the few companies in the world whose climate transition (or lack thereof) in the coming years will have a determining impact on our collective ability to limit global warming to 1.5°C. In 2020, the company pledged to achieve carbon neutrality across its entire operations on an absolute basis by 2050 or sooner.²

Shell’s investors and other financial stakeholders have both a key interest and a crucial responsibility to ensure that the company swiftly aligns on a 1.5°C-compatible pathway. In addition to targeted restriction policies, shareholder engagement is an important tool to reach this objective.

The key findings of this briefing are:

• Shell does not provide sufficient information about its decarbonization plan to allow investors and other financial stakeholders to correctly assess its capacity to align with a 1.5°C pathway. Insufficient information is given on the company’s CAPEX plan, its 2030 targeted energy mix and production volumes, as well as on the reference scenario it uses to establish its climate plan.

• Taking into account Shell’s oil and gas production from currently producing fields, and its fields that are under development and under field evaluation, its production level in 2030 will be 16% higher than what is required to align with the International Energy Agency’s 1.5°C-aligned Net Zero Emissions (NZE) scenario.

• Shell plans a reduction of its oil production by 1% to 2% per year by 2030 and a mix composed of 45% of oil and by 55% of gas in 2030. If it meets this target, its production will be 53% higher than the level required to align with the NZE.

• Shell has not committed to stop developing new oil and gas projects beyond those already in development and around a quarter of its current expansion plans are in ultradeep water and fracking activities.

• For every dollar invested in its “Renewables & Energy solutions” division in 2022, more than 6 dollars in oil and gas. Taking into account that Shell’s “Renewables & Energy solutions” division includes non-renewable energy sources, for every dollar invested in fossil fuels, less than 16 cents was invested in sustainable renewable energies.

• For every dollar invested in its “Renewables & Energy solutions” division in 2022, more than 7 dollars were distributed to shareholders through dividends and share buyback.

• Shell’s “Renewables & Energy solutions” division amounts to 12% of its 2023 overall cash capital expenditure plan.

• Shell’s targeted carbon intensity by 2030 is 40% higher than in the NZE, and 25% more than in the below 2°C Announced Pledges Scenario (APS) scenario. If it meets these targets and reduces its energy supply as per the IEA scenarios, Shell will have overshot its share of the 2023-2030 carbon budget by 40% under the NZE, and by 25% under the below 2°C.
1. SHELL IN A NUTSHELL TODAY

Shell accounts for 2.6% of global oil and gas production and 1.9% of short-term expansion plans. As of March 1st, 2023:

- Shell had 14,736 million barrels of oil equivalent (mmboe) of resources under production, including 7,776 million barrels (mmbbl) of oil and 6,960 mmbbl of fossil gas. This represents the equivalent of 13.4 years of production at 2022 levels.
- Shell had 4,230 mmboe of resources under development or field evaluation, including 1,839 mmbbl of oil and 2,392 mmbbl of fossil gas. This represents 3.8 years of production at 2022 levels.
- Shell holds 7,544 mmboe of oil and fossil gas discoveries, including 3,073 mmbbl of oil and 4,472 mmboe of fossil gas. This represents 6.8 years of production at 2022 levels.

In 2022, Shell extracted 487 mmbbl of oil and 571 mmbbl of fossil gas. Beyond exploration and production, Shell is also active in other segments such as midstream, oil refining and trading, renewable and gas power generation, hydrogen and retail. In 2022, Shell produced 30 million tons of LNG, 512 mmbbl of refinery throughput and petrochemical sales were 12Mt.

Shell’s renewable portfolio is composed in majority of solar energy and offshore wind. Shell has 50 GW of renewable generation capacity in operation, under construction or potential projects.

Source: Rystad Energy, accessed in March 2023

2. TRANSPARENCY OF SHELL’S CLIMATE PLAN

The adoption and publication of sufficiently detailed targets and indicators are a prerequisite to assessing how a company’s transition plan aligns with a 1.5°C trajectory. Shell publishes a climate plan and indicators with detailed climate targets.

While Shell provides information about its decarbonization targets, it does not include significant indicators, and the information provided lacks the granularity needed to allow investors and other financial stakeholders to correctly assess its capacity to align with a 1.5°C pathway. The information given does not allow investors to understand the company’s trajectory for GHG emissions and its production model through 2030, or the risks associated with financial exposure to the company.

For example, Shell does not disclose the 2030 forecasted energy mix, and its investments specifically dedicated to renewable energy. Such information is key to identify the energy transition strategy planned by the company, and therefore the credibility of emission reduction goals.

