



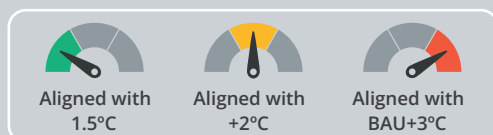
Overall Assessment

Planet Tracker's analysis shows Lyondell-Basell (LYB) is on target to meet its 2030 emission target, but not net zero by 2050. We recognise that the company's emission targets are among the most ambitious in the sector, for which it should receive credit. However, there is no Scope 3 target for post 2030. Presently, Scope 3 accounts for over 80% of total emissions.

The management has made commitments to investors which includes selling at least 2 million tonnes of recycled or renewable polymers by 2030, about 20% of current sales. Furthermore, by 2030, the management aims to source at least 50% of electricity from low-carbon or renewable sources.

Although LYB is a transition leader in the chemical sector, surprisingly the CEO has little financial incentive to deliver on reduced carbon levels. About 3% of the executive compensation can be attributed to sustainability metrics. We are also surprised that from the information provided by the company, it appears to be applying little pressure on its suppliers to reduce their carbon footprint.

Planet Tracker recognises the openness with which the company often talks about its carbon transition strategy, stating that it finds it "challenging" to estimate Scope 3 emissions and it publicly discloses its dependence on the deployment of new technologies across the company's manufacturing footprint. LYB belongs to numerous industry groups and publishes an assessment of whether each group is aligned with LYB's climate position.



This report is one of a series examining the climate transition plans of companies in the Climate Action 100+ list. This project is separate to and not affiliated with Climate Action 100+.

Download the Shareholder Engagement Sheet [here](#).



Climate Alignment

- LYB's total emissions were 123,200 ktCO₂e in 2022, of which 12% were Scope 1, 6% were Scope 2 and 82% were Scope 3.
- Based on Planet Tracker's assessment, LYB is on track to hit its target of reducing Scope 1 & 2 emissions by 42% by 2030 from a 2020 baseline, albeit with significant technical risk later in the decade.
- LYB is also on track to hit its target of reducing Scope 3 emissions by 30% by 2030, mainly because of the planned closure of the Houston refinery in early 2025.
- LYB is targeting net zero Scope 1 & 2 emissions by 2050. The pathway is vague and relies heavily on unproven technologies.
- There is no Scope 3 target after 2030.
- We conclude that LYB is on track for its 2030 targets – which are among the most ambitious in the sector – but is not on track for net zero by 2050. We therefore rate LYB as Amber.



Policy and Governance

- LYB has both short-term (STI) and long-term incentive (LTI) plans for its CEO. The maximum nominal value of his total package was USD 15.6 million with the Sustainability component representing USD 420k or just under 3%.
- We conclude that the CEO has minimal financial incentive to reduce carbon emissions.
- LYB uses EcoVadis to assess supplier sustainability performance and reserves the right to terminate underperformers that fail to improve. It is not clear whether this right has ever been exercised.



Risk Analysis

- LYB has announced plans to sell at least 2 million tonnes of recycled or renewable polymers by 2030, which is about 20% of currently sales. This is laudable but there is no post 2030 target.
- LYB purchased 46.8 million tonnes of feedstock in 2021, i.e. base chemicals that are turned into plastics, all derived from oil and natural gas. There is no detailed plan to replace all this feedstock with recycled or renewable alternatives post 2030.
- LYB notes that the 2050 Scope 1 & 2 net zero target will "require the deployment of new technologies across the company's manufacturing footprint". Most of these new technologies are unproven in commercial applications. We assess the transition risk post 2030 to be high.
- We assess risk out to 2030 to be low and risk post 2030 to be high. Overall therefore we score LYB AMBER.



Strategy Assessment

- Chemical companies like LYB are both energy-intensive and reliant on oil and natural gas-derived feedstock.
- Our analysis concludes that LYB does not have a credible strategy to reach net zero for Scope 1 & 2 by 2050. There is no net zero Scope 3 strategy.

Company Overview

LYB describes itself as “one of the world’s largest producers of plastics and chemicals¹”. It is the world’s second largest producer of polypropylene (PP) and the third largest producer of polyethylene (PE)². It is a pure chemical business with no material non-chemical operations. It is also a vertically integrated business, converting natural gas and oil into intermediate products, mainly ethylene and propylene, and then into finished products such as PP and PE.

LYB claims to have a strategic focus on “Leadership in Circular and Low Carbon Solutions³”.

LYB has 6 segments. The largest by customer revenue is ‘Olefins & Polyolefins - Europe’ which has averaged 26% of group revenue over the last 5 years. – see

Figure 1. This does not tell the whole story though. The fourth largest segment – ‘Olefins & Polyolefins - Americas’ – is a major supplier to other parts of LYB. In 2022 for example, O&P Americas was 18% of group customer revenue but also supplied another 8% of group revenues to other segments. In reality, O&P Americas is the largest operation and is a key supplier of intermediate products to the other segments, primarily in the US.

This can also be seen in the location of long-lived assets, which are mainly plant & equipment and goodwill. In 2022, 72% of long-lived assets were based in the US, followed by 7% in Germany⁴. LYB is better thought of as an American company that sells products globally. It has been a beneficiary of North American shale gas.

