

INVESTOR REPORT | May 2016

# A post-Paris overview and analysis of Shell's climate reporting

**ShareAction»**



# Executive summary

This paper explains and analyses the enhanced reporting provided by Royal Dutch Shell following a shareholder resolution filed and passed in 2015.<sup>1</sup> The resolution directed the company to disclose additional information on areas relevant to climate risk and strategic resilience. While making progress, in this first year of reporting we find that Shell downplays the risks that a 1.5 – 2°C outlook poses to its business model, and does not provide a clear pathway for strategic alignment with the target set by governments at COP21 in Paris.

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## Key findings

- While Shell provides investors with narrative reporting on what a <2°C scenario might look like, the company does not adequately describe the risks that this momentous energy shift would pose to its current business model.
- In a disclaimer, Shell explicitly states that it has “no immediate plans to move to a net-zero emissions portfolio over [its] investment horizon of 10-20 years”. For 1.5°C/ high probability <2°C pathways, full decarbonisation of the energy sector is needed by 2045-2055. This disclaimer raises questions about how Shell’s current portfolio would perform under such carbon-constrained circumstances.
- KPIs and executive incentives continue to encourage the replenishing of fossil fuel reserves, with climate receiving negligible consideration and weighting.
- While making progress by establishing a ‘New Energies’ division to invest in low-carbon power, Shell does not outline a more comprehensive transformation of R&D and investment strategies for consistency with a <2°C world.
- To evaluate whether the company is truly supportive of the target set in Paris, there is a need for much greater transparency regarding Shell’s public policy interventions.

Investors that voted in support of the 2015 resolutions, and are supportive of the Paris target, should urge Shell’s board for more rapid and ambitious progress. This paper includes analysis on the five areas of the shareholder resolution, with suggestions for investor engagement on each.

# Background & introduction

UN negotiations held at COP21 in Paris, December 2015, raised the bar of climate ambition, setting a target to limit temperature rises to below 2°C, with an ambition for 1.5 (hereinafter, <2°C).<sup>2</sup> This has been welcomed by investors alert to the portfolio-wide harm associated with unmitigated climate change. It is now imperative for companies to develop and adopt strategies for resilience under <2°C, and investors have an important stewardship role to play in holding them accountable to this.

Pre-Paris, in May 2015, a resolution directing Shell to publish enhanced reporting on five areas relevant for post-2035 resilience was filed and passed at the AGM. In light of developments at COP21, this paper considers whether Shell's enhanced reporting indicates the company is preparing for strategic resilience under a <2°C economy. This goes beyond technical compliance with the resolution, recognising that post-Paris, shareholder and wider stakeholder opinion will require more to satisfy the resolution's purpose of realising long-term strategic resilience.

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Compared to US peers such as ExxonMobil and Chevron, Shell has made notable progress in its disclosures on climate risk. Nonetheless, Shell's reporting does not indicate that the company is transitioning for low carbon resilience as shareholders require if they seek to align their investment strategy with the <2°C limit. This paper

## SHAREHOLDER RESOLUTION IN 2015

In 2015, a shareholder resolution was filed for Shell's Annual General Meeting (AGM) requesting additional information from Shell regarding business risks associated with climate change. We have been asked to disclose this information from 2016 onwards.

The resolution was prepared by a coalition of UK asset owners and mutual fund managers. It was intended to emphasise the need to balance the short- and long-term interests of Shell's shareholders in relation to Shell's actions to mitigate climate change.

We supported the resolution at the 2015 AGM. We provided additional reporting in 2015 and we maintain our commitment to engage with our shareholders. In 2016, we continue to report on the five areas specified in the resolution. These five areas are Shell's ongoing operational emissions management, asset portfolio resilience to post-2035 scenarios, low-carbon research and development and investment strategies, as well as Shell's public policy interventions. Information that addresses the resolution can be found on the following pages of this report:

- reducing emissions, [page 13](#);
- portfolio resilience, [page 15](#);
- low-carbon energy investment, [page 18](#);
- Shell's scorecard structure, [page 48](#); and
- collaboration and public policy, [page 14](#).

The full resolution can be viewed at [www.shell.com/ghg](http://www.shell.com/ghg). We will continue to publish additional information on this website as it becomes available. This will include, for example, our greenhouse gas emissions, additional information on our resilience to post-2035 scenarios and our submission to the Carbon Disclosure Project.

considers how investors might engage with Shell to encourage progress on each area of the resolution:

1. Asset portfolio resilience to post-2035 scenarios
2. Strategic KPIs and executive incentives
3. Low carbon energy R&D and investment strategies
4. Greenhouse gas emissions management
5. Public policy interventions

## 2016 reporting

Documents taken into consideration for this analysis include Shell's Annual Report,<sup>3</sup> Sustainability Report,<sup>4</sup> and supplementary reports: 'A better life with a healthy planet'<sup>5</sup> and 'Energy Transitions and Portfolio Resilience'.<sup>6</sup> While Shell indicates in the Sustainability Report specific pages designated for each issue (see table on page 3), ShareAction's analysis considers information found more widely across the documentation to provide a rounded picture of Shell's approach.

# Asset portfolio resilience to post-2035 scenarios

To evaluate Shell's asset portfolio resilience to post-2035 scenarios, it is necessary to consider the quality of the company's assessment of the risks associated with low carbon pathways, as well as its plans to respond and adapt to these challenges. The supporting statement circulated with the 2015 resolution directed an assessment of Shell's "portfolio's resilience against the range of IEA (International Energy Agency), and any other relevant post-2035, scenarios". It stated "investors are also interested in the role exploration, disposals and cash distributions to investors will play in the nearer term".