The table below summarizes the level of disclosure on a few key transition indicators by Shell. It does not provide a comprehensive assessment of the transparency and completeness of Shell’s transition plan, but rather focuses on basic indicators that should be at the foundations of any oil and gas major transition plan.
## Assessment of the transparency of Shell’s climate plan

<table>
<thead>
<tr>
<th>Does Shell publish detailed information about the following indicators up to 2030?</th>
<th>Yes - No</th>
<th>Comment</th>
</tr>
</thead>
</table>
| Absolute & relative GHG emissions reduction targets covering scope 1, 2 and 3 | Partially | - Shell publishes 2030 carbon intensity targets on scope 1, 2 and 3.  
- Shell publishes 2030 absolute emissions targets on scope 1 and 2. |
| Contribution of carbon capture along the company’s value chain to emission reduction targets | Partially | - Shell publishes 2035 CCS targets. |
| Contribution of offsets to the emission reduction targets, and offsetting approaches | Yes | |
| Capital expenditure (CAPEX) breakdown by activity, and by production maintenance and growth | No | - Shell does not disclose its 2030 forecasted CAPEX.  
- Shell forecasted the share of its 2025 CAPEX dedicated to low carbon, that include biofuels and hydrogen, power, NBS, CCS, convenience retail.  
- Shell indicates its 2023 CAPEX range guidance with the breakdown between business lines, but renewable energy CAPEX is aggregated with electricity storage, gas trading and power, retail gas and electric vehicle charging services.  
- Shell does not disclose the breakdown between maintenance and growth CAPEX. |
| 2030 targeted energy mix and production volumes | No | - Shell does not report its 2030 total energy supply projections and 2030 future energy mix.  
- Shell discloses its projected oil production average evolution by 2030, but not its fossil gas production.  
- Shell does not communicate neither on its 2030 renewable capacity projections nor on its 2030 projected renewable production. |
| Reference scenario used to define the climate targets | No | - Shell stated that it studied a subset of IPCC scenarios that limit the increase in the global average temperature to 1.5°C above pre-industrial levels. They set their targets “within these pathways”. |

Source: 2022 FY Financial statements and 2021 20-F, 2022 and 2023 Investor presentations
3. QUALITY OF SHELL’S CLIMATE PLAN

a. Oil and gas trajectory

In May 2021, the IEA published its “Net Zero Emissions (NZE)” scenario. This provides a pathway to meet global energy needs while having a 50% chance of keeping global warming below 1.5°C. It was used as the reference scenario in the World Energy Outlook (WEO) 2021 and was updated in the WEO 2022 published in October 2022. It projected a reduction in oil and gas production of 22 and 23% respectively by 2030 compared to 2021 levels and an end to the development of new oil and gas production projects and LNG terminals.

According to the Global Oil and Gas Exit List (GOEL), Shell is the 12th top global oil and gas upstream developer. 45% of its expansion plans did not obtain their Final Investment Decision (FID) before 2022 and then are overshooting the IEA NZE scenario. Shell is tapping into unconventional oil and gas resources, mostly ultradeep water and fracking. Unconventional resources account for 27.2% of oil and gas resources currently being developed by the major. Among the main projects under development today are fields located in the Vaca Muerta basin in Argentina, in Alberta tar sands area in Canada, in Verde Island Passage in Philippines.

Despite the disrupted energy environment caused by the invasion of Ukraine, the need to halt oil and gas expansion as soon as possible remains a key feature of the IEA NZE scenario. The May 2021 NZE scenario already projected to halt the development of new oil and gas fields, beyond those for which the FID was approved before January 1st, 2022. Considering 2022’s LNG capacity additions, the WEO 2022 version of the NZE highlights the need to also end the development of new LNG terminals, beyond those approved by January 1st, 2023.

The completion of some projects that can swiftly enter production and operate for a limited time only – mainly shale oil & gas projects – is not expressly forbidden in the

Shell’s oil and gas resources (based on current resources and 2022 level of production)

Source: Rystad Energy, accessed in March 2023

I am also calling on CEOs of all oil and gas companies to be part of the solution. They should present credible, comprehensive and detailed transition plans in line with the recommendations of my High-Level Expert Group on net-zero pledges.

These plans must clearly detail actual emission cuts for 2025 and 2030, and efforts to change business models to phase out fossil fuels and scale up renewable energy.

Antonio Guterres, Secretary-General of the United Nations, March 2023
The IEA notably stresses that the invasion of Ukraine cannot justify a “new wave of oil and gas infrastructure”, and that any new oil and gas fields will make it “even more challenging” to meet carbon neutrality targets and “creates the clear risk that [the 1.5°C] target moves out of reach”. Concretely, any such project will require even greater reduction efforts in other sectors and activities.

The IPCC also highlights the risks associated with the development of any new fossil fuel projects. This concurs with a large and growing body of scientific evidence showing the need to immediately end fossil fuel development and a growing consensus on this in net-zero policy discussions.

