Aligning With 1.5C: A benchmark for the chemical sector

Assessment of BASF

Important information: ShareAction selected BASF for assessment because it is a major company in the global chemical sector. It was not chosen based on any judgement about the company's climate performance relative to its peers. A late-stage draft of part two of this report was shared with BASF before publication to check for accuracy.

Contents

shareaction.org
info@shareaction.org
+44 (0)20 7403 7800

Runway East
2 Whitechapel Road
London
E1 1EW

What is the purpose of this report?

The science is clear: climate change threatens life as we know it. The most recent report of the Intergovernmental Panel on Climate Change warns that the "window of opportunity to secure a liveable and sustainable future for all" is "rapidly closing"[i] […] the choices and actions implemented in this decade will have impacts now and for thousands of years."[ii]

This is the critical decade to reduce greenhouse gas (GHG) emissions. If emissions continue at current rates, then the remaining carbon budget for 1.5C will be exhausted within the next decade – and even the 2C carbon budget will be significantly depleted[iii]. Emissions must fall immediately and sharply to 2030 to avert the worst impacts of climate change.

This report assesses whether BASF is aligned with the 1.5C Paris goal. It compares the company to ShareAction's benchmark for 1.5C alignment in the chemical sector. The benchmark draws on the CA100+ Net Zero Company Benchmark but expands to cover additional areas particularly relevant to the chemical sector. Investors can use the findings and recommendations of this report to engage with BASF in order to improve the company's climate performance.

How should investors use it?

Part one is a summary of the assessment findings. This identifies priority areas for engagement, provides recommended engagement questions, and summarises findings from other areas covered by the assessment.

Part two is the detailed assessment of BASF's climate strategy on which part one is based. Each section assesses a different area of BASF's climate performance against a standard set by ShareAction. The **Appendix** contains calculations referenced in this report.

Key findings and engagement priorities:

Key finding: BASF's targets are insufficient to align with a 1.5C low/no overshoot pathway. With no scope 3 target, BASF is targeting less than 20 per cent of its total emissions.

Investors should ask BASF to:

- Expand its net zero commitment to include scope 3;
- Set an absolute scope 3 target, covering all relevant upstream and downstream emissions, that is aligned with 1.5C low/no overshoot pathways; and
- Increase the ambition of its scope one and two targets to align with 1.5C low/no overshoot pathways.

Key finding: BASF has not yet committed to transition to emissions-neutral chemical production by 2050 at the latest.

Investors should ask BASF to set out a plan for the short, medium and long term, with intermediate targets, to:

- Phase in electrified chemical production processes, with the aim of transitioning to 100 per cent electrified processes by 2050;
- Increase energy consumption from renewable energy sources, with the aim of transitioning to 100 per cent renewable energy by 2050; and
- Phase in non-fossil-based feedstocks that are emissions-neutral over their entire lifecycle, with the aim of transitioning to 100 per cent emissions-neutral feedstocks by 2050.

Key finding: BASF has not committed to aligning its lobbying with the 1.5C Paris goal. The company has consistently positioned itself against carbon tax policies designed to accelerate emissions reductions in the chemical sector.

Investors should ask BASF to publicly commit to aligning all of its future lobbying positions and activities with the Paris Agreement goal of limiting global warming to 1.5C.

Full assessment summary and links to engagement questions:

- Aligned
- Not aligned

shareaction.org
info@shareaction.org
+44 (0)20 7403 7800

Runway East
2 Whitechapel Road
London
E1 1EW

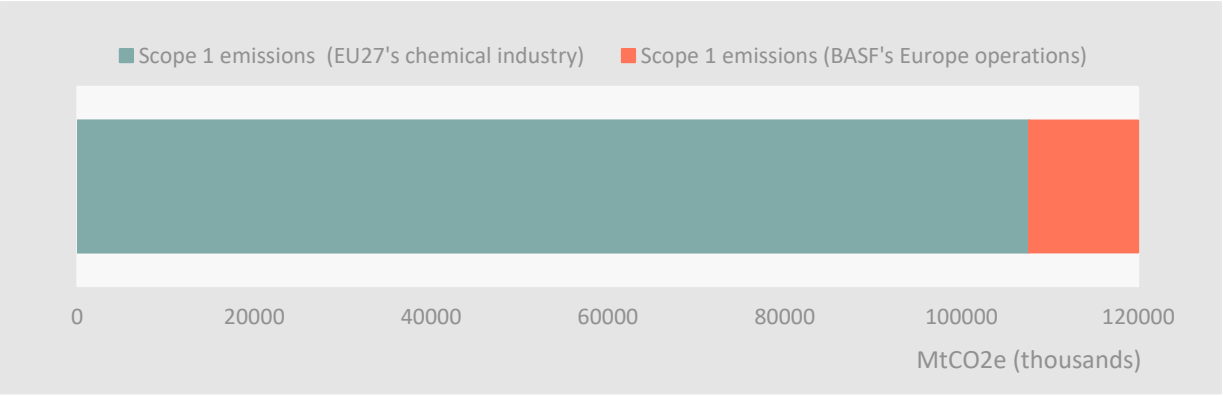
Part 1: Assessment summary

BASF: A major emitter heavily exposed to fossil fuel risks

In 2020, BASF was responsible for more than one in every 10 tonnes of scope 1 emissions from Europe's chemical industry

As one of the largest publicly listed chemical company in the world, producing petrochemicals, fertilisers, plastics and more across six continents, BASF has a very large carbon footprint. In 2020, the company's European operations were responsible for more than one in every 10 tonnes of scope 1 emissions from Europe's chemical industry[iv]. Its Ludwigshafen site alone accounts for four per cent of Germany's gas consumption[v].

Figure 1: BASF's scope 1 emissions as a share of EU27 chemicals scope 1 emissions (2020)



Source: Cefic reports that the EU27's chemical industry emitted 120 million MtCO2e at scope 1 in 2020 [Cefic (2023), 2023 Facts And Figures Of The European Chemical Industry. Website, accessed 03/04/23]. BASF discloses that it emitted a total of 12.34 million MtCO2e from operations in Belgium, France, Germany, Italy and Spain at scope 1 in 2020 [CDP (2021), Climate Change – BASF. Website, accessed 03/04/23.

Most of BASF's emissions are created by consuming fossil fuels to make chemicals, both as **energy** and as **feedstocks**[1]:

- **For energy**: fossil fuels are burned to produce electricity and heat.
- **As feedstocks**: fossil fuels are used as a source of hydrogen and carbon molecules to make chemicals. Fossil carbon is released either as a by-product of chemical production processes or is embodied in chemical products and released downstream.

In addition, upstream of BASF's operations, fugitive[2] emissions are created by fossil fuel extraction and transportation[vi].

The age of cheap fossil fuels, which has underpinned the sector to this point, is now drawing to a close. For BASF, a company that derives 94 per cent of its raw materials from oil, gas and coal[vii], this presents a significant challenge. It will have to transition to new energy sources and raw materials to reduce its reliance on fossil fuels.

Emissions-neutral chemicals are possible. As ShareAction's previous investor briefing explains, the technologies and materials to replace fossil fuels in primary chemical production exist and are technically feasible. The economics of emissions-neutral chemicals are also increasingly viable. But to make this transition, BASF must transform its operations in under thirty years.

The energy crisis highlights BASF's exposure to fossil fuel risks

The energy crisis has highlighted how exposed BASF is to the rising cost of fossil fuels. In the week that BASF announced that its earnings before interest and taxes fell 11.5 per cent in 2022 under the burden of higher energy costs[viii], the EU Emissions Trading Scheme (EU ETS) carbon

[1] ShareAction's previous investor briefing explains these emissions in more detail.
[2] Unintentional release of emissions, e.g in extraction or transportation.

price broke €100/tonne for the first time[ix]. 52 per cent of BASF's direct emissions are covered by the EU ETS. There is no provision for free allowances, which reduce BASF's exposure to this price, to continue beyond 2030. Although BASF is investing in production outside Europe, a review in just three years will determine if and when organic chemicals and polymers will be included under the Carbon Border Adjustment Mechanism (CBAM), which will soon apply the EU's carbon price to imports[x]. With 40 per cent of sales, Europe is BASF's largest market[xi].

This is a global trend, not just a European one. Carbon pricing mechanisms continue to develop in other jurisdictions where BASF operates, and investors should expect this to accelerate[xii]. Companies will increasingly internalise the cost of their emissions. BASF assesses this to be a "substantial" and "high-impact" financial risk[xiii]. The faster it can adapt, the more resilient it will be.

What is ShareAction's assessment of BASF's climate strategy?

Assessment summary: ShareAction's assessment finds that BASF does not yet fully align with any of the benchmark's criteria[3], indicating that the company is off track to align with 1.5C. Three findings are highlighted as priorities for investor engagement: the company's **emissions targets**, its plans to transition to **emissions-neutral chemical production**, and its **climate lobbying activities**.

Inaction, delay, and prolonging dependence on fossil fuels is not a viable path for the planet, BASF, or its investors. Investors should engage with the company on the findings outlined below.

[3] This is a binary assessment; if all criteria are not met, the company is not considered to be aligned. Areas of alignment and misalignment are explored in detail in each section.

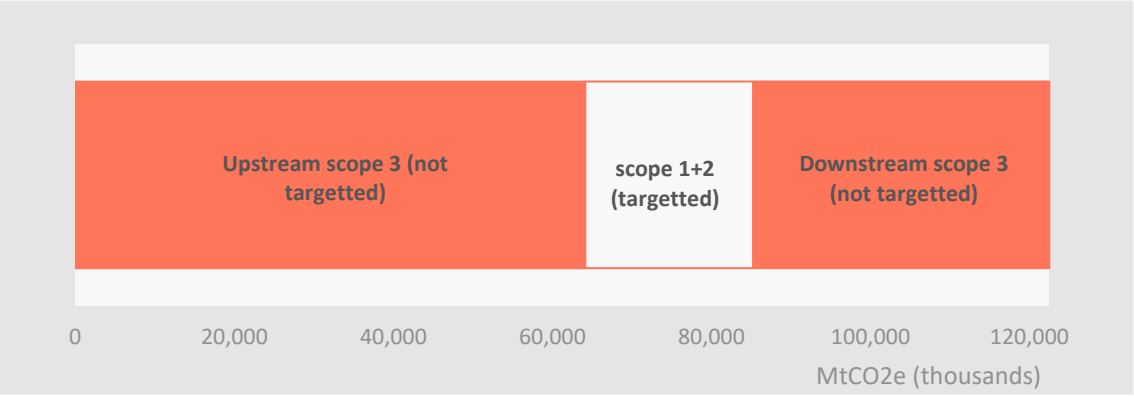
Key finding: BASF's emissions targets are insufficient to align with 1.5C (Section 1)

The assessment finds that BASF's targets are insufficient in two ways: first, that scope 3 is not covered by BASF's net zero commitment, meaning 80 per cent of the company's emissions are not targeted for reductions; and second, that its previously announced scope 1+2 target for 2030 is insufficient to align with 1.5C.

