

LyondellBasell Industries

Sector	Revenue	Emissions	Pledge	Transparency	Integrity
Chemicals	€ 48.0 bn (2022)	123.2 MtCO ₂ e (2022)	Net zero by 2050	Moderate	Low

1. Tracking & disclosure of emissions			Transparency & Integrity									
123.2 MtCO ₂ e in 2022	●	Subsidiaries are covered.										
Major emissions sources	S3 represents 82% of total emissions, with the production of raw materials used, and the use and end of life of products sold making up a significant portion of the total emissions.		<table border="1"> <thead> <tr> <th>Scope</th> <th>Emissions (MtCO₂e)</th> </tr> </thead> <tbody> <tr> <td>Scope 1</td> <td>14.7</td> </tr> <tr> <td>Scope 2</td> <td>7.4</td> </tr> <tr> <td>Scope 3 (upstream & downstream)</td> <td>101.1</td> </tr> </tbody> </table>		Scope	Emissions (MtCO ₂ e)	Scope 1	14.7	Scope 2	7.4	Scope 3 (upstream & downstream)	101.1
Scope	Emissions (MtCO ₂ e)											
Scope 1	14.7											
Scope 2	7.4											
Scope 3 (upstream & downstream)	101.1											
Disclosure	S1 and S2 included, except for sources that are estimated to be non-material. S2 reported using location- and market-based methods. The 2022 sustainability report contains no breakdown of S3. The latest breakdown of S3 is provided in a separate CDP disclosure and contains data on 2021. A 2022 breakdown is disclosed after the 1 st of June 2023.											

2. Setting emission reduction targets			Transparency	Integrity
Headline target or pledge	Net-zero GHG emissions from operations (S1 & S2) by 2050			
Short- & medium-term targets (up to 2030)	- S1 & S2: reduce absolute GHG emissions by 42% by 2030 - S3: reduce absolute GHG emissions by 30% by 2030		High	Low
Scope coverage	1 2 3	LyondellBasell's interim target, equivalent to a 32% reduction by 2030 below a 2020 baseline across the entire value chain, falls short of global efforts required to limit global warming to 1.5°C (no 2019 baseline available).		
Own emission reductions (compared to full value chain in 2020)	-32% by 2030 (2020 baseline)			
Long-term vision (beyond 2030)	- S1 & S2: net-zero GHG emissions by 2050 - S3: no further S3 reduction goals		High	Low
Scope coverage	1 2 3	The long-term target of LyondellBasell excludes S3 emissions, which account for 82% of the GHG footprint.		
Own emission reductions (compared to full value chain in 2020)	-18% by 2050 (2020 baseline)			

3. Reducing own emissions		Transparency	Integrity
Emissions reduction measures	Several reduction measures for all scopes and a pathway to reach net-zero S1 and S2 emissions published. For S3 we found several reduction levers for achieving 2030 targets, such as an exit from the refining business (40 MtCO ₂ e).	Moderate	Moderate
Renewable electricity procurement	Major improvements by detailing its (future) PPAs, including information about power sources, starting year and capacity. Total MWh usage is not disclosed.	Moderate	Low

4. Climate contributions & offsetting		Transparency	Integrity
Responsibility for unabated emissions	No information identified on how the company takes responsibility for unabated emissions.	Low	Low
Climate contributions	- No climate contributions identified.	N/A	Low
Offsetting claims today	- A small amount of project-based carbon credits purchased (compliance), but no offsetting claims made.	N/A	N/A
Offsetting plans for the future	No offsetting plans for the future identified. We also did not find that the company does not plan to offset.	Low	?

RATINGS **Transparency** refers to the disclosure of information. **Integrity** refers to the quality and credibility of the approach.
Overall Average of sections 1-4 ■ High ■ Reasonable ■ Moderate ■ Low ■ Very Low;
Sections 1-4 Average of criteria in each section ■ ■ ■ ■ ■; **Rating criteria** See methodology for rating criteria ■ ■ ■ ■ ■.

Source: SEO Amsterdam Economics' interpretation of identified public documentation from LyondellBasell Industries

LyondellBasell Industries

LyondellBasell Industries is a global chemical company specialising in the production of plastics, chemicals, fuels and technologies. The majority of the company's GHG emissions stem from the production of the raw materials that it utilises, as well as the usage and end-of-life treatment of its sold products (S3 totalling 82 percent). The remaining 18 percent of emissions from S1 and S2 primarily result from the substantial energy and heat requirements of its manufacturing processes. The company aims to achieve net-zero GHG emissions for its operations (S1 and S2) by 2050, excluding S3. The company has established interim targets for all three emission scopes. These targets fall short of the global efforts required to limit global warming to 1.5°C.

