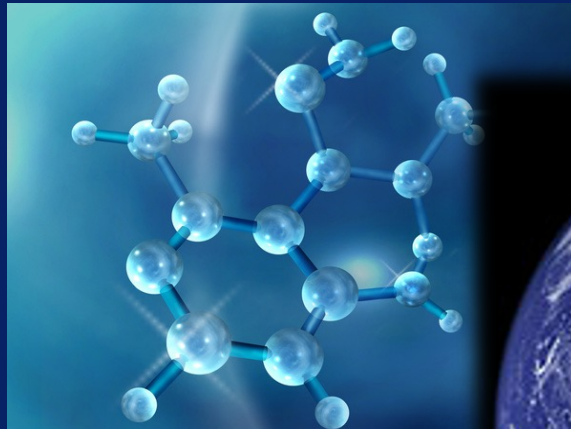


Brainfood for the Plastics Industry

Issue 23.04 – Feb 2023



Market Update

Plastics Feedstocks (Naphtha, Ethane, and Propane)

- Naphtha prices (CIF Japan) are about 2.5% higher over the past two weeks to a price of \$712/mt
- Propane pricing is down about 8% to a spot price of 83 cents per gallon (cpg) in Mont Belvieu, TX. This drop in propane pricing is a result of the incredibly mild winter weather experienced across parts of this country this past week.
- Ethane prices are unchanged around 24cpg from two weeks ago.

Ethylene

- Over the past two weeks, ethylene prices in the Enterprise system in Mont Belvieu, TX increased by about 2cents per pound (cpp) to a spot price of 21.75cpp.

Propylene

- Physical PGP prices in Enterprise's system are up 8cpp to a spot price of 52pp from 44cpp on Jan 31st.
- Physical PGP prices rallied to 50.75cpp on Monday Jan 23rd then prices proceeded to drop back down to 44cpp at the end of January. Since the start of February, physical PGP prices have been climbing back up to break through the January high price and establish a new high price point for 2023.
- The rally in PGP pricing remains a supply constraint issue with delayed downtime experienced by PDH production.
- If physical pricing remains north of 50cpp to finish out the month of February, the monthly average PGP price for physical spot volumes in Mont Belvieu, TX will be around 50cpp.
- BlueClover was estimating contract PGP to be up 10cpp in January and the market settled up 11cpp to a contract price of 43cpp.
- BlueClover is estimating that the contract PGP price for February will be up 5cpp to 48cpp.
- With the recent drop in propane pricing and increase in PGP pricing, gross margins for PDH units are around 28cpp which is up significantly from the 6-10cpp range these assets were generating in the November-December 2022 time frame.

Polypropylene

- According to industry data, PP production increased in January. This surprised us as the PP market appeared short supplied in January, specifically copolymer PP.
- So far in February the overall supply of PP has improved somewhat but producers are still looking to increase pricing as a result of the increasing costs of polymer grade propylene.
- The rally in PGP in February may make it difficult for producers to realize all the announced margin increase but in our opinion the market is ripe for some of the margin increase to materialize. BlueClover holds its view that convertor demand remains subdued but the ongoing supply pressures on PGP and the lag effect of the December downed PP production continue to lead to PP price increases for customers.

Crude Oil

- Prices for WTI crude oil are up a little over 1% to \$78.62/barrel.
- According to the EIA, crude oil output in the USA will reach 9.36 million barrels/day in March which sets a new all time high for USA oil production. Counterbalancing this globally, Russia said it will cut oil production by 500k barrels/day in March. This is a result of the sanctions placed on Russia by many developed economies.
- Many industry analysts are keeping a close eye on Chinese oil demand as their economy continues to pull back Covid restrictions across major cities in 2023.

Natural Gas

- Natural Gas prices are down about 5% the past two weeks to a spot price of \$2.54/mmbtu.
- 2022 was one of the most volatile years in natural gas pricing. The historical volatility on an annualized basis was about 82% last year versus 49% which is the average annualized historical volatility for the previous 10 years.
- Many industry analysts expect natural gas volatility to remain in place as demand continues while additional supply and storage remain an issue. The following are reasons for increases in demand over the next several years. 1) A decreasing ability for the electrical grid to switch to coal should natural gas shortages arise. 2) The USA natural gas export capacity is set to increase by an additional 40% by 2025.
- From a supply perspective, gas producers are prioritizing capital to shareholders because reinvestment in natural gas supply, transportation, and storage is met with some resistance from local and federal governments and certain ESG shareholders are demanding more investment in renewables.

