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# LyondellBasell Industries – 2Q19 Update
# Maintain BUY

We maintain our BUY recommendation on LYB after 2Q19 results. The company missed forecasts by 9-cents due to the refining operation posting a larger loss than expected. It hit the low end of EBITDA forecasts at $1.58 billion. The total loss by the refinery was 24-cents vs. the 13-cent loss in 1Q. The macro events that drove the loss have good reason to reverse toward the end of the 3Q. Historically, the way LYB operates the refinery is different than much of the industry as it is designed to provide more cost-advantaged feedstock for its operations. Thus, a short-term profit squeeze in one of the smaller units is unlikely to derail the over-riding positives of LYB.

There are some headwinds for car sales and the trade situation. Also, some car sales will be under pressure based on emission standards. Given some weakness there, LYB is still seeing stronger consumer demand elsewhere offset that and is still hitting cash flow numbers in its expected long-term range.

It is our belief that LYB is no longer a boom/bust cyclical company as a high-cost producer against cheaper labor markets in Asia. That equation changed with lower feed-costs in the US 10-11 years ago. The market has still not fully embraced the idea of non-cyclical status, which is why the stock has a 5.5% yield growing at 5% and the dividend only uses about one-third of free cash flow. The market also trades it up and down on moving oil prices making the ratio of cost-advantaged feedstocks higher or lower – but they remain comfortably in the golden zone at a 17x ratio of oil/gas vs. breakeven at 8x. The stock is only 8x EPS too. After buying back 9.5% of its stock in July, liquidity remains over $5 billion.

- **The refinery is another source of flexible feedstock and a minor part of LYB's operation.** It is set up to take advantage of the discount between heavy crude and the light crude. The refinery has frequently been one of the more volatile parts of LYB and likely will remain so.

- **There is a solid reason to expect the refinery to recover by the end of the 3Q.** Heavy crude has been in short supply after Venezeula left the market, at the same time light crude from the Permian Basin has been in large supply – cutting the heavy/light spread in half. However, new sulfur rules for bunker fuel in shipping will influence production in 3Q. That will require more light crude and less heavy – which should help the spread widen again and return the refinery to a profitable state.

- **Overcoming the cyclical label for LYB has taken longer – but many of the cyclical fears have been disproven.** The ratio of oil/gas prices has changed, but not left the range where profitability remains strong. New chemical plants have not driven up the price of gas and NGLs as the pipeline companies have opened up new supply to the plants. New plants have not cut plant utilization as Asia remains the high-cost producer and price setter as demand has for chemicals has accelerated.

- **The cost-advantage in feedstocks is more than just NGLs vs oil at LYB. The company has the ability to interchange different types and grades of various NGLs.** If the price of ethane is low, use that. If the next quarter, ethane is high – but not propane – use propane. Much of this ability to have flexible raw materials is also helping profitability and removing more of the cyclical nature for LYB.

## The Refining Operation Remains the Wild Card

As we talked about in earlier reports, LYB's refinery operation has several issues the make it respond differently than other refineries. First, crude oil is refined into naphtha and then into gasoline and other fuels in most cases. However, LYB is using its naphtha as another feedstock option to make chemicals so it doesn't refine fully into gasoline. That means that the industry benchmark Maya spread has less impact on results. Second, they process more heavy sour crude, which normally trades at a discount on the market and buy from some smaller sources. Much of the local market is refining light crude coming from the Permian Basin. The changes in the heavy/light discount have a larger impact than the Maya spread. Third, refineries undergo maintenance, which impacts the volume being processed at times.