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By publishing what is claimed to be a <2°C scenario Shell has made headway on the first request,<sup>7</sup> although this falls short of a quantitative stress-test, or detailed qualitative analysis of the risks which a <2°C scenario pose to the company's near-term business model. In a disclaimer, Shell clearly states it has "no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10-20 years".<sup>8</sup> For the 1.5°C/ high probability below 2°C pathways, full decarbonisation of the energy sector is needed by 2045-2055.<sup>9</sup> This gap between progress on scenario reporting, and progress on substantive preparation for portfolio resilience should be the focus of investor engagement.

## Key Points

- Shell responds to investors' requests to include analysis of portfolio resilience against IEA 450, and also provides a <2°C energy outlook.

- Despite these steps, analysis of the near-term risks associated with low carbon pathways remains inadequate for investors to properly assess Shell's portfolio resilience.
- Shell explicitly reports that it is not aligning its 10–20 year investment strategy for resilience under net-zero pathways.
- This raises concern about how Shell's current portfolio would perform against the disruptive low carbon trends that the company's own scenario team foresee under a <2°C pathway.

## Analysing the risk that a <2°C scenario poses to Shell's business model

### Limited evaluation of portfolio resilience

Under low carbon pathways, a number of factors could lead to demand destruction for high-carbon products, challenging Shell's near-term performance. These include exponential growth in disruptive technologies, rapid decarbonisation of the global vehicle fleet, and tightening emissions legislation.

In this year's reporting, Shell explores a number of low carbon pathways including IEA 450, a 'lower-carbon' scenario consistent with 2-3°C of warming, and a <2°C scenario. It is important to note that these scenarios depend on negative emissions technologies to reach mitigation targets, and therefore present a conservative outlook on the necessary fall in emissions from hydrocarbon sources.<sup>10</sup>

These scenarios imply varying degrees of disruption to Shell's current business model. Shell discloses the results of a stress-test only against IEA 450,<sup>11</sup> a pathway favourable to its current business model. While Shell outlines a <2°C energy outlook in narrative reporting, the implications that this drastic energy shift would have on the company's short to medium-term resilience are not made clear to shareholders.

Further, the disruptive trends explored in Shell's <2°C outlook are not included in the company's formal corporate reporting,<sup>12</sup> nor are they integrated even tangentially through cross-reference. This omission from mainstream communications

raises questions about how extensively Shell is considering and preparing for the risks associated with low-carbon trajectories.

Another factor to consider in analysing Shell's management of low carbon risks is the degree of likelihood the company ascribes to the different scenarios. Shell recognises criticisms of IEA 450, and suggests the 2-3°C 'lower carbon' outlook is 'more likely', while still stretching.<sup>13</sup> The <2°C pathway is described as a 'Goldilocks' scenario, requiring a "combination of all the most optimistic outcomes".<sup>14</sup>

## Reporting against IEA 450

IEA 450 is an energy pathway widely used as an industry benchmark consistent with limiting temperature rises to 2°C, limiting the concentration of greenhouse gases in the atmosphere to around 450 parts per million of CO<sub>2</sub>.<sup>15</sup> It is important to note that IEA 450 only corresponds to a 50% chance of a 2°C limit, and is heavily dependent on BECCS (Biomass Energy Carbon Capture and Storage) technology that is not yet mature or scalable, and can involve high risks such as seismic tremors.<sup>16</sup> IEA 450 has been challenged for not providing a climate-safe model, and comparisons between its emissions pathway with the Intergovernmental Panel on Climate Change (IPCC) carbon budget for a 50% chance of staying below 2°C reveal a significant gulf.<sup>17</sup>

In its Annual Report, Shell notes other limitations of IEA 450.<sup>18</sup> By 2030, it assumes:

- That carbon capture and storage (CCS) capacity will be 40 times the present storage
- Oil and gas prices of around \$97 per barrel and \$9 per MMBtu respectively
- Global CO<sub>2</sub> equivalent costs of \$100 per tonne

Under current market conditions, these assumptions look questionable. In addition to much lower oil prices, advances in CCS have fallen far short of this outlook,<sup>19</sup> and in the EU the carbon price averages around €5 –10 per tonne.<sup>20</sup>

Shell reports that "looking at 2030... the aggregate impact under the IEA's 450 Scenario would be positive overall for us compared with our own outlook. This is primarily due to the higher oil and gas prices assumed by the IEA".<sup>21</sup> Shell reports that the high carbon price will be outweighed

by strong oil and gas prices, and suggests the potential "allocation of free allowances under CO<sub>2</sub> pricing regimes as well as [Shell's] ability to recover the increased costs from customers" could also enhance its portfolio's resilience.<sup>22</sup>

While it is welcome that Shell offers this analysis – as requested in the supporting statement circulated with the 2015 resolution – given IEA 450's significant limitations, this alone does not adequately describe Shell's portfolio resilience to <2°C scenarios.

## Shell's alternative 'lower carbon' scenario

In response to the limitations recognised with IEA 450, Shell develops a 'lower carbon' outlook that "assumes an average global temperature increase of 2-3°C by 2100. This model uses our best estimates for future oil and gas prices and expected trends in GHG policies".<sup>23</sup> Shell states that "while difficult, it could be possible for society to approach net-zero emissions by the end of this century".<sup>24</sup> This outlook is presented as the one that Shell considers most likely, despite exceeding the climate goal agreed in Paris. Predictions underpinning this scenario include:<sup>25</sup>

- Renewable energy has a 9% market share by 2050, reaching 70% by 2100
- Within 50 years, global energy demand could be 60% higher with 2 billion vehicles on the road (800 million today)
- 8% of transport could be powered by renewable sources by 2050. Many forms of transport still rely on oil-based products (blended with biofuels)

This 'lower carbon' scenario takes a very conservative outlook on potential market penetration of low carbon technologies. For renewables to only equate for 9% of the energy mix by 2050, growth would have to significantly drop from current rates averages of 17.4% per annum.<sup>26</sup> Predictions of stalling progress are divergent to forecasts of exponential growth many anticipate due to rapidly falling costs. For example, Bloomberg New Energy Finance projects that renewables will account for around 46% of electricity generation by 2040, leaving fossil fuels providing 44% of electricity generation.<sup>27</sup> This divergence in forecasts could lead Shell to allocate capital to projects that would be economically stranded if more optimistic low carbon forecasts are proved correct.