BASF excludes more than 80 per cent of its emissions from targets by failing to cover scope 3

BASF makes a critical omission by not including scope 3 in its net zero ambition. All emissions must fall sharply before 2030 to align with the Paris goals (as a reference point, under a sector-specific pathway with a 67 per cent chance of limiting global warming to 1.5C with low/no overshoot, scope 3 emissions fall by 52 per cent by 2030 on a 2019 baseline)[xiv]. But, BASF currently excludes more than 80 per cent of its emissions from its target setting.

Figure 2: Scope 3 emissions (orange) excluded from BASF's target setting



Source: ShareAction analysis, CDP (2022), Climate Change – BASF.

BASF is already engaging with its value chain to begin to tackle scope 3 emissions but has not set a measurable target. In particular, the company will need to reduce its reliance on fossil

feedstocks to tackle scope 3 emissions both upstream and downstream of its operations. The company should follow the example of a growing number of its peers, including *LyondellBasell*[xv], *Yara*[xvi], and *Lanxess*[xvii] who have set scope 3 targets in the absence of a standardised scope 3 methodology for the chemical sector.

BASF's scope 1 and 2 target falls short of what is required to align with 1.5C

BASF says that its scope 1+2 target, a 25 per cent absolute reduction by 2030, is aligned with **2C of warming**[xviii]. A steeper reduction, which the company might have achieved if business growth had stayed flat since 2018, is being offset by the effects of new business growth[xix].

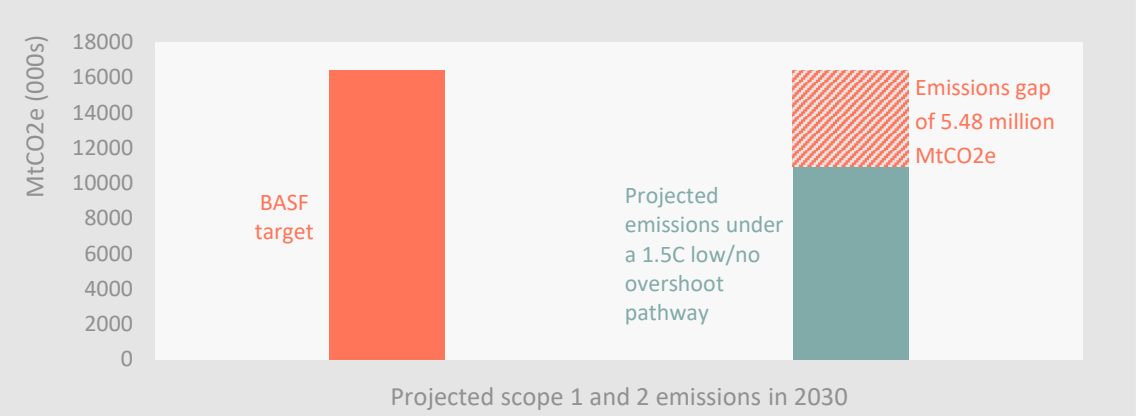
BASF risks veering off track from the 1.5C temperature goal for the sake of business growth. The latest report of the Intergovernmental Panel on Climate Change reaffirmed that global warming must be limited to **1.5C** to avert the worst impacts of climate change, which will disproportionately be felt by the world's poorest and most vulnerable communities[xx]. Climate-related risks, from extreme weather and sea level rise to food insecurity and species loss, "escalate with every increment of global warming"[xxi].

The analysis in **Section 1** of this report shows that BASF is far off track to align with a sector-specific 1.5C pathway for the chemical sector with a high chance (67 per cent) of low/no overshoot, developed by the University of Technology Sydney (the OECM pathway)[xxii]. As **Figure 3** (below) shows, under current targets, BASF's scope 1+2 emissions in 2030 would be more than **5.48 million tonnes** (CO_2e) higher than under the OECM pathway[4].

BASF must take corrective action immediately. With less than seven years to go until 2030, time is very short for the company to adjust its course.

[4] See Appendix for workings.

Figure 3: BASF's projected emissions far exceed a 1.5C low/no overshoot pathway



Source: ShareAction analysis (see Appendix); UTS (2022) OECM Sectoral Pathways to Net-Zero Emissions.

Recommended engagement questions:

Will BASF confirm that its net zero ambition covers scope 3 emissions; and set an absolute, intermediate scope 3 target, covering all relevant upstream and downstream emissions, that is aligned with 1.5C low/no overshoot pathways?

Will BASF increase the ambition of its scope 1 and 2 2030 targets to align with 1.5C low/no overshoot pathways?

Key finding: BASF must set out clear plans to achieve a large-scale reduction in its reliance on fossil fuels (Section 2)

To reach net zero emissions, BASF needs to transition away from using fossil fuels both as an energy source and a raw material[xxiii]. This will require BASF to introduce fundamentally new approaches to making chemicals. Process electrification with renewable energy can replace the burning of fossil fuels for energy for chemical processes. Alternative feedstocks – alternative

sources of hydrogen and carbon that are emissions neutral over their entire lifecycle – can replace fossil fuels as the raw material in chemical production. This is explained in greater detail in our previous investor briefing.

BASF has not set out clear plans for a large-scale switch to process electrification, renewable energy or non-fossil-fuel feedstocks

The company is making encouraging progress developing process electrification, increasing its use of renewable energy, and exploring non-fossil feedstocks as part of its strategy to achieve its emissions targets[xxiv], but it has yet to commit to making these changes at the pace and scale required to significantly reduce its reliance on fossil fuels. BASF should demonstrate that it has a clear plan to phase in new processes and feedstocks over the short, medium and long term.

BASF cannot rely on other parts of its value chain to reduce emissions from using fossil feedstocks. Upstream, fugitive emissions from fossil fuel extraction and transportation remain significant[xxv]. Downstream, the limitations of circularity, reuse and recycling, also need to be acknowledged[xxvi].

Ultimately, firm commitments to large-scale change across its business are lacking. BASF is ambiguous about the extent to which it will continue to rely on fossil fuels over the next three decades. While it is reasonable for a company's strategy to reflect uncertainties about the future, BASF must set out more clearly its intentions for its chemicals business in 2050. As one of the sector's largest companies, BASF can accelerate the transition by setting an example for its peers – and its suppliers – to follow.

Recommended engagement questions:

Will BASF set out a plan for the short, medium and long term, with intermediate targets, to:

- phase in electrified chemical production processes, with the aim of transitioning to 100 per cent electrified processes by 2050;
- increase energy consumption from renewable energy sources, with the aim of transitioning to 100 per cent renewable energy by 2050; and
- phase in non-fossil-based feedstocks that are emissions-neutral over their entire lifecycle, with the aim of transitioning to 100 per cent emissions-neutral feedstocks by 2050?

Key finding: BASF has not committed to aligning its lobbying with the 1.5C Paris goal (Section 9)

BASF says it "supports the goals of the Paris Agreement", but the company has consistently positioned itself against policies designed to accelerate emissions reductions in the chemical sector. Moreover, BASF has not explicitly committed to aligning its lobbying with the 1.5C goal[xxvii]. By lobbying against carbon pricing regulations, BASF risks swimming against the current, slowing its ability to adapt and increasing risks to its reputation.

The company has opposed reforms to European carbon pricing mechanisms, namely reducing free allowances under the EU ETS[xxviii] and including chemical products under the CBAM[xxix]. These are key EU policies designed to work towards the goals of the Paris Agreement. The CEO of BASF, Martin Brudermüller, is also the Chair of the European chemical industry trade association, CEFIC; and Vice Chair of the German Chemical Industry Association, the VCI. Both have opposed CBAM and the phase-out of free allowances[xxx].

BASF's lobbying activity has caused the think tank InfluenceMap to rank the company third among 25 companies it has assessed as the most negatively engaged on climate policy globally[xxxi]. This reflects both BASF's lobbying positions and how engaged the company is in climate lobbying.

Figure 4: Only Exxon and Chevron rank worse than BASF on lobbying

Rank	+/- from 2021	Name	Sector(s)	Headquarters	Climate Policy Footprint
1	(+) 1	*Chevron*	Energy		-84
2	(-) 1	*ExxonMobil*	Energy		-76
3	(+) 3	*BASF*	Chemicals		-69
4	(+) 3	*ConocoPhillips*	Energy		-64
5	0	*Sempra Energy*	Utilities		-57
6	(+) 5	*American Electric Power*	Utilities		-57
7	(-) 3	*Southern Company*	Utilities		-53
8	New Entry	*Nippon Steel Corporation*	Metals & Mining		-52
9	(+) 8	*Gazprom*	Energy		-42
10	(-) 7	*Toyota Motor*	Automobiles		-42

Source: InfluenceMap (2022), Corporate Climate Policy Footprint.

Ultimately, BASF must contend with two global and accelerating trends: carbon pricing is expanding to cover more emissions, and the price of carbon is only going to increase. Notwithstanding the technical challenges of measuring the chemical sector's emissions, it will not be exempt from these trends.

Recommended engagement question:

Will BASF publicly commit to aligning all of its future lobbying positions and activities with the Paris Agreement goal of limiting global warming to 1.5C?

Further areas for engagement

Further weaknesses in BASF's climate strategy and readiness for transition

ShareAction's assessment identified further areas where investors should challenge BASF's approach to transition. These include insufficient capital allocation towards climate goals (Section 4) and the development of technologies, raw materials, and practices (offsetting) that may be unsuitable on a large scale and over the long term in the context of a 1.5C-aligned transition (Section 3). Currently, BASF is not assessing the resilience of its climate strategy against a 1.5C temperature scenario (Section 11), and there are insufficient disclosures regarding its use of climate scenarios and carbon pricing (Section 5).

BASF must set out clear plans to phase out hazardous and 'forever' chemicals

BASF's responsibility to address environmental harms goes beyond reducing its chemical emissions. The company must ensure that its products, which have thousands of end uses, are suitable for the circular economy. BASF has not set out clear plans to phase out the 25 'forever' chemicals it produces or reduce the production of 133 hazardous chemicals (Section 8)[xxxii].

BASF must integrate biodiversity into its climate strategy (New focus area: Biodiversity)

Biodiversity loss and climate change are interconnected crises that demand connected solutions. By not integrating biodiversity into its climate strategy, BASF misses an opportunity to advance both climate and biodiversity goals. With a 9.5 per cent market share of the global pesticides market, a core area of BASF's business is driving biodiversity loss[xxxiii].

It's crucial that BASF addresses how pesticides contribute to biodiversity loss, including through their role in land use change and pollution, by starting to phase out harmful synthetic pesticides and adopting a robust strategy to tackle pesticide-related biodiversity loss. As an important first step, the company must include biodiversity considerations in its climate strategy.