Here is a longer view of the refinery operation and the last three quarters:

| Refining | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| EBITDA | $167 | $157 | $72 | $342 | $65 |
| Maya | $19.85 | $20.56 | $19.24 | $22.30 | $24.43 |

| Refining | 2Q19 | 1Q19 | 4Q18 |
|---|---|---|---|
| EBITDA | -$66 | -$15 | -$84 |
| Maya | $18.99 | $13.55 | $10.89 |

**Maintenance had large impacts on reducing volumes in 2016 and late 2018.** What has happened of late is the supply of heavy crude has fallen as Venezuela has gone offline. Also, some heavy crude arrives by rail, which costs more than shipping via pipeline. At the same time, there has been a surge of light crude coming to the market. The result is the discount between heavy and light has shrunk. Bob Patel of LYB noted on the call that the spread between heavy and light was about $5 in July when it normally is $8-$10.

The company has some flexibility here and can process up to 10% light crude in its refinery and it is the light crude growing in supply. However, it does not want to convert away from heavy sour as new regulations on sulfur will start kicking in late 3Q for the new production cycle in 2020. The new rules are IMO2020 – which requires ships to emit much lower levels of sulfur dioxide. One way to do that is to install scrubbers on the ship – which is a heavy investment and often tied to the age/value of the ship to determine whether that is an option. The other way is to burn low sulfur fuel, which costs more.

Currently heavy crude is a cheaper way to create bunker fuel so there is still demand for it at the same time the supply of heavy crude has fallen. What LYB and others envision is many ships will not install scrubbers and will need low sulfur bunker fuel distilled from light crude oil. Thus, the expectation is the demand for light crude will rise and help offset the pricing pressure from the growing supply of light crude. At the same time, they expect demand for heavy crude to fall as less is refined into bunker fuel, which should remove the push in pricing from lower supply. That should help the refinery situation at LYB normalize again at a higher heavy/light spread.

The forecast for LYB long term is to produce $1.5-$2.0 billion in EBITDA per quarter. There are changes in spread every quarter plus FX and other variables. But, the diverse portfolio of operations should generally be working in a positive manner and combine to reach that level of total EBITDA. In the 2Q, it was the refining side that hurt results. EBITDA was $1.58 billion with refining at a -$66 million. Historically, refining can be $50-$60 million in a quarter so a return to that level puts LYB at $1.7 billion. There is also a tailwind from new facilities coming online in the 2Q19 and the repurchase of 9.5% of the stock.

## Fears of New Supply and Bottlenecks Have Proven Unfounded

As we have discussed in prior reports, there are three basic parts to this long term growth story: 1) Natural Gas feedstocks have a cost advantage in chemical production over oil when Oil Prices are more than 8x Natural Gas prices, 2) Asia is not as cost-competitive and sets the price for chemicals, and 3) demand for chemicals is rising driven by more 2nd and 3rd world citizens joining the middle class.

One of the fears that is always happening with LYB is the stock price is positively correlated to oil prices. Yes, if oil is $54 and gas is $3, the ratio of 17x is less then when oil is $60 and the ratio is 20x. However, the underlying profitability comes from having the ratio above 8x. If the speed limit is 55mph and at 17x you're driving 80 instead of 84 when the ratio was 20x – you're still going really fast.

The other fear was that there were too many chemical plants under construction especially in the US. That was going to use up all the natural gas and NGLs being produced and the prices would rise and hurt the feedstock cost advantage of gas over oil. At the same time, it would create more chemical supply and hurt pricing and plant utilization rates would fall. None of that has happened either. As more oil has been drilled, more natural gas and NGLs have been byproducts of that process. The pipeline companies have been building new infrastructure for years and more of continues to come on-line every quarter. Thus, the feedstock supply has kept up with chemical plant demand.

LYB has also shown the capacity utilization rates which are another key to chemical pricing have stayed very high as the industry has absorbed higher capacity. LYB noted in its presentation that demand growth has accelerated with more capacity. Also, utilization which was expected to fall to about 90% - has remained above 95% during the whole time.