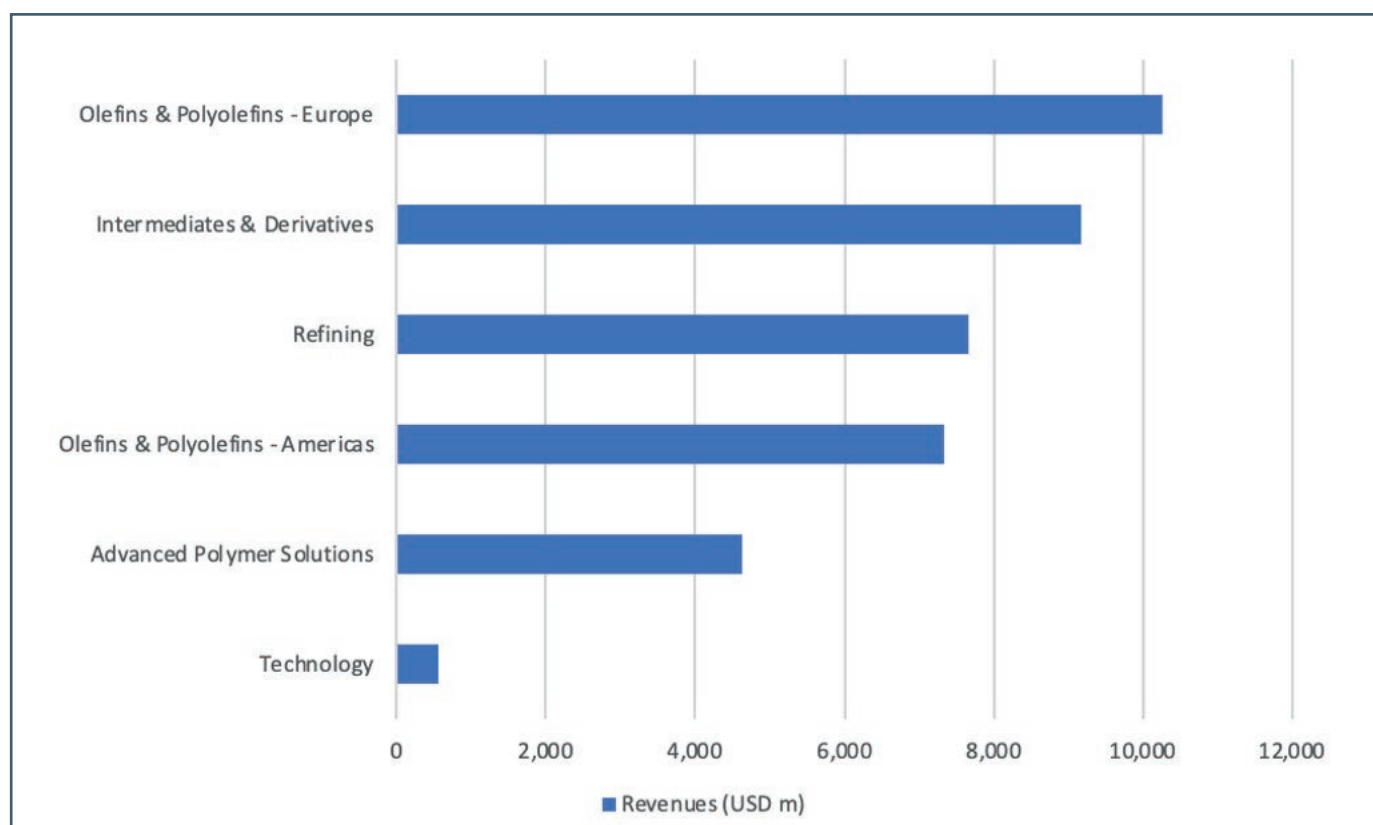


Figure 1: LYB revenue by segment (5-year average 2018-2022). Source: LYB annual reports.

1 Source: LYB 2022 CDP submission, C0.1
 2 Source: LYB Capital Market Day presentation, March 2023
 3 Source: LYB 2022 Annual Report, page 4
 4 Source: LYB 2022 Annual Report, page 128

The 'Olefins & Polyolefins – Americas' segment is by far the most profitable. It produced 52% of group operating income over the last 5 years, followed by Intermediates & Derivatives at 27% - see Figure 2.

The location of LYB's main production assets in the US has also enabled it to use shale-based oil & gas, which offer a cost advantage over heavy liquids⁵.

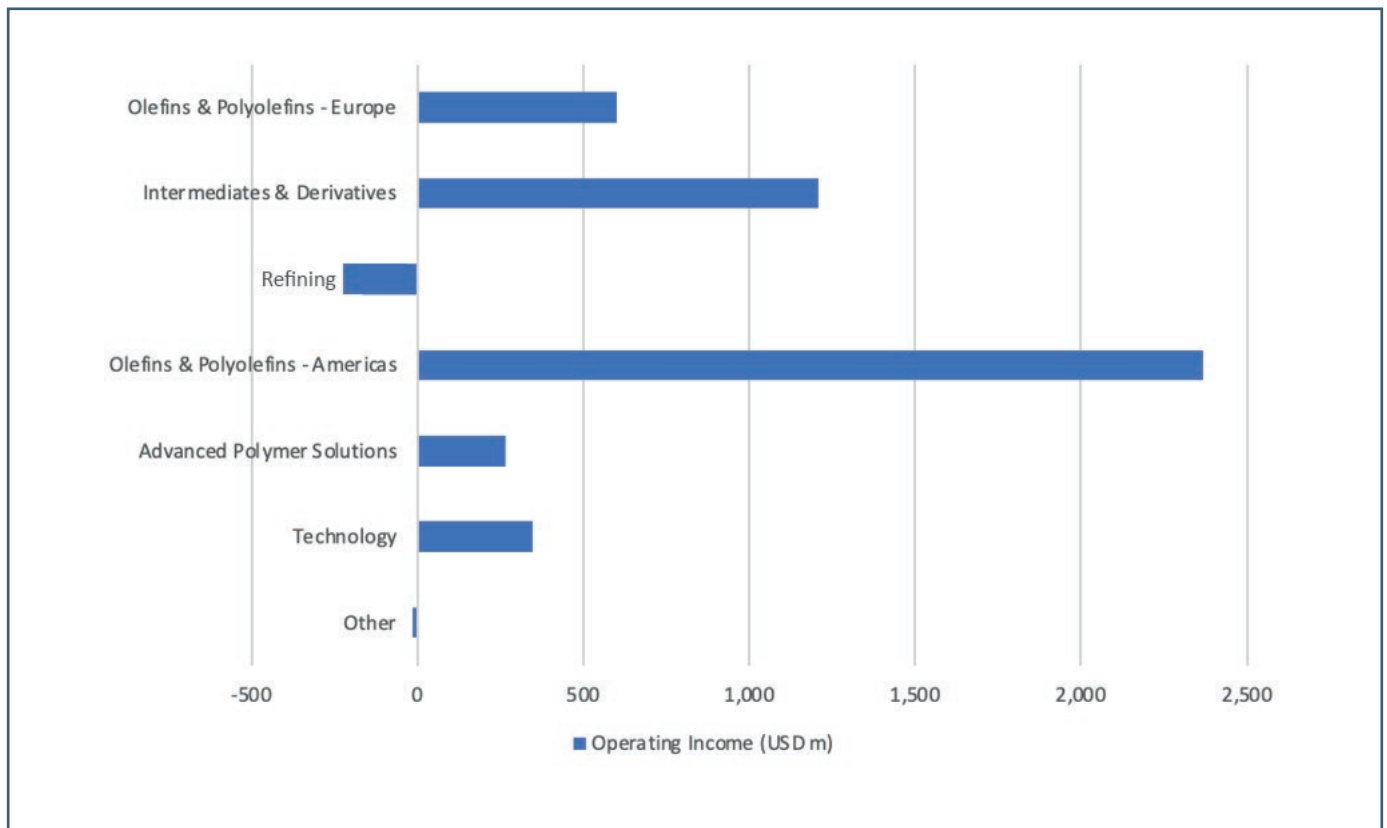


Figure 2: LYB Operating Income by segment (5-year average 2018-2022). Source: LYB annual reports