Part 2: Full assessment of BASF

1. Emissions targets

The Standard:
The company must explicitly commit to aligning with 1.5C low/no overshoot pathways. Further, it must commit to mid and long-term emissions targets that are aligned with such pathways.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	Not aligned

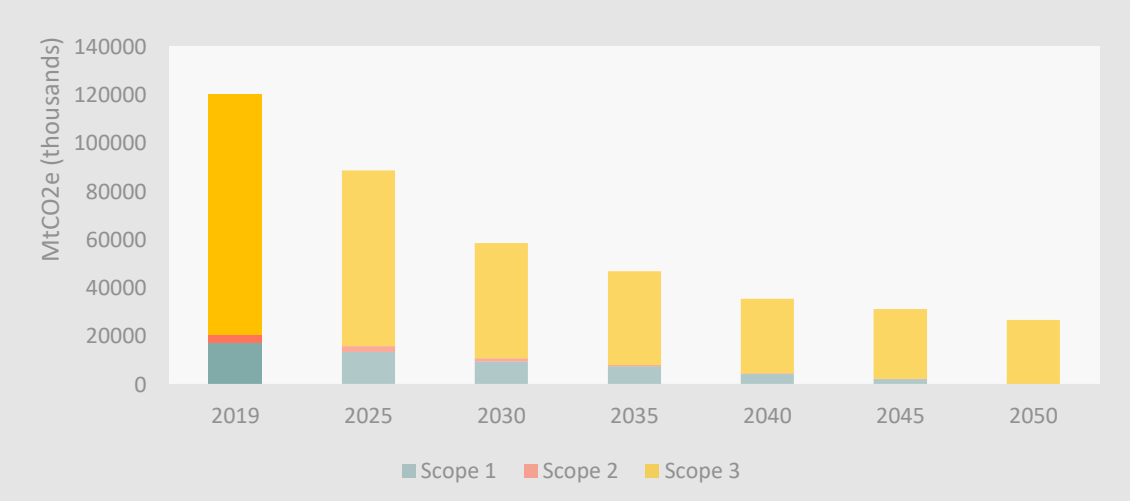
BASF must sharply reduce emissions now to align with Paris goals

This is the critical decade for action. If GHG emissions continue at current rates, then the remaining carbon budget for 1.5C will be exhausted within the next decade – and even the 2C carbon budget will be significantly depleted[xxxiv]. Emissions must fall sharply and immediately to 2030.

As a reference point for the pace and scale of change BASF must make, this assessment compares the company's targets to a sector-specific 1.5C pathway with a high chance (67 per

cent) of low/no overshoot, developed by the University of Technology Sydney (the OECM pathway)[xxxv]. **Figure 5** (below) illustrates how BASF's emissions would fall under this pathway.

Figure 5: How BASF's emissions would fall under a 1.5C low/no-overshoot pathway



Source: ShareAction analysis (see Appendix); UTS (2022), OECM Sectoral Pathways to Net-Zero Emissions.

The assessment finds that BASF's targets are insufficient in two ways: first, that scope 3 is not covered by BASF's net zero commitment, meaning more than 80 per cent of the company's emissions are not targeted for reductions; and second, that its previously announced scope 1+2 target for 2030 will be insufficient to align with 1.5C.

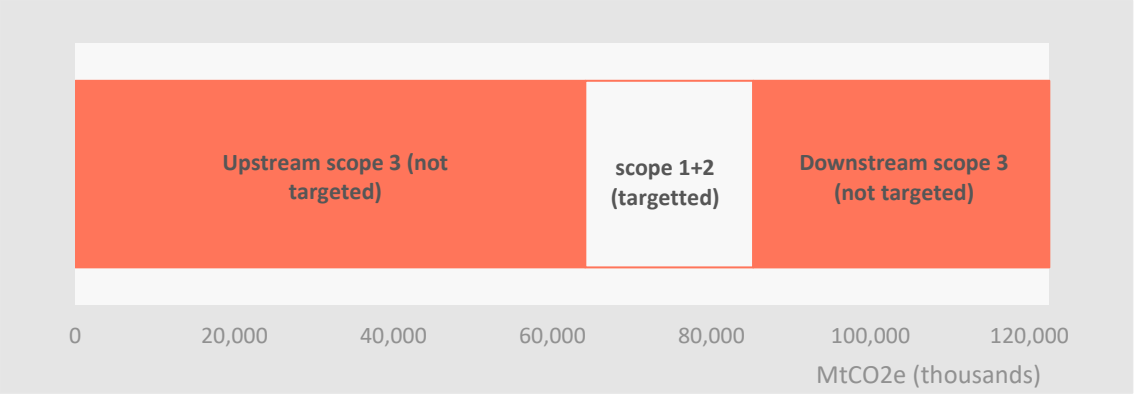
BASF excludes more than 80 per cent of its emissions from its targets by failing to cover scope 3

Under BASF's current plans, the company is excluding more than 80 per cent[5] of its emissions from target setting by failing to cover scope 3 (**Figure 6 below**). These emissions must be

[5] See **Appendix** for workings.

targeted and reduced before 2030 to align with Paris goals (as a reference point, under the OECM pathway, scope 3 emissions will fall 52 per cent by 2030 on a 2019 baseline)[xxxvi].

Figure 6: Scope 3 emissions (orange) excluded from BASF's target setting



Source: ShareAction analysis, CDP (2022), Climate Change – BASF.

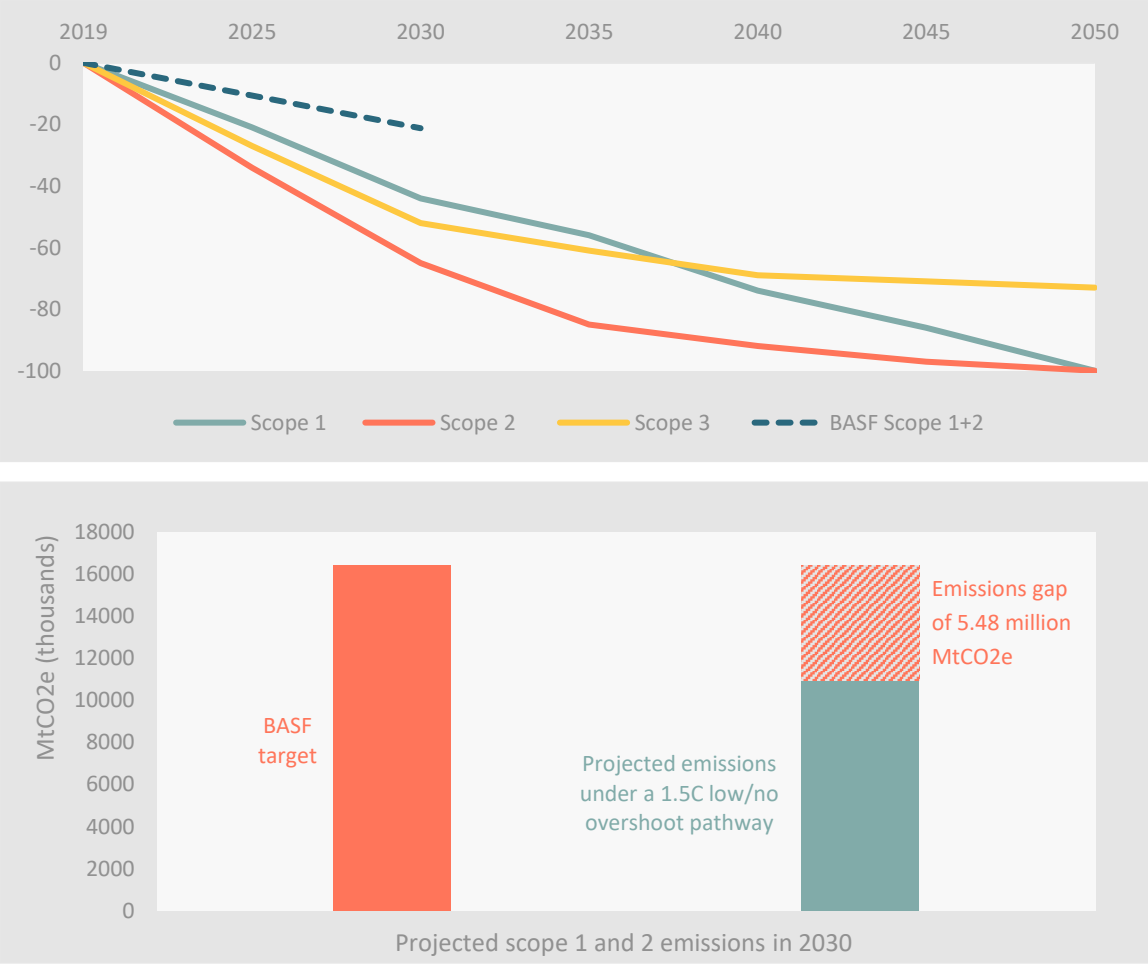
BASF will particularly need to reduce its reliance on fossil fuel feedstocks to achieve this – 86 per cent of BASF's scope 3, and more than 70 per cent of total emissions, are from the purchase of goods and services, and from the use and disposal of end products. In other words, these emissions are largely from the purchase of fossil fuels and when the fossil carbon BASF embodies in its products is released[xxxvii]. Section 2 evaluates what progress BASF is making towards this objective.

BASF's 2030 emissions target is insufficient to align with 1.5C

BASF targets a 25 per cent absolute reduction in scope 1 and 2 emissions by 2030 on a 2018 baseline**.** The company has assessed that this target is aligned with **2C of warming**[xxxviii]. A steeper reduction, which the company might have achieved if business growth had stayed flat since 2018, is being offset by the effects of new business growth[xxxix].

Under the OECM pathway, by 2030, scope 1, 2 and 3 emissions will be reduced by 44, 65 and 52 per cent, respectively, on a 2019 baseline[xl]. As **Figure 4** (below) shows, under the company's current targets, BASF's 2030 emissions would be more than **5.48 million tonnes** (CO2e) higher than under the OECM pathway[6].

Figure 4(i) BASF scope 1+2 emissions fall far short of a 1.5C low/no overshoot pathway



Source: ShareAction analysis (see Appendix); UTS (2022) OECM Sectoral Pathways to Net-Zero Emissions.

[6] Ibid.

BASF cannot allow business growth to be at the expense of the emissions reductions necessary to align the company with a sustainable future. It must take corrective action now and increase the ambition of its 2030 targets.

Recommended engagement questions:
Will BASF confirm that its net zero ambition covers scope 3 emissions; and set an absolute, intermediate scope 3 target, covering all relevant upstream and downstream emissions, that is aligned with 1.5C low/no overshoot pathways? Will BASF increase the ambition of its scope 1 and 2 targets to align with 1.5C low/no overshoot pathways?