Conference calls continue to be filled with questions of "what are you going to do – ethane prices may rise?" Answer – "we'll use butane." What if the price of naphtha squeezes your margin in Europe?" Answer – "we'll use propane." This is a little simplistic, but if the conference call prints out to 20 pages in a given quarter – this type of discussion will consume 5-6 pages every quarter. The bigger picture here is LYB has a long term cost advantage and it comes not only from lower feedstock costs, but feedstock flexibility to be able to quickly take advantage of what is cheapest. Here is what Bob Patel the CEO said on the call:

> "***We continue to optimize our cracker feedslate to benefit from lower NGL prices*** *in our U.S. Gulf Coast system. We've previously spoke about how much of our ethylene production was produced from NGLs.* ***It may be more useful to understand the composition of our feedslate.***
>
> ***In the second quarter, we found advantage in low propane and butane prices. More than 25% of the raw materials used in North American crackers were propane- or butane-based and more than 55% was purely ethane****. We continue to increase our utilization of mixed Y-grade NGLs as an advantaged ethylene feedstock. During the second quarter, mid single-digit percentages of our North American cracker feedslate was composed of Y-grade."*
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> *"So first of all, your question on butane really we should think about propane and butane together.* ***We can crack up to 40% - or 40% of our ethylene can come from propane and butane. 40% of our feedslate can be propane and butane.*** *Yes, indeed, it did benefit our oxyfuels as well especially here in the U.S. So, I think there was – again, it highlights our feedstock flexibility and our ability to be resilient in a range of energy price environments.*
>
> *In terms of Y-grade, we're continuing to increase our demonstration of our ability to crack Y-grade. So soon, we'll have demonstrated on four of our crackers on the Gulf Coast that we can crack Y-grade.* ***So, when ethane prices were a bit higher, Y-grade made a lot of sense for us. Today with where ethane is, ethane is far better from an economic perspective. the way to think about Y-grade is that it's one more lever in our ability to flex feedstocks to maximize value.*** *And I think now we're very confident that we can do this at meaningful rates."*

# Explanation of EQ Rating Scale

| | |
|---|---|
| 6- "Exceptionally Strong" | Indicates uncommonly conservative accounting policies to the point that revenue and earnings are essentially understated relative to the company's peers. Higher possibility of reporting positive earnings surprises |
| 5- "Strong" | Indicates the company has no areas of concern with its reported results and we see very little risk of the company disappointing due to recent results being overstated from aggressive reporting in recent periods. |
| 4- "Acceptable" | Indicates the company may have exhibited a minor “red flag”, but the severity of the issue is not yet a concern. Minimal risk of an earnings disappointment resulting from previous earnings or cash flow overstatement |
| 3- "Minor Concern" | Indicates the company has exhibited either a larger number of or more serious warning signs than companies receiving a 4. The likelihood of an immediate earnings or cash flow disappointment is not considered to be high, but the signs mentioned deserve a higher degree of attention in the future. |
| 2- "Weak" | Indicates the company’s recently reported results have benefitted materially from aggressive accounting. Follow up work should be performed to determine the nature and extent of the problem. There is a possibility that upcoming results could disappoint as the impact of unsustainable benefits disappears. |
| 1- "Strong Concerns" | Indicates that the company’s recent results are significantly overstated and that we view a disappointment in upcoming quarters is highly likely. |

In addition to the numerical rating, the EQ Review Rating may also include either a minus or plus sign. A minus sign indicates that our analysis shows the overall earnings quality of the company has worsened since the last review and there is a possibility the numerical rating will fall should the problem continue into the next quarter. Likewise, a positive sign indicates that the overall earnings quality is improving, and the company may see an upgrade in its numerical rating should the trend continue.

**Key Points to Understand About the EQ Score**

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**The EQ Review Rating is not comparable to a traditional buy/sell rating**. The Rating is intended to specifically convey the extent to which reported earnings may be over/understated. Fundamental factors such as forecasts for future growth, increasing competition, and valuation are not reflected in the rating. Therefore, a high score does not in itself indicate a company is a buy but rather indicates that recent results are a good indication of the underlying earnings and cash generation capacity of the company. A low score (1-2) will likely result in us performing a more thorough review of fundamental factors to determine if the company warrants a full-blown sell recommendation.

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