5 Source: LYB 2022 Annual Report, page 6

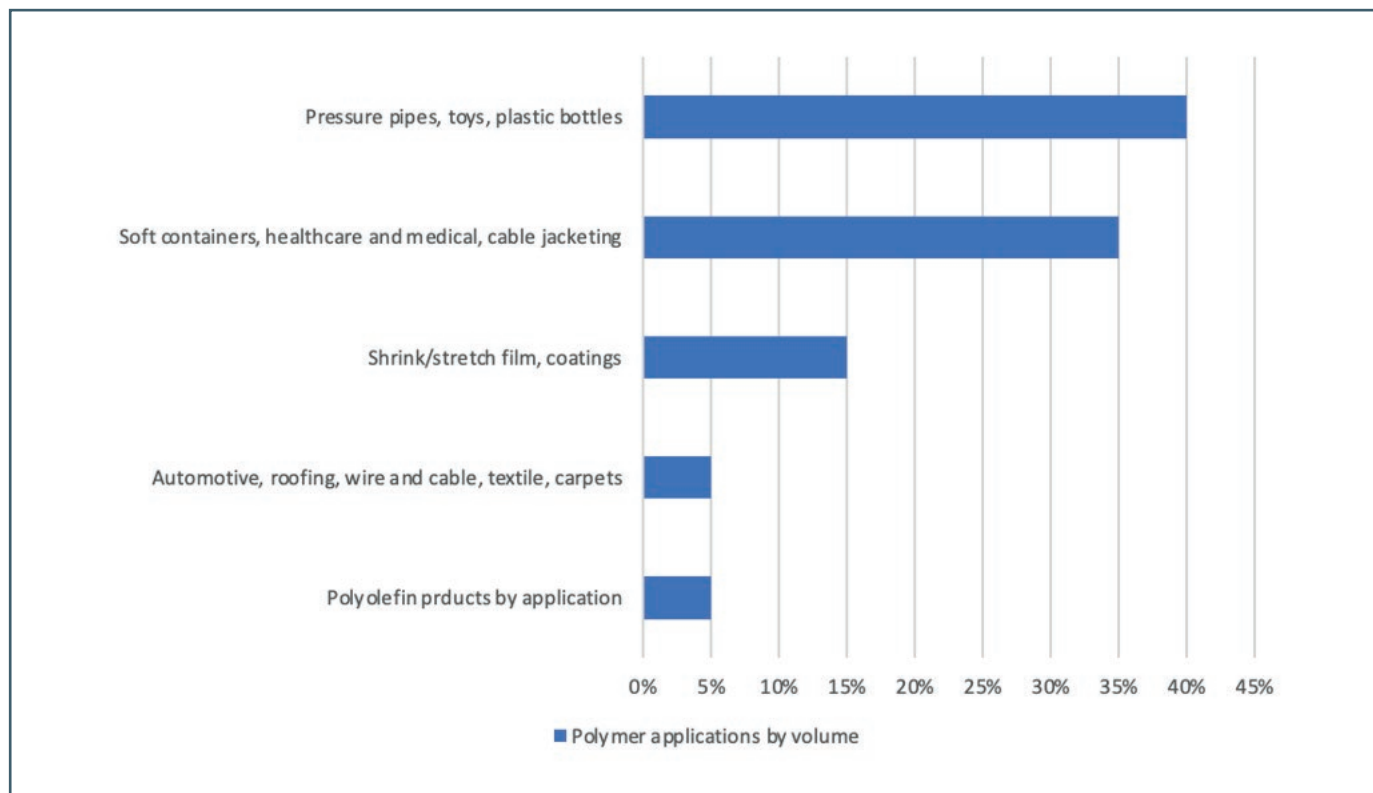


Figure 3: LYB Polymer applications by volume. Source: LYB Capital Market Day, March 2023

Climate Alignment

EMISSIONS INVENTORY

In 2022, LYB produced 123,200 ktCO₂e of GHG emissions, split between 14,700 of Scope 1 (12% of the total), 7,400 of Scope 2 (6%) and 101,100 of Scope 3 (82%). LYB finds it “challenging⁶” to estimate Scope 3 emissions. The 2022 Sustainability Report says that “our 2020 baseline scope 1, 2 and 3 emissions are estimated to be 120 million metric tons” whereas the table alongside totals a slightly different 121.6 million tonnes. It is clear that LYB considers the Scope 3 numbers to be an estimate. Planet Tracker agrees with this assessment but notes that it is unusual for companies to be so frank.

90% of all Scope 1 & 2 emissions come from LYB’s Olefin and Intermediates & Derivatives (I&D) sites⁷. The manufacture of Olefins alone represents more than 50% of total Scope 1 & 2 emissions⁸.

We noted earlier that LYB is best thought of as an American company that operates globally. This is also visible in its Scope 1 footprint. LYB’s 16 US plants generated 10,057 ktCO₂e in 2021 or 68% of the global total⁹. This is similar to the disposition of long-lived assets – 72% in the US – as one would expect.

Scope 1 emissions are also very concentrated. The largest plant in Channelview, US, produced 21% of total group emissions in 2021 and the top 6 produced 78% - see Figure 4.