2. Investments in emissions-neutral chemical production

The Standard:
The company must transition to emissions-neutral feedstocks and production processes for ammonia, methanol, olefins (ethylene and propylene) and aromatics (benzene, toluene and xylene) at all of its plants by 2050 at the latest, on a schedule that will align the company with 1.5C low/no overshoot pathways.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	Not aligned

BASF must transform its chemical production processes to reduce its reliance on fossil fuels

BASF relies heavily on fossil fuels in its current operations to make chemicals in two key ways:

- **For energy**: fossil fuels are burned to produce electricity and heat.
- **As feedstocks**: fossil fuels are used as a source of hydrogen and carbon molecules to make chemicals. Fossil carbon is released either as a by-product of chemical production processes or is embodied in chemical products and released downstream.

In addition, upstream of BASF's operations, fugitive emissions are created by fossil fuel extraction and transportation[xli].

To reach net zero emissions BASF needs to transition away from using fossil fuels both as an energy source and a raw material[xlii]. This will require BASF to introduce fundamentally new approaches to making chemicals.

This transition is possible. Process electrification with renewable energy, which BASF has called "the ultimate lever for CO2 reduction"[xliii], can replace the burning of fossil fuels for energy for chemical processes. Alternative feedstocks – alternative sources of hydrogen and carbon that are emissions neutral over their entire lifecycle – can replace fossil fuels as the raw material in chemical production. This is explained in greater detail in our previous investor briefing. However, the speed and scale at which companies make this transition will determine whether they can align with the 1.5C goal.

BASF needs to set out a plan for the short, medium and long term, with intermediate targets, to:

- phase in electrified chemical production processes, with the aim of transitioning to 100 per cent electrified processes by 2050;
- increase energy consumption from renewable energy sources, with the aim of transitioning to 100 per cent renewable energy by 2050; and
- phase in non-fossil-based feedstocks that are emissions-neutral over their entire lifecycle, with the aim of transitioning to 100 per cent emissions-neutral feedstocks by 2050.

BASF has not set out clear plans for large-scale process changes and risks retaining a large reliance on fossil fuels in 2050

BASF has not yet committed to making changes at the pace and scale that is required to significantly reduce its reliance on fossil fuels. The company is developing process electrification, increasing its use of renewable energy, and exploring non-fossil feedstocks as part of its strategy to achieve its emissions targets[xliv]. It demonstrates encouraging progress on each of these three fronts[xlv] — but this does not amount to a clear plan to phase in new processes and feedstocks over the short-medium and long term.

Ultimately, firm commitments to large-scale changes across BASF's business are lacking. The company is ambiguous about the extent to which it will continue to rely on fossil fuels over the next three decades. While it is reasonable for a company's strategy to reflect uncertainties about the future, BASF must set out more clearly its intentions for its chemicals business in 2050.

BASF has not stated its intention to fully transition to electrified processes and renewable energy sources by 2050

BASF has not stated its intention to fully electrify processes across its chemicals business by 2050. The inclusion of electrification in BASF's climate strategy, and recent announcements of process electrification projects at BASF sites, do not form part of a clear, public plan to phase in process electrification across its business over the short, medium and long term.

In addition, BASF is "increasingly meeting [its] electricity needs from renewable sources"[xlvi] but has not stated its intention to fully transition to renewable energy sources by 2050.

The company has publicly recognised the importance of electrification with renewable energy[xlvii]. It features under the 'grey-to-green', 'power to steam' and 'new technologies' pillars of BASF's strategy for achieving its climate goals[xlviii]. Encouraging, individual examples of process electrification are given, including the recent installation of an industrial heat pump at its Ludwigshafen site[xlix].

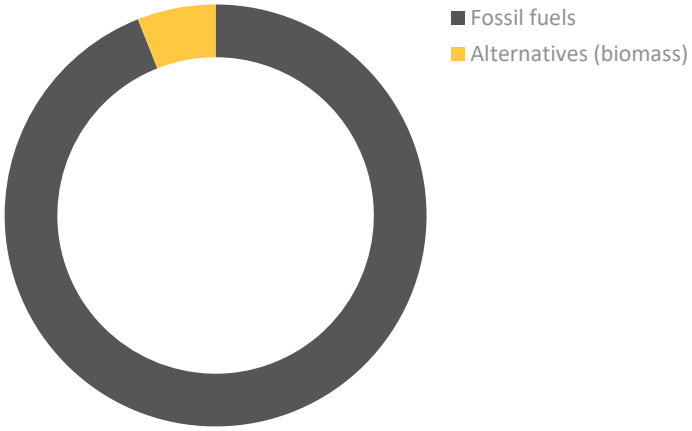
In addition, the company is making very significant power purchase agreements to increase its proportion of renewable electricity[l]. BASF's energy demand will increase, so it will have to source a very significant amount of renewable energy across its global operations in the future. This presents challenges for the company – which is why it must plan for large-scale process electrification at an early stage and set out how it will make this transition gradually.

BASF has not stated that it intends to transition away from fossil fuel feedstocks at large scale

BASF has not committed to a total transition from fossil feedstocks to emissions-neutral feedstocks. The company says it is "increasingly replacing fossil resources with alternative materials"[li] but has not set out plans for how a large-scale substitution of fossil fuel feedstocks

will be achieved – or stated clearly that this is the company's intention. **Figure 6** (below) shows the scale of change that BASF must achieve.

Figure 6: 94 per cent of BASF's chemical feedstocks are derived from oil, gas and coal[lii].



Source: CDP (2022), *Climate Change – BASF.*

BASF cannot rely on other parts of its value chain to reduce the emissions from its use of fossil feedstocks. Upstream, fugitive emissions from fossil fuel extraction and transportation remain significant – the IEA recently estimated that methane emissions from the oil and gas sector are 70 per cent higher than official figures[liii]. Downstream, BASF cannot rely entirely on increasing the circularity of its products to keep carbon embodied in its products from being released. BASF has limited control over what happens to its products once sold, no recycling system is totally efficient, and even with a very large increase in reuse and recycling, leakage will still occur[liv].

BASF is exploring alternative feedstocks derived from biomass and plastic waste but will need to go beyond these to achieve a large-scale substitution. Firstly, because the availability of sustainable biomass for chemical feedstocks is likely to be highly limited (**see further discussion in Section 3**)[lv]. Secondly, because the extent to which plastic waste can substitute virgin

feedstocks, either fossil fuels or biomass, is likely to be limited (see further discussion in Section 8).

BASF must therefore develop other alternative feedstocks. Carbon can be captured from the air and, as an intermediate solution, from point-sources in industries[7] with as-yet hard-to-abate processes, like cement. BASF has not announced plans to capture or procure carbon from these sources, but may utilise carbon captured in its own processes as a feedstock[lvi].

With less than 30 years to go until 2050, BASF needs to set out a clearer plan for a transition away from fossil fuel feedstocks. This must explain which alternative feedstocks BASF will use and how large-scale substitution will be achieved.

Recommended engagement questions:

Will BASF set out a plan for the short, medium and long term, with intermediate targets, to:

- phase in electrified chemical production processes, with the aim of transitioning to 100 per cent electrified processes by 2050;
- increase energy consumption from renewable energy sources, with the aim of transitioning to 100 per cent renewable energy by 2050; and
- phase in non-fossil-based feedstocks that are emissions-neutral over their entire lifecycle, with the aim of transitioning to 100 per cent emissions-neutral feedstocks by 2050?

[7] Point-source capture refers to carbon captured at the point that it is emitted from an industrial process.

3. Investments that companies must avoid or explain

The Standard:
The company must either: **avoid** investing in the following technologies or materials, or it must **explain** why it has invested in them and produce credible evidence that its activity is aligned with 1.5C low/no overshoot pathways. ***'Avoid or explain' technologies and materials (see Appendix of the benchmark for details):*** • offsets • carbon capture and 'blue' hydrogen • steam cracker electrification • methane pyrolysis • biomass for feedstocks New investments in unabated fossil fuel-based assets cannot be aligned under any circumstances.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	**Not aligned**

shareaction.org
info@shareaction.org
+44 (0)20 7403 7800

Runway East
2 Whitechapel Road
London
E1 1EW

BASF is exploring ways to lower emissions that may be inconsistent with a 1.5C-aligned transition

Technologies classified as 'avoid-or-explain' are those that are unlikely to be emissions neutral, or could only be emissions neutral under very strict conditions, and so are unlikely to be 1.5C aligned. They may lock in high emissions, delay necessary transitions to emissions-neutral processes, and present an opportunity cost over other investments[lvii]. Companies must either avoid them or explain why they are using them and how this will align with 1.5C.

BASF says there is still some uncertainty about which of its low-carbon projects it will take forward and scale[lviii]. The choices it makes will be decisive for its ability to reduce emissions and stay competitive in the long term. Investors should engage with BASF to ask whether these projects are consistent with a 1.5C transition.

BASF's reliance on offsets to meet its emissions targets carries high risks

The credibility of offsetting by businesses is under growing scrutiny[lix]. BASF has suggested that offsetting will be used to meet both its 2030 target and its net zero target, and it is unclear on the scale at which it will rely on offsetting[lx]. As this assessment shows that BASF can do more to abate its emissions, this reliance on offsetting is likely to create risks.

To truly net off emissions, offsetting needs to be an *additional* (the emissions reduction would not have occurred without the offsetting exercise) and *permanent* removal of carbon. This is difficult to verify, measure and control over long periods of time. Offsetting programmes may issue credits for carbon offset, and there is a risk of double issuance to two companies for the same unit of carbon removal.

Offsetting can also negatively impact biodiversity and therefore compromise the ability of an ecosystem to be resilient in the face of climate change[lxi]. For example, tree planting projects can

damage biodiversity by clearing grassland or wetland ecosystems to plant monocultures of non-native trees. This compromises important habitats that support local species and the ecosystem services they provide, such as carbon storage and buffering against climate change-induced extreme weather events.

Several low-carbon approaches BASF is exploring are unlikely to be suitable at large-scale and over the longer term

BASF is exploring a range of new technologies to meet its climate targets. While several of these have strong merits and are encouraged – as **Section 2** explained – others have drawbacks that may make them unsuitable for large-scale use over the longer term.

The company should favour investments in new processes that will address the sources of its emissions over attempting to mitigate them with carbon capture[lxii]. Carbon capture does not result in zero emissions – its carbon footprint will depend on the capture rate, the source of the energy it uses, and the fate of the captured CO2 (in this case, the CO2 is destined for offshore storage).In addition, carbon capture cannot resolve fugitive emissions from fossil fuel extraction and transportation upstream of BASF's operations[lxiii].

Beyond carbon capture, BASF is investing in new processes which **may not be able to eliminate emissions entirely** or may **lock in reliance on either fossil fuels or biomass** as alternative feedstocks. As a forthcoming ShareAction report will explain, the supply of sustainable biomass for the sector will be highly limited[lxiv]. It is not straightforward to say that products made with biomass are low emissions or sustainable. Cradle-to-grave lifecycle assessments of bio-based products are provided to BASF's customers under NDA, but are not publicly available to non-customers. To minimise pressure on biomass, BASF must prioritise developing alternative feedstocks, particularly captured carbon from the air or other industries.

