



RBN U.S. Propane Billboard

U.S. Propane Market Update & Outlook

For questions, please email troot@rbnenergy.com; Follow on Twitter @RBNEnergy

May 12, 2023

TABLE OF CONTENTS

| | |
|---------------------------|-------|
| <u>Summary</u> | p. 1 |
| <u>Inventories</u> | p. 3 |
| <u>Markets</u> | p. 4 |
| <u>Demand</u> | p. 6 |
| <u>Exports</u> | p. 7 |
| <u>Production</u> | p. 9 |
| <u>Infrastructure Map</u> | p. 10 |
| <u>PADD Analysis</u> | p. 11 |
| <u>Prices</u> | p. 16 |
| <u>International</u> | p. 18 |
| <u>Appendix</u> | p. 19 |



U.S. PROPANE SUPPLY & DEMAND

| Table A: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Production | 2,776 | 2,518 | 2,854 | 2,794 | 2,899 | 2,826 | 2,941 | 2,132 | 2,141 | 2,192 | 2,218 | 2,227 | 2,243 | 2,259 |
| Gas Plants | 2,431 | 2,200 | 2,499 | 2,444 | 2,533 | 2,467 | 2,565 | 1,867 | 1,871 | 1,920 | 1,939 | 1,946 | 1,958 | 1,970 |
| Refinery | 345 | 318 | 354 | 350 | 366 | 359 | 376 | 265 | 270 | 272 | 278 | 281 | 285 | 289 |
| Imports | 214 | 206 | 168 | 95 | 53 | 55 | 69 | 164 | 175 | 129 | 75 | 41 | 44 | 53 |
| TOTAL SUPPLY | 2,989 | 2,724 | 3,021 | 2,889 | 2,953 | 2,881 | 3,010 | 2,296 | 2,316 | 2,321 | 2,293 | 2,268 | 2,287 | 2,312 |
| Demand (Prod. Supplied) | 1,427 | 1,230 | 1,102 | 765 | 781 | 687 | 790 | 1,096 | 1,046 | 846 | 607 | 600 | 545 | 607 |
| Exports | 1,897 | 1,825 | 2,162 | 2,011 | 2,012 | 1,937 | 1,961 | 1,457 | 1,552 | 1,660 | 1,596 | 1,545 | 1,537 | 1,506 |
| Stock Change | (335) | (336) | (242) | 114 | 160 | 258 | 260 | (257) | (286) | (186) | 90 | 123 | 204 | 199 |
| TOTAL DISPOSITION | 2,989 | 2,719 | 3,022 | 2,889 | 2,953 | 2,881 | 3,010 | 2,296 | 2,312 | 2,321 | 2,293 | 2,268 | 2,287 | 2,312 |
| TOTAL INVENTORY* | 2.9 | 2.5 | 2.3 | 2.4 | 2.6 | 2.8 | 3.1 | 68.6 | 60.6 | 54.8 | 57.5 | 61.4 | 67.5 | 73.7 |

* Inventories are shown in billion gallons and million barrels respectively.

MONTHLY HIGHLIGHTS

- Propane production growth continues to be weak with year-to-date volumes relatively flat. Propane gas plant production for February, as reported by the EIA, was 1,871 Mb/d, an increase of only 4 Mb/d from January and 90 Mb/d below September's all-time high. (See the Monthly Market Spotlight section of this report, where we analyze the propane production growth mystery of 2023.)
- The propane market was down for the second month in a row as prices declined by more than 4%, pressured by high inventory levels. Propane was also weaker relative to crude oil with the ratio to WTI falling to 38% as of May 1, only slightly above the 5-year minimum for the month.
- U.S. propane stocks built by 2.7 MMbbl for the first month of the 2023 storage injection season, with April ending inventories at 57.5 MMbbl, which is 10 MMbbl, or 22%, above the 5-year average.
- Energy Transfer announced an expansion of its NGL marine terminal in Nederland, TX, which would add up to 250 Mb/d of export capacity. The company estimated the project cost at \$1.25 billion with a planned in-service date in mid-2025. They are the third midstream company to announce an LPG export expansion project along with Targa (Galena Park in mid-2023) and Enterprise (Houston Ship Channel in H1 2025).
- U.S. propane exports remained robust in April as weak Mont Belvieu propane prices kept the export arbitrage window to Asia open.

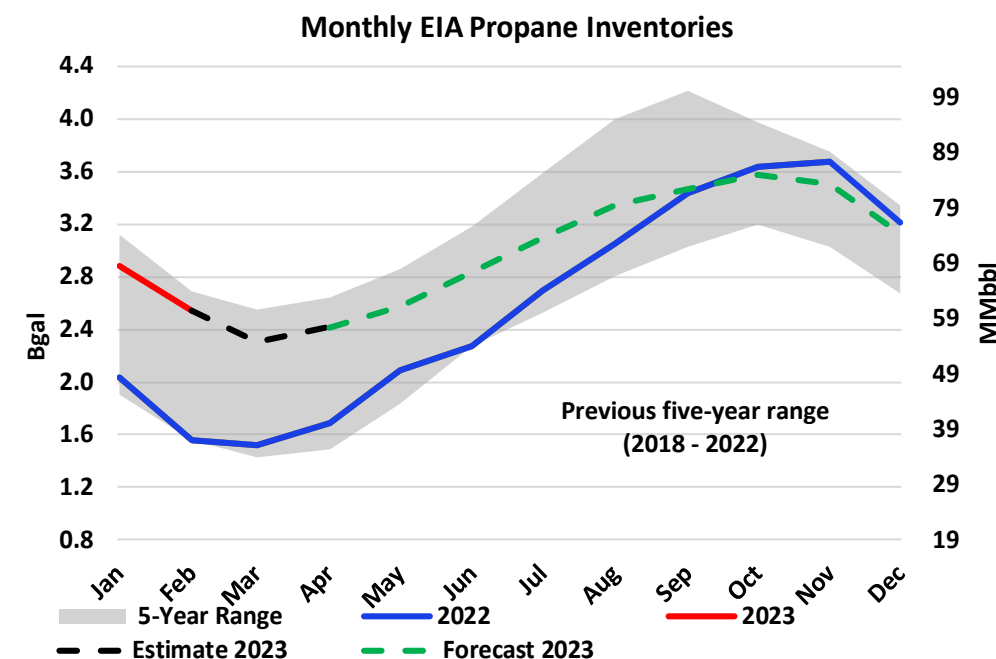
MARKET OVERVIEW

Strong overseas export demand and lackluster production growth continued to be the dominant propane market themes in April. On a fundamental basis, U.S. propane supplies are healthy with total stocks well above last year and the 5-year average. The market was decidedly bearish during the month, mainly due to high inventory levels, with propane prices plunging to 63 c/gal in early May, the lowest since December 2020. Lastly, we remain concerned about the lack of recent propane production growth. As a result, we have trimmed our 2023 production forecast but continue to be optimistic that growth will pick up in the second half of the year with a significant amount of new gas processing plant capacity scheduled to come online in the Permian Basin.

U.S. PROPANE INVENTORIES

| Table B: | MM gal | | | | | | M bbl | | | | | | |
|--------------------------|-------------|--------|-------|-----------|--------|----------|-------|-------------|--------|---------|-----------|--------|----------|
| | MONTHLY EIA | | | ESTIMATED | | FORECAST | | MONTHLY EIA | | | ESTIMATED | | FORECAST |
| | Jan-23 | Feb-23 | M/M | Mar-23 | Apr-23 | May-23 | | Jan-23 | Feb-23 | M/M | Mar-23 | Apr-23 | May-23 |
| PADD 1 (East Coast) | 267 | 237 | (30) | 196 | 207 | 239 | | 6,354 | 5,648 | (706) | 4,670 | 4,930 | 5,701 |
| PADD 2 (Midwest) | 838 | 619 | (219) | 484 | 538 | 638 | | 19,960 | 14,748 | (5,212) | 11,526 | 12,815 | 15,201 |
| PADD 3 (Gulf Coast) | 1,642 | 1,574 | (68) | 1,534 | 1,571 | 1,580 | | 39,104 | 37,476 | (1,628) | 36,517 | 37,410 | 37,615 |
| PADD 4 (Rocky Mountains) | 86 | 81 | (5) | 61 | 68 | 83 | | 2,041 | 1,927 | (114) | 1,460 | 1,624 | 1,980 |
| PADD 5 (West Coast) | 48 | 33 | (15) | 28 | 32 | 36 | | 1,153 | 789 | (364) | 660 | 764 | 859 |
| TOTAL PROPANE | 2,882 | 2,545 | (337) | 2,303 | 2,417 | 2,577 | | 68,612 | 60,588 | (8,024) | 54,832 | 57,543 | 61,355 |
| Propylene | 40 | 35 | (5) | 37 | 31 | 32 | | 963 | 845 | (118) | 876 | 749 | 772 |
| TOTAL INVENTORIES | 2,922 | 2,580 | (342) | 2,340 | 2,448 | 2,609 | | 69,575 | 61,433 | (8,142) | 55,708 | 58,291 | 62,126 |

Figure 1.1



Source: EIA

ANALYSIS & INSIGHTS

U.S. propane inventories built by 2.7 MMbbl for the first month of the injection season, which was in line with the 3.0 MMbbl 5-year average increase for the month, bringing ending stocks for April to 57.5 MMbbl (2.4 Bgal), which is 17.4 MMbbl, or 43%, above last year and 22% higher than the 5-year average. PADD 3 had a small stock increase of 0.9 MMbbl for the month, which was below the 2 MMbbl average build for the period. Gulf Coast inventories remain healthy and are 6.7 MMbbl, or 22%, above the 5-year average. PADD 2 inventories rose by 1.3 MMbbl, which was slightly more than the 0.8 MMbbl average draw for the month. Midwest stocks are 3.7 MMbbl above last year and 2.2 MMbbl higher than the 5-year average. PADD 1 inventories grew by 260 Mbbl, which was above the 5-year average draw of 29 Mbbl. PADD 4 stocks rose by 164 Mbbl to 1.6 MMbbl, which is 440 Mbbl below last year and 53 Mbbl below the 5-year average. PADD 5 inventories increased by 104 Mbbl to 764 Mbbl, which is 215 Mbbl more than last year and 52 Mbbl above the 5-year average.

INVENTORY OUTLOOK

U.S. propane inventories in May are projected to build by 3.8 MMbbl, which is well below the 5-year average increase of 8.1 MMbbl. This would bring total stocks to 61.3 MMbbl (2.6 Bgal), which is 11.7 MMbbl more than last year and 5.9 MMbbl above the 5-year average.

PROPANE MARKET UPDATE

PROPANE PRICES DECLINE AGAIN IN APRIL

West Texas Intermediate (WTI) prices ended April little changed. Crude oil prices rallied early in the month, supported by the surprise OPEC+ production cut, but then gave back the gains on weak economic data out of China and rising U.S. interest rates. WTI closed at \$75.66/bbl on May 1, essentially unchanged from April 1.

U.S. propane prices were weaker than crude, falling by 4.4% during the month. OPIS non-LST (Enterprise, aka non-TET) propane averaged 80.7 c/gal in April, settling at 73.9 c/gal on April 28, down 3.4 c/gal from the beginning of the month. OPIS LST (Energy Transfer, aka TET) propane prices averaged 80.9 c/gal for the month, closing at 75.4 c/gal on April 28, falling 1.1 c/gal from the beginning of the month. The non-TET vs. TET price spread increased by 1.2 c/gal during the month with non-TET trading discount at a 1.5 c/gal on April 28. Conway OPIS propane averaged 79.2 c/gal during the month, which represented a 1.5 c/gal discount to the average non-LST price.