Oil and gas production should decrease by 21% and 6% respectively during the decade according to the NZE scenario. However, without developing any new oil and gas fields and extracting only its resources that are already under production, Shell has enough resources to produce the equivalent of 13.4 years of oil and gas production at its elevated 2022 level. Shell’s resources under development and field evaluation will provide Shell the equivalent of another 3.8 years of production at its 2022 production level. If Shell exploits all its oil and gas discoveries, Shell will have enough resources to produce the equivalent of a further 6.8 years of production at its 2022 level.

In the NZE scenario, the oil and gas production rate declines due to the combination of the natural depletion of existing oil and gas fields and the absence of new fields to fill the gap. This decline happens even though the NZE relies on material levels of negative emissions, including through the deployment of technologies unproven at scale, and would be much faster without such a reliance. Other prominent 1.5°C scenarios with no or low overshoot also show oil and gas production declining by 2030. These, include the One Earth Climate Model (OECM), the Network for Greening the Financial System (NGFS)’ Net-Zero scenarios, and IPCC 1.5°C with no or low overshoot scenarios filtered to limit the reliance on negative emissions (CCS, NBS...) to reasonable volumes.

The following chart compares Shell’s planned oil and gas production level in 2030 (indicated with a black cross – Shell plans a reduction of its oil production by 1% to 2% per year by 2030 and a mix composed of 45% oil and 55% gas in 2030) with the level that would be considered aligned with the NZE scenario. That level aggregates production from its producing fields and its under-development fields that obtained FID before 2022. The chart also indicates the level of production that would come from the fields under construction and those under development and under field evaluation. To reach its production target, Shell will have to increase its oil and gas production beyond its current short-term expansion plans. That means Shell will have to develop part of its discoveries and/or to buy new fields.

In 2030, with Shell’s oil and gas production from currently producing fields, under development and under evaluation fields, its production will be 16% higher than what is required to align with the NZE scenario.

In 2030, with Shell’s current oil and gas production target, its production will be 53% higher than the level required to align with the NZE.

Shell has not committed to stop developing new oil and gas projects beyond those already in development and could review its production targets, up or down. Consequently, the level of field-based production indicated in the chart could be conservative and less than Shell’s own forecasts. Shell owns 7,544 mmboe of discovered hydrocarbon resources that have not yet entered the field evaluation or development stage. From 2020 to 2022, Shell spent on average US$2.3 billion per year on exploration, which make it the 3rd biggest investor in exploration over that period.

Regarding oil and gas midstream infrastructure, Shell is also developing 27.7 million tons per annum (Mtpa) of LNG terminal capacity.
b. Cash-flow allocation

The future energy mix of a company is determined by its current investment strategy. In the NZE, total energy investment needs to more than double by 2030, with a shift from high carbon energy to clean alternatives. Investment in clean energy, end-use and efficiency more than triple, and nine dollars are spent on clean energy for each dollar spent on fossil fuels by 2030.

In 2022, Shell provided its shareholders with US$26 billion, through dividend payment (US$7.6 billion) and share buybacks (US$18.4 billion). In total, for every dollar invested in its “Renewables & Energy solutions” business line, more than seven dollars are distributed to shareholders through dividends and share buybacks.

In 2023, Shell’s cash capital expenditure guidance reaches US$23 billion to US$27 billion in total. US$2 billion to US$4 billion are dedicated to its “Renewables & Energy solutions” business line, that covers renewable energy as well as gas power. This target could represent a 15% increase of its cash capital expenditures in this business line in 2023 compared to 2022. Although this is a significant increase from 2022 levels, it amounts to 12% of its overall cash capital expenditure which in turns, means that most of its investments will still be going to fossil fuels.

Due to its capital expenditure strategy, Shell remains focus on oil and gas. Shell does not communicate neither on its 2030 energy mix nor on its 2030 renewable capacity. Shell indicates it plan to provide electricity from renewable sources to 50 million households by 2030. Considering that Shell reaches that

1. Shell cash CAPEX in the “Renewables & Energy solutions” business line amounted to US$3.5 billion; That includes renewable energy and electricity storage, gas trading and power, retail gas, electric vehicle charging services.

2. Shell provided its shareholders with US$26 billion, through dividend payment (US$7.6 billion) and share buybacks (US$18.4 billion).

In total, for every dollar invested in its “Renewables & Energy solutions” business line, more than seven dollars are distributed to shareholders through dividends and share buybacks.

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Considering that Shell reaches that
goal and that Shell’s renewable production is dedicated to the developed markets, Shell’s maximum renewable share of its energy supply mix would remain under 22% in 2030.\textsuperscript{26}

c. Decarbonization targets and climate trajectory

Shell pledged mitigation targets for 2023, 2024 and 2030 compared to its 2016 levels, measured in absolute and intensity terms, and including scope 1, 2 and 3.\textsuperscript{31}

Using the IEA energy supply data from the 1.5°C NZE scenario and the below 2°C “Announced Pledges Scenario” (APS) from the World Energy Outlook 2022, Reclaim Finance has calculated Shell’s greenhouse gas emissions overshoot.