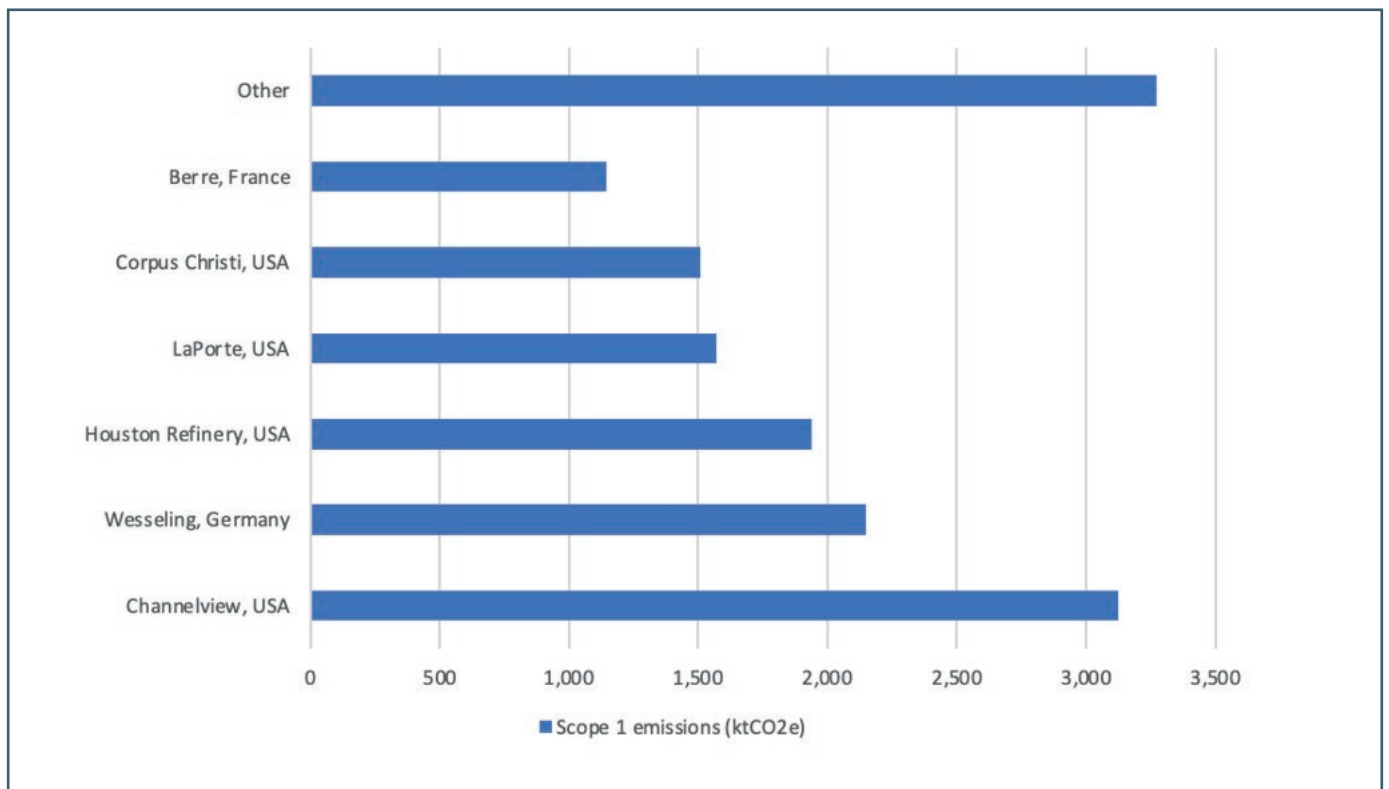


Figure 4: 78% of LYB’s Scope 1 emissions come from just six facilities (ktCO₂e).
Source: LYB 2022 CDP submission C7.3b.

6 Source: LYB 2022 Sustainability Report, page 33
7 Source: LYB 2022 CDP submission, C4.1a

8 Source: LYB 2022 Sustainability Report, page 30
9 Source: Derived from LYB 2022 CDP submission, C7.3b

LYB's disclosure is less good than its peers; we only have aggregate Scope 3 data going back to 2020 – see Figure 5. There have also been numerous

restatements in the last 1-2 years, but we view this as a desire to improve data quality.

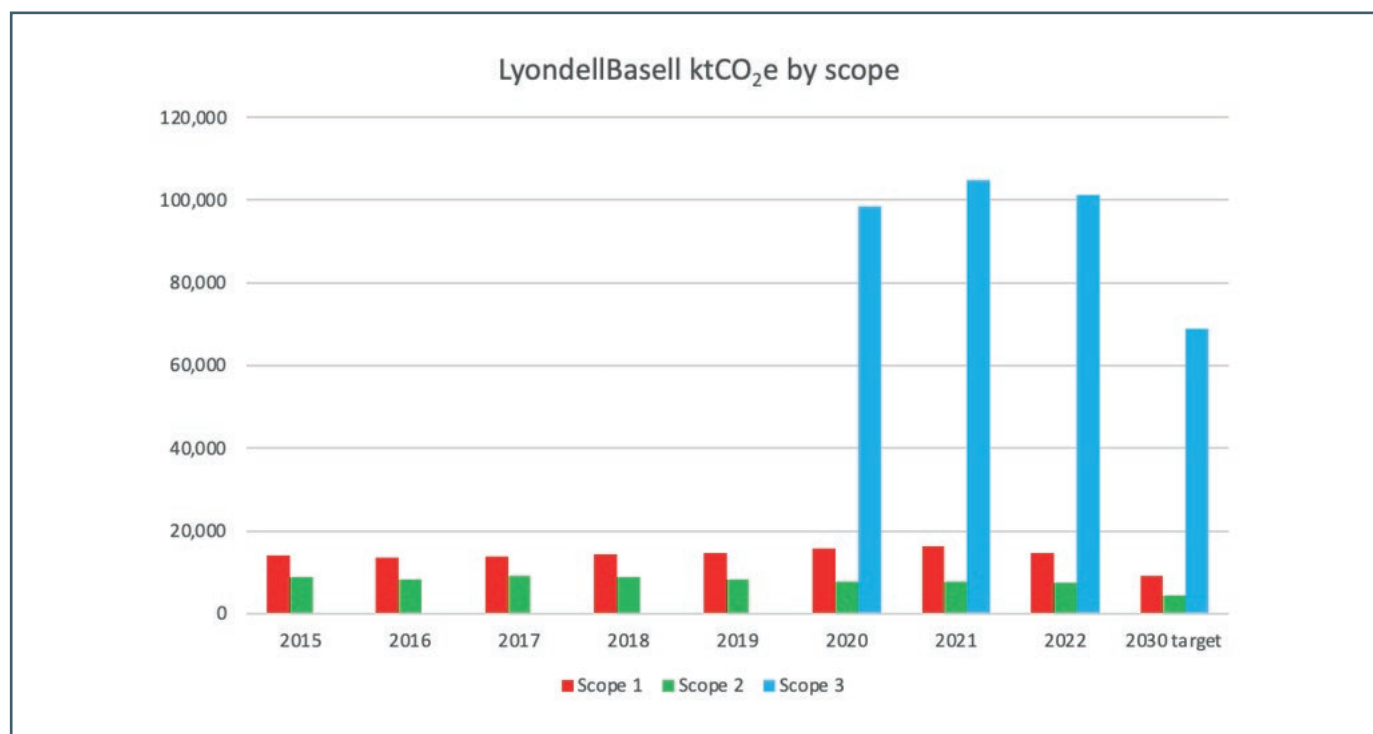


Figure 5: LYB GHG emissions by Scope (KTCO₂e). Source: LYB annual reports and CDP submissions.