The benchmark propane-to-WTI Cushing ratio settled at 38% as of May 1, down 5 percentage points from April 1. The current forward curves project the propane-to-WTI ratio to average around 42% through September, which is 2 percentage points lower than implied by the forward curves from last month. As shown in Figure 1.3, the forward curve for May (red line) shifted down sharply, falling by about 15 c/gal, from the forward curve from April (yellow line).

Figure 1.2

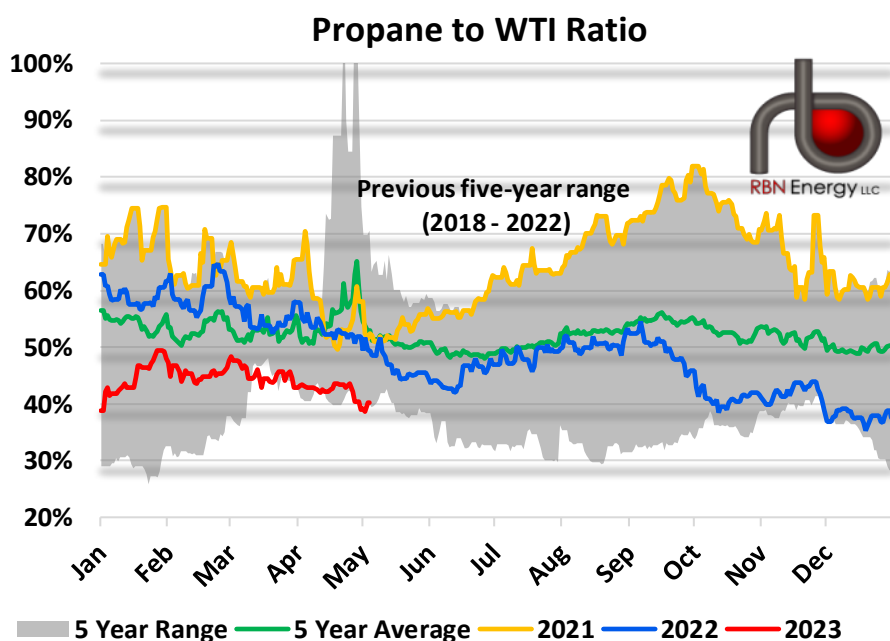
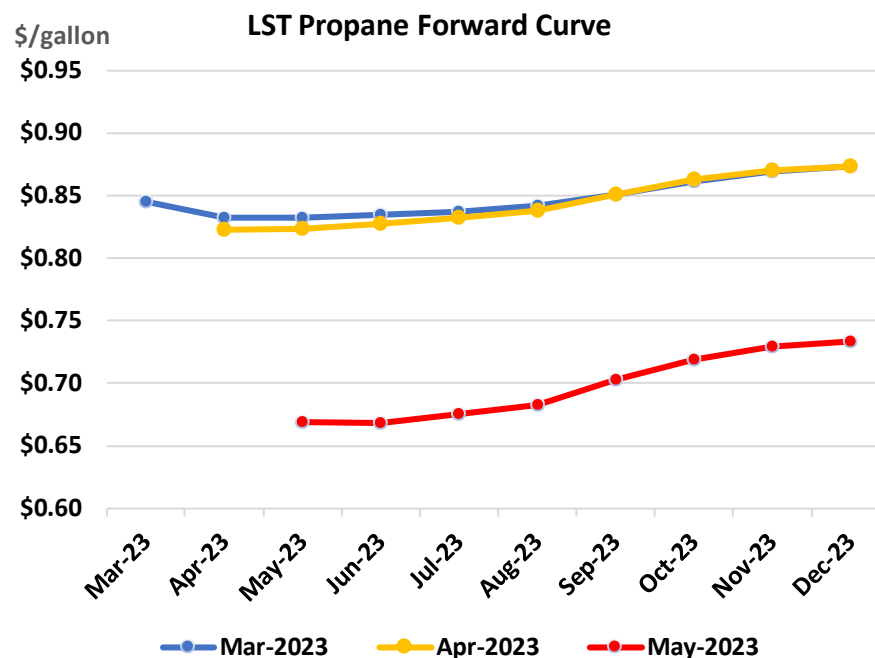


Figure 1.3



CONWAY VS. MONT BELVIEU PROPANE PRICES

Figure 2.5

CONWAY DISCOUNT TO BELVIEU NARROWS

The Conway spot propane (OPIS) average discount to Mont Belvieu narrowed to 1.5 c/gal during April, compared to a 4.8 c/gal discount in March and a 4.3 c/gal discount in February. In April 2022, Conway was at an average discount of 2.9 c/gal while in 2018 it was at a discount of 14.1 c/gal. The 5-year average Conway discount for April is 6.5 c/gal. As of May 5, the Conway spot propane (OPIS) discount to Mont Belvieu had declined further to 0.4 c/gal.

CONWAY PROPANE SPREAD — FORWARD CURVE ANALYSIS

Figure 2.6 shows the propane forward price curves for Conway (blue line) and Mont Belvieu (red line) on the left-hand axis. The gray area is the differential on the right axis. The Mont Belvieu-Conway price spread is a good indicator whether the market is incenting barrels to flow from PADD 2 to PADD 3 or keep barrels in the Midwest. The current forward curves expect Belvieu to trade at a 1.3 c/gal premium to Conway in June, then gradually narrow through the summer months before flipping to a small discount in October.

For 2023, the forward curves project that Gulf Coast propane prices will trade higher than Conway for most of the year, with Mont Belvieu averaging 1.3 c/gal over Conway compared to a 0.8 c/gal premium last year.

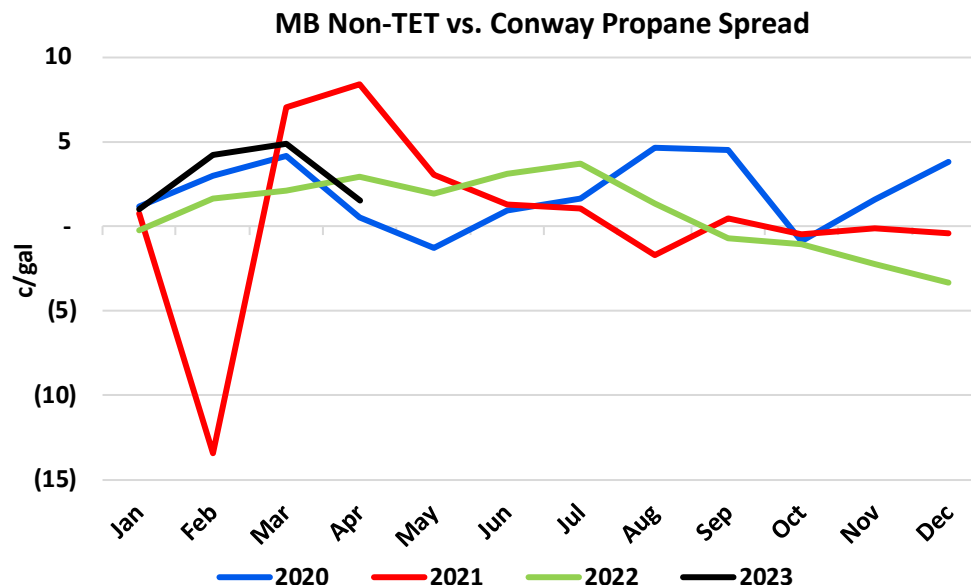
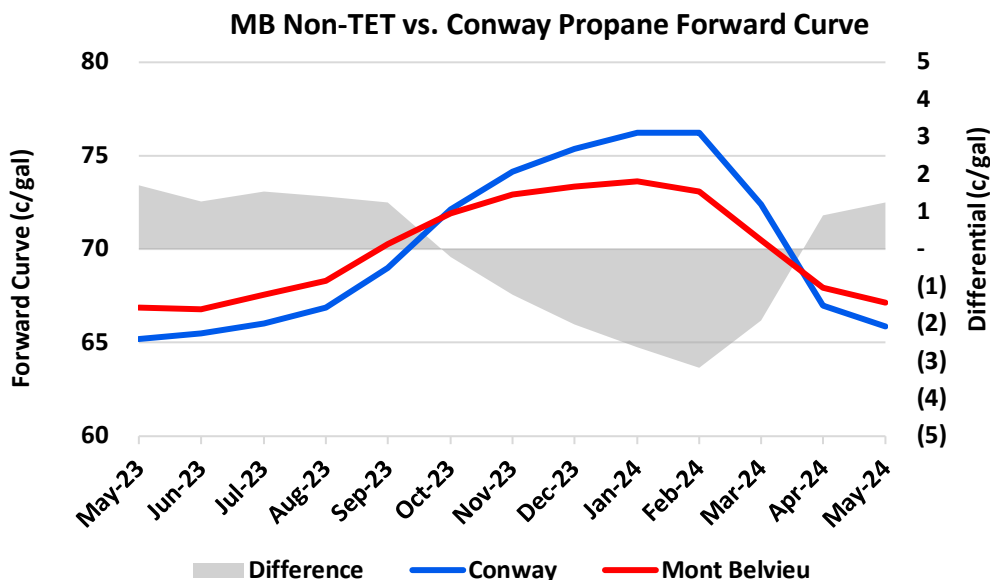


Figure 2.6



U.S. PROPANE DEMAND

| Table C: | MM gal / month | | | | | | M bbl / day | | | | | |
|------------------------|----------------|--------------|--------------|--------------|--------------|------------|--------------|--------------|-------------|--------------|------------|------------|
| | MONTHLY | | | ESTIMATED | | FORECAST | MONTHLY | | | ESTIMATED | | FORECAST |
| | Jan-23 | Feb-23 | M/M | Mar-23 | Apr-23 | | Jan-23 | Feb-23 | M/M | Mar-23 | Apr-23 | |
| ResCom | 812 | 703 | (108) | 771 | 560 | 387 | 623 | 598 | (25) | 592 | 444 | 297 |
| Crop Drying | 77 | 57 | (20) | 40 | 40 | 40 | 59 | 48 | (11) | 30 | 31 | 30 |
| Industrial | 120 | 100 | (20) | 105 | 91 | 89 | 92 | 85 | (7) | 80 | 72 | 68 |
| Petrochemicals | 243 | 218 | (25) | 218 | 205 | 222 | 187 | 185 | (2) | 168 | 163 | 171 |
| PDH | 72 | 71 | (1) | 85 | 88 | 111 | 55 | 60 | 5 | 65 | 70 | 85 |
| Balancing | 103 | 81 | (22) | (117) | (219) | (328) | 79 | 69 | (10) | (90) | (174) | (252) |
| TOTAL PROPANE | 1,427 | 1,230 | (197) | 1,102 | 765 | 520 | 1,096 | 1,046 | (50) | 846 | 607 | 400 |
| Propylene | 340 | 288 | (52) | 331 | 336 | 395 | 261 | 245 | (16) | 255 | 267 | 303 |
| TOTAL DEMAND ** | 1,767 | 1,518 | (249) | 1,433 | 1,101 | 915 | 1,357 | 1,291 | (66) | 1,101 | 874 | 703 |
| Weekly*** | 1,716 | 1,630 | (86) | 1,399 | 1,142 | | 1,318 | 1,386 | 68 | 1,075 | 906 | |
| Variance | (50) | 112 | 162 | (34) | 41 | | (39) | 95 | 134 | (26) | 33 | |

* EIA reports purity propane product supplied in monthly data, while weekly data includes propylene.

** Total Demand** is the equivalent of product supplied as reported by the EIA.

*** Monthly product supplied from EIA through February, weekly through the week of April 28, 2023.

RESIDENTIAL & COMMERCIAL

Figure 3.1 shows our forecast for Residential & Commercial (“ResCom”) propane demand. ResCom demand was sharply lower in April at 444 Mb/d, down 148 Mb/d from March. ResCom demand for May is expected to decline again to 297 Mb/d, a decrease 147 Mb/d from April.