The company is also piloting **methane pyrolysis**, a process in which natural gas or biomethane is converted into a solid carbon by-product and hydrogen. This process can have no direct emissions if renewable electricity is consumed[lxv] but would not resolve fugitive emissions if natural gas is used as the feedstock. As renewable hydrogen is a market-ready alternative, and is forecast to be cost-competitive with grey hydrogen by 2030[lxvi], methane pyrolysis may represent an opportunity cost with higher emissions.

Attempts to **electrify steam cracking**, the main production route for making high-value chemicals from fossil fuels, carry similar risks[8]. While electrifying the heat source for this process could replace the burning of fossil fuels and significantly reduce its direct emissions, a key concern is whether companies could replace fossil fuel feedstocks with sustainable, emissions-neutral alternatives. While biomass and plastic waste can be converted into alternative steam cracker feedstocks, as is noted above, the availability of biomass is likely to be limited. Further, the extent to which plastic can substitute fossil fuels as a cracker feedstock is also likely to be limited (see further discussion in **Section 8**). So, a full transition away from fossil feedstocks in steam cracking could lock in high demand for scarce biomass. In any case, BASF has not said it would replace fossil fuels as the feedstock in its electric cracker[lxvii].

Instead of steam cracking, high value chemicals can be produced from renewable methanol via methanol-to-olefins and methanol-to-aromatics processes – this is explained in our previous investor briefing. As renewable methanol can be produced not just from biomass and plastic waste but also from renewable hydrogen and captured carbon, it can utilize a wider range of alternative feedstocks. Companies should therefore favour investments in this route.

[8] In the traditional process a fossil feedstock – naphtha or ethane – is mixed with steam in a furnace to produce chemical products. This is energy intensive and creates significant emissions from burning fossil fuels. BASF has jointly invested in an electric cracker pilot to eliminate the need to burn fossil fuels.

Recommended engagement questions:

Will BASF commit to not relying on offsetting to achieve its climate targets and net zero commitment?

Will BASF explain at what scale it intends to develop carbon capture and storage at its sites, and the steps it will take to ensure this activity is aligned with 1.5C low/no overshoot pathways on all scopes to 2050?

Will the company explain at what scale it intends to develop methane pyrolysis; and what steps it would take to manage emissions from the continued use of a natural gas feedstock, to ensure this activity is aligned with 1.5C low/no overshoot pathways on all scopes to 2050?

To verify claims of emissions reductions, will the company publish, in full, cradle-to-grave lifecycle assessments for primary chemical products created with bio-based feedstocks?

Will the company explain at what scale it intends to develop electric steam cracking, and with what feedstocks, and outline the steps it will take to ensure this activity is aligned with 1.5C low/no overshoot pathways on all scopes to 2050?

4. Capital spending alignment

The Standard:
100 per cent of the company's capital spending on new and existing assets is aligned with 1.5C low/no overshoot pathways.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	Not aligned

BASF has not committed to aligning its capital spending with a 1.5C-transition

BASF has not committed to aligning all its future capital spending with 1.5C low/no overshoot pathways. Moreover, the company does not provide a clear breakdown of how its "net zero transformation" capital is being spent. The company has said only that it will spend up to one billion euros by 2025 to pilot new technologies, "around two to three billion" by 2030, and "significantly" more beyond 2030[lxviii]. The company recently said it would spend on average €0.4 billion per year on its "net zero transformation" between 2023-2027[lxix]. Verifying whether a company is investing in 1.5C- aligned assets is impossible without more detailed disclosures.

Recommended engagement question:
Will BASF explicitly commit to disclose and align its capital expenditure plans with the objective of limiting global warming to 1.5C with a low/no chance of overshoot?

5. Carbon pricing

The Standard:
The company has set a company-wide internal carbon price, covering all geographies and scopes, to drive low-carbon investment in line with 1.5°C low/no overshoot pathways.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	Not aligned

BASF does not disclose its internal carbon price

BASF uses an internal price on carbon to evaluate future investment opportunities. The price is set to reflect existing and expected regulations, with the addition of "a strategic premium to foster internal climate action"[lxx]. The company says, "the price of carbon considered depends on

various factors driven by the specific assessment, e.g. geography and timeframe of an investment. Sometimes, several pricing scenarios may be used to evaluate uncertainties in future regulatory environments"[lxxi].

However, BASF does not disclose the price it uses. Investors must be able to judge whether the price used by a company is appropriately ambitious to manage regulatory risk and drive low-carbon investment.

Fewer than one in five tonnes of BASF's emissions are priced[9]

BASF's carbon pricing covers scopes 1 and 2, but not scope 3. With this exclusion, the company is not internalising the cost of most of its emissions. Not pricing scope 3 emissions significantly reduces the cost incentive to invest in low-carbon assets and feedstocks. This is inconsistent with a 1.5C-aligned transition.

Recommended engagement questions:
Will BASF disclose its internal carbon price?
Will BASF adopt a carbon price covering all scopes?

[9] Scope 1 and 2 emissions together are 17 per cent of BASF's 2021 emissions. See **Appendix**.

6. Reducing scope 3 emissions

The Standard:
The company is acting to reduce scope 3 emissions beyond its direct control. It is engaged with its value chain to align with 1.5C low/no overshoot pathways.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	**Not aligned**

BASF engages with suppliers but sets low expectations on climate action

We welcome BASF's engagement with suppliers to improve their climate impacts. However, the company's expectations are currently too vague. The company's Supplier Code of Conduct says that suppliers must "reduce…emissions [and] minimize [their] negative impact on biodiversity [and] climate change"[lxxii], but does not make explicit a required level of ambition. Specifically, it does not say what temperature goal suppliers should commit to aligning with. Without this guardrail, BASF may allow suppliers with weak climate commitments into its value chain.

BASF evaluates and engages with suppliers based on the climate criteria in its Code. Suppliers that are found to deviate from this are asked to improve in a set timeframe or after a maximum of five years. BASF says that it "support[s] them in their efforts, e.g., with training on environmental topics" and that it has a "retain and engage" policy for non-compliance[lxxiii]. By 2025, it aims to increase coverage to 90 per cent of spend and for 80 per cent of suppliers to have improved their performance when re-evaluated[lxxiv].

In addition, BASF has developed a Product Carbon Footprint methodology. In 2021 the company launched a *Supplier CO2 Management Programme,* through which suppliers use this methodology to estimate their products' carbon footprints and work with BASF to reduce them. The initiative is currently voluntary. BASF intends to make this a criteria for purchasing decisions in the future, but has not specified when this will happen.[lxxv]

Recommended engagement question:

Will the company require its suppliers to explicitly commit to aligning with 1.5C low/no overshoot pathways?

7. Green revenue targets

The Standard:
The company has set a target for revenue from the sale of emissions-neutral chemicals, which are compliant with the production processes listed in Section 2 of the benchmark, to represent a proportion of overall sales in a future year.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	**Not aligned**

BASF has not set a green revenue target

By linking climate targets to financial returns, green revenue targets can be a powerful incentive for companies to reduce their emissions. Primary chemicals whose processes and/or feedstocks are not yet emissions-neutral should not be counted as green, nor should revenue from chemicals whose emissions-neutral content has been allocated with a mass balance approach[10].

[10] Mass balance: if fossil fuels and an alternative, 'sustainable' feedstock are fed into a chemical production process it may not be possible to determine the alternative content in a final chemical product. Under the mass balance approach, sustainable content is 'allocated' to the final product in equal proportion to its concentration in the original feedstock mix.

Recommended engagement question:
Will BASF set a target for revenue from the sale of emissions-neutral chemicals (which are compliant with the conditions in ShareAction's benchmark) to represent a proportion of overall sales in a future year?

8. Enabling the circular economy

The Standard:
The company is committed to enabling the circular economy by (1) creating materials that are safe and easy to reuse and circulate, and (2) developing appropriate recycling technologies.
Metrics for assessment:
Please refer to the full benchmark. **This standard is based on previous research by ShareAction on how chemical producers can align with the circular economy. Please read our previous investor briefing.**

Assessment:	Not aligned

BASF must enable the circular economy to reduce emissions, pollution and toxic chemical harms

The circular economy is fundamental to global efforts to address climate change, as lower demand for virgin materials can significantly reduce energy demand and emissions[lxxvi]. As importantly, this can address unsustainable levels of waste and pollution. Support for the circular economy is reflected in major legislative initiatives, including a global treaty to combat plastic pollution[lxxvii] and coming EU regulation to further restrict the use of toxic chemicals[lxxviii].

BASF's responsibility to address environmental harms goes further than reducing the emissions from the chemicals it produces. The company must ensure that its chemical products, which will have thousands of end uses, are suitable for the circular economy. As the presence of hazardous chemicals can make products more difficult, and less safe, to reuse and recycle, companies like BASF have the direct power and responsibility to remove barriers to circularity[lxxix].

BASF, and the sector, can directly support the transition to a circular economy in two key ways: by producing products that are safe and easy to reuse and recycle; and by incorporating recycled materials into its own products. On both fronts, BASF's approach is currently lacking.

BASF has not committed to addressing hazardous substances

BASF has not committed to disclosing all of its intentionally added chemical ingredients, and has not published a strategy to eliminate or substitute hazardous substances from its products.

Research by ChemSec shows that in 2022 BASF produced 133 hazardous chemicals, up from 114 in 2020[lxxx]. It also produces 25 persistent chemicals ('forever chemicals'), which makes BASF (alongside Lanxess) the company producing the highest number of forever chemicals of the 54 companies that ChemSec track[lxxxi]. As ChemSec has argued, BASF should produce plans to reduce and phase out these chemical products.

BASF's chemical recycling projects may lock in high reliance on fossil fuels or scarce biomass

BASF is working with other companies to develop a chemical recycling technology called pyrolysis[lxxxii]. In this process, plastic waste is converted into a product called pyrolysis oil that can be used as a feedstock for steam cracking to make high-value chemicals. Pyrolysis is explained in more detail in our previous investor briefing.

Pyrolysis oil may need to be diluted at very high rates to meet cracker specifications[lxxxiii]. In this case pyrolysis depends either on virgin fossil naphtha or biomass to produce a viable feedstock – either anchoring pyrolysis to fossil fuels or, if fossil fuels are substituted, to highly limited sustainable biomass supply. Consequently, pyrolysis and steam cracking for high-value chemical production are unlikely to be sustainable at a large scale and over the long term.

As was discussed in **Section 3**, high-value chemicals can be made with renewable methanol via methanol-to-olefins and methanol-to-aromatics processes as an alternative to steam cracking. Renewable methanol can be made from biomass or from plastic waste, but it can also be made with renewable hydrogen and captured CO2. BASF should therefore favour this route to high-value chemical production in the long term.

An alternative chemical recycling technology, gasification, could convert plastic waste into a feedstock for renewable methanol production. This is explained in our previous investor briefing.