Feedstock “Spot” Prices:

<u>Product</u>	<u>Location</u>	<u>Price as of Feb 14</u>	<u>Price as of Jan 31</u>	<u>Unit</u>
Brent Crude	North Sea, Europe	85.04	84.24	USD/barrel
WTI Crude	Cushing, OK	78.62	77.63	USD/barrel
Natural Gas	Henry Hub, LA	2.54	2.67	USD/MMBtu
Naphtha	C&F Japan	712	695	USD/mt
Ethane	Mont Belvieu, TX	24.25	24.75	Cents/Gal
Propane	Mont Belvieu, TX	83	90.5	Cents/Gal
Ethylene (Enterprise system)	Mont Belvieu, TX	21.75	19	Cents/Lb
PG Propylene (Enterprise)	Mont Belvieu, TX	52	44	Cents/Lb

* Sources – CME, Bloomberg

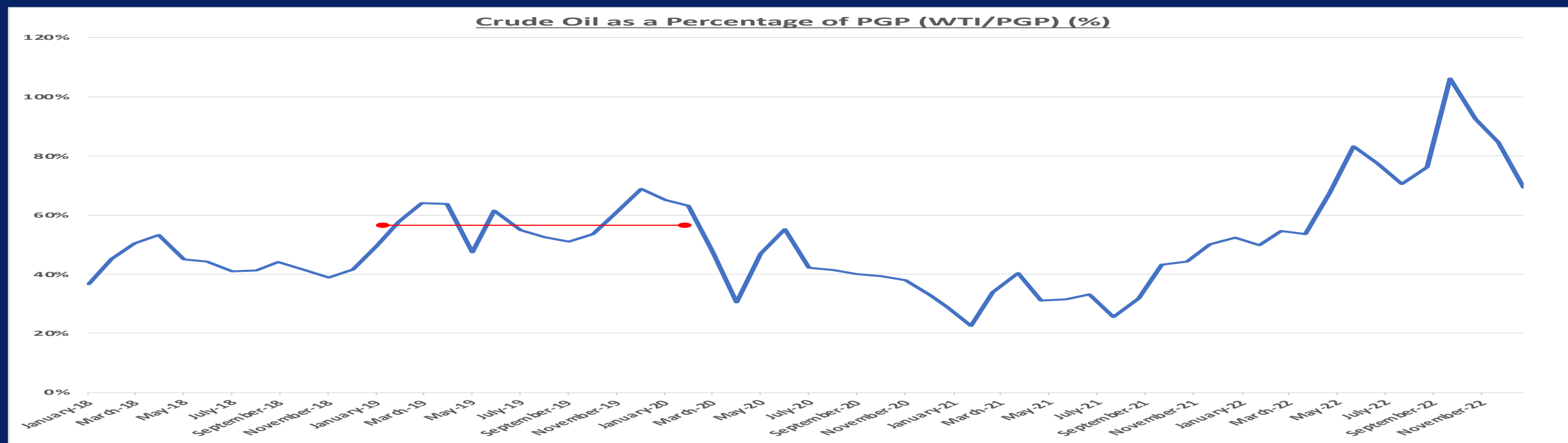
Inventory

HERO GREEN™ (Post Consumer PP Repro)		
Grade	Description	Location
HG7BK1	7 melt HomoPP - Black	Midwest
HG3GR1	3 melt HomoPP - Grey	Midwest
HG16GR1	16 melt HomoPP - Grey	Midwest
HG22GR1	22 melt HomoPP - Grey (SOLD OUT)	Midwest
HG3GR3	3 melt CoPP 3.6 izod - Grey (TWO LOADS LEFT)	Midwest
HG35GR3	35 melt CoPP 1.4 izod - Grey	Midwest



Trader Toolbox - From Our Report 4 weeks ago!!

Trader Toolbox - PGP prices still cheap??



Above is a 5 year chart of the relationship between WTI and crude oil as a %. Typically WTI, as measured in \$/lb, is cheaper than PGP so this percentage is usually less than 100%. You can see this relationship inversed (greater than 100%) with PGP being cheaper than crude oil in Oct 2022 when the monthly average physical PGP price was \$0.285/lb. As this line decreases since Oct 2022, PGP is becoming more expensive relative to crude oil.

What we would like to point out is that while PGP pricing has increased significantly since the 4th quarter of 2022, it might have more room to run up according to its historical relationship with crude oil. Back in 2019, that last year the PP and PGP market was very long, this relationship averaged 57%. That same % today with crude oil prices as they are today would put physical PGP at 49cpp. The question is how much different is the PGP/PP market in 2023 than it was in 2019?

The above slide was taken from our Brainfood report which went out on Wed Jan 18th. While we did not directly call for a price increase in PGP and have been wrong many times in the past (and will be again in the future), we feel as if we did provide some warning about the possibility of PGP prices increasing. For that reason, we are giving ourselves a pat on the back on this one.



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