

Company Description & Business Segments

LyondellBasell Industries NV (LYB) manufactures plastic, chemical, and fuel products. It operates through the following segments: Olefins and Polyolefins-Americas; Olefins and Polyolefins-Europe, Asia, International; Intermediates and Derivatives; Advanced Polymer Solutions; Intermediate/Derivatives; Refining; and Technology.

Advanced Polymer Solutions

The Olefins and Polyolefins-Americas and the Olefins and Polyolefins -Europe, Asia & International segments produce and market olefins and co-products, polyethylene, polypropylene, and butadiene. These products have several uses including food and beverage packaging, pipes, automotive components, rubber products including tires, and fibers for carpets, rugs, and upholstery. Olefins and Polyolefins – Americas segment’s operating income in 2022 was \$2.734 billion, 43.4% of LYB’s total. Olefins & Polyolefins – Europe, Asia & International segment’s operating income in 2022 was \$0.112 billion.

Intermediate/Derivatives

The Intermediates and Derivatives segment includes propylene oxide and its derivatives; oxyfuels and related products; and intermediate chemicals. These products have several uses including octane enhancers for gasoline, antifreeze, solvents and cleaners, paint, urethane foams for insulation, automotive seating, polystyrene packaging and foam cups, adhesives, coatings, and engineered resins for the automotive industry. The segment’s operating income in 2022 was \$1.872 billion.

The Advanced Polymer Solutions segment produces and markets compounding and solutions, such as polypropylene compounds, engineered plastics, masterbatches, colors and powders, engineered composites, and advanced polymers. These products have several uses including automotive interior and exterior panels and trims, packaging, agricultural films, roofing membranes, films, and pressurized piping. The segment’s operating income in 2022 was \$0.312 billion.

Refining

The Refining segment refines heavy, high-sulfur crude oil and other crude oils of varied types and sources into transportation fuels. The segment’s operating income in 2022 was \$0.921 billion, 14.6% of LYB’s total. This was an anomaly for a segment whose next highest level of operating income was \$.167 billion in 2018 and generated significant operating losses during 2020 and 2021. LYB is in the process of shutting down the Refining segment and will be repurposing the real estate for other strategic initiatives.

Technology

The Technology segment develops chemical and polyolefin process technologies and manufactures and sells polyolefin catalysts. This segment’s operating income in 2022 was \$0.366 billion.

Company Background

The company is headquartered in London, the United Kingdom.

LyondellBasell was formed by the ill-timed leveraged buyout of publicly traded, Houston based Lyondell Chemical Company by privately held, Netherlands based Basell International in 2007. The US units of the highly leveraged company declared bankruptcy in 2009. LyondellBasell emerged from bankruptcy in April 2010, and became a publicly traded company on the NYSE in October of the same year. This near-death experience helped to create a culture of strong cost control. While we believe this generally has been positive for the company, historically this conservative cost control approach has at times slowed innovation and delayed productivity improvements.

Transformational Strategy & Investment Thesis

Peter Vanacker was appointed CEO of LyondellBasell in December 2021, assuming the position in May 2022. Mr. Vanacker outlined his long-term strategy to leverage LyondellBasell's foundation to "establish a value creation engine" at the company's Capital Markets Day in March 2023. It consisted of "Three Pillars". The first Pillar, to grow and upgrade the core business by reinvesting in the parts of the portfolio that have a lasting and competitive advantage to generate returns at scale, was a positive but traditional approach to their grow strategy. However, we found the other two Pillars to have the potential to significantly change the company.

The second Pillar is to build up a profitable circular (recycled plastics) and low-carbon business, establishing a leadership position, and addressing the massive customer demand in a profitable way. LYB's long-term strategy for reaching these goals includes:

- Becoming technologically agnostic. LYB expects to not only develop its own technology, but to leverage start-up companies and external technologies because it has the expertise and ability to leverage scale
- Optimizing the value chain for circularity by building integrated hubs and leveraging existing capabilities to allow the firm to build scale, reduce cost, and capture value from waste to final product.
- Develop regional hubs to access and supply feedstock to the integrated hubs because plastic waste is localized and extremely fragmented.
- Expand mechanical recycling process that produces premium plastic pellets from plastic waste for use in a range of applications including electrical appliances, washing detergent bottles and suitcases.
- Develop recycled plastics using LYB's proprietary MoReTec technology. It is a scalable, high yielding, low energy consuming process that will produce polymers from mixed post-consumer plastic that are indistinguishable from those made from virgin feedstock. The products from this recycled material have a wide range of applications including food packaging and medical supplies which are subjected to more stringent regulatory standards.
- Produce end products using recycled feed stocks.

Polymers made using recycled feedstocks currently are marketed under the Circulen brand.

LYB's goal is to develop an integrated plastic recycling segment with a goal of producing two million metric tons of recycled and renewable based polymers annually by 2030.