Recommended engagement questions:
Will BASF disclose all intentionally added chemical ingredients and the volumes produced; and produce a strategy for eliminating or substituting hazardous and persistent chemicals? Will BASF exit its pyrolysis ventures by 2050 at the latest?

9. Responsible lobbying

The Standard:
The company's lobbying promotes and protects policies in line with the goal of limiting warming to 1.5C without overshooting.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	Not aligned

BASF has not committed to align its lobbying with the 1.5C Paris goal

BASF says that it "supports the goals of the Paris Agreement", but has not explicitly committed to aligning its lobbying with the 1.5C goal[lxxxiv].

The company publishes its climate policy positions on its website and discloses an audit of its trade associations' climate positions. This includes a review of whether BASF considers them to be Paris aligned and whether it has engaged with the associations on those positions[lxxxv]. The company also has policies on conflicts of interest and corruption[lxxxvi].

BASF says that it considers its lobbying positions and its trade association's lobbying positions on key climate regulations for the chemical industry to be aligned with the goals of the Paris Agreement[lxxxvii]. As a reminder: parties to the Paris Agreement agreed on the "aim to reach global peaking of greenhouse gas emissions as soon as possible…[and] to undertake rapid reductions thereafter in accordance with best available science" in order to limit global warming to well below 2C and pursue efforts to limit warming to 1.5C[lxxxviii].

However, BASF has consistently positioned itself against carbon tax regulations, whose purpose is to deliver the goals of the Paris Agreement. In doing so, BASF risks swimming against the current, slowing its ability to adapt and increasing the risks to its reputation.

BASF has consistently positioned itself against carbon tax policies designed to accelerate emissions reductions in the chemical sector

BASF has stated its support for the development of a harmonised global carbon price[lxxxix], but has opposed recent reforms to carbon tax policies in Europe.

The company has lobbied against reducing free allowances allocated to certain sectors under the EU Emissions Trading System[xc]. These allowances are intended to discourage companies from

moving their production (and emissions) to less regulated geographies, but they will gradually be withdrawn to strengthen the carbon pricing signal – there is currently no provision for them to continue beyond 2030.

BASF has also strongly opposed the inclusion of chemical products under the new Carbon Border Adjustment Mechanism (CBAM), a landmark EU regulation introduced as part of the Green New Deal[xci]. By applying the EU ETS carbon price to imports to Europe, CBAM is designed to drive decarbonisation outside Europe and discourage companies from moving production offshore. The European Parliament's proposal to establish a CBAM states:

> **"The initiative for a CBAM is a part of the 'Fit for 55 Package'. That mechanism is to serve as an essential element of the EU toolbox to meet the objective of a climate-neutral Union at the latest by 2050 in line with the Paris Agreement."[xcii]**

CBAM will apply to iron, steel, cement, aluminium, electricity, fertilisers and hydrogen, for which free allowances will be reduced as CBAM is introduced. However, BASF strongly opposes CBAM being applied to chemicals. The company says that it is technically challenging to apply to chemical products[xciii], and BASF's CEO, Martin Brudermüller, has said it is a "very bureaucratic piece"[xciv]. A review will take place no later than 2026 to determine whether it will be extended to cover chemicals and polymers.

BASF promotes these positions through its trade associations, in which it holds leadership roles. BASF's CEO currently serves as the Chair of the European chemical industry trade association, CEFIC; and as Vice Chair of the German Chemical Industry Association, the VCI. Both have opposed CBAM and the phase-out of free allowances[xcv].

BASF's lobbying activity has caused the think tank InfluenceMap to rank the company third among 25 it has assessed as the most negatively engaged on climate policy[xcvi]. This reflects both

BASF's lobbying positions and how engaged the company is in climate lobbying. BASF is the only European company in the top 10 – only Chevron and Exxon Mobil performed worse.

Ultimately, BASF must contend with two global and accelerating trends: carbon pricing is expanding to cover more emissions, and the price of carbon will only increase. Notwithstanding the technical challenges of measuring the chemical sector's emissions, it will not be exempt from these trends.

Recommended engagement question:
Will BASF publicly commit to aligning all of its future lobbying positions and activities with the Paris Agreement goal of limiting global warming to 1.5C?

10. Climate governance

The Standard:
The company has clearly designated responsibility for climate at C-suite level and links executive remuneration to 1.5C-aligned emissions targets. It appoints board members who are qualified to manage a 1.5C aligned transition.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	**Not aligned**

BASF designates responsibility for sustainability at C-Suite level

BASF's CEO and Chairman of its Executive Board of Directors has overall responsibility for climate protection. Another member of the Executive Board of Directors chairs a Corporate Sustainability Board. Arrangements for sustainability governance are disclosed on BASF's website[xcvii].

BASF links compensation to 2C-aligned emissions targets

Under BASF's long-term incentive plan, compensation of the Board of Executive Directors is linked to the achievement of BASF's 2030 emissions reduction targets[xcviii]. While this link is welcome, the 2C target itself is insufficiently ambitious.

BASF designates climate responsibility at board level, but it is not clear how BASF assesses climate competence

The Supervisory Board oversees BASF's Executive Board of Directors. The company says that "[the Board] has not established a separate Sustainability Committee [as] the entire Supervisory Board regularly discusses it in detail as a cross-cutting issue"[xcix]. The board reviews climate-related strategy and key decisions at least annually, including target performance, carbon price forecasts and investment and R&D decisions. Climate-related risks and opportunities are reviewed by the Board twice a year[c].

BASF says that "[a]ppropriate expertise…on sustainability issues" are "considered essential to the composition of the Supervisory board"[ci]. Seven of 12 board members are identified as having competence on "sustainability topics", but not on climate strategy specifically, and it is not clear how this is assessed[cii]. BASF says that Board members can draw on the expertise of BASF's Stakeholder Advisory Council, which includes climate experts[ciii]. The company also offers

induction and training to board members, but it is unclear whether or how this relates to BASF's climate strategy[civ]. Investors should ask BASF for more details on how it ensures that its Supervisory Board is equipped to provide oversight of the company's transition strategy.

Recommended engagement question:
Will the company provide more details of how it ensures that the Supervisory Board has competence in areas of sustainability, decarbonisation, and climate risk management?

11. Disclosures and assessment of climate-related risks

The Standard:
The company discloses comprehensively against the recommendations of the Taskforce for Climate-related Financial Disclosures, the Carbon Disclosure Project Questionnaire, and the additional requirements in the benchmark.
Metrics for assessment:
Please refer to the full benchmark.

Assessment:	Not aligned

BASF identifies, assesses and discloses climate-related risks and opportunities

BASF discloses against the recommendations of the Task Force for Climate-related Financial Disclosures[cv], and completes the climate change questionnaire from the Carbon Disclosure Project[cvi].

The company has an internal process for identifying, assessing and managing climate-related risks. The company includes the types of risks specified in the examples given by the Task Force on Climate-related Financial Disclosures in its risk catalogue[cvii]. BASF gives examples of risks it has identified for each of these categories. The company discloses risks it has identified as 'substantial' risks, as requested in the CDP questionnaire. The company defines a 'substantial' impact as any which results in a deviation from planned earnings of more than €10 million, with further thresholds defined for low, medium and high impacts. Substantial risks, likelihoods and expected impacts are clearly described, with estimations of minimum and maximum financial impact[cviii].

BASF does not test its strategy against a 1.5C scenario

Although BASF says that it has "a transition plan which aligns with a 1.5C world", the temperature alignment of the low warming scenario used to test the resilience of its strategy is disclosed to be "1.6-2 degrees"[cix]. Without using a 1.5C scenario, BASF cannot test the resilience of its strategy against the risks and opportunities that may materialise under these specific conditions.

BASF discloses the key questions it seeks to answer through scenario analysis, covering transitional and physical risks. The company describes only at a high level how it is affected under the different scenarios it uses[cx].

BASF uses both quantitative and qualitative scenarios to assess the resilience of its strategy under future warming scenarios. Examples of assumptions underpinning the scenarios are referenced but not described in detail. Such assumptions, such as the trajectory of carbon pricing or the availabilities of different feedstocks over time, will significantly affect how the company performs under those scenarios. Without knowing the details of these assumptions, it is impossible to verify whether the scenarios are realistic, and whether the company's strategy is credibly resilient to a 1.5C future.

The company does not disclose its capital spending plans

As discussed in section four, capital spending is a critical indicator of whether a company is aligning its operations with 1.5C. BASF does not currently disclose what capital spending is aligned with a 1.5C-aligned transition, but says that it plans to within the next two years[cxi].

Recommended engagement questions:

Will the company use a 1.5C low/no overshoot scenario to test the resilience of its strategy, and disclose all of the inputs of the scenario in detail?

Will the company disclose capital spending on new and existing assets broken down by the type of asset, and by plant/facility, across all geographies?

New focus area: BASF's impact on biodiversity

BASF's pesticides business is driving biodiversity loss

In addition to contributing to climate change, BASF is driving biodiversity loss through its role as a major pesticide producer. As of 2021, BASF controlled 9.5 per cent of the global pesticides market[cxii].

Pesticides used in industrial agriculture, which include insecticides, herbicides, fungicides and other pest-specific chemicals, contribute greatly to land-use change and pollution. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), these are two direct drivers of biodiversity loss. The excessive and inappropriate use of pesticides severely damages terrestrial and aquatic life and compromises ecosystem services like pollination, water purification and soil fertility[cxiii].

BASF produces 20 'highly hazardous pesticides', so-called because of their high acute or chronic toxicity. Highly hazardous pesticides accumulate in soil and water, and in the food chain through animals preying on contaminated organisms, which kills species and damages ecosystems that provide essential services: highly hazardous pesticides have already been associated with declining bird and bee populations, which has threatened pollination services[cxiv].

The company's approach to addressing biodiversity loss is encompassed in its efforts to improve the environmental sustainability of agriculture. However, these efforts do not include biodiversity-specific commitments and targets, assessing and disclosing the biodiversity impacts, dependencies and risks generated by its pesticide products, and a strategy to address these impacts. BASF must address how pesticides contribute to biodiversity loss, including through their role in land use change and pollution, by starting to phase out harmful synthetic pesticides

and adopting a robust strategy to tackle pesticide-related biodiversity loss. As an important first step, the company must include biodiversity considerations in their climate strategy.

By not integrating biodiversity into its climate strategy, BASF misses an opportunity to tackle these interconnected crises

BASF's 2022 report indicates that the company has not integrated biodiversity into their climate strategy. With this omission, BASF fails to identify shared opportunities to advance climate and biodiversity goals.

Interconnected crises demand connected solutions. As the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and Intergovernmental Panel on Climate Change (IPCC) emphasise, the biodiversity and climate crises must be addressed together. The Global Biodiversity Framework also specifies the need to reduce the impact of climate change on biodiversity (Target 8) and the risks posed to biodiversity by pesticides (Target 7).