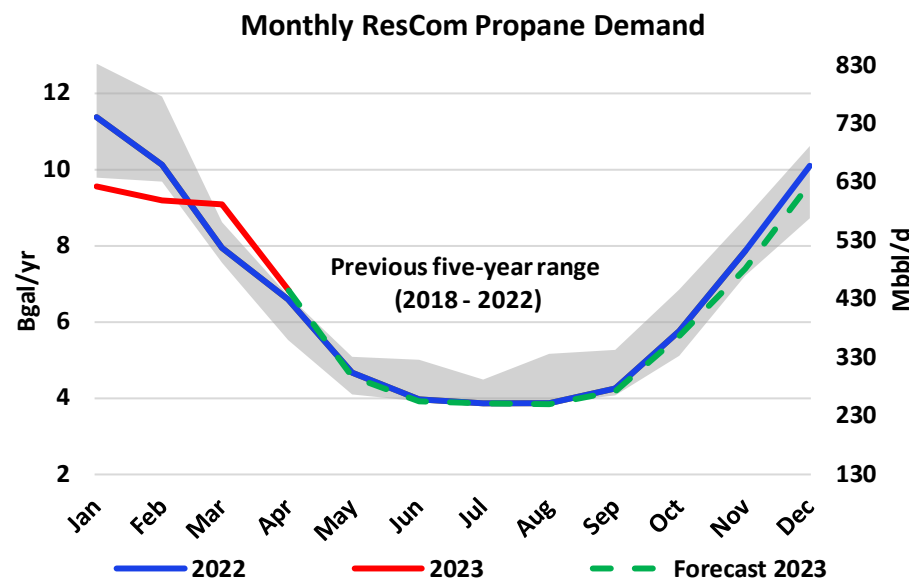
AGRICULTURAL (CROP DRYING) DEMAND

Crop drying is expected to be relatively flat around 30 Mb/d (39 MMgal/m) through July. We should see crop-drying demand start to pick up in August and peak in October-November, especially in the Midwest, where about 90% of the U.S. corn crop is grown.

PETROCHEMICAL DEMAND WEAK

Steam cracker demand for propane remained weak in April at 163 Mb/d, mainly due to spring maintenance turnarounds and poor margins. We expect cracker demand for propane to stay low as ethane remains the highest-margin feedstock. PDH demand was slightly higher in April at 70 Mb/d as the Enterprise and Investa PDH units restarted after completing maintenance outages. PDH demand is expected to ramp up in the second half of the year with the startup of Enterprise’s new PDH 2 plant in Q2 (30 Mb/d propane).

Figure 3.1



U.S. PROPANE EXPORTS

| Table D: U.S. Propane Exports Monthly and Weekly* | | | | | | |
|---|--------------|--------------|-----------|--------------|--------------|--------------|
| (Mbbbl/d) | MONTHLY EIA | | | ESTIMATED | | FORECAST |
| | Jan-23 | Feb-23 | M/M | Mar-23 | Apr-23 | May-23 |
| Gulf Coast | 1,324 | 1,409 | 85 | 1,440 | 1,382 | 1,350 |
| East Coast | 105 | 107 | 2 | 180 | 179 | 165 |
| West Coast | 24 | 33 | 9 | 35 | 30 | 25 |
| Other | 4 | 3 | (1) | 5 | 5 | 5 |
| TOTAL EXPORTS | 1,457 | 1,552 | 95 | 1,660 | 1,596 | 1,545 |
| Weekly | 1,496 | 1,609 | 113 | 1,611 | 1,559 | |
| Variance | 39 | 57 | 18 | (50) | (38) | |

*Monthly data from EIA through February, weekly through the week of April 28, 2023.
See [RBN's NGL Voyager Report](#) for additional details on propane exports.

EAST COAST EXPORTS

East Coast propane exports from Marcus Hook in Pennsylvania remained strong at 179 Mb/d in April, essentially unchanged from March. PADD 1 exports are expected to decline by 14 Mb/d in May to 165 Mb/d, which is 14 Mb/d higher than May 2022. East Coast exports (green bars in Figure 4.1) are forecast to

grow at a healthy rate in 2023, averaging 154 Mb/d, up 20 Mb/d from 2022. No propane cargoes were imported into the Newington, NH, or Providence, RI, terminals in April.

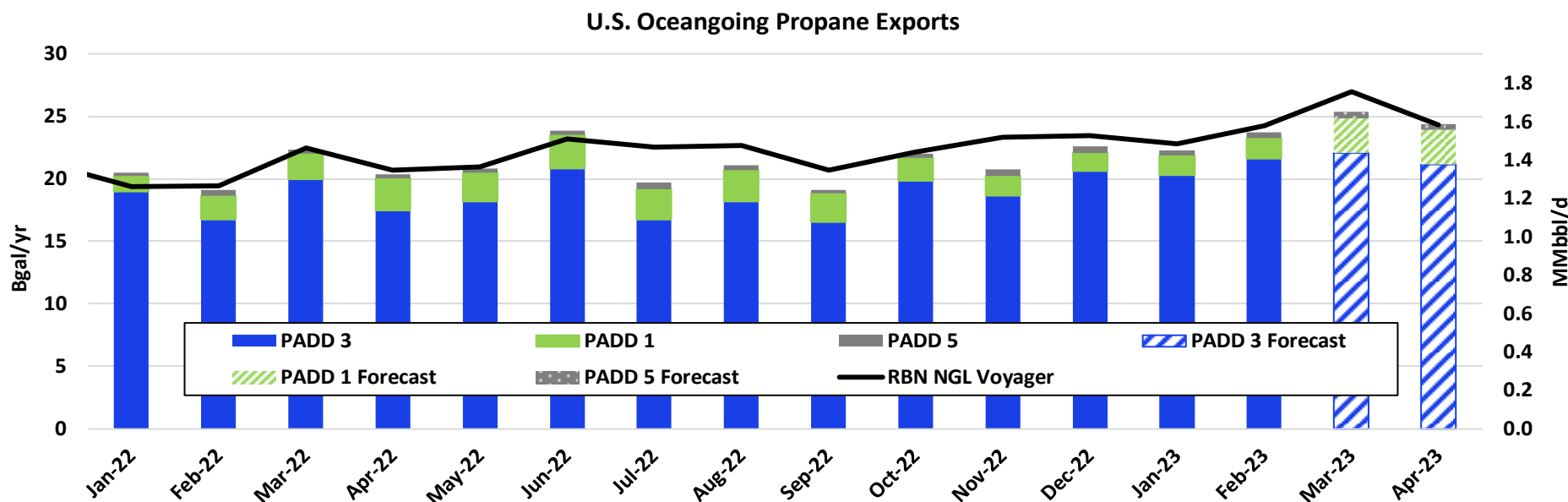
GULF COAST EXPORTS

Gulf Coast propane exports were also robust in April at 1,382 Mb/d, falling 58 Mb/d from March's record high but 194 Mb/d more than May 2022. For May, we expect PADD 3 exports to remain strong at 1,350 Mb/d. Gulf Coast exports (blue bars in Figure 4.1) are forecast to grow at a healthy clip in 2023, averaging 1,350 Mb/d, up 139 Mb/d, or 11%, from 2022.

WEST COAST EXPORTS

On the West Coast, propane exports were down 5 Mb/d from the prior month to 30 Mb/d. PADD 5 exports are projected at 25 Mb/d for May and average 28 Mb/d for 2023, up 1 Mb/d from last year. All West Coast exports are destined for Asia (via the Ferndale, WA, terminal) or Mexico (railcars/trucks).

Figure 4.1



INTERNATIONAL PROPANE

Figure 4.2

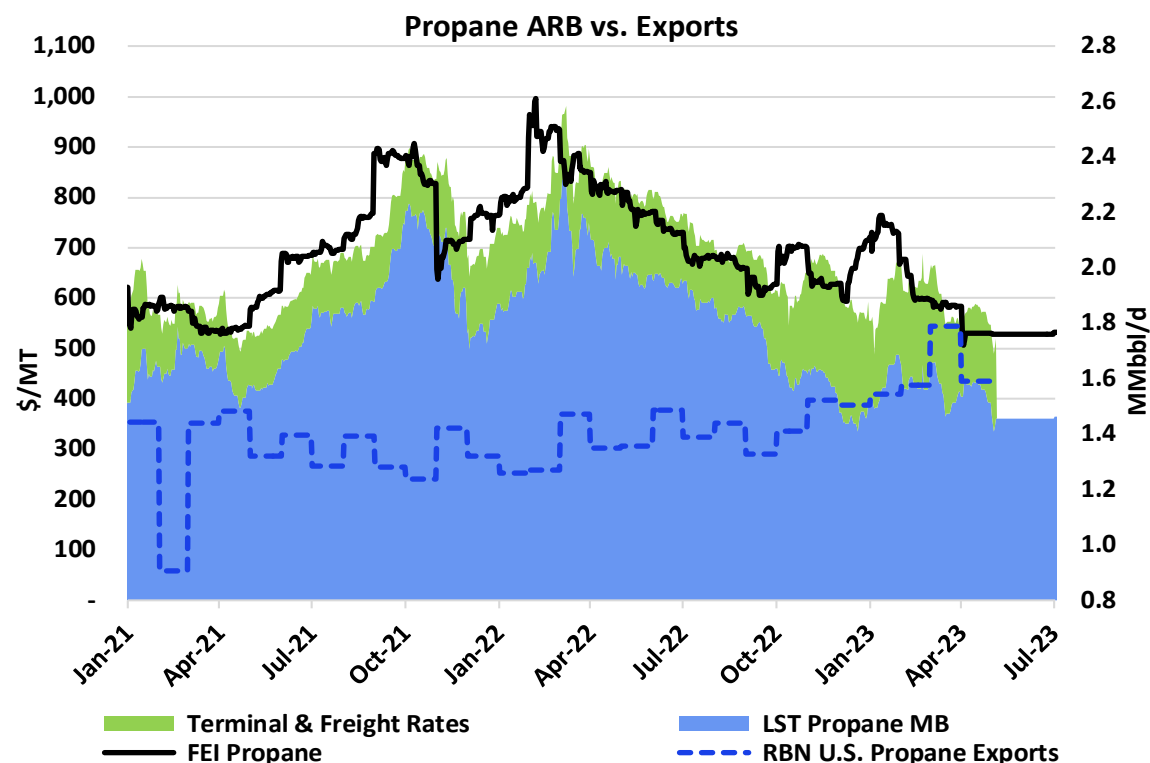
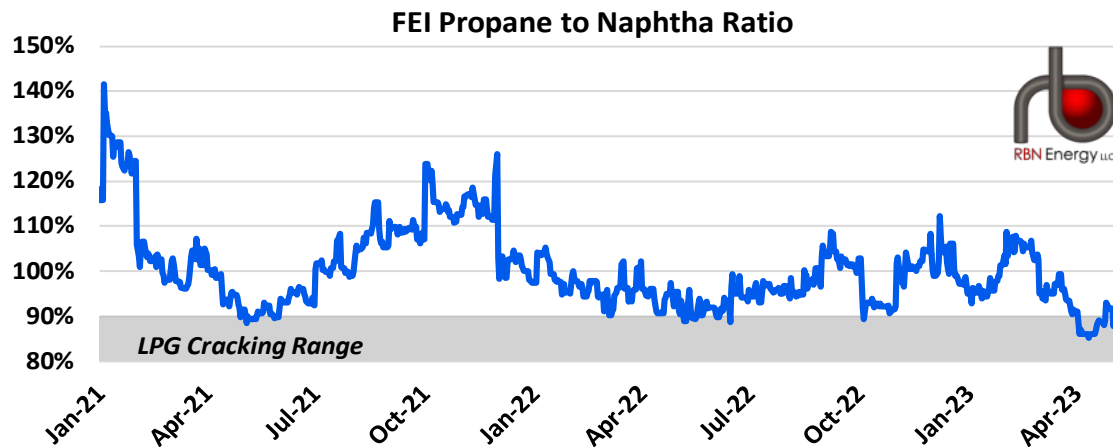


Figure 4.3



U.S.-ASIA EXPORT ARB OPEN

Saudi Aramco LPG contract prices (CP) for May were little changed amid ample supplies from the U.S. and Middle East. The May CP for propane was unchanged from the April CP at \$555/MT while normal butane increased by \$10/MT to \$555/MT.