LyondellBasell Industries' 2022 sustainability report demonstrates improvements in the disclosure of most of its emission sources. However, there is still potential for further enhancement of transparency. Although previous annual sustainability reports from LyondellBasell Industries (2020, 2021) did not address S3 emissions, the latest sustainability report provides an overview of S3 emissions starting from 2020 (2023a, p. 35). The company does not differentiate between up- and downstream S3 emissions (2023a, p.35). The disclosure of the total S3 emissions can be seen as an improvement, especially considering that S3 emissions accounted for 82 percent of the total GHG emissions in 2022. The sustainability report presents information about the methodological approach to calculate each S3 category (2023a, pp. 81-82). However, the emissions per category are not reported. For 2021, LyondellBasell (2022, pp. 28-29; 2023, p. 35) did submit these figures to the CDP, but the company notes that these are outdated by now due to adjustments based on new information. No new disclosure is provided.¹ We note that the methodology of NCI does not consider companies' CDP responses to be accessible public information (NCI, p. 48).

The interim targets of a 42 percent reduction for S1 and S2 and a 30 percent reduction for S3 below a 2020 baseline fall short of global efforts to limit global warming to 1.5°C. In 2022, LyondellBasell Industries publicly announced that it had increased its 2030 GHG emissions reduction target for S1 and S2 emissions from 30 percent to 42 percent, relative to a 2020 baseline. In addition, the company established a 2030 S3 GHG emissions reduction target of 30 percent relative to a 2020 baseline. The company's previously announced goal to achieve net-zero S1 and S2 GHG emissions from global operations by 2050 remains unchanged. The current interim targets for 2030 imply a reduction of 32 percent by 2030 across full value chain GHG emissions. According to Teske et al. (2022), these targets do not meet the global efforts needed to restrict global warming to 1.5°C for the chemical industry. Additionally, it is not possible to compare the emissions to those of 2019 due to a lack of publicly available data for S3 (previous sustainability reports only provide data on S1 and S2).

The main target for 2050 only covers emissions from own operations and entirely leaves out S3 emissions, which are the largest source. As mentioned earlier, the company has committed to achieving net-zero GHG emissions from its global operations by 2050. However, this pledge only covers S1 and S2. In 2022, S3 emissions accounted for 82 percent of the company's total emissions. The current long-term target implies a reduction of 18 percent across the full value chain emissions by 2050. According to Teske et al. (2022), this aim is not aligned with the global efforts necessary for the chemical industry to limit global warming to 1.5°C. Consequently, based on

¹ LyondellBasell Industries (2023c) has released its new CDP Disclosure. However, this CCRM report by SEO solely incorporates information that was publicly accessible on 1 June 2023.

these considerations, we regard the interim targets as having "poor integrity". Furthermore, due to a lack of publicly available data, it is not possible to compare the emissions to those of 2019.

The company provides reports on various measures taken to reduce emissions. However, the information regarding S1 and S2 measures is more comprehensive compared to the information available on S3 measures. The sustainability report of LyondellBasell Industries (2023a) contains a list of action areas to reduce its own operational emissions, such as fuel switching, electrification, CCS/CCU, renewable and low-carbon energy, energy efficiency gains, and investments and divestitures. In total, these measures will approximately account for a reduction of 9.7 million metric tons of emissions across S1 and S2. There is more uncertainty regarding the S3 emissions and the measurements to reduce emissions. The company says that estimating the S3 emissions can be challenging as the industry's understanding of sources and appropriate emission methodologies is evolving. In the sustainability report we identified several levers that target the S3 emissions, such as an exit from the refining business (estimated to reduce emissions by 40 Mt), the use of circular feedstocks (2 Mt of emissions), engagement with suppliers, shifting to less carbon-intensive fuels, and engagement with logistic providers. At this moment, the company is seeking SBTi validation for its goals.

LyondellBasell Industries provides no information on the intended role of offsets for unabated emissions.