Reducing emissions and restoring biodiversity are mutually supporting goals. Biodiversity plays an important role in the provision of ecosystem services, such as carbon sequestration and flood control, that can help mitigate the impacts of climate change and enable adaptation. BASF compromises the provision of these services by producing pesticides that significantly harm biodiversity. Through its contribution to climate change, BASF feeds into the effects that global warming, sea level rise, and severe weather events have on biodiversity, such as by creating inhospitable habitats.

BASF's climate strategy must therefore include biodiversity-related targets, action plans, impact measurement practices, and policy and governance frameworks to effectively address climate change and reduce biodiversity loss. This must include steps to address how chemicals produced

by the company, including pesticides, degrade nature and its ability to mitigate and adapt to climate change.

BASF must also address other ways that it drives biodiversity loss beyond climate change. For example, BASF also contributes significantly to pollution and land-use change, which is closely associated with pesticide use. The company must therefore develop a strategy to address these drivers of biodiversity loss. This will indirectly support climate goals by ensuring that nature can support carbon sequestration and mitigate climate change impacts where they cannot be prevented. Through a holistic approach to addressing biodiversity loss, BASF can start to transition its business model to halt its negative impacts on biodiversity and align with a sustainable food future and global biodiversity goals.

Recommended engagement questions:

Will BASF commit to phasing out the production of harmful synthetic pesticides and adopt a robust strategy for addressing biodiversity loss?

Will BASF commit to integrating biodiversity into its climate strategy and addressing all additional drivers of biodiversity loss, including those not directly related to climate change?

Appendix

Analysis of BASF's 2030 emissions target

2019 baseline	2030		Emissions gap (BASF target 2030 *less* OECM pathway 2030)
	Under own target	Under OECM pathway	
Scope 1: 100% (17,323,000) Scope 2: 100% (3,519,000)	Scope 1+2: -21.24%	Scope 1: -44% Scope 2: -65%	
MtCO2e **20,842,000**	**16415250**	**10932530**	**= 5482720**

Source: ShareAction analysis of BASF emission data from CDP Climate Change questionnaires.

BASF's 2021 emissions

Emissions type	MtCO2e	% total
Total scope 1	**18,668,000**	**15.23570123**
Total scope 2 (market-based)	**2,464,000**	**2.010968921**
Total scope 1+2	**21,132,000**	**17.24667015**
Total scope 3	**101,396,000**	**82.75332985**
Purchased goods and services	**55,195,000**	**45.04684644**
Capital goods	**1,701,000**	**1.388254113**
Fuel and energy-related activities (not included in scope 1 or 2)	**2,904,000**	**2.370070514**
Upstream transportation and distribution	**2,252,000**	**1.837947245**
Waste generated in operations	**1,742,000**	**1.421715853**

Business travel	**27,000**	**0.02203578**
Employee commuting	**163,000**	**0.133030817**
Upstream leased assets	**147,000**	**0.119972578**
Downstream transportation and distribution	**1,702,000**	**1.389070253**
Use of sold products	**4,050,000**	**3.305366937**
End-of-life treatment of sold products	**28,340,000**	**23.12940716**
Downstream leased assets	**100,000**	**0.081613998**
Investments	**3,073,000**	**2.507998172**
Total purchased goods, use and disposal of sold products	**87,585,000**	**71.48162053**
Total emissions	**122,528,000.00**	**100**

Source: Carbon Disclosure Project (2022), Climate Change – BASF.

References

[i] IPCC (2023). 'Synthesis Report of the IPCC Sixth Assessment Report (AR6): Summary for Policymakers', p. 25. Available online at: https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf [accessed 28 March 2023].
[ii] Ibid.
[iii] Intergovernmental Panel on Climate Change (2023), AR6 Synthesis Report. Available online at: https://www.ipcc.ch/report/sixth-assessment-report-cycle/ [accessed 17/04/23].
[iv] See source note for figure 1.
[v] ICIS (2022), BASF expects to continue Ludwigshafen production in gas emergency, website. Available online at: https://www.icis.com/explore/resources/news/2022/07/27/10788967/basf-expects-to-continue-ludwigshafen-production-in-gas-emergency/ [accessed 15/03/23].
[vi] Climate Chance (2019), Fugitive emissions: a blind spot in the fight against climate change. Available online at: https://www.climate-chance.org/wp-content/uploads/2019/03/new-fugitive-emissions-a-blind-spot-in-the-fight-against-climate-change.pdf [accessed 05/04/23].
[vii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 09/01/23].
[viii] BASF (2023), BASF shows resilience in a challenging market environment and implements measures to strengthen competitiveness, website. Available online at: https://www.basf.com/global/en/media/news-releases/2023/02/p-23-131.html [accessed 14/03/23].
[ix] Financial Times (2023), EU Carbon Price tops 100 euros a tonne for the first time, website. Available online at: https://www.ft.com/content/7a0dd553-fa5b-4a58-81d1-e500f8ce3d2a [accessed 14/03/23].
[x] European Parliament (2023), Proposal for a regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism (COM(2021)0564 – C9-0328/2021 – 2021/0214(COD)). Available online at: https://www.europarl.europa.eu/RegData/commissions/envi/inag/2023/02-08/ENVI_AG(2023)742452_EN.pdf.
[xi] BASF (2023), Segment Data and Regional Results, website. Available online at: https://www.basf.com/global/en/investors/basf-at-a-glance/key-financial-data/segment-data-and-regional-results.html [accessed 14/03/23].
[xii] World Bank (2022), State and Trends of Carbon Pricing. Available online at: https://openknowledge.worldbank.org/entities/publication/a1abead2-de91-5992-bb7a-73d8aaaf767f [accessed 17/04/23].
[xiii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 09/01/23].
[xiv] Ibid.
[xv] LyondellBasell (2022), LyondellBasell Increases Greenhouse Gas Emissions Reduction Targets, Includes Scope 3, website. Available online at: https://www.lyondellbasell.com/en/news-events/corporate--financial-news/lyondellbasell-increases-greenhouse-gas-emissions-reduction-targets-includes-scope-3/ [accessed 04/04/23].
[xvi] Yara (2023), Climate Action: Yara's road to 2030 and beyond, website. Available online at: https://www.yara.com/knowledge-grows/climate-action-road-to-2030-and-beyond/ [accessed 04/04/23].
[xvii] Lanxess (2022), Entire value chain to become climate neutral, website. Available online at: https://lanxess.com/en/Media/Press-Releases/2022/08/Entire-value-chain-to-become-climate-neutral [accessed 04/04/23].
[xviii] Ibid.

[xix] BASF (2022), Taking the next step in climate protection – from targets to delivery, presentation at BASF Investor Update, March 28th 2022. Available online at: https://www.basf.com/global/documents/en/investor-relations/calendar-and-publications/presentations/2022/BASF_Investor-Update-2022_Keynote_Presentation.pdf [accessed 09/01/23].
[xx] Intergovernmental Panel on Climate Change (2023), SYNTHESIS REPORT OF THE IPCC SIXTH ASSESSMENT REPORT (AR6). Available online at: https://www.ipcc.ch/report/ar6/syr/ [accessed 04/04/23].
[xxi] Ibid.
[xxii] University of Technology Sydney (2022), OECM Sectoral Pathways to Net-Zero Emissions. Available online at: https://www.uts.edu.au/isf/news/how-limit-global-warming-1.5degc-guidance-sectors [accessed 10/08/22].
[xxiii] ShareAction (2021), Slow Reactions: Chemical companies must transform in a low carbon world. Available online at: https://shareaction.org/reports/slow-reactions-chemical-companies-must-transform-in-a-low-carbon-world [accessed 13/04/23].
[xxiv] BASF (2023), Annual Report, p.27. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[xxv] IEA (2022), Methane emissions from the energy sector are 70% higher than official figures, website. Available online at: https://www.iea.org/news/methane-emissions-from-the-energy-sector-are-70-higher-than-official-figures [accessed 05/04/23].
[xxvi] Winnie Y W Lau et al. (2020), 'Evaluating Scenarios Towards Zero Plastic Pollution', Science, 369. Available online at: https://pubmed.ncbi.nlm.nih.gov/32703909/ [accessed 26/05/2022].
[xxvii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[xxviii] Carbon Disclosure Project (2021), Climate Change 2021 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[xxix] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[xxx] Cefic (2022), Carbon Border Adjustment Mechanism (CBAM) Cefic position. Available online at: https://cefic.org/the-chemical-industry-position-papers/ [accessed 02/03/23]; VCI (2022), Unbeirrt ins Dickicht, website. Available online at: https://www.vci.de/presse/pressemitteilungen/unbeirrt-ins-dickicht-trilog-einigung-zu-grenzausgleichsmassnahme.jsp [accessed 02/03/23].
[xxxi] InfluenceMap (2022), Corporate Climate Policy Footprint. Available online at: https://influencemap.org/report/Corporate-Climate-Policy-Footprint-2022-20196 [accessed 24/04/23].
[xxxii] Ibid.
[xxxiii] ShareAction (2023), A Growing Problem: Why investors must engage with the pesticides industry. Available online at: https://shareaction.org/news/a-growing-problem-why-investors-must-engage-with-the-pesticides-industry [accessed 17/04/23].
[xxxiv] Intergovernmental Panel on Climate Change (2023), AR6 Synthesis Report. Available online at; https://www.ipcc.ch/report/sixth-assessment-report-cycle/ [accessed 17/04/23].
[xxxv] University of Technology Sydney (2022 OECM Sectoral Pathways to Net-Zero Emissions. Available online at: https://www.uts.edu.au/isf/news/how-limit-global-warming-1.5degc-guidance-sectors [accessed 10/08/22].
[xxxvi] Ibid.
[xxxvii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 09/01/23].
[xxxviii] Carbon Disclosure Project (2021), Climate Change 2021 – BASF. Available online at: https://www.cdp.net/en [accessed 09/01/23].