Shell's 'lower carbon' scenario is also conservative in its outlook on the decarbonisation of the global vehicle fleet. Shell's ability to correctly assess this market is important, given its stated interest in biofuels.<sup>28</sup> In 'lower carbon', Shell predicts that vehicle ownership will more than double by 2050 triggering high growth rates in energy demand, largely underpinned by oil and biofuel mixes: "Only around 3% of transport is powered by renewable energy sources. In 2040, this could reach 8%. Many forms of transport will, likely, still rely on oil-based products (blended with biofuels)".<sup>29</sup>

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A prospective risk to this outlook comes from disruptive technological advances and market trends in hybrid and electric vehicles (EVs). As costs continue to fall and battery technology makes rapid improvements, numerous city analysts suggest EVs will continue on an exponential growth trend.<sup>30</sup> Bernstein finds that EVs could be cost-competitive with internal combustion engine cars by 2025.<sup>31</sup> Some suggest the EV market share could surpass 50% by 2040.<sup>32</sup> Again, this significant divergence in forecasts poses a high risk to Shell's portfolio resilience, and should inform the firm's approach to capital discipline.

In China and India – where oil majors predict the greatest rise in vehicle ownership<sup>33</sup> – air pollution resultant from increased vehicle ownership is leading policy makers to rapidly introduce tougher legislation.<sup>34</sup> The environmental health costs of Shell's estimated doubling of the global vehicle fleet could trigger additional tightening of regulations, further undercutting structural demand for oil.

## Shell's <2°C scenario

Shell's 'A better life with a healthy planet' publication reports on what a <2°C scenario might look like. It picks up on many of disruptive trends omitted from Shell's other reports. Notably, it also includes a more sophisticated understanding of the nuances surrounding CCS and biofuels.

For instance, Shell recognises that: "Passenger road transport will be the easiest to electrify, with battery and fuel cell electric vehicles potentially reaching 80% of the global passenger car fleet over coming decades", and "the evolution of battery technology is one of the most important variables that will shape the eventual pace of electrification".<sup>35</sup> The role of biofuels is limited to "the movement of heavy freight over longer distances in ships and trucks" and "the longest journeys by air and sea".<sup>36</sup>

Shell also notes the issues associated with CCS, stating the technology "face[s] a number of non-technical challenges, especially in relation to permitting and financing".<sup>37</sup> Shell acknowledges the limited role of CCS under this pathway, recognising "a large proportion of industry appears capable of being electrified at moderate cost" and that CCS will only be necessary in cases where industrial operations cannot currently be run on renewables.<sup>38</sup>

Moreover, Shell recognises the enormous shift in the energy mix required under the <2°C pathway: "If society succeeds, we will find ourselves with an energy system that is very unfamiliar to us".<sup>39</sup> The spread of low-carbon technologies "leaves about 20–25% hydrocarbon fuels, primarily oil and gas, in the global energy mix in a net-zero emissions world. Much of the hydrocarbon slice of the mix will be gas... Oil use will continue in heavy-duty long-distance transport, and hydrocarbons will still be used to manufacture petrochemicals. But the world of the net-zero future is a complete turnaround from today, when hydrocarbons constitute more than 80% of the energy system".<sup>40</sup> This could represent a fall of 60 percentage points from the current energy share of hydrocarbons.

Although Shell does not put a clear timeline on this transformation, there is broad scientific consensus that to keep the <2°C goal in sight, the process of rapid decarbonisation must start immediately.<sup>41</sup> This urgency is not communicated to shareholders in a way that describes the risks that a rapid transition poses to Shell's current business model.



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Shell does not provide analysis of how its portfolio would perform under the heavily carbon-constrained circumstances depicted by the company’s scenario team, or the proportion of its assets exposed to economic stranding under the implied structural demand destruction. There is a need for a breakdown of the economic details of Shell’s exposure to these risks for investors to evaluate Shell’s portfolio resilience under <2°C. This information is important for assessing how capital discipline is being applied to ensure the portfolio is balanced to mitigate risk.

## Portfolio resilience in the Annual Report

Shell’s reporting on ‘Risk Factors’ in its Annual Report does not reflect the scale of transformation outlined in its <2°C scenario. Indeed, climate is considered as a risk factor separated from others. Under the section regarding competitive forces, focus remains on state-owned oil and gas entities, with no reference of disruptive low-carbon technologies.<sup>42</sup> There is no mention of climate in relation to litigation and reputational risk, fluctuating prices, technology innovation nor the acquisition of the BG Group.<sup>43</sup>

Under Shell’s specific ‘climate risk’ section, focus rests upon regulatory change, as opposed to market-based and technology driven factors.<sup>44</sup> Whilst these disruptive forces can be harder to predict, their assessment is vital for portfolio resilience, given the large-scale and structural demand destruction that these developments could trigger. Notably, Shell makes no reference to electric

vehicles, despite the recent evolution of battery technology being noted in supplementary reporting as “one of the most important variables that will shape the eventual pace of electrification [of the global light vehicle fleet]”.<sup>45</sup>

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Shell briefly notes how regulations could affect demand for fossil fuels, as well as increasing the cost of operations.<sup>46</sup> The latter is explored in more depth, despite the less significant threat this poses for portfolio resilience: operational emissions make up only 10- 20% of an oil company’s total footprint, the majority expended by consumers.<sup>47</sup> The effects of emission legislation on the demand-side present a more systemic threat to Shell’s business model than rising operational costs.