For future emissions (2030 and 2050), uncertainty remains on whether the company plans to offset its unabated emissions. In its CDP disclosure, LyondellBasell Industries (2022, pp. 51-52) reports purchasing a small amount of carbon offset credits (equaling around 0.02 percent of its 2022 emissions), but it remains unclear which of its emissions the company intends to offset. We could not find evidence that the company takes any further responsibility for most of its unabated emissions at present, either through offsetting or through climate contributions towards mitigation beyond the company's value chain. These results are similar to the results of the first edition of the CCRM. We note that LyondellBasell Industries' 2030 reduction targets are in absolute terms. However, as previously mentioned, the targets fall short of the global efforts needed to restrict global warming to 1.5°C for the chemical industry, resulting in unabated emissions.

LyondellBasell Industries provides a list of signed power purchase agreements (PPAs). The transparency of the sustainability report is improved considerably by detailing (future) PPAs. The report includes a table that outlines all of LyondellBasell Industries' (future) PPAs, providing information such as the project name, region, source of renewable power, estimated start-up date, and power generation capacity. Additionally, the report mentions an ongoing initiative to construct a 5 MW – last year 7 MW was mentioned – solar plant at its Tarragona Plant in Spain, marking its first on-site generation capacity. On page 81 of its sustainability report the company also mentions that it used GOs and RECs during 2022 to contractually procure renewable energy in relation to its manufacturing sites in Brazil and Sweden. The report does not mention the total amount of electricity used. An approximation of its baseline level (2020 procured levels) can be found in its 2021 sustainability report (2021, p. 27), namely nine terawatt hours of electricity, split primarily between its operations in North America (62%) and Europe (38%). Neither does LyondellBasell industries (2023, p. 32) disclose whether the PPAs' locations are connected to the same energy grid as the company's facilities. The methodology of NCI considers this to be important for the company's transparency, especially considering LyondellBasell industries' 2030 target of procuring at least 50 percent of its electricity globally from renewable sources.

Sources:

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Low Integrity assessment for short- and medium-term target(s) towards 2030

What do the short- and medium-term targets actually mean?

What are the targets for the short to medium term?

S1 and S2 emissions:

- Reduce absolute GHG emissions by 42 percent by 2030 (2020 baseline)

S3 emissions:

- Reduce absolute GHG emissions by 30 percent by 2030 (2020 baseline)

How do these targets equate to emission reductions across the value chain (compared to a 2019 baseline)?

We estimate that LyondellBasell Industries' short- and medium-term emission reduction targets translate to emissions reductions of 32 percent by 2030. The company targets all emission scopes across the complete value chain.

Do these targets cover both the short term (within 5 years) and medium term (up to 2030)?

LyondellBasell Industries does not commit to any earlier interim targets within a five-year horizon.

Do these emission reduction commitments align with a 1.5°C trajectory for the sector according to available literature?

Global benchmarks: The IPCC's Sixth Assessment Report stresses that global CO₂ emissions must be reduced by net 48 percent by 2030, compared to 2019 levels, to stand a reasonable chance of limiting global warming to 1.5°C (IPCC, 2022). In the same period, global GHG emissions must decrease by 43 percent. The Sixth Assessment Report thus reaffirms the findings of the IPCC's Special Report on 1.5°C (IPCC, 2018). Based on the scientific insights from the latter report, the Hague District Court ordered Shell to reduce CO₂ emissions across all emission scopes by net 45 percent by 2030 below a 2019 baseline (The Hague District Court, 2021). LyondellBasell likely does not meet these global benchmarks. **Sector-level benchmarks:** Teske (2022, p. 322, table 13.5) finds that S1, S2 and S3 emissions should decrease by 44, 66 and 52 percent, respectively, by 2030 (2019 baseline). Therefore, LyondellBasell's interim reduction commitment also falls below the sector-level benchmark for any of its emission scopes (since 42<44, 42<66, and 30<52), with S3 representing the largest source of emissions whilst also being the furthest removed from meeting the reduction requirement.

Low Integrity assessment for long-term target(s) (post-2030)

What do the long-term targets actually mean?

What are the targets for the long term beyond 2030?

S1 and S2 emissions:

- Net-zero S1 and S2 GHG emissions from global operations by 2050

No further targets for S3.

How do these targets equate to emission reductions across the value chain (compared to a 2019 baseline)?

We estimate that LyondellBasell Industries' long-term emission reduction targets translate to emissions reductions of 18 percent by 2050. The long-term target of LyondellBasell Industries excludes all S3 emissions, which represent 82 percent of the company's total emissions.

Do these emission reduction commitments align with a 1.5°C trajectory for the sector according to available literature?

The company's 2050 emission targets fall short of both global and sectoral benchmarks as its S3 emissions are not covered by any long-term targets.