VLGC freight rates moved higher in April, supported by robust export demand. Spot VLGC freight rates from the U.S. Gulf Coast to Chiba, Japan, (via Panama Canal) increased by \$29/MT to \$131/MT as of April 28, which is 28.4% higher than the rate on April 3. Congestion at the Panama Canal eased during the month, with wait times of only two days northbound and two days southbound as of May 2. Spot terminal fees declined during the month, falling by 1 c/gal to 5 c/gal (H2 May) as of April 28.

Figure 4.2 compares the Asian arb to U.S. propane exports. The arb is open (economic) when the forward month of FEI propane (black line) is higher than the sum of the terminal and freight rates (green area) and the price of Lone Star (LST) propane at Mont Belvieu (blue area). Over the last month, the LST propane price at Mont Belvieu declined by \$37/MT to close at \$367/MT, or 70.4 c/gal, on May 1, while the June FEI propane forward curve fell by \$31/MT, which resulted in a slightly wider spread between U.S. and Asian prices. Thus, the arb for May-June increased to \$176/MT, or 33.8 c/gal, as of May 1.

Taking into consideration terminal fees and freight costs, the arb for May-June was open (negative, thus economic) at -\$19.6/MT, or -3.8 c/gal.

Figure 4.3 shows the ratio of the Asian FEI propane price to naphtha in the same region. On May 5, the ratio sat at 89%, which implies that Asia crackers will tend to favor propane feed over naphtha.

U.S. PROPANE PRODUCTION

Figure 5.1

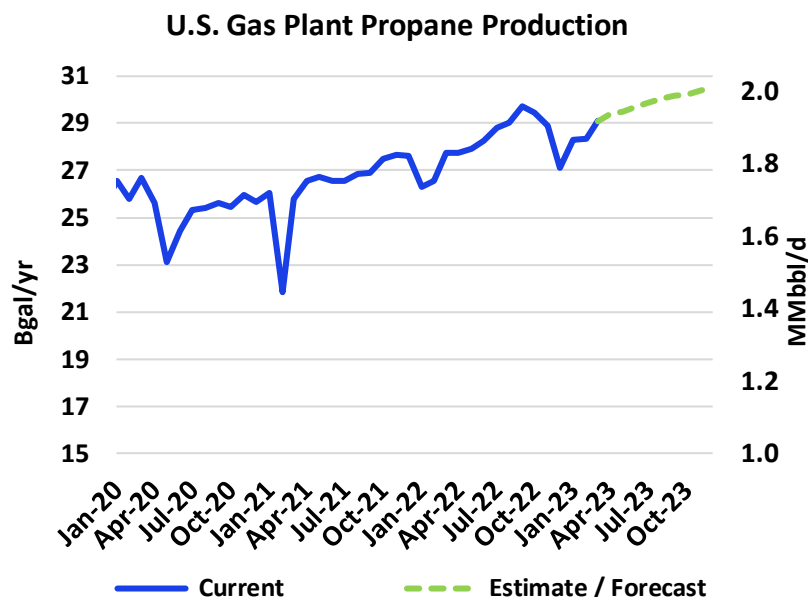
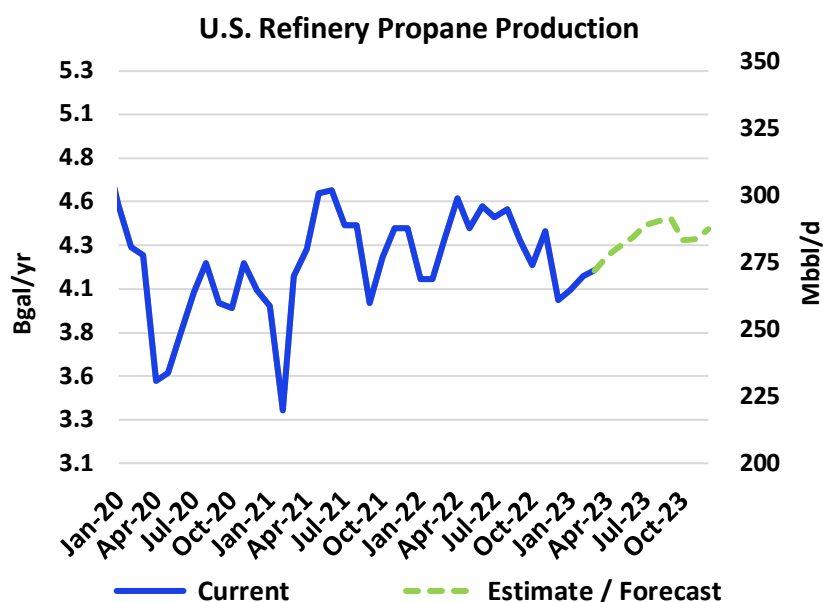


Figure 5.2



| Table E: U.S. Propane Production Monthly and Weekly* | | | | | | |
|--|--------------|--------------|----------|--------------|--------------|--------------|
| (Mbb/d) | MONTHLY EIA | | | ESTIMATED | | FORECAST |
| | Jan-23 | Feb-23 | M/M | Mar-23 | Apr-23 | May-23 |
| Gas Plant | 1,867 | 1,871 | 4 | 1,920 | 1,939 | 1,946 |
| Refinery | 265 | 270 | 5 | 272 | 278 | 281 |
| TOTAL PROPANE | 2,132 | 2,141 | 9 | 2,192 | 2,218 | 2,227 |
| Propylene | 234 | 225 | (9) | 239 | 245 | 286 |
| TOTAL PRODUCTION | 2,366 | 2,366 | - | 2,430 | 2,463 | 2,513 |
| Weekly** | 2,377 | 2,384 | 8 | 2,407 | 2,462 | |
| Variance | 11 | 18 | 8 | (24) | (0) | |

* EIA reports purity propane production separately in monthly data, while weekly data includes propylene.

** Monthly production from EIA through February, weekly through the week of April 28, 2023.

GAS PLANT PRODUCTION HOLDS RELATIVELY FLAT

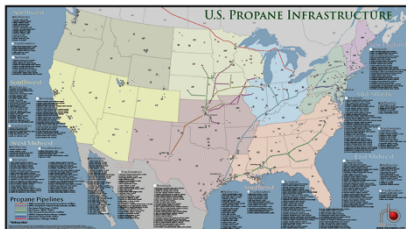
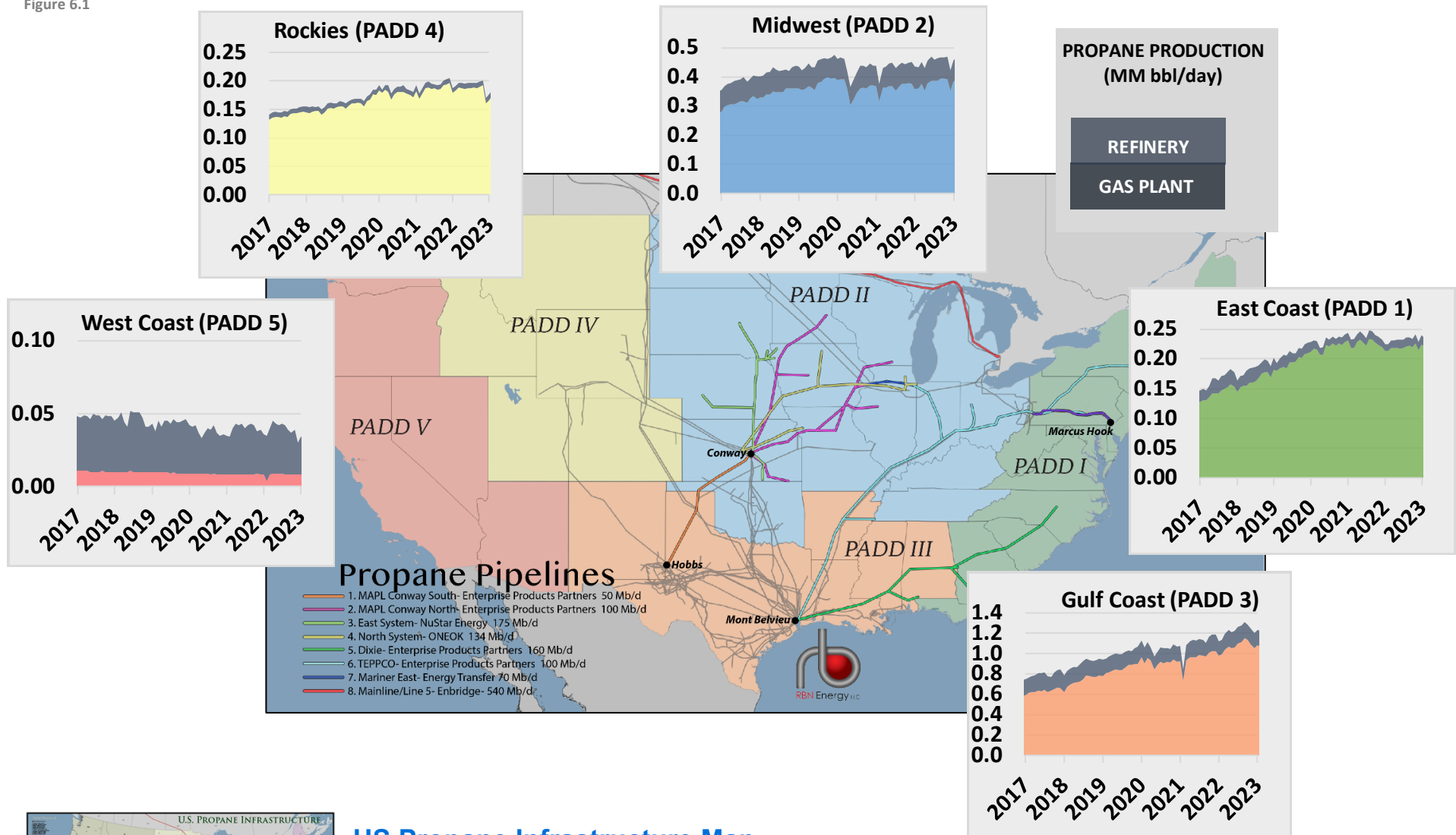
Propane gas plant production for February, as reported in the EIA Petroleum Supply Monthly issued April 28, was below our estimates, coming in relatively unchanged from the prior month. Total U.S. propane production was 1,871 Mb/d, up only 4 Mb/d from January and about 90 Mb/d below September's record rate. PADD 3 production was weaker at 1,071 Mb/d, down 14 Mb/d from January and 78 Mb/d below September's record rate. Based upon the latest EIA weekly data, we estimate that April gas plant production should rebound to 1,939 Mb/d. Our forecast model projects gas plant production to continue to recover in May to 1,946 Mb/d, only 13 Mb/d below September's record high. For 2023, we have lowered propane production growth forecast by 26 Mb/d to 1,954 Mb/d, up 98 Mb/d, or 5.3%, from 2022. Almost all production growth for the year is in PADD 3, primarily in the Permian Basin, with more than nine new gas processing plants scheduled to come online by the end of 2023.