## Portfolio resilience in supplementary documentation

In Shell’s report ‘Energy Transitions and Portfolio Resilience’, two commonly asked questions are reported: “How does Shell view the energy transition to a low-carbon future? And how is the company positioned for the changes that are to come?”<sup>48</sup> Shell states the first is answered through its <2°C scenario, and that the second will be answered in this report.<sup>49</sup> However, the scale of transformation recognised by Shell’s <2°C analysis is vastly downplayed in the company’s answer to this second important question.

Shell reports “Analysis against our own and other scenarios shows that Shell’s portfolio is generally resilient to developments related to climate change”.<sup>50</sup> The qualifier ‘generally’ suggests there



are certain low carbon scenarios that Shell would not be resilient under, although this is not elaborated upon. Shell's assessments lean on IEA analysis, which assume high oil prices that, as the company notes, help bolster portfolio resilience.<sup>51</sup>

The 'low carbon' pathways that Shell reports resilience against also appear to rely on a larger composition of fossil fuels than the <2°C scenario could entail. For instance, it is suggested that due to global growth in energy demand, coupled with technical, financial and political difficulties associated with low carbon changes, "oil and gas will remain integral to the global economy for decades".<sup>52</sup> This misaligns with the conclusion of Shell's <2°C scenario, which states "the trajectory of global emissions is dramatically turned around in the next 20 years".<sup>53</sup>

Continued reliance on fossil fuels is also found in Shell's assessment of stranded asset risk and the future role of exploration. The company states that Shell's reserves will not become stranded, adding that the "natural decline rate in oil and gas fields, which occurs when reservoir pressures reduce as the oil and gas is produced, could leave world energy demand unmet without current and future investment in supply".<sup>54</sup> As such, "replacing that production with profitable new barrels is a key element of our strategy today", and Shell perceives a necessary role for exploration of new fields.<sup>55</sup> The company concludes that "Far from having a "stranding" problem, we have time to make decisions on selective investments and divestments to build a resilient portfolio for the future".<sup>56</sup>

Shell's analysis does not align with the findings of Carbon Tracker, which suggests that Shell is not investing in the right type of assets for low carbon strategic resilience. They find that \$76.9bn of capital expenditure is unneeded from 2015 to 2025 under IEA 450,<sup>57</sup> suggesting that Shell is pursuing projects that are uneconomical in a 2°C world. While Shell has seen changes to its portfolio since this 2015 analysis – such as the merger with BG, and divestment of assets – the company must nonetheless explain to shareholders the discrepancy in findings.

'Stranded assets' and 'selective divestments' might be importantly different concepts, but for investors they both imply sunk costs and a loss of shareholder value in the short-term. While in the case of divestments, this might be more strategic

and ultimately result in greater portfolio resilience, it is important that Shell is approaching near-term risk management and capital discipline to minimise the need for either of these outcomes in the future.

Shell offers a table providing "a qualitative assessment of the key trends facing our portfolio", listed by strategic theme (see page 10).<sup>58</sup> The vulnerability of assets is tested against three factors: demand shifts in existing markets, new markets for low carbon products, and technology innovation. The company explains, "Down arrows represent trends signifying a more challenging future business environment; up arrows represent potential upside from these developments".<sup>59</sup>

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Without more detailed economic information on the weighting of these factors and relative proportion of Shell's assets that will be affected, it is not possible for investors to assess how great a strategic risk they pose, nor how vulnerable Shell's current portfolio is to different outcomes. For instance, Shell states that technology innovation will have upside implications for each strategic theme, but it is unclear how these might be outweighed by the potentially greater downside costs associated with significant demand shifts in both existing markets, and new markets for low carbon products.

# SHELL PORTFOLIO RESILIENCE BY STRATEGIC THEME











	Demand shift in existing markets	New markets for low carbon products	Technology innovation	Comments
 <b>CONV. OIL</b>	↓		↑	<ul style="list-style-type: none"> <li>Alternative fuels and efficiency may weaken underlying demand</li> <li>In-field innovation can reduce emissions</li> </ul>
 <b>CONV. GAS</b>	↑	↑	↑	<ul style="list-style-type: none"> <li>Transition from coal to gas in power will support gas demand</li> <li>Potential for increased use of gas and electricity in transportation</li> <li>Decarbonisation through CCS can support long-term demand</li> </ul>
 <b>INTEGRATED GAS</b>	↑	↑	↑	<ul style="list-style-type: none"> <li>Transition from coal to gas in power will support gas demand</li> <li>Potential for increased use of gas and electricity in transportation</li> <li>CCS technologies can improve CO<sub>2</sub> footprint and support long-term demand</li> </ul>
 <b>OIL SANDS MINING</b>	↓		↑	<ul style="list-style-type: none"> <li>Operating costs and market access pressured by CO<sub>2</sub> regulations</li> <li>Low-steam solvent and CCS technologies can improve CO<sub>2</sub> footprint and competitiveness</li> </ul>
 <b>OIL PRODUCTS</b>	↓		↑	<ul style="list-style-type: none"> <li>Longevity of transport fleet and cleaner fuels technology</li> <li>Alternative fuels and efficiency may weaken underlying demand</li> </ul>
 <b>DEEP WATER</b>	↓		↑	<ul style="list-style-type: none"> <li>Alternative fuels and efficiency may weaken underlying demand</li> <li>In-field innovation can reduce emissions</li> </ul>
 <b>CHEMICALS</b>	↑	↑	↑	<ul style="list-style-type: none"> <li>Increasing material prosperity will drive chemical demand</li> <li>Chemicals enable improved energy efficiency of homes, cars, buildings</li> <li>Novel chemistries can enable wider variety of end users and markets</li> </ul>
 <b>SHALE OIL</b>	↓		↑	<ul style="list-style-type: none"> <li>Alternative fuels and efficiency may weaken underlying demand</li> <li>Advances in shale oil recovery can improve competitiveness</li> </ul>
 <b>SHALE GAS</b>	↑	↑	↑	<ul style="list-style-type: none"> <li>Transition from coal to gas in power will support gas demand</li> <li>Potential for increased use of gas and electricity in transportation</li> <li>Decarbonisation through CCS can support long-term demand</li> </ul>
 <b>NEW ENERGIES</b>	↑	↑	↑	<ul style="list-style-type: none"> <li>Business will grow alongside need for low-carbon energy sources and connected systems for service delivery</li> <li>Next generation biofuels and battery technology can improve competitiveness</li> </ul>