[xxxix] BASF (2022), Taking the next step in climate protection – from targets to delivery, presentation at BASF Investor Update, March 28th 2022. Available online at: https://www.basf.com/global/documents/en/investor-relations/calendar-and-publications/presentations/2022/BASF_Investor-Update-2022_Keynote_Presentation.pdf [accessed 09/01/23].
[xl] Ibid.
[xli] Climate Chance (2019), Fugitive emissions: a blind spot in the fight against climate change. Available online at: https://www.climate-chance.org/wp-content/uploads/2019/03/new-fugitive-emissions-a-blind-spot-in-the-fight-against-climate-change.pdf [accessed 05/04/23].
[xlii] ShareAction (2021), Slow Reactions: Chemical companies must transform in a low carbon world. Available online at: https://shareaction.org/reports/slow-reactions-chemical-companies-must-transform-in-a-low-carbon-world [accessed 13/04/23].
[xliii] BASF (2021), Our Journey to Net Zero, BASF Capital Markets Day, March 26th 2021. Available online at: https://www.basf.com/global/en/investors/calendar-and-publications/calendar/2021/capital-markets-day.html#text-846986676 [accessed 20/03/23].
[xliv] BASF (2023), Annual Report, p.27. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[xlv] RWE (2022), Green electricity for a CO2-neutral chemical industry and green hydrogen, website. Available online at: https://www.rwe.com/en/research-and-development/project-plans/offshore-to-x/#:~:text=The%20RWE%2DBASF%20lighthouse%20project,through%20CO2%2Dfree%20hydrogen. [accessed 28/02/23]; BASF (2022), BASF and MAN Energy Solutions enter into partnership for construction of one of the world's largest heat pumps in Ludwigshafen, website. Available online at: https://www.basf.com/global/en/media/news-releases/2022/07/p-22-278.html [accessed 09/01/23].
[xlvi] BASF (2023), Annual Report, p.27. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[xlvii] BASF (2021), Our Journey to Net Zero, BASF Capital Markets Day, March 26th 2021. Available online at: https://www.basf.com/global/en/investors/calendar-and-publications/calendar/2021/capital-markets-day.html#text-846986676 [accessed 20/03/23].
[xlviii] BASF (2023), Annual Report. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[xlix] BASF (2022), BASF and MAN Energy Solutions enter into partnership for construction of one of the world's largest heat pumps in Ludwigshafen, website. Available online at: https://www.basf.com/global/en/media/news-releases/2022/07/p-22-278.html [accessed 09/01/23].
[l] BASF (2022), BASF enters power agreements for clean energy supply of more than 20 BASF sites across the United States. Website. Available online at: https://www.basf.com/global/en/media/news-releases/2022/08/p-22-305.html [accessed 05/04/23].
[li] BASF (2023), Annual Report, p.27. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[lii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 09/01/23].
[liii] IEA (2022), Methane emissions from the energy sector are 70% higher than official figures, website. Available online at: https://www.iea.org/news/methane-emissions-from-the-energy-sector-are-70-higher-than-official-figures [accessed 05/04/23].
[liv] Winnie Y W Lau et al. (2020), 'Evaluating Scenarios Towards Zero Plastic Pollution', Science, 369. Available online at: https://pubmed.ncbi.nlm.nih.gov/32703909/ [accessed 26/05/2022].

[lv] Energy Transitions Commission (2021), Bioresources within a Net-Zero Emissions Economy: Making a Sustainable Approach Possible. Available online at: https://www.energy-transitions.org/publications/bioresources-within-a-net-zero-economy/ [accessed 06/04/23].
[lvi] BASF (2023), Virtual Conference for Analysts and Investors. Available online at: https://www.basf.com/global/en/investors/calendar-and-publications/calendar/2023/full-year-results-2022.html [accessed 20/03/23].
[lvii] ShareAction (2023), Aligning with 1.5C: a benchmark for the chemical sector. https://shareaction.org/reports/aligning-with-1-5-c-a-benchmark-for-the-chemical-sector [accessed 13/04/23]
[lviii] BASF (2023), Transcript Q&A by topic. Available online at: https://www.basf.com/global/en/investors/calendar-and-publications/calendar/2023/full-year-results-2022.html [accessed 20/03/23].
[lix] See: Climate Change Committee (2022), Voluntary Carbon Markets and Offsetting. Available online at: https://www.theccc.org.uk/publication/voluntary-carbon-markets-and-offsetting/ [accessed 06/04/23]; Guardian (2023), Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows. Website. Available online at: https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe [accessed 06/04/23].
[lx] BASF (2022), Taking the next step in climate protection – from targets to delivery, presentation at BASF Investor Update, March 28th 2022. Available online at: https://www.basf.com/global/documents/en/investor-relations/calendar-and-publications/presentations/2022/BASF_Investor-Update-2022_Keynote_Presentation.pdf [accessed 09/01/23].
[lxi] Joseph W. Veldman et al. (2015), 'Where Tree Planting and Forest Expansion are Bad for Biodiversity and Ecosystem Services', Bioscience, 65. Available online at: https://doi.org/10.1093/biosci/biv118 [accessed 06/04/23]
[lxii] Ibid.
[lxiii] Climate Chance (2019), Fugitive emissions: a blind spot in the fight against climate change. Available online at: https://www.climate-chance.org/wp-content/uploads/2019/03/new-fugitive-emissions-a-blind-spot-in-the-fight-against-climate-change.pdf [accessed 05/04/23].
[lxiv] Energy Transitions Commission (2021), Bioresources within a Net-Zero Emissions Economy: Making a Sustainable Approach Possible. Available online at: https://www.energy-transitions.org/publications/bioresources-within-a-net-zero-economy/ [accessed 06/04/23].
[lxv] BASF (2022), What our researchers say, website. Available online at: https://www.basf.com/gb/en/who-we-are/sustainability/we-produce-safely-and-efficiently/energy-and-climate-protection/carbon-management/interview-methane-pyrolysis.html [accessed 09/01/23].
[lxvi] Carbon Tracker (2022), Green Hydrogen's Place in the Renewable Energy Transition. Available online at: https://carbontracker.org/reports/clean-hydrogens-place-in-the-energy-transition/ [accessed 10/01/23].
[lxvii] BASF (2021), BASF, SABIC and Linde join forces to realize the world's first electrically heated steam cracker furnace, website. Available online at: https://www.basf.com/global/en/media/news-releases/2021/03/p-21-165.html [accessed 06/04/23].
[lxviii] BASF (2021), Capital Markets Day 2021 Keynote "Our journey to net zero 2050. Available online at: https://www.basf.com/global/en/investors.html [accessed 17/04/23].
[lxix] BASF (2023), Virtual Conference for Analysts and Investors. Available online at: https://www.basf.com/global/en/investors/calendar-and-publications/calendar/2023/full-year-results-2022.html [accessed 20/03/23].
[lxx] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].

[lxxi] Ibid.
[lxxii] BASF (2022), Supplier Code of Conduct. Available online at: https://www.basf.com/global/en/who-we-are/organization/suppliers-and-partners/sustainability-in-procurement/supplier-code-of-conduct.html [accessed 11/01/23].
[lxxiii] Ibid.
[lxxiv] Ibid.
[lxxv] BASF (2023), Annual Report, p. 141. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[lxxvi] ShareAction (2022), Coming around: how chemical companies must adapt to the circular economy. Available online at: https://shareaction.org/reports/coming-around-how-chemical-companies-must-adapt-to-the-circular-economy#0 [accessed 17/04/23].
[lxxvii] UNEP (2022), *What you need to know about the plastic pollution resolution.* Website. Available online at: https://www.unep.org/news-and-stories/story/what-you-need-know-about-plastic-pollution-resolution [accessed 24/04/23].
[lxxviii] ChemicalWatch (2022), EU Commission adopts 2023 work programme confirming REACH delay. Website. Available online at: https://chemicalwatch.com/589261 [accessed 24/04/23].
[lxxix] ChemSec (2020), What goes around: enabling the circular economy by removing chemical roadblocks. Available online at: https://chemsec.org/app/uploads/2021/02/What-goes-around_210223.pdf [accessed 28/09/22].
[lxxx] ChemSec (2022), BASF ChemScore Scorecard. Available online at: https://chemscore.chemsec.org/reports/basf-2022/ [accessed 13/03/23].
[lxxxi] Ibid.
[lxxxii] BASF (2023), Annual Report, p.120. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[lxxxiii] Marvin Kusenberg et al. (2022), 'Opportunities and challenges for the application of post-consumer plastic waste pyrolysis oils as steam cracker feedstocks: To decontaminate or not to decontaminate?', Waste Management, 138. Available online at: https://doi.org/10.1016/j.wasman.2021.11.009 [accessed 15/05/23].
[lxxxiv] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[lxxxv] Ibid.
[lxxxvi] BASF (2023), Our Code of Conduct. Available online at: https://www.basf.com/global/en/who-we-are/organization/management/code-of-conduct.html [accessed 28/02/23].
[lxxxvii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[lxxxviii] United Nations (2015), The Paris Agreement. Available online at: https://unfccc.int/sites/default/files/english_paris_agreement.pdf [accessed 13/04/23].
[lxxxix] BASF (2018), Our Carbon Management. Available online at: https://www.basf.com/global/documents/en/sustainability/we-produce-safely-and-efficiently/energy-and-climate-protection/carbon-management/BASF_Carbon_Management_Fact_Sheet.pdf [accessed 11/04/23].
[xc] Carbon Disclosure Project (2021), Climate Change 2021 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[xci] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[xcii] European Parliament (2023), Proposal for a regulation of the European Parliament and of the Council establishing a carbon border adjustement mechanism. Available online at:

https://www.europarl.europa.eu/RegData/commissions/envi/inag/2023/02-08/ENVI_AG(2023)742452_EN.pdf [accessed 13/04/23].
[xciii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[xciv] BASF (2021), Conference Call Q2 2021, Transcript Q&A. Available online at: https://www.basf.com/global/documents/en/investor-relations/calendar-and-publications/presentations/2021/BASF_Q2-2021_Transcript_QA_by_Topic.pdf [accessed 11/04/23].
[xcv] Cefic (2022), Carbon Border Adjustment Mechanism (CBAM) Cefic position. Available online at: https://cefic.org/the-chemical-industry-position-papers/ [accessed 02/03/23]; VCI (2022), Unbeirrt ins Dickicht, website. Available online at: https://www.vci.de/presse/pressemitteilungen/unbeirrt-ins-dickicht-trilog-einigung-zu-grenzausgleichsmassnahme.jsp [accessed 02/03/23].
[xcvi] InfluenceMap (2022), *Corporate Climate Policy Footprint.* Available online at: https://influencemap.org/report/Corporate-Climate-Policy-Footprint-2022-20196 [accessed 24/04/23].
[xcvii] BASF (2023), Structure, website. Available online at: https://www.basf.com/global/en/who-we-are/sustainability/management-goals-and-dialog/management/structure-basf.html [accessed 02/03/23].
[xcviii] BASF (2023), BASF SE Compensation Report 2022. Available online at: https://www.basf.com/global/en/investors/basf-at-a-glance/corporate-governance/compensation-report.html [accessed 02/03/23].
[xcix] BASF (2023), Annual Report, p.173. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[c] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[ci] BASF (2023), Annual Report, p.173. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[cii] Ibid, p 174.
[ciii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[civ] BASF (2023), Annual Report, p.173. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[cv] Ibid.
[cvi] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[cvii] BASF (2023), Annual Report, p.159. Available online at: https://report.basf.com/2022/en/services/downloads.html [accessed 27/02/23].
[cviii] Carbon Disclosure Project (2022), Climate Change 2022 – BASF. Available online at: https://www.cdp.net/en [accessed 11/01/23].
[cix] Ibid.
[cx] Ibid.
[cxi] Ibid.
[cxii] ShareAction (2023), A Growing Problem: Why investors must engage with the pesticides industry. Available online at: https://shareaction.org/news/a-growing-problem-why-investors-must-engage-with-the-pesticides-industry [accessed 17/04/23].
[cxiii] Ibid.
[cxiv] Ibid.