REFINERY PRODUCTION INCREASES ON HIGHER UTILIZATION

April refinery propane production increased by 6 Mb/d to 278 Mb/d as capacity utilization increased by 1.4 percentage points to 90.6%. We forecast that production in May will increase to 281 Mb/d as refinery utilization improves to slightly above 91%. For 2023, we expect refinery propane production will be relatively flat and average 281 Mb/d for the year, down 2 Mb/d from 2022, due to slightly lower capacity utilization.

U.S. PROPANE INFRASTRUCTURE MAP

Figure 6.1



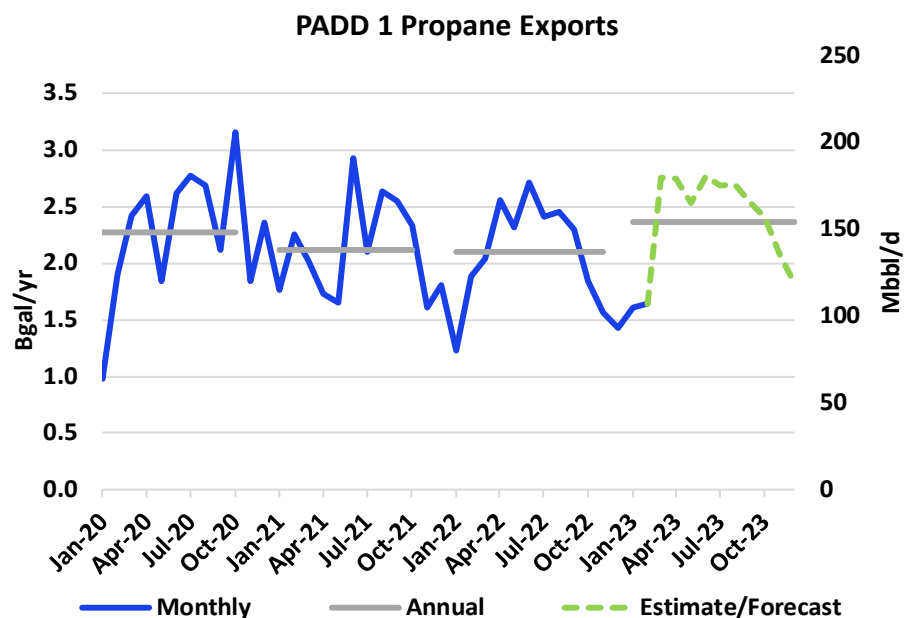
[US Propane Infrastructure Map](#)

Click on the link above for RBN's U.S. Propane Infrastructure Map, which fits together all the pieces of an opaque and regionally fragmented propane market to reveal the extensive domestic propane network in a clear, concise map.

PADD 1: PROPANE SUPPLY & DEMAND

| Table F: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|------------|------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Production | 312 | 275 | 314 | 312 | 323 | 315 | 327 | 240 | 234 | 242 | 248 | 248 | 250 | 251 |
| Gas Plants | 292 | 261 | 299 | 293 | 304 | 296 | 307 | 224 | 222 | 230 | 233 | 234 | 235 | 236 |
| Refinery | 21 | 14 | 15 | 19 | 19 | 19 | 20 | 16 | 12 | 12 | 15 | 14 | 15 | 15 |
| Imports | 57 | 60 | 52 | 19 | 16 | 18 | 18 | 44 | 51 | 40 | 15 | 13 | 14 | 14 |
| Net Inter-PADD Transfers | 273 | 249 | 247 | 233 | 198 | 184 | 197 | 210 | 212 | 190 | 185 | 152 | 146 | 151 |
| TOTAL SUPPLY | 643 | 584 | 614 | 564 | 538 | 516 | 541 | 494 | 497 | 472 | 447 | 413 | 410 | 416 |
| Demand (Prod. Supplied) | 526 | 488 | 421 | 327 | 290 | 255 | 286 | 404 | 415 | 323 | 260 | 223 | 202 | 220 |
| Exports | 137 | 126 | 234 | 226 | 215 | 227 | 228 | 105 | 107 | 180 | 179 | 165 | 181 | 175 |
| Stock Change | (21) | (29) | (41) | 11 | 32 | 34 | 27 | (16) | (25) | (32) | 9 | 25 | 27 | 21 |
| TOTAL DISPOSITION | 642 | 584 | 614 | 564 | 538 | 516 | 541 | 493 | 497 | 472 | 447 | 413 | 410 | 416 |
| TOTAL INVENTORY | 267 | 237 | 196 | 207 | 239 | 273 | 300 | 6,354 | 5,648 | 4,670 | 4,930 | 5,701 | 6,512 | 7,149 |

Figure 7.1



INSIGHTS & ANALYSIS

PADD 1 (East Coast) inventories built by 260 Mbbl in April, which was above the 770-Mbbl draw last year and the 5-year average draw of 29 Mbbl. Higher production was the primary reason for the larger build, leaving stocks at 4.9 MMbbl (207 MMgal). This puts PADD 1 inventory 1.7 MMbbl above April 2022 and 1.3 MMbbl higher than the 5-year average. Exports remained strong at 179 Mb/d, down 1 Mb/d from March. Gas plant production in the Northeast continued to move higher, increasing by 3 Mb/d to 233 Mb/d.

PADD 1 OUTLOOK

Our propane model estimates East Coast inventories will increase by 771 Mbbl in May to 5.7 MMbbl (239 MMgal), leaving stocks 0.9 MMbbl, or 19%, above the 5-year average. As shown in Figure 7.1, East Coast exports are expected to decline to 165 Mb/d in May, which is 11 Mb/d above the 2022 average rate and 14 Mb/d higher than in May 2022. Exports are projected to average 154 Mb/d in 2023, an increase of 20 Mb/d from last year.

PADD 2: PROPANE SUPPLY & DEMAND

| Table G: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|------------|------------|------------|------------|------------|------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Production | 594 | 553 | 597 | 584 | 598 | 583 | 605 | 456 | 470 | 459 | 463 | 460 | 463 | 465 |
| Gas Plants | 500 | 465 | 503 | 495 | 506 | 492 | 510 | 384 | 395 | 387 | 393 | 389 | 390 | 391 |
| Refinery | 94 | 88 | 94 | 88 | 92 | 91 | 96 | 72 | 75 | 72 | 70 | 71 | 73 | 74 |
| Imports | 60 | 61 | 38 | 20 | 10 | 4 | 10 | 46 | 52 | 29 | 16 | 8 | 4 | 8 |
| Net Inter-PADD Transfers | (319) | (483) | (487) | (427) | (398) | (376) | (396) | (245) | (411) | (374) | (339) | (306) | (299) | (304) |
| TOTAL SUPPLY | 335 | 131 | 148 | 177 | 210 | 211 | 220 | 257 | 111 | 114 | 141 | 161 | 168 | 169 |
| Demand (Prod. Supplied) | 460 | 345 | 277 | 117 | 103 | 76 | 66 | 353 | 293 | 213 | 93 | 79 | 61 | 51 |
| Exports | 5 | 4 | 7 | 6 | 7 | 7 | 7 | 4 | 3 | 5 | 5 | 5 | 6 | 6 |
| Stock Change | (129) | (219) | (135) | 54 | 100 | 128 | 146 | (99) | (186) | (104) | 43 | 77 | 102 | 112 |
| TOTAL DISPOSITION | 336 | 129 | 148 | 177 | 210 | 211 | 220 | 258 | 110 | 114 | 141 | 161 | 168 | 169 |
| TOTAL INVENTORY | 838 | 619 | 484 | 538 | 638 | 766 | 912 | 19,960 | 14,748 | 11,526 | 12,815 | 15,201 | 18,246 | 21,725 |

INSIGHTS & ANALYSIS

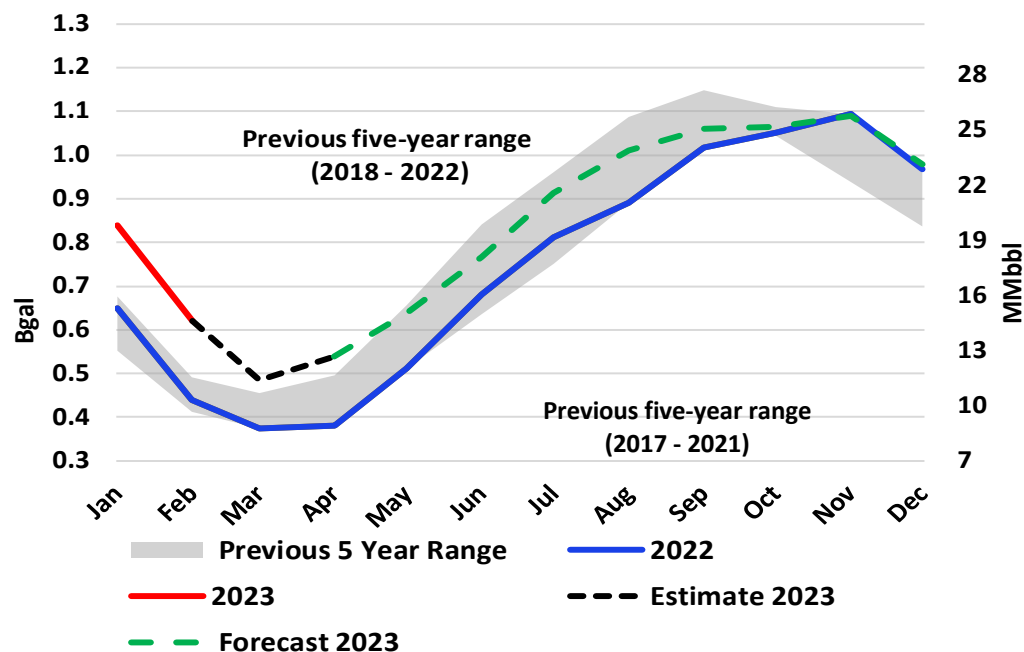
PADD 2 (Midwest) inventories built by 1.3 MMbbl during April, which was above the 139-Mbbl increase last year and the 5-year average build of 852 Mbbl, with stocks ending at 12.8 MMbbl (538 MMgal). The Midwest market is in a more comfortable supply position compared to last year with 3.7 MMbbl more in storage. Production was marginally higher in April at 463 Mb/d. Imports declined sharply to 16 Mb/d, which is 19 Mb/d less than last year and 29 Mb/d below the 2022 average rate.

PADD 2 OUTLOOK

Midwest inventories are forecast to build by 2.4 Mbbl in May compared to a 5-year average increase of 3.3 MMbbl, bringing ending inventories to 15.2 MMbbl (638 MMgal), 3 MMbbl above last year and 1.3 MMbbl above the 5-year average. Canadian imports into the Midwest are projected to average 24 Mb/d in 2023, down 21 Mb/d from last year, primarily due to the ramp-up of Inter Pipeline's propane dehydrogenation (PDH) plant in Western Canada (22 Mb/d propane demand).