LYB is an energy intensive business. It consumed 393 million GJ in 2022¹⁰, which is the equivalent of 109 TWh (Terawatt hours). To put this in perspective, Germany generated 482 TWh in 2022¹¹. In other words, LYB's energy consumption was equivalent to 23% of Germany's entire electrical output.

Planet Tracker recognises the difficulty with companies such as LYB in securing long-term contracts from new renewable sources as accounting rules will categorise these as derivatives, requiring them to be marked to market every quarter. In turn, this could create significant volatility at the net income level. We also note that this definition of LYB's energy consumption excludes energy consumed by suppliers, for example in the production of feedstock.

¹⁰ Source: LYB 2022 Sustainability Report, page 92. Based on SASB disclosure.

¹¹ Source: German Federal Network Agency

EXTERNALITIES AND TARGETS

LYB has several GHG-related targets:

- **2030:** 42% reduction in Scope 1 & 2 emissions from a 2020 baseline. This target was increased from 30% to 42% in December 2022. LYB claims that this is one of the most ambitious targets in the peer group.
- **2030:** 30% reduction in Scope 3 emissions from a 2020 baseline. This target was announced for the first time in December 2022. LYB is seeking SBTi validation for its 2030 goals¹².
- **2030:** at least 50% of electricity from low-carbon or renewable sources¹³. The share was 1% in 2020. Reaching 50% will reduce Scope 2 emissions by “nearly 1,000 kt¹⁴” or about 15% of 2020 emissions. By October 2023, LYB had signed contracts covering 78% of the 2030 target¹⁵.
- **2030:** at least 2,000kt of recycled or renewable polymers sold annually. This represents about 20% of LYB's 2022 sales or PE and PP¹⁶. LYB sold 175 kt of recycled or renewable polymers over the last 4 years (2019-2022) or roughly 45kt per annum. The 2030 target is therefore approximately a 40-50 times expansion of the status quo.
- **2050:** net zero for Scope 1 & 2; there is no scope 3 target¹⁷.

Scope 1 & 2 in more detail

As discussed below, closure has been postponed until early 2025 as LYB explores other options for the Houston site

LYB notes that the achievement of net zero Scope 1 & 2 by 2050 will “require the deployment of new technologies across the company's manufacturing footprint in addition to technologies we are assessing such as cracker electrification, use of hydrogen, carbon capture and storage (“CCS”) and carbon utilization¹⁸”.

LYB announced in April 2022 that it will close its Houston refinery by the end of December 2023, which will reduce Scope 1 & 2 emissions by more than 3,000 ktCO₂e¹⁹.

This represents more than 13% of 2020 emissions. As discussed below, closure has been postponed until early 2025 as LYB explores other options for the Houston site

In other words, closing this refinery will contribute about one-third of the planned 42% Scope 1 & 2 reduction by 2030.

Switching to renewable or low-carbon electricity should contribute another 2,100 ktCO₂e reduction, or 9% of the 2020 emissions. Together with the refinery closure, this brings the combined reduction versus 2022 to 22%, or just over half the targeted 42%.

12 Source: LYB 2022 Sustainability Report, page 33

13 Source: LYB 2022 CDP submission, C4.2a

14 Source: LYB 2022 Sustainability Report, page 7

15 LYB press release 5th October 2023

16 Source: LYB 2022 Annual Report, page 5

17 Source: LYB 2022 CDP submission, C4.2c

18 Source: LYB 2022 CDP submission, C4.2c

19 Source: LYB 2022 Annual Report, page15

As LYB has already signed contracts for 78% of the targeted renewable energy, we conclude that LYB is on track to hit its 2030 Scope 1 & 2 target, albeit with

significant technical risk later in the decade – see Figure 6.

Description	GHG reduction (ktCO2e)	contribution	comment
Investments & divestitures	2,500	26%	closure of Houston refinery partially offset by expansion of Channelview site
Energy efficiency	2,300	24%	
Fuel switching	600	6%	Largely based on switching to hydrogen, which remains unproven
Electrification	1,100	11%	This technology remains unproven
Carbon capture and storage	1,100	11%	This technology remains unproven
Renewable electricity	1,500	15%	70% of the target has already been contracted
Low carbon energy	600	6%	
Total	9,700	100%	42% of 2020 emissions

Figure 6: LYB planned reduction in Scope 1 & 2 emissions by source by 2030. Source: LYB 2022 Sustainability report, page 32.

LYB states that “In the long term, our pathway to achieve net zero includes enhanced energy management; low emission steam; flare minimization;

use of lower-emitting fuels; process electrification; furnace upgrades and carbon capture, storage and utilization²⁰”.

Scope 3 in more detail

LYB states that “our net zero 2050 target currently does not include scope 3 emissions in its coverage. There are many industry-wide challenges to the definition of scope 3 targets, including the lack of a uniform calculation methodology for scope 3 emissions and the lack of sectoral guidance for target setting for the chemical industry. Rigorous emissions accounting is a prerequisite for the definition of a reliable baseline and the definition of a scope 3 target.²¹” Planet Tracker recognises that this could be a hindrance to being a first mover in the chemical sector.

We note that these factors have not stopped other chemical companies from setting net zero Scope 3 targets. However, we also note that other companies’ net zero scope 3 targets are often unsatisfactory and vague when examined in detail.

In LYB’s own words the chemical industry is a “hard to abate sector”. It is working with a variety of organisations to understand the specific challenges the sector faces, including the World Economic Forum (WEF), Together for Sustainability (TfS) and the Science Based Target Initiative (SBTi)²². We note that the Scope 1 & 2 net zero target is not SBTi approved.

20 Source: LYB 2023 Proxy Statement, page 25

21 Source: LYB 2022 CDP submission, C4.2c

22 Source: LYB 2022 CDP submission, C4.2c

LYB's largest single source of Scope 3 emissions is 'Purchased Goods & Services' which produced 38,419 ktCO₂e in 2021²³. LYB states that 94% of this (i.e. 36,113) came from purchased feedstock²⁴.

LYB consumed 46,821kt of fuel for use as a feedstock in 2021²⁵.

LYB's feedstock was 60% oil and 40% natural gas in 2021²⁶.

LYB announced in April 2022 that it will close its Houston refinery by the end of December 2023, which will reduce Scope 3 emissions by approximately 40,000 kt²⁷. This represents more than 40% of 2020 Scope 3 emissions. In other words, closing this refinery will by itself enable LYB to exceed the targeted 30% Scope 3 reduction by 2030.

LYB announced in May 2023 that the closure would be delayed until the first quarter of 2025 while LYB explores other options for the site and for the workforce. The ambition is that the site will be part of a Houston hub for circular and low carbon solutions.^{27a} LYB states that "PlasticEurope and its members, including LyondellBasell, believe that in the long-term, plastics production should be decoupled from fossil feedstock and that, in the future, the vast majority of plastics will be produced from alternative feedstocks, such as recycled oils or secondary plastics, responsibly sourced biomass, or even CO₂²⁸".