Photo source: Energy Transitions and Portfolio Resilience, page 31

## Key questions for investors

- Has Shell stress tested its portfolio against the most disruptive trends identified within its <2°C pathway? If not, the company should produce and disclose these evaluations. These stress tests should cover both the existing portfolio and Shell's pipeline of projects.
- How is Shell managing the risk of demand destruction in the case that its more ambitious low carbon scenarios are reflective of the scale and speed of global decarbonisation? How does this risk management inform capital discipline?
- Will Shell release the economic data underpinning its table on 'portfolio resilience by strategic theme' to allow investors to properly understand the relative risks and opportunities?

## Preparing for portfolio resilience in a <2°C economy

The resolution's supporting statement asked for information concerning "the role exploration, disposals and cash distributions... will play in the nearer term". In the context of a low carbon transition, the role of exploration will be heavily reduced, as companies must either diversify their portfolios away from high-carbon assets, and/or implement wind-down strategies, potentially with cash distributions to investors.

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This year's reporting falls short of a <2°C resilience strategy, and indeed explicitly states Shell has “no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10–20 years”. This fits uneasily beside the conclusion of

Shell's <2°C report, that “the trajectory of global emissions [must be] dramatically turned around in the next 20 years”.<sup>60</sup>

Whilst recognising that there is no one linear <2°C transition plan, it is important that shareholders start to see substantive commitments towards this end. In the future, investors should request quantifiable measures and milestones to track how Shell is developing its business model.

Shell identifies a number of ways the company is seeking to improve resilience against low-carbon scenarios which are analysed below.

## Portfolio diversification

Shell is taking steps to diversify its portfolio away from a high-carbon mix. The company focuses on the role that natural gas can play as a transitional fuel, making up 49% of the company's portfolio.<sup>61</sup> In 2016, Shell reorganised upstream activities into Upstream and Integrated Gas (IG), stating that “establishing IG as a stand-alone business reflects its further potential for growth”.<sup>62</sup> Shell has also established New Energies to invest in renewable and low-carbon power.<sup>63</sup>

While natural gas is a lower emitting fossil fuel compared to coal and oil, its role as a 'transitional fuel' can be overstated. This is reflected in Carbon Tracker's findings, which suggested that \$30.3 billion of Shell's capex on gas would be surplus under IEA 450 for the period 2015 – 25.<sup>64</sup> This analysis does not account for the BG merger, which is likely to make unneeded LNG capex higher still.

A recent report from the UK Energy Research Centre has also warned that gas may not be the most cost-efficient path to meeting emissions targets, highlighting that without an ambitious roll-out of CCS technologies, a second 'dash for gas' could compromise decarbonisation ambitions.<sup>65</sup> These findings underscore the need for a more fundamental portfolio diversification, and accompanying wind-down strategy for high-carbon assets with long timelines for production.

Shell also holds investments in carbon capture and storage, biofuels, wind and solar energy.<sup>66</sup> It is not disclosed what percentage these make up of Shell's total portfolio, nor are long-term targets or investment strategies set for increasing this proportion. Shell reports that “over the past six



years, we have invested about \$1.1 billion in low-carbon R&D”.<sup>67</sup> This seems small compared to the amounts spent on hydrocarbon exploration. For example, Shell spent around \$7 billion in the Arctic.<sup>68</sup>

## Project level adaptation

Shell also looks at legislative and physical risks on a project-level basis. The company seeks to reflect the regulatory challenges posed by carbon pricing by applying a \$40 per tonne project screening value (PSV) to the emissions associated with investments.<sup>69</sup> It notes that for projects “with a high exposure to government imposed carbon pricing or legislation, we consider the impact of higher GHG prices”, but does not disclose this range.<sup>70</sup> Shell says it has stopped some projects at an early stage, due to high levels of CO<sub>2</sub> in the hydrocarbon reservoir.<sup>71</sup>

Given that the majority of Shell’s emissions occur in the consumption of its products (scope 3 emissions), more significant than the increased costs of operations is the impact that carbon pricing policies are likely to have on demand. Whilst Shell acknowledges the higher “product costs for consumers” that carbon pricing might entail,<sup>72</sup> it is not clear whether the company has fully analysed the potential downside effects this policy might have on the demand-side.

The increased costs associated with carbon

pricing could incentivise consumers towards lower-carbon energy sources and products, cutting into the structural demand for oil and gas. However, when analysing resilience under IEA 450 – with an assumed \$100 carbon price – Shell suggests it could bolster resilience by “recover[ing] the increased costs from customers”.<sup>73</sup> More analysis on the potential downside implications of carbon pricing in relation to scope 3 emissions is required for investors to properly understand the effects of a carbon price on portfolio resilience.