Figure 7.2

PADD 2 Monthly EIA Propane Inventories

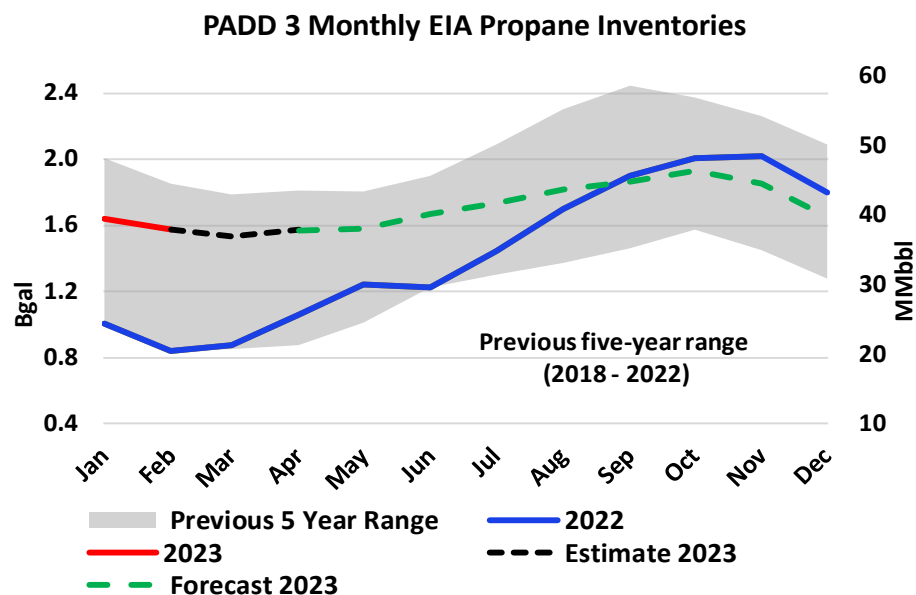


Source: EIA

PADD 3: PROPANE SUPPLY & DEMAND

| Table H: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Production | 1,603 | 1,438 | 1,653 | 1,610 | 1,676 | 1,635 | 1,705 | 1,231 | 1,223 | 1,269 | 1,278 | 1,287 | 1,298 | 1,310 |
| Gas Plants | 1,413 | 1,259 | 1,450 | 1,407 | 1,467 | 1,432 | 1,492 | 1,085 | 1,071 | 1,114 | 1,117 | 1,127 | 1,136 | 1,146 |
| Refinery | 190 | 179 | 203 | 203 | 209 | 203 | 213 | 146 | 152 | 156 | 161 | 161 | 161 | 164 |
| Imports | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Net Inter-PADD Transfers | 220 | 396 | 444 | 381 | 349 | 349 | 371 | 169 | 337 | 341 | 303 | 268 | 277 | 285 |
| TOTAL SUPPLY | 1,823 | 1,835 | 2,096 | 1,992 | 2,025 | 1,984 | 2,076 | 1,400 | 1,560 | 1,610 | 1,581 | 1,556 | 1,575 | 1,595 |
| Demand (Prod. Supplied) | 255 | 245 | 262 | 213 | 259 | 226 | 322 | 196 | 208 | 201 | 169 | 199 | 179 | 247 |
| Exports | 1,724 | 1,657 | 1,875 | 1,741 | 1,758 | 1,670 | 1,693 | 1,324 | 1,409 | 1,440 | 1,382 | 1,350 | 1,325 | 1,300 |
| Stock Change | (156) | (68) | (40) | 38 | 9 | 89 | 62 | (120) | (58) | (31) | 30 | 7 | 71 | 48 |
| TOTAL DISPOSITION | 1,823 | 1,833 | 2,096 | 1,992 | 2,025 | 1,984 | 2,076 | 1,400 | 1,559 | 1,610 | 1,581 | 1,556 | 1,575 | 1,595 |
| TOTAL INVENTORY | 1,642 | 1,574 | 1,534 | 1,571 | 1,580 | 1,669 | 1,731 | 39,104 | 37,476 | 36,517 | 37,410 | 37,615 | 39,736 | 41,209 |

Figure 7.3



Source: EIA

INSIGHTS & ANALYSIS

PADD 3 had a small stock increase of 0.9 MMbbl for the month, which was below the 4.4-MMbbl build in April 2022 and the 5-year average increase for the month of 2 MMbbl. The small build brought Gulf Coast inventories to 37.4 MMbbl (1.6 Bgal) at month's end, 12.1 MMbbl higher than last year and 6.7 MMbbl, or 22%, above the 5-year average. Propane exports from the Gulf Coast were robust at 1,382 Mb/d, up 244 Mb/d from April 2022. PADD 3 gas plant production increased modestly to 1,117 Mb/d in April, up 3 Mb/d from March, slowly recovering from the winter weather-related curtailments in late 2022.

PADD 3 OUTLOOK

May inventories are forecast to be relatively flat, as exports remain strong, increasing by just 205 Mbbl, compared to the 5-year average build of 3.1 Mbbl. That would leave May ending stocks at 37.6 MMbbl (1.6 Bgal), which is 8 MMbbl more than last year and 3.7 MMbbl above the 5-year average. Gulf Coast propane production is expected to grow by 10 Mb/d in May to 1,127 Mb/d, which is 22 Mb/d below September's all-time high.

PADD 4: PROPANE SUPPLY & DEMAND

| Table I: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Production | 223 | 213 | 244 | 245 | 253 | 246 | 254 | 171 | 181 | 187 | 194 | 195 | 195 | 195 |
| Gas Plants | 216 | 206 | 236 | 237 | 245 | 238 | 246 | 166 | 175 | 181 | 188 | 188 | 189 | 189 |
| Refinery | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 5 | 6 | 6 | 6 | 6 | 6 | 7 |
| Imports | 40 | 38 | 25 | 17 | 7 | 8 | 14 | 31 | 32 | 19 | 14 | 5 | 6 | 11 |
| Net Inter-PADD Transfers | (201) | (183) | (223) | (205) | (171) | (176) | (192) | (154) | (156) | (171) | (163) | (131) | (140) | (147) |
| TOTAL SUPPLY | 62 | 67 | 46 | 57 | 89 | 77 | 77 | 48 | 57 | 36 | 45 | 68 | 61 | 59 |
| Demand (Prod. Supplied) | 78 | 71 | 66 | 50 | 74 | 73 | 69 | 60 | 60 | 51 | 39 | 57 | 58 | 53 |
| Exports | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stock Change | (14) | (5) | (20) | 7 | 15 | 4 | 8 | (11) | (4) | (15) | 5 | 11 | 3 | 6 |
| TOTAL DISPOSITION | 64 | 66 | 46 | 57 | 89 | 77 | 77 | 49 | 56 | 36 | 45 | 68 | 61 | 59 |
| TOTAL INVENTORY | 86 | 81 | 61 | 68 | 83 | 87 | 95 | 2,041 | 1,927 | 1,460 | 1,624 | 1,980 | 2,067 | 2,253 |

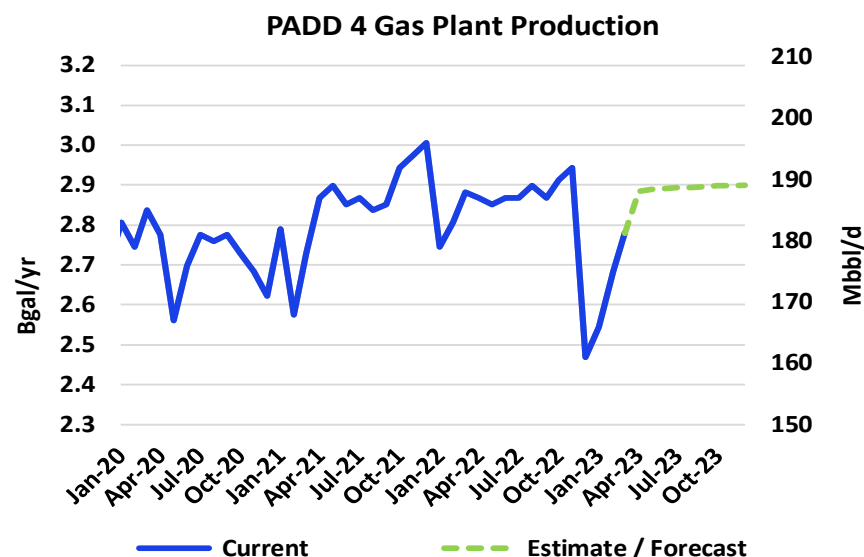
INSIGHTS & ANALYSIS

PADD 4 (Rocky Mountain) inventories built by 164 Mbbl in April to 1.6 MMbbl (68 MMgal), which is 440 Mbbl less than last year and 53 Mbbl below the 5-year average. Gas plant production continued to recover in April, increasing to 188 Mb/d, up 7 Mb/d from March. Imports were seasonally weaker at 14 Mb/d, down 5 Mb/d from the prior month.

PADD 4 OUTLOOK

PADD 4 inventories are projected build by 356 Mbbl during the second month of the storage injection season (April-September), bringing May stocks to 2 MMbbl (83 MMgal), which is 208 Mbbl below last year but 152 Mbbl above the 5-year average. As shown in Figure 7.4, PADD 4 gas plant production is expected to remain flat in May at 188 Mb/d and average 185 Mb/d for the year, unchanged from 2022.

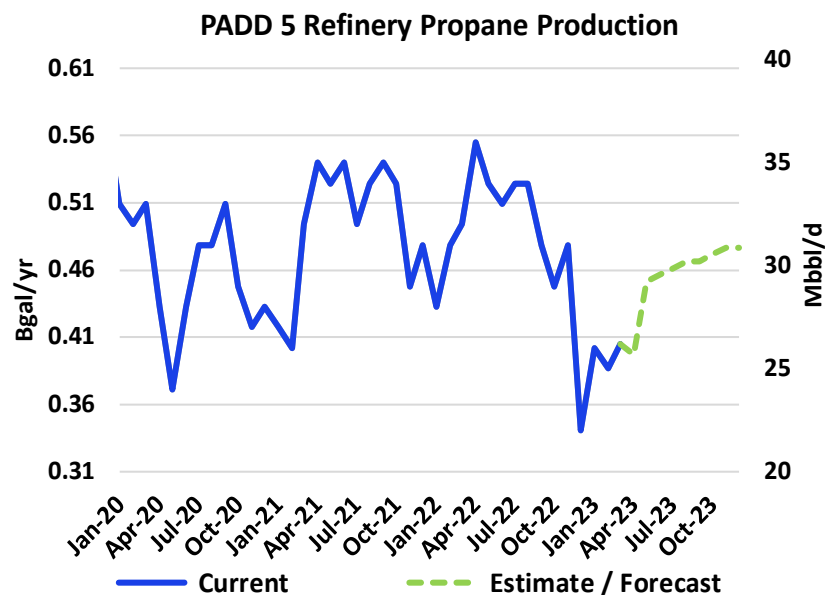
Figure 7.4



PADD 5: PROPANE SUPPLY & DEMAND

| Table J: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|------------|------------|------------|-----------|-----------|-----------|--------------|------------|------------|------------|------------|------------|--------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Production | 44 | 39 | 45 | 43 | 49 | 47 | 49 | 34 | 33 | 34 | 34 | 37 | 38 | 38 |
| Gas Plants | 10 | 9 | 11 | 11 | 11 | 10 | 11 | 8 | 8 | 8 | 9 | 8 | 8 | 8 |
| Refinery | 34 | 29 | 34 | 32 | 38 | 37 | 39 | 26 | 25 | 26 | 26 | 29 | 30 | 30 |
| Imports | 56 | 47 | 52 | 39 | 21 | 26 | 27 | 43 | 40 | 40 | 31 | 16 | 21 | 21 |
| Net Inter-PADD Transfers | 26 | 22 | 19 | 19 | 21 | 20 | 20 | 20 | 19 | 15 | 15 | 16 | 16 | 15 |
| TOTAL SUPPLY | 126 | 108 | 116 | 101 | 91 | 93 | 96 | 97 | 92 | 89 | 80 | 70 | 74 | 74 |
| Demand (Prod. Supplied) | 108 | 82 | 76 | 59 | 54 | 57 | 46 | 83 | 70 | 59 | 46 | 42 | 46 | 36 |
| Exports | 31 | 39 | 46 | 38 | 33 | 33 | 33 | 24 | 33 | 35 | 30 | 25 | 26 | 25 |
| Stock Change | (14) | (15) | (5) | 4 | 4 | 3 | 17 | (11) | (13) | (4) | 3 | 3 | 2 | 13 |
| TOTAL DISPOSITION | 125 | 106 | 116 | 101 | 91 | 93 | 96 | 96 | 90 | 89 | 80 | 70 | 74 | 74 |
| TOTAL INVENTORY | 48 | 33 | 28 | 32 | 36 | 39 | 56 | 1,153 | 789 | 660 | 764 | 859 | 927 | 1,333 |

Figure 7.5



INSIGHTS & ANALYSIS

PADD 5 (West Coast) inventories grew by 104 Mbbl in April to 764 Mbbl (32 MMgal), leaving stocks 215 Mbbl higher than last year and 52 Mbbl above the 5-year average. Refinery production was unchanged at 26 Mb/d as capacity utilization remained at 84%. West Coast exports were weaker than the prior month at 30 Mb/d but in line with imports, which fell to 31 Mb/d.