Pillar three is initiation of a "value enhancement" program. Management believes that many good ideas have been left on the table over the years due to overly stringent cost controls. The objective is to identify and fund projects that generally require a small outlay of capital but can generate a solid ongoing return. These ideas come from all levels of the company and are centered on three "idea buckets": Operational excellence and manufacturing, procurement, and supply chain, and customer and commercial excellence. Approved projects are expected to generate \$150 million in

recurring EBITDA in 2023 with a goal of generating \$750 million in recurring EBITDA by the end of 2025. This shift in focus from pure cost control to a willingness to invest in smaller projects while maintaining strict cost discipline is a change in philosophy that could have a significant impact on the firm.

Positive Attributes

- LYB believes that recycled plastics are not premium plastics but an entirely new market that has its own dynamic driven by demand, particularly in consumer packaging. Customers are willing to pay a higher price for green products. LYB is focused on creating an integrated and efficient program to increase the supply to meet the burgeoning demand for high-quality recycled products. The company is currently selling recycled plastic under the brand name Circulen.
- LYB does not expect to need to invest significant capital into its circular/low carbon program. The company is upgrading crackers to use flexible feedstocks including those that are produced from recycled and renewable materials. LYB also expects to use JVs for other aspects of its integrated hubs (for example the sorting of waste)
- LYB has regional strategies that align the company's strengths with regional markets to maximize value creation.
 - North America: scale, low-cost feedstocks, world scale Gulf Coast assets
 - South America: market focused solutions that allow the company to service global customers on a local basis.
 - Europe: Europe is a difficult environment. LYB does see great opportunities for the circular/low carbon business in the region due to a more advanced regulatory environment.
 - Middle East: leverage technology position and global network to make LYB the partner of choice in JVs for companies with access to low cost feedstocks
 - Asia: Market access with low capital intensity through technology leadership position and JV structures.
- LYB has a valuable technology business. It is the leading franchise in the business for polyolefins licensing and catalysts. If a client builds a plant using LYB's technology, it then buys catalysts from LYB for the life of the plant. Management's ability and willingness to license much of LYB's technology allows it to be paid more than once by innovation – the first time through internal improvement and then through licensing.
- LYB is building the largest and lowest cost propylene oxide plant on the planet. This plant, which should begin production in the second half of 2023, will make LYB the lowest cost producer of propylene oxide on the planet. Tetra Butyl Alcohol, the foundation for oxyfuels, also will be produced in the plant.
- LYB is closing its Houston refinery and getting out of the refining business. The current refinery is in a prime location for either repurposing or sale.
- LYB refinanced a significant portion of its debt in 2020-2021. It has an average weighted fixed coupon of 3.9% and a weighted average maturity of 16.6 years (Bloomberg data)
- The company's capital priorities are a good match for the Morgan Dempsey Large Cap Value Strategy. They are (in order)
 - Maintain the safe and reliable operations of LYB's assets.
 - Grow and protect the dividend with a target payout ratio of 70% of free cash flow.
 - Pursue focused organic growth opportunities.
 - Additional growth through strategic, disciplined M&A and/or returning cash to shareholders via stock purchasers and/or special dividend.

Investment Risk(s)

- A significant amount of new polymer capacity is coming online, led by new projects in the Middle East which are blessed with lower cost feedstocks. As these come online the price of polyethylene and polypropylene could face downward pressure.
- The Houston refinery closure could pressure cash flows in the short term. The facility continues to provide a relevant level of cash to the organization even as it is being wound down.
- Chemicals are a cyclical industry. The company's sales, margins and earnings could be hurt by a slowing US and/or global economy.

- Management’s new “value enhancement program” will loosen the strict cost controls that have helped the company to successfully weather poor economic environments since emerging from bankruptcy. While the new strategy should have a positive impact, management needs to maintain a disciplined approach to capital allocation.
- LYB is subject to price changes due to higher primary inputs like natural gas and natural gas products as well as oil, the primary input for some of the company’s competitors.
- The company could be negatively impacted by changes in the price and availability of electricity.
- LYB may be overestimating the size and potential profitability of the recycled plastic market while underestimating its competitors in the space.
- P/E valuations a little higher than desired. LYB believes that earnings are near cycle lows so it makes the current PE less problematic.

Current & Historical Valuations

Valuation Metric	Current	5-Year High	5-Year Low	Average	Vs. Industry
Trailing PE	9.8	31.3	3.5	9.5	.6
Forward PE	9.1	13.4	3.6	8.1	.5
Price to Book Value	2.3	5.3	1.4	3.1	.7
Price to Cash Flow	5.8	11.5	2.3	6.1	.5
Price to Sales	.6	1.4	.3	.8	.3
Enterprise Value to EBITDA	6.1	13.2	3.5	6.8	.5
Enterprise Value to Sales	.8	1.6	.6	1.0	.3
Dividend Yield	5.5	12.3	3.0	4.9	2.7
Market Capitalization	\$29 Billion				

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