Shell also reports to “take steps at [its] facilities around the world to ensure that they are resilient to climate change. This reduces the vulnerability of [its] assets and infrastructure to potential extreme variability in weather conditions linked to climate change.”<sup>74</sup> It is notable that Shell acknowledges the material consequences that climate change will have on operations, but not how these might affect the variables underpinning demand scenarios. If the 2°C limit is not met, deployment of capital to projects that exceed this carbon budget would contribute to the broader physical devastation related to temperature rises (flooding, drought, famine etc.) and associated economy-wide harm. Research from The Economist indicates that 6°C of warming represents value losses worth \$43trn – 30% of the world’s manageable assets.<sup>75</sup> The European Systemic Risk Board has recently showcased the high financial cost of a late and sudden low-carbon transition in response to material climatic impacts.<sup>76</sup>

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These factors – and their compounding effects on other issues such as migration, poverty and conflict – would affect the predicted GDP growth underpinning Shell’s forecast. Such outcomes are likely to have further implications for fossil fuel demand – for instance, stimulating more stringent emissions legislations. This could be enforced, for example, through the COP21 ‘ratchetting’ mechanism. The ‘ratchetting mechanism’ is a policy device wherein countries would submit new “Intended Nationally Determined Contributions” (INDCs) every five years, outlining how much they intend to reduce emissions. Each submission would be more ambitious than the last, namely, ratcheting up.<sup>77</sup>

## Key questions for investors

- Shell needs to communicate a clearer and more ambitious strategy for adapting its portfolio for resilience under <2°C. Is the company developing a managed decline strategy? If not, how will Shell diversify its portfolio for consistency <2°C? Investors should seek targets and milestones to track progress towards this goal in a way that can be externally monitored.
- When factoring carbon pricing into investment decisions, Shell should consider the effect of such regulation when applied to total lifecycle emissions.

# KPIs and executive incentives

The resolution's supporting statement stated: "Transitions that span decades are complex to manage and often require lead indicators and incentives. Bearing in mind existing arrangements regarding the inclusion of sustainability factors in the annual bonus, investors are interested in Shell's evolving approach to KPIs and executive incentives, in the context of the transition to a low carbon economy".

As fossil fuel companies integrate the <2°C limit into their business strategies, they must move away from indicators that encourage behaviour inconsistent with low carbon resilience – such as metrics based on exploration volumes. Focus on remuneration is particularly important in 2016, given that Shell will review its remuneration policy prior to a binding vote at the 2017 AGM.<sup>78</sup>

## Key points

- Shell's 2016 reporting does not describe what a comprehensive rethink of its remuneration policy might look like to reflect the transformative shift in strategy needed to align with <2°C.

- Shell's KPI and executive incentive structure continues to incentivise the replenishing of fossil fuel reserves. Whilst shifting away from these metrics will take time, clearer signals of progress are required.

In the Annual Report, Shell overviews the various metrics and indicators that underpin the company's remuneration strategy. Performance indicators include "Production available for sale" (thousand boe/d) and "Proved oil and gas reserves" (million boe).

In the context of declining access to conventional oil fields, for companies to maintain proven reserves, executives are incentivised towards nonconventional and frontier projects that tend to be higher cost and higher risk – such as tar sands and deep-water.<sup>79</sup> This is unhelpful in the context of economic decarbonisation, where high break-even projects risk being stranded.

Whilst Shell includes 'Sustainable development' as a measure with 20% weighting on the scorecard that helps determine the annual bonus for all employees,

## 2015 ANNUAL BONUS OUTCOME (AUDITED)

Measures	Weight (% of scorecard)
<b>Operational cash flow (\$ billion) [A]</b>	<b>30%</b>
<b>Operational excellence</b>	<b>50%</b>
Project delivery: identified projects on time and budget (%)	20%
Production (kboe/d)	12%
LNG sales (mtpa)	6%
Refinery and chemical plant availability (%)	12%
<b>Sustainable development</b>	<b>20%</b>
Total recordable case frequency (injuries/million hours)	5%
Operational Tier 1 process safety events (number)	5%
Volume of operational spills (thousand tonnes)	4%
Refining Energy Intensity Index (EII™) (indexed to 2002)	4%
Fresh water intensity (cubic metres per tonne of production) oil sands	2%
	<b>100%</b>

Photo source: Shell Annual Report, page 93



climate factors are negligible.<sup>80</sup> They are limited to consideration of “refining energy intensity”, which only has a 4% weighting, offset by factors such as “Production (kboe/d)” that count for 12% (see table on page 14).<sup>81</sup>

Similarly, whilst “Direct greenhouse gas emissions (million tonnes of CO2 equivalent)” is included as an ‘additional performance indicator’, Shell also includes “Proved oil and gas reserves (million boe)”.<sup>82</sup> A more strategic integration of climate risk across remuneration metrics is required.

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“ Current consideration of climate factors clearly falls short of incentivizing the transformative behavioural changes that will be required for the company to adapt for low-carbon resilience.

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The current inclusion of climate factors is limited on two counts. First, they receive inconsequential weighting within a mixture of KPIs that promote activities inconsistent with a low carbon transition. Second, the narrow focus on operational emissions – and indeed, on ‘energy intensity’ as opposed to absolute emissions – overlooks that the company’s operational carbon footprint amounts for a small proportion of Shell’s total lifecycle emissions. Current consideration of climate factors clearly falls short of incentivizing the transformative behavioural changes that will be required for the company to adapt for low-carbon resilience.

This will require Shell to reconsider how it measures success in the context of sustaining long-term portfolio resilience and protecting shareholder value. Strategic decisions made today will directly affect Shell’s resilience to post-2035 low carbon scenarios, but may not cause an immediate fall in profitability. Fitting a systemic risk like climate change into decision-making requires a much longer-term outlook, and correspondingly, incentives that encourage (and indeed allow) consideration of this type of threat. This must go beyond nominal environmental metrics.

## Key questions for investors

- For Shell to transition for <2°C consistency, there is a need for the company to refocus its strategic direction. This must be reflected in the KPIs and metrics that incentivise senior executives and influence decision-making procedures.
- Investors should encourage Shell to move away from metrics based on production volumes, and request a more comprehensive restructuring of executive incentives to focus on portfolio diversification and/ or wind-down strategies for high carbon assets.

# Greenhouse gas emissions management

The 2015 resolution directed Shell to report on how the company is reducing its operational emissions – those resulting from operative practices such as gas flaring, well testing and refining. Given that the largest proportion of an oil company's emissions are not operational, but those expended by consumers (roughly 80- 90%),<sup>83</sup> a more comprehensive approach would consider total lifecycle emissions. As the economy shifts towards decarbonisation, both energy producers and their consumers will have to adapt behaviour. A more holistic approach to emission management would allow Shell to develop portfolio resilience in the face of these changing circumstances.