PADD 5 OUTLOOK

Our propane model projects West Coast inventories to increase modestly in May to 859 Mbbl (36 MMgal), leaving stocks 202 Mbbl below the 5-year average. As shown in Figure 7.5, refinery production in PADD 5 is expected to increase slightly to 30 Mb/d in May as capacity utilization improves to 85%. Imports are projected to decline to 16 Mb/d and average 28 Mb/d for the year, up 1 Mb/d from 2022. West Coast exports for May are estimated at 25 Mb/d, down 5 Mb/d from the prior month. PADD 5 exports are forecast to average 28 Mb/d for the year, up 1 Mb/d from 2022.

KEY ENERGY PRICES

| Table K: | | Prices | | | | | | | | | |
|-----------------------|----------|---------------------|-----------|-------------------|--------|-------------------------|--------|--------|------------------------|---------|--------|
| Product | Units | Current 5-May-23 | 28-Apr-23 | Prior Week W/W | W/W % | Prior Month 5-Apr-23 | M/M | M/M % | Prior Year 5-May-22 | Y/Y | Y/Y % |
| Brent Crude | \$/bbl | 75.3 | 79.5 | (4.2) | -5.3% | 85.0 | (9.7) | -11.4% | 110.9 | (35.6) | -32.1% |
| WTI Cushing Crude | \$/bbl | 71.3 | 76.8 | (5.4) | -7.1% | 80.6 | (9.3) | -11.5% | 108.3 | (36.9) | -34.1% |
| Henry Hub Natural Gas | \$/MMBtu | 2.14 | 2.41 | (0.27) | -11.3% | 2.16 | (0.02) | -0.8% | 8.78 | (6.65) | -75.7% |
| Propane | | | | | | | | | | | |
| Mont Belvieu Non-TET | c/gal | 68.2 | 73.9 | (5.7) | -7.7% | 82.5 | (14.3) | -17.3% | 127.2 | (59.0) | -46.4% |
| Mont Belvieu TET | c/gal | 69.0 | 75.4 | (6.4) | -8.5% | 82.5 | (13.5) | -16.3% | 127.5 | (58.5) | -45.9% |
| Conway | c/gal | 68.7 | 71.5 | (2.8) | -3.9% | 80.5 | (11.8) | -14.7% | 125.8 | (57.1) | -45.4% |
| Edmonton* | c/gal | 48.5 | 54.9 | (6.4) | -11.7% | 61.4 | (12.9) | -21.1% | 101.1 | (52.6) | -52.0% |
| European (ARA) | \$/MT | 441.7 | 506.2 | (64.5) | -12.7% | 516.5 | (74.9) | -14.5% | 763.0 | (321.3) | -42.1% |
| Asian (FEI) | \$/MT | 529.7 | 583.9 | (54.2) | -9.3% | 586.7 | (57.0) | -9.7% | 826.2 | (296.5) | -35.9% |

Figure 8.1

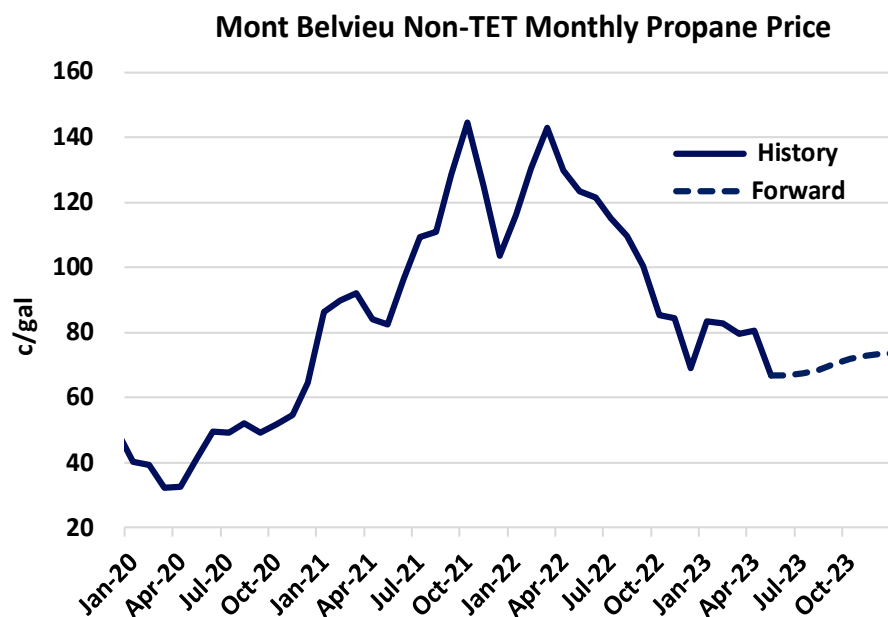
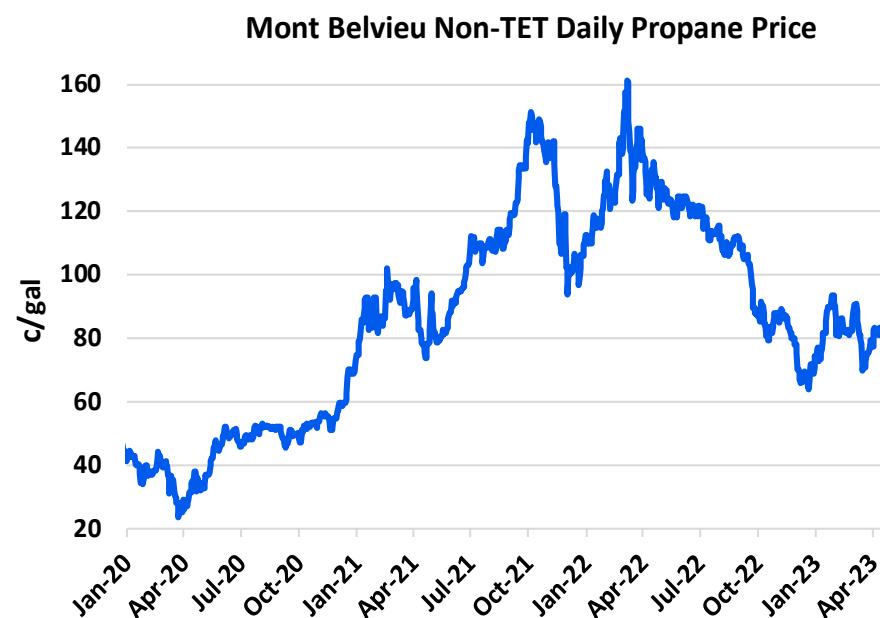


Figure 8.2



MONTHLY PROPANE PRICE TRENDS

Figure 8.3

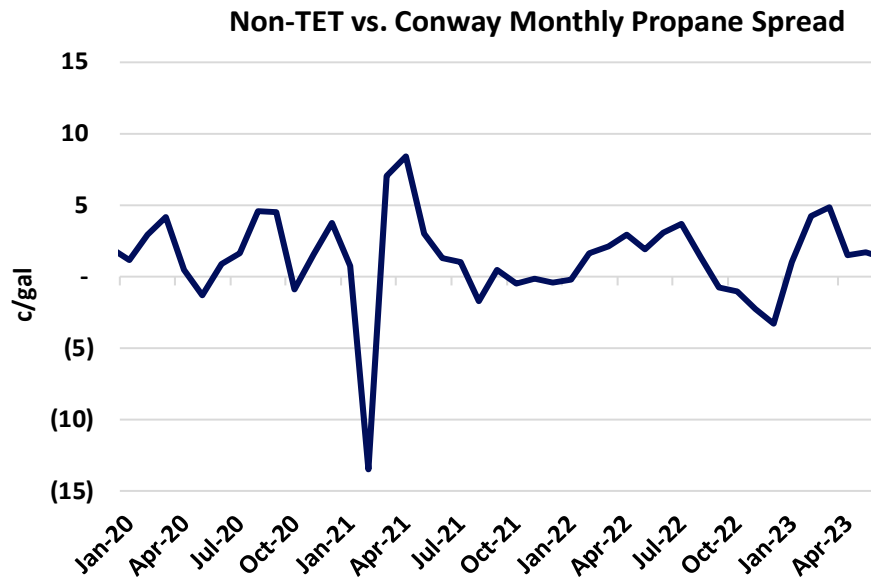


Figure 8.4

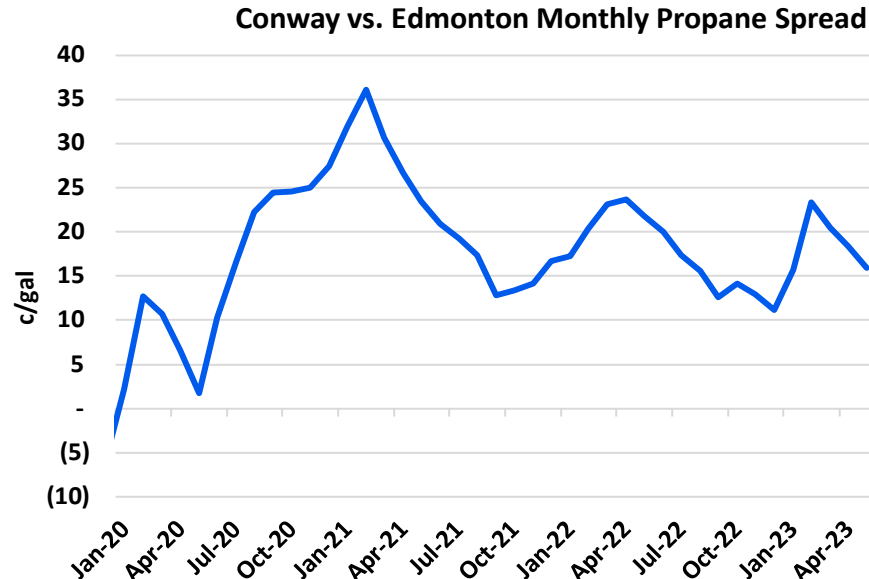
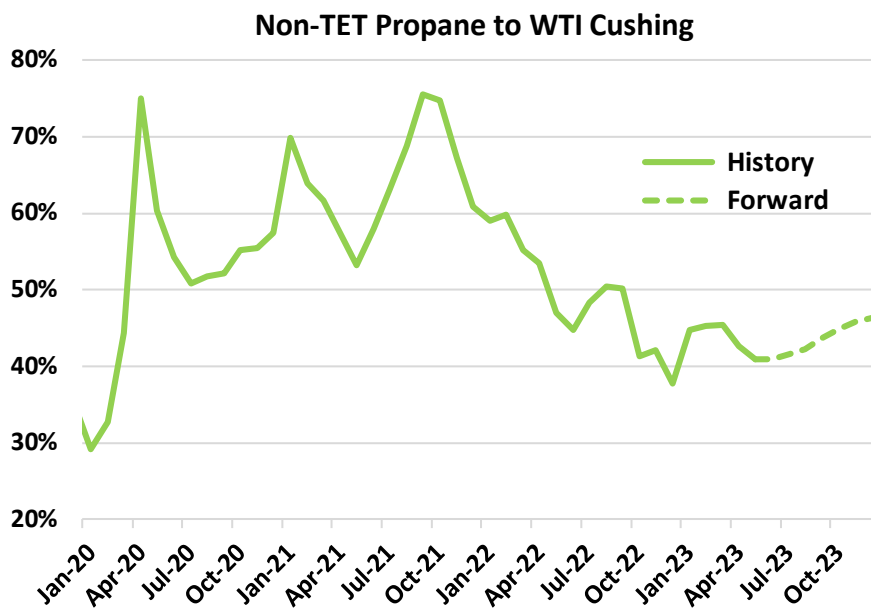