LYB is targeting sales of at least USD 5 billion from circular and low-carbon solutions by 2030. LYB had sales of USD 50.4 billion in 2022²⁹. This would have a material but unspecified positive impact on Scope 3 emissions. LYB expects this to contribute USD 500 million³⁰ of EBITDA³¹ by 2027 and at least USD 1 billion³² by 2030, i.e. an EBITDA margin of about 20%.

23 Source: LYB 2022 CDP submission, C6.5

24 Source: LYB 2022 CDP submission, C-CH7.8

25 Source: LYB 2022 CDP submission, C-CH8.3a

26 Source: LYB 2022 CDP submission, C-CH8.3b

27 Source: LYB 2022 Annual Report, page15

27a LYB press release 31 May 2023

28 Source: LYB 2022 CDP submission, C12.3b

29 Source: LYB investor presentation, June 2023

30 Source: LYB investor presentation, May 2023

31 EBITDA = Earnings Before Interest, Tax, Depreciation and Amortisation

32 Source: LYB Capital Market Day presentation, March 2023

Policy and Governance

ENGAGEMENT AND INFLUENCE

Suppliers' Engagement

LYB collects "climate change and carbon information at least annually from suppliers" covering 93% of its total procurement spend³³. LYB plans "to initiate an improvement plan if a supplier does not meet a minimum overall score requirement".

LYB has a target of assessing a minimum of 70% of its key suppliers by 2025 using sustainability criteria³⁴.

LYB's Chief Procurement Officer is currently the President of 'Together for Sustainability', an industry coalition dedicated to building sustainable chemical supply chains. LYB uses EcoVadis to assess supplier behaviour. Suppliers that fail to meet minimum requirements are given the opportunity to improve. LYB reserves the right to terminate suppliers that fail to improve; it is not clear whether this right has ever been exercised.

Other Value Chain Partners' Engagement

LYB is an active member of a number of industry groups³⁵ including:

- Alliance to End Plastic Waste (AEPW)³⁶
- American Chemistry Council.
- American Fuel & Petrochemical Manufacturers.
- BusinessEurope.

- European Chemical Industry Council (CEFIC).
- China Petroleum and Chemical Industry Association (CPCIF).
- European Petrochemical Association.
- International Council of Chemical Associations (ICCA).
- National Association of Manufacturers.
- PlasticsEurope.

LYB considers its engagement with all of these bodies to be aligned with the goals of the Paris Agreement, even when LYB's own views differ from the views of specific industry groups.

LYB publishes an assessment of whether each of the top 10 industry groups is aligned with LYB's climate position. One group, American Fuel and Petrochemical Manufacturers, was assessed as 'misaligned'³⁷.

LYB does offer what it calls 'low-carbon products', such as its CirculenRenew polymers, which are made from renewable feedstocks based on waste and residue bio-based oils. In 2021, low-carbon products or services were 0.13%, or about 1/750th, of total revenue³⁸.

LYB plans to grow its circular and low carbon products to over USD 5 billion of revenues by 2030³⁹. This is based on a 20%-plus share of what LYB expects

33 Source: LYB 2022 CDP submission, C12.1a

34 Source: LYB 2022 Sustainability Report

35 Source: LYB 2022 CDP submission, C12.3b

36 See 'Barely Credible' Planet Tracker, August 2022

37 LYB Climate Advocacy Report, May 2023

38 Source: LYB 2022 CDP submission, C4.5a

39 Source: LYB investor presentation, June 2023

MANAGEMENT ALIGNMENT

LYB states that its “Chief Executive Officer (CEO) has overall responsibility for our climate change program as part of our wider sustainability strategy. The CEO heads the company’s Leadership Team, many members of which play an active role in addressing strategic or operational matters concerning climate change⁴⁰”.

As detailed above, the CEO has overall responsibility for LYB’s climate change programme. We are therefore going to focus on CEO compensation as is our normal practice. We will look at base salary and variable pay but ignore other benefits such as pension contributions. The CEO had a base salary of USD 1.4 million in 2022.

There are two variable compensation or bonus plans:

- **Short-Term Incentive (STI).** The targeted payout for the CEO is 150% of base salary if he hits all his performance targets. Under or overachievement will result in a bonus less than or more than 150%. The payout is capped at 300% of base salary or USD 4.2 million. The assessment is made every year. The plan is relatively simple to understand and analyse.
- **Long-Term Incentive (LTI).** This is a much more complex plan that vests over three years. The CEO was awarded a nominal total of USD 10 million under this plan in 2022. The actual value will depend on developments over the 3-year period.

The STI in more detail

The STI is based on 4 metrics:

- EBITDA performance against budget – 60%.
- Safety performance – 20%.
- Cost control – 10%.
- Sustainability – 10%. This splits further into 4 equally-weighted sub-categories:
 - Executing renewable power purchase agreements.
 - Growing sales of Circulen. Circulen is a family of low-carbon products which are already on sale.
 - CO₂ reduction projects. This is calculated by counting the numbers of plants with a completed CO₂ transition plan versus the target.
 - Demonstrating MoReTec technology. MoReTec is a proprietary plastic recycling technology which is still under development.

The maximum payout for the Sustainability metrics is therefore 30% of base salary or USD 420k.

The LTI in more detail

The LTI has 3 components:

- Performance Share Units (PSUs, 50% of the LTI). This is based 50/50 on Total Shareholder Return versus peers and free cash flow per share
- Retention Share Units (RSUs, 25% of the LTI). These vest after three years if the executive is still employed.
- Stock options (25% of the LTI). These vest over a 3-year period.

We note that the LTI has no sustainability component.

The maximum nominal value of the CEO’s package was USD 15.6 million in 2022, with the Sustainability component representing USD 420k, or just under 3% of the total.

Risk Analysis

FINANCIAL IMPACT

LYB discloses the following medium-term risks and opportunities in its 2022 CDP submission:

- **Risk:** Increased costs in the European Emissions Trading Scheme (ETS). **Estimated cost:** USD 150-200 million over a 5-year period⁴¹. We note that this estimate was disclosed before LYB increased its 2030 Scope 1 & 2 reduction target from 30% to 42%. The risk under the new target will likely be materially lower.
- **Opportunity:** improved resource efficiency. **Estimated benefit:** USD 45 million over a 5-year period⁴². This will likely offset most of the potential ETS cost, given the increased Scope 1 & 2 target.