## Key point

- Whilst Shell's operational emissions are by no means insignificant, we recommend investors focus on total lifecycle emissions. This could include the development of a strategy to benchmark and set targets for reduction.

## Approaches to emissions management

Shell estimates that the CO<sub>2</sub> emissions from the use of refinery and natural gas products were around 560 million tonnes in 2015.<sup>84</sup> The company reports a decrease in operational emissions – from 76 million tonnes of CO<sub>2</sub> equivalent in 2014, to 72 million in 2015.<sup>85</sup> This is attributed to initiatives to decrease flaring, divestments, and higher level maintenance of shutdowns. Shell notes that direct emissions from Upstream facilities might in the future increase as “energy demand increases and easily accessible oil and gas resources decline, we are developing resources that require more energy and advanced technologies to produce”.<sup>86</sup>

Shell states its four main contributions to reducing global GHG emissions include: “supplying more natural gas to replace coal for power generation; supplying biofuels; progressing CCS technologies; and implementing energy-efficiency measures in our operations”.<sup>87</sup> These factors help manage both total lifecycle as well as operational emissions.

## Natural gas

Whilst a lower-emitting fossil fuel than coal, as this report has already noted, the role of gas as a ‘transitional fuel’ is often overstated.

## CCS

CCS is a technology that captures CO<sub>2</sub> and injects it into geological formations. Shell reports that globally only 25 million tonnes of CO<sub>2</sub> is currently captured and stored each year<sup>88</sup> – whilst total global carbon emissions from fossil fuel use amount to just under 10 gigatonnes per annum.<sup>89</sup> The sheer scale of the gap between current emissions and CCS capacity has led some to suggest this prevents CCS from becoming a panacea for mitigation purposes.<sup>90</sup>

There is debate around the carbon-saving benefits of CCS. Critics of the technology regard it as perpetuating reliance on fossil fuels.<sup>91</sup> However, for certain industrial sectors, there are currently limited or no alternatives for achieving deep emission reductions.<sup>92</sup> Whilst beyond the scope of this paper, it is worth querying whether capital should be allocated to CCS projects to mitigate hydrocarbon burning for energy production. Indeed, as mentioned earlier in this report, Shell identifies a more limited role of CCS in its <2°C scenario, noting that CCS will only be necessary in cases where industrial operations cannot be run on renewables.<sup>93</sup>

## Biofuels

In the Annual Report, Shell states that “[it] believe[s] that low-carbon biofuels are one of the most viable ways to reduce CO<sub>2</sub> from transport fuels in the coming years”.<sup>94</sup> Shell has a vested interest in this product, reporting to use “around 9.5 billion litres of biofuel in [its] gasoline and diesel blends worldwide, which makes [it] one of the world's largest biofuel suppliers”.<sup>95</sup>

Shell notes: “some biofuels emit significantly less CO<sub>2</sub> compared with conventional gasoline. But this depends on several factors, such as how the raw materials are produced. Other challenges include concerns over land competing with food crops, labour rights, and the water used in the production process”.<sup>96</sup> Similar concerns have also been raised by environmentalists, and contributed to the EU scrapping a law requiring member states to use “at least 10%” renewable energy in transport.<sup>97</sup>

Shell's <2°C report picks up on some of these nuances. It is noted that under this scenario, the role of biofuels will be limited to “the movement of heavy freight over longer distances in ships and trucks” and “the longest journeys by air and sea... Passenger road transport will be the easiest to

electrify, with battery and fuel cell electric vehicles potentially reaching 80% of the global passenger car fleet over coming decades”.<sup>98</sup> This contrast in messaging within Shell’s reporting raises questions about the resilience of the company’s current investment strategy.

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This contrast in messaging within Shell’s reporting raises questions about the resilience of the company’s current investment strategy.

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## Energy efficiency

Shell seeks to improve energy efficiency across Upstream and Downstream operations. The company reports a slight improvement in energy intensity in 2015, compared to 2014.<sup>99</sup> A limitation of this strategy is that Shell’s metric used to measure energy efficiency is energy intensity.<sup>100</sup> It is absolute emissions – rather than energy intensity – that are significant from a climate perspective.

## Key questions for investors

Encourage Shell to benchmark and set targets to reduce total lifecycle emissions.



# Low carbon R&D and investment strategies

The supporting statement to the 2015 resolution requested details on plans for low carbon energy R&D and investment strategies. A <2°C consistent investment strategy does not necessarily imply a refocus on renewable energies: the company might also consider returning capital to shareholders, or applying its skillset into a different market area. This was recognised in a report by the Oil and Gas Climate Initiative (OGCI), of which Shell is a member, which noted that whilst oil and gas companies are currently looking into renewables, they are also “exploring new business models to ensure [they] can play a competitive and dynamic role in a low greenhouse gas future”.<sup>101</sup>

## Key point

- Although Shell has a range of low carbon initiatives, Shell makes clear that these do not form part of a comprehensive investment strategy for portfolio transformation for <2°C resilience.
- Shell’s establishment of New Energies could offer a take-off point for a more far-reaching diversification strategy.

Shell reports that “over the past six years, we have invested about \$1.1 billion in low-carbon R&D”. As noted earlier, this figure seems small in comparison to the amount spent on hydrocarbon exploration. It is further worth recalling that Shell explicitly states that it has no plans to move to a net-zero emissions portfolio over its investment horizon of 10-20 years.

Shell lists a variety of low carbon initiatives, including those noted below. Some of these have carbon-saving credentials that have been questioned elsewhere in this document. The establishment of the ‘New Energies’ division for investment in renewable and low-carbon power could present an opening for the company to roll out a more ambitious low-carbon diversification strategy.