We assumed that Shell will follow the IEA scenario pathways for total global energy supply.\textsuperscript{40} In the NZE scenario total energy supply decreases by 9.1% between 2022 and 2030 and in the APS scenario, it increases by 1.6% in the same period. Our analysis is likely to be conservative: while Shell does not give a projection for its 2030 energy supply, we know that Shell’s oil and gas production target is significantly higher than what is forecasted in the NZE scenario.

In our hypothesis, we assume that Shell reaches its targets with a decrease of both its scope 1, 2 and 3 carbon intensity of production, processing, transport and end-use of their energy products by 6% to 8% by 2023, its scope 1, 2 and 3 carbon intensity of production, processing, transport and end-use of their energy products by 9% to 12% by 2024 and its scope 1, 2 and 3 carbon intensity of production, processing, transport and end-use of their energy products by 20% by 2030.

Shell relies on CCS and offsets: it will offset 120Mtpa in 2030. These technologies have a significant place in the company’s decarbonization plan: 32% of the company absolute emission reduction by 2030 would be achieved just using offsets. As highlighted by the IPCC, CCS in the energy sector still have limitation to overcome before it can be scaled up and come with limited potential and prohibiting costs. Too high a reliance on such mitigation approaches represents a material risk factor for the company’s ability to reach its decarbonization targets.\textsuperscript{32}

Shell’s targeted carbon intensity would remain respectively 40.1% and 25.3% higher than in the NZE and APS by 2030. If it meets these targets and reduces its energy supply as per the IEA scenarios, Shell will have overshoot its share of the 2023-2030 carbon budget by 39.9% under the NZE, and by 25.3% under the below 2°C scenario.

<table>
<thead>
<tr>
<th>Base year</th>
<th>Target year</th>
<th>Reduction target</th>
<th>Net target</th>
<th>Geographical scope</th>
<th>Emission scope</th>
<th>Emission Type</th>
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<tr>
<td>2016</td>
<td>2023</td>
<td>-6%/-8%</td>
<td>Yes</td>
<td>World</td>
<td>1 &amp; 2 &amp; 3, carbon intensity of sold energy products</td>
<td>Intensity</td>
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<tr>
<td>2016</td>
<td>2024</td>
<td>-9%/-12%</td>
<td>Yes</td>
<td>World</td>
<td>1 &amp; 2 &amp; 3, carbon intensity of sold energy products</td>
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<td>2016</td>
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<tr>
<td>2016</td>
<td>2030</td>
<td>-50%</td>
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<td>1 &amp; 2, operationnal control</td>
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<tr>
<td>2016</td>
<td>2030</td>
<td>-20%</td>
<td>Yes</td>
<td>World</td>
<td>1 &amp; 2 &amp; 3, carbon intensity of sold energy products</td>
<td>Intensity</td>
</tr>
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Source: Shell’s website and reports, as of end of 2022
Calculations based on data from company's disclosed data and scenario data taken from IEA's NZE and APS scenarios. See the methodology section below for more details on these calculations.

2023-2030 Shell’s GHG emissions compared to the NZE pathway (in million tons of CO2e to 2030)

2023-2030 Shell’s GHG emissions compared to the below 2°C pathway (in million tons of CO2e to 2030)
26. Shell allocated US$21.077 billion to oil and gas, including US$8.143 billion to oil and gas upstream activities, US$4.265 billion to integrated gas, that include the LNG business, and US$8.669 billion to other oil and gas activities, that are mostly composed of retail, refining and petrochemical activities.
27. Shell provided its shareholders with US$26.048 billion, through dividend payment (US$7.611 billion) and share buybacks (US$18.437 billion).
28. Shell, Fourth quarter and full year 2022 results - Strong results, disciplined capital allocation, 2023
29. Shell, Atteindre le zéro émission nette
30. To calculate the energy supplied, we used the Australian average household whose consumption reach 5000kWh per year. Therefore, the renewable share of the 2030 energy mix will probably rely much less on renewable energy.
ASSESSMENT OF SHELL’S CLIMATE STRATEGY

Reclaim Finance is an NGO affiliated with Friends of the Earth France. It was founded in 2020 and is 100% dedicated to issues linking finance with social and climate justice. In the context of the climate emergency and biodiversity losses, one of Reclaim Finance’s priorities is to accelerate the decarbonization of financial flows. Reclaim Finance exposes the climate impacts of financial players, denounces the most harmful practices and puts its expertise at the service of public authorities and financial stakeholders who desire to bend existing practices to ecological imperatives.

contact@reclaimfinance.org