Current legislative proposals to reduce the use of single-use plastics are unlikely to pose a material financial risk to LYB in our view.

Overall, we assess LYB's financial risk out to 2030 to be low. Financial risks beyond 2030 are too uncertain to be estimated.

TECHNICAL RISK

2030 technical risk

LYB's 2030 targets are among the most ambitious in the sector. Despite this, we assess that LYB is on track for the Scope 1 & 2 targets and has in effect already achieved the Scope 3 target.

We note that about 25% of the targeted 2030 Scope 1 & 2 reduction is reliant on Electrification and Carbon Capture & Storage. These are not currently commercially viable in large-scale operation. It may however be possible to increase reductions via other means such as efficiency improvements or greater use of renewable energy, so overall we conclude that LYB is on track for 2030 and the technical risk is medium.

2050 technical risk

LYB states that its "ambition to achieve net zero GHG emissions by 2050 will need to be enabled by the deployment of new technologies across the company's manufacturing foot-print, and we are assessing technologies such as cracker electrification, use of hydrogen, carbon capture and storage (CCS) and carbon utilization⁴³".

None of these new technologies are currently commercially viable in large-scale operation, which means that associated technical risks is high. We also note that these risks are not under LYB's control but are reliant on third parties.

This observation is true for all chemical companies. To put it bluntly, there is no currently viable pathway to de-carbonise chemical companies' scope 1 & 2 emissions, let alone scope 3. LYB is at least frank about the challenges.

We therefore assess 2050 technical risk as high.

41 Source: LYB 2022 CDP submission, C2.3a

42 Source: LYB 2022 CDP submission, C2.4a

43 Source: LYB 2022 CDP submission, C0.1

Strategy Assessment

CAPITAL ALIGNMENT

In its own words, LYB is not currently spending significant sums on lowering emissions in its own operations. The 2022 Sustainability report states:

“Estimates of the capital expenditure necessary to achieve our emissions reduction goals are built into the company’s long-range plan. These investments are not expected to represent a significant portion of total capital expenditures over the next three years, nor change the capital allocation strategy. While many of the GHG emission reduction projects are still the early stages of development, the company will evaluate, pursue and prioritize its GHG emission reduction investments based on each project’s rate of return⁴⁴”.

At an investor presentation in June 2023, LYB stated that growing its Circular and Low-carbon solutions business was “relatively low capital intensity” and was expected to be about 15% of capital investment during 2023-2030⁴⁵. This is largely because LYB plans to use existing plant and equipment to produce circular and low-carbon products. We note that this is significantly better than many other chemical companies.

LYB announced in May 2023 that the planned closure of the Houston refinery would be delayed until the first quarter of 2025. The ambition is that the site will be part of a Houston hub for circular and low carbon solutions. The cost and technical details have not yet been disclosed.⁴⁶

44 Source: LYB 2022 sustainability Report, page 31

45 Source: LYB investor presentation, June 2023

46 LYB press release 31 May 2023

TRANSITION APPRAISAL

Roadmap to 2030

LYB published a graphic in its 2022 Sustainability report showing the expected trajectory of Scope 1 & 2 emissions out to 2030, which we have reproduced in Figure 7. This shows an expected increase in 2023 as a new plant comes on stream, followed by a near-linear trajectory to the 2030 target.

We have not located a similar chart for the Scope 3 target but, as we have noted earlier, the planned closure of the Houston refinery in early 2025 should enable LYB to hit the 2030 target easily.

The planned Scope 1 & 2 reductions are quantified in detail and were discussed earlier in the report.

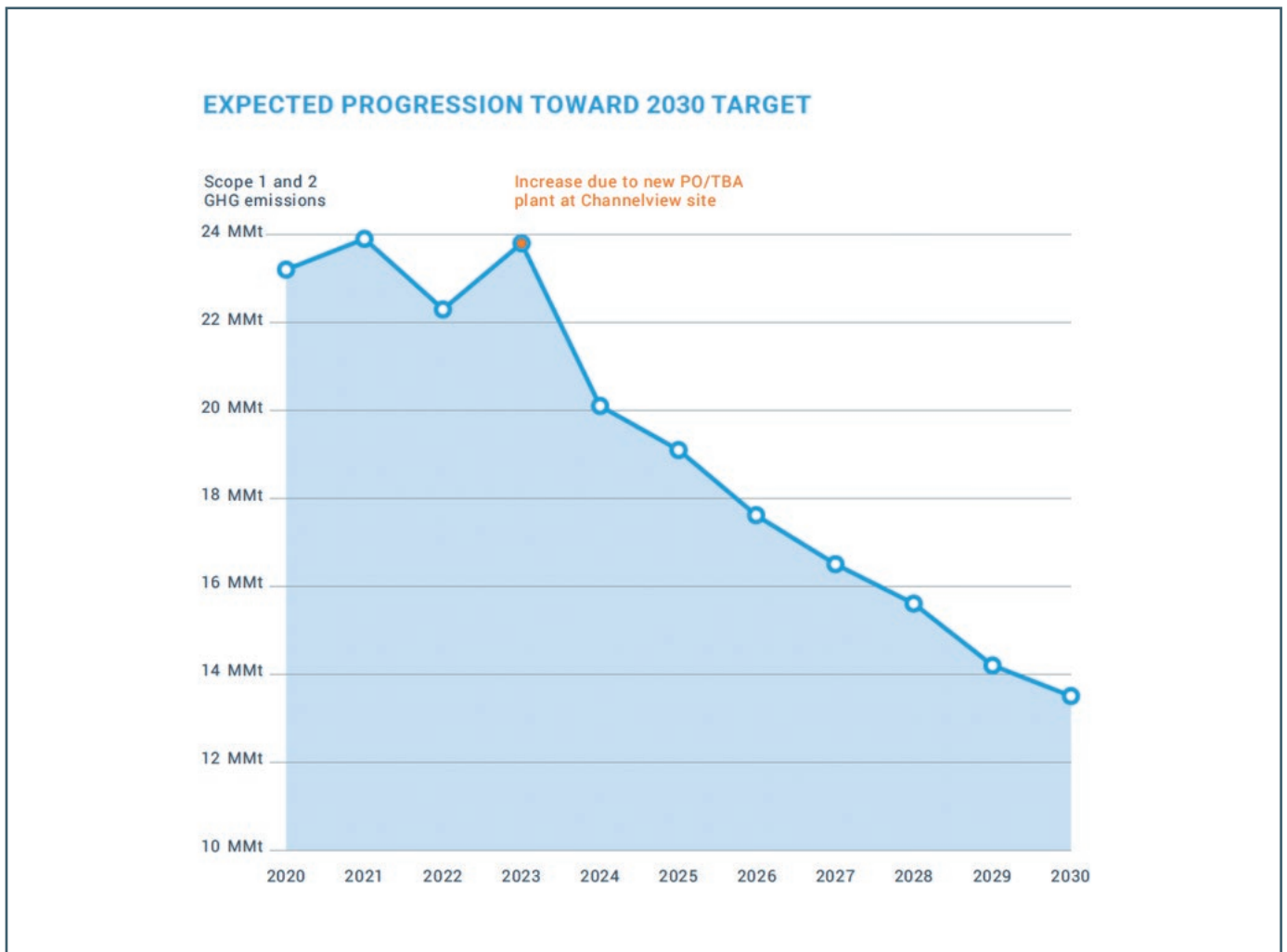


Figure 7: LYB Pathway to reducing Scope 1 & 2 emissions by 42% by 2030.
Source: LYB 2022 Sustainability Report, page 31.