- Biofuels
- CCS technology
- Research partnerships with universities and research institutes
- Programmes that support future energy technology development
- Products and services to increase vehicle efficiency
- LNG for heavy-duty road transport, shipping and industry
- Some limited interest in solar and wind technologies

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“ The establishment of the ‘New Energies’ division for investment in renewable and low-carbon power could present an opening for the company to roll out a more ambitious low-carbon diversification strategy.

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## Key questions for investors

Investors should continue to encourage Shell to consider and develop an R&D strategy consistent with limiting temperature rises to <2°C. In the future, this could be presented as a transition strategy, phasing out some forms of R&D expenditures and replacing them with others.

# Public policy intervention

The 2015 resolution's supporting statement directed information on Shell's "public policy programme, including positions on key policy measures, especially for the critical 2015 to 2020 policy making period". To ensure the consistency of Shell's policy position, there is a need for full disclosure of association with third party organisations that lobby on the firm's behalf.

As the recent case of ExxonMobil having documents subpoenaed as part of an investigation by the New York Attorney General has demonstrated, investors have an interest in transparency around companies' interactions with the policy framework – including through think tank and advocacy groups.<sup>102</sup> Shell's reporting falls short of this more comprehensive breakdown of lobbying activities.

## Key points

- Shell does not offer a breakdown of details on factors that would be key for assessing public policy intervention, such as its membership and affiliation with trade associations and other third party groups.
- Shell has inconsistent messaging on certain policy positions – such as its support for the Paris target of limiting temperature rises to <2°C – and has unclear positions on other policy areas necessary for limiting temperature rises.

## Lobbying and political donations

Under the section 'Political contributions', Shell states that "No donations were made by the Company or any of its subsidiaries to political parties or organisations during the year. Shell Oil Company administers the non-partisan Shell Oil Company Employees' Political Awareness Committee (SEPAC), a political action committee registered with the US Federal Election Commission. Eligible employees may make voluntary personal contributions to the SEPAC".<sup>103</sup> The company does not offer a further breakdown of details on political lobbying.

There remains a need for disclosure of memberships and total research allocation (including fees and staff time) for all entities to which Shell is linked – or those that act on the company's behalf – on issues of climate or energy policy. This should include trade associations and federations, Chambers of Commerce, general business forums, PR consultants/agencies, think tanks, advertising

agencies, and special interest advocacy groups. There is also a need for disclosure of management oversight for ensuring consistency between the company's position and that of any third party associations to which the company belongs or is associated, with mechanisms in place to respond to misalignments.

## Public policy positions

### COP21 target

Shell sends mixed signals on its support for the <2°C target set at COP21, suggesting that whilst important, climate action should be balanced with concern for economic prosperity. For instance, it is stated: "Policies and regulations designed to limit the increase in global temperatures to well below 2°C could have a material adverse effect on us. While we support the efforts to reduce GHG emissions, governments, when adopting rules and regulations, should balance the need to limit increases in temperature with society's need for energy".<sup>104</sup> Further, the "[Paris] agreement should now encourage countries to develop policies that balance environmental concerns with enabling a decent quality of life for more people".<sup>105</sup>

The juxtaposition of climate action with a 'decent quality of life' creates a binary that hints at a trade-off. It has been shown through academic research that economic progress is not incompatible with climate mitigation policies.<sup>106</sup> Indeed, stunted progress on climate legislation will come at a great cost to the quality of life for many – particularly for societies most vulnerable to the effects of rising temperatures and associated physical damage. There is also a danger in trading future economic viability for short term profit.

## Supportive policies

Shell sets out a number of policy suggestions that will be needed "if there is to be a successful shift to a low-carbon energy system and to keep global temperatures well below 2°C".<sup>107</sup> These include:

- Regulatory measures such as government implemented carbon-pricing mechanisms to motivate investment in emissions reduction and energy efficiency
- Energy efficiency to encourage smarter practices and stricter regulations for compact

urban development, infrastructure and energy-efficient buildings, as well as investment in low-emission transport; and ways to reduce or offset CO2 emissions

- Removal of consumption subsidies for fossil fuels to create a level playing field for all energy providers, and financial incentives that encourage the development, demonstration and deployment of new low-carbon technologies

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“ [T]here is a need for greater transparency around Shell’s position [...] in order for investors to evaluate whether the company’s advocacy position is truly supportive of the low carbon transition.

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It is welcome that Shell recognises that the range of initiatives required to limit temperature rises go beyond a call for carbon pricing. However, there is a need for greater transparency around Shell’s position on a number of these policies areas in order for investors to evaluate whether the company’s advocacy position is truly supportive of the low carbon transition. For example, Shell has recently been accused of trying to block EU progress on electric vehicles, which would undermine its stated support for investment in low-emission transport.<sup>108</sup>

## Key questions for investors

Investors should continue to push Shell towards best practices in terms of transparency:<sup>109</sup>

- Disclosure of memberships of all entities with which the company is linked or those that act on its behalf on issues of climate or energy policy, including: trade associations and federations, Chambers of Commerce, general business forums, PR consultants, think tanks, advertising agencies, and special interest advocacy groups.
- Disclosures regarding the company’s position on and engagement with key upcoming climate legislation, such as reforms to the EU ETS) and the US Clean Power Plan.
- Disclosure of management oversight for ensuring consistency between the company’s position and that of any third parties to which the company belongs or is closely associated, with mechanisms in place to respond to misalignments.



# Conclusion

In a post-Paris context, investors will be looking beyond technical compliance to satisfy the 2015 shareholder resolution's purpose of realising long-term strategic resilience. Shell's 2016 enhanced climate reporting is not reflective of the level of transformation required for portfolio resilience under a <2°C economy. Investors are encouraged to push forward a robust engagement strategy, seeking commitment to a transition pathway consistent with <2°C.

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ShareAction (Fairshare Educational Foundation) is a registered charity that promotes Responsible Investment practices by pension providers and fund managers. ShareAction believes that Responsible Investment helps to safeguard investments as well as securing environmental and social benefits.

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