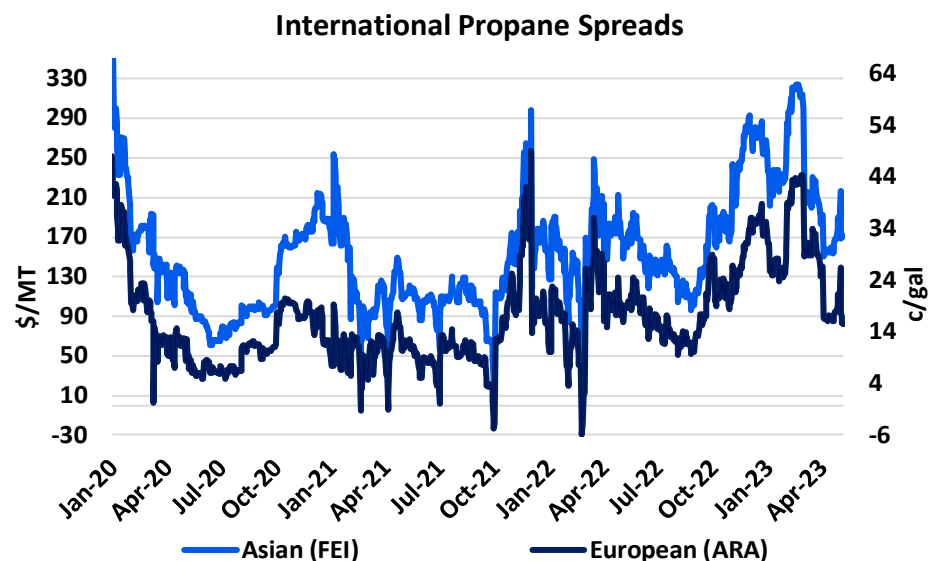
Figure 8.5



| Table L: MB TET Propane / WTI Cushing | | | | | |
|---------------------------------------|-------|-------|-------|-------|--------|
| % | 2020 | 2021 | 2022 | 2023 | Y/Y % |
| Feb | 32.8% | 65.0% | 60.4% | 44.7% | -26.0% |
| Mar | 45.3% | 62.0% | 55.6% | 45.6% | -18.1% |
| Apr | 67.6% | 56.5% | 54.2% | 42.7% | -21.2% |
| Q1 | 36.6% | 65.8% | 58.3% | 45.0% | -22.9% |
| Q2 | 60.5% | 55.5% | 48.8% | 42.3% | -13.2% |
| Q3 | 50.6% | 69.2% | 49.5% | | |
| Q4 | 56.0% | 67.7% | 40.8% | | |
| Year | 51.0% | 64.6% | 49.3% | 44.2% | -10.3% |

INTERNATIONAL PROPANE PRICE SPREADS

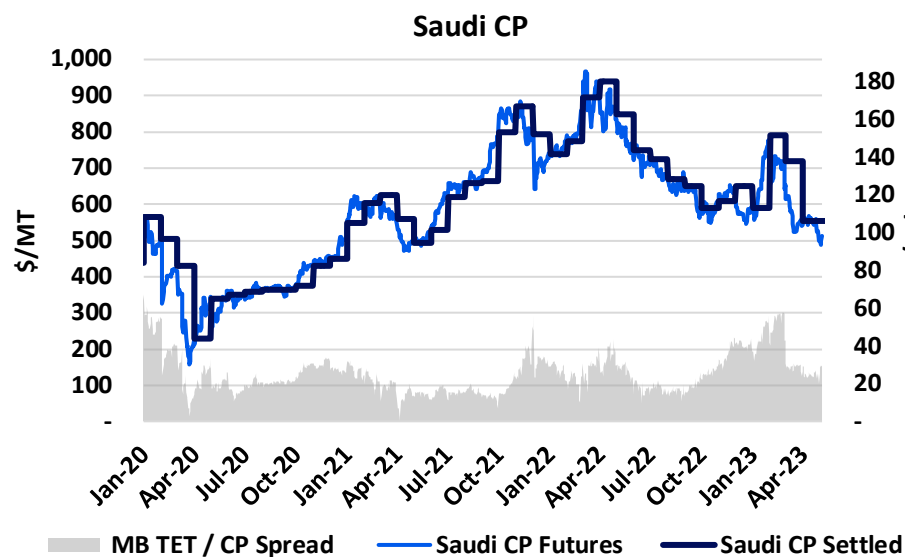
Figure 9.1



| Table M: Asian FEI / MB TET Spread | | | | | |
|------------------------------------|-------|-------|-------|-------|--------|
| \$/MT | 2020 | 2021 | 2022 | 2023 | Y/Y % |
| Feb | 174.1 | 96.5 | 115.0 | 311.6 | 171.0% |
| Mar | 151.8 | 102.4 | 181.7 | 209.4 | 15.2% |
| Apr | 125.8 | 112.7 | 175.1 | 166.2 | -5.0% |
| Q1 | 192.9 | 129.5 | 151.5 | 247.9 | 63.6% |
| Q2 | 97.6 | 106.1 | 163.8 | 168.2 | 2.7% |
| Q3 | 91.0 | 101.1 | 134.0 | | |
| Q4 | 175.0 | 163.6 | 232.5 | | |
| Year | 139.1 | 125.1 | 170.6 | 225.6 | 32.2% |

| Table N: European ARA / MB TET Spread | | | | | |
|---------------------------------------|-------|-------|-------|-------|--------|
| \$/MT | 2020 | 2021 | 2022 | 2023 | Y/Y % |
| Feb | 110.5 | 46.5 | 44.4 | 221.3 | 398.9% |
| Mar | 72.0 | 56.6 | 134.5 | 156.4 | 16.2% |
| Apr | 60.1 | 60.6 | 99.3 | 96.1 | -3.2% |
| Q1 | 121.6 | 53.5 | 90.5 | 171.3 | 89.2% |
| Q2 | 44.8 | 50.7 | 98.3 | 96.4 | -2.0% |
| Q3 | 49.8 | 48.3 | 79.3 | | |
| Q4 | 89.5 | 111.3 | 147.9 | | |
| Year | 76.4 | 66.0 | 104.1 | 150.3 | 44.4% |

Figure 9.2



| Table O: Saudi CP / MB TET Spread | | | | | |
|-----------------------------------|-------|-------|-------|-------|--------|
| \$/MT | 2020 | 2021 | 2022 | 2023 | Y/Y % |
| Feb | 197.3 | 116.7 | 112.8 | 275.7 | 144.4% |
| Mar | 97.1 | 95.5 | 150.8 | 150.0 | -0.6% |
| Apr | 123.5 | 65.2 | 174.7 | 128.7 | -26.3% |
| Q1 | 189.7 | 118.4 | 136.5 | 216.9 | 58.9% |
| Q2 | 103.4 | 74.8 | 135.3 | 131.5 | -2.8% |
| Q3 | 107.5 | 77.5 | 91.6 | | |
| Q4 | 150.0 | 144.3 | 178.4 | | |
| Year | 137.6 | 103.7 | 135.4 | 193.0 | 42.5% |

U.S. PROPANE SUPPLY & DEMAND BALANCE DETAIL

| Table P: | MM gal / month | | | | | | | M bbl / day | | | | | | |
|--------------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|
| | EIA MONTHLY | | ESTIMATED | | FORECAST | | | EIA MONTHLY | | ESTIMATED | | FORECAST | | |
| | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Gas Processing | 2,431 | 2,200 | 2,499 | 2,444 | 2,533 | 2,467 | 2,565 | 1,867 | 1,871 | 1,920 | 1,939 | 1,946 | 1,958 | 1,970 |
| Refinery Propane | 345 | 318 | 354 | 350 | 366 | 359 | 376 | 265 | 270 | 272 | 278 | 281 | 285 | 289 |
| Imports | 214 | 206 | 168 | 95 | 53 | 55 | 69 | 164 | 175 | 129 | 75 | 41 | 44 | 53 |
| TOTAL SUPPLY | 2,989 | 2,724 | 3,021 | 2,889 | 2,953 | 2,881 | 3,010 | 2,296 | 2,316 | 2,321 | 2,293 | 2,268 | 2,287 | 2,312 |
| Product Supplied | 1,427 | 1,230 | 1,102 | 765 | 781 | 687 | 790 | 1,096 | 1,046 | 846 | 607 | 600 | 545 | 607 |
| ResCom | 812 | 703 | 771 | 560 | 387 | 322 | 327 | 623 | 598 | 592 | 444 | 297 | 255 | 251 |
| Crop Drying | 77 | 57 | 40 | 40 | 40 | 40 | 40 | 59 | 48 | 30 | 31 | 30 | 31 | 30 |
| Industrial | 120 | 100 | 105 | 91 | 89 | 87 | 90 | 92 | 85 | 80 | 72 | 68 | 69 | 69 |
| Petrochemicals | 243 | 218 | 218 | 205 | 222 | 218 | 224 | 187 | 185 | 168 | 163 | 171 | 173 | 172 |
| PDH | 72 | 71 | 85 | 88 | 111 | 113 | 130 | 55 | 60 | 65 | 70 | 85 | 90 | 100 |
| Balancing | 103 | 81 | (117) | (219) | (68) | (92) | (21) | 79 | 69 | (90) | (174) | (52) | (73) | (16) |
| Exports | 1,897 | 1,825 | 2,162 | 2,011 | 2,012 | 1,937 | 1,961 | 1,457 | 1,552 | 1,660 | 1,596 | 1,545 | 1,537 | 1,506 |
| Stock Change | (335) | (336) | (242) | 114 | 160 | 258 | 260 | (257) | (286) | (186) | 90 | 123 | 204 | 199 |
| TOTAL DISPOSITION | 2,989 | 2,719 | 3,022 | 2,889 | 2,953 | 2,881 | 3,010 | 2,296 | 2,312 | 2,321 | 2,293 | 2,268 | 2,287 | 2,312 |
| TOTAL INVENTORY | 2,882 | 2,545 | 2,303 | 2,417 | 2,577 | 2,835 | 3,094 | 68,612 | 60,588 | 54,832 | 57,543 | 61,355 | 67,488 | 73,670 |
| Last Year Inventory | 2,031 | 1,559 | 1,522 | 1,688 | 2,085 | 2,272 | 2,693 | 48,357 | 37,128 | 36,244 | 40,185 | 49,644 | 54,099 | 64,130 |
| Stock M/M Δ | (335) | (336) | (242) | 114 | 160 | 258 | 260 | (7,967) | (8,008) | (5,756) | 2,711 | 3,812 | 6,134 | 6,182 |
| Last Year Stock M/M Δ | (642) | (473) | (38) | 165 | 397 | 188 | 419 | (15,283) | (11,256) | (899) | 3,930 | 9,455 | 4,470 | 9,982 |

* Inventories are shown in billion gallons and million barrels respectively.

PADD AVERAGE HEATING DEGREE DAYS (HDDs)

Figure 10.1