Roadmap to 2050

LYB had also published a graphic showing very vague details about the planned elimination of Scope 1 & 2 emissions over the 2030-2050 period. There are 4 levers of indistinct size:

- Electrification. This is an immature technology that depends on technological developments by third parties in Planet Tracker’s view.
- Fuel Switching. This involves switching to ‘greener’ fuels such as hydrogen. Greener fuels are not currently available in the required quantities at competitive cost.

- Low carbon energy. This involves working with utilities to switch to renewable and low-carbon electricity generation.
- Carbon Capture and Storage/Use (CCS/CCU). This is an immature technology that has not yet been proven to be commercially viable in large-scale operation.

As LYB does not have a 2050 Scope 3 target, there is no associated pathway. We also note that only 1 of the 4 levers – electrification – is internal and even then, it requires technological developments by third party equipment vendors – see Figure 8

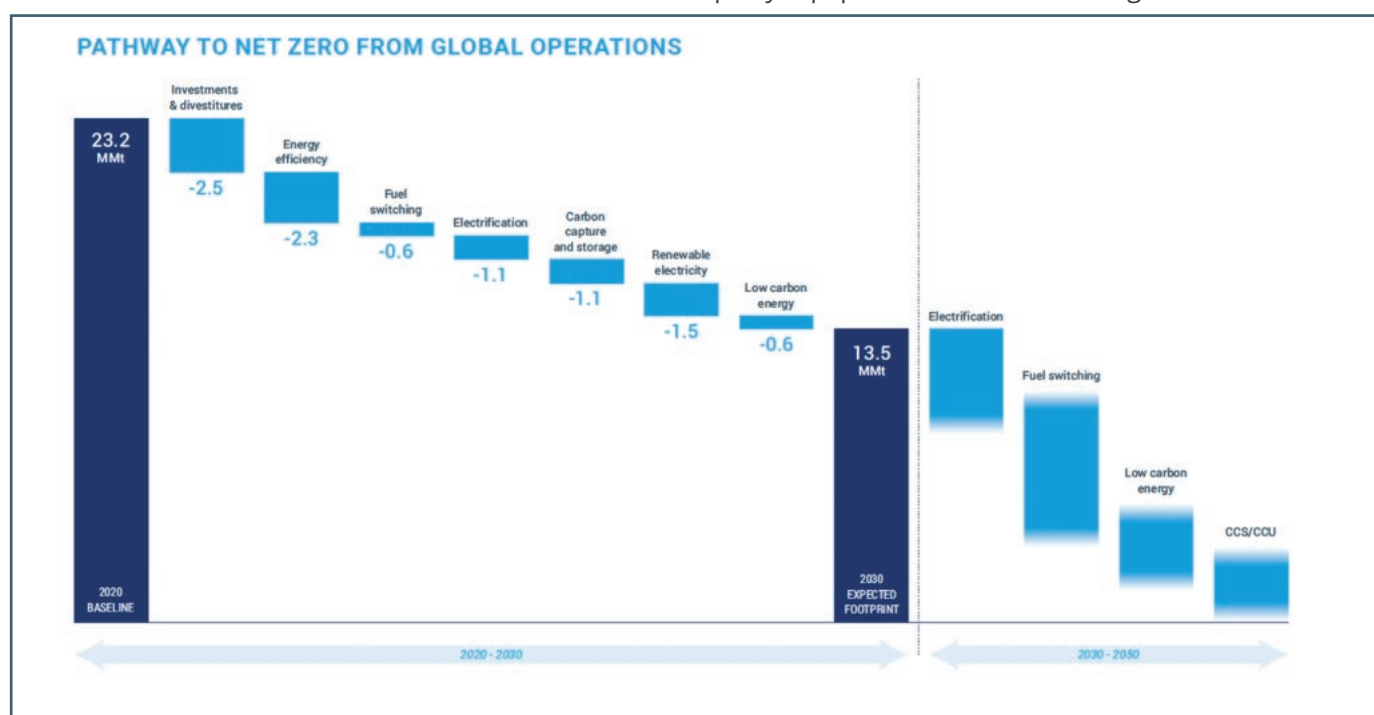


Figure 8: LYB Pathway to net zero, Scope 1 & 2 only. Source: LYB 2022 Sustainability Report, page 29.

LyondellBasell has a climate transition plan which is much more credible than most of its CA100+ chemical sector peers. It is on target to meet its 2030 emission target. However, beyond this date there is no Scope 3 target and the pathway for Scopes 1 and 2 is vague, making it difficult for investors to understand how it will achieve its net zero target.

We admire the openness with which the management discusses its transition challenges but are surprised that the company is a member of industry groups which appear to lobby against the goals of the Paris Agreement. Let’s hope they are trying to effect change from within these organisations.

End note

Planet Tracker sent a draft of this report to LyondellBasell Investor Relations Department on 22 September 2023 and a follow-up on 5 October 2023.

The company provided a detailed response and this has been included in this paper.



ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries. Our mission is to create significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

PLANET TRACKER'S CLIMATE TRANSITION ANALYSIS – CHEMICAL COMPANIES

As part of its material system transition programme, Planet Tracker is examining the transition plans of the chemical companies covered by the [Climate Action 100+ list](#). Our goal is to provide investors with the key information and analysis they need to be able to hold chemical companies to account for the quality of their climate transition plans and their execution against those plans, and to encourage them to use this information to engage effectively with these companies with the ultimate aim of driving the sustainable transformation of the chemical sector.

ACKNOWLEDGEMENTS

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WITH THANKS TO OUR FUNDERS



*Suggested citation: Reilly P., Willis J., LyondellBasell
Climate Transition Analysis, Planet Tracker (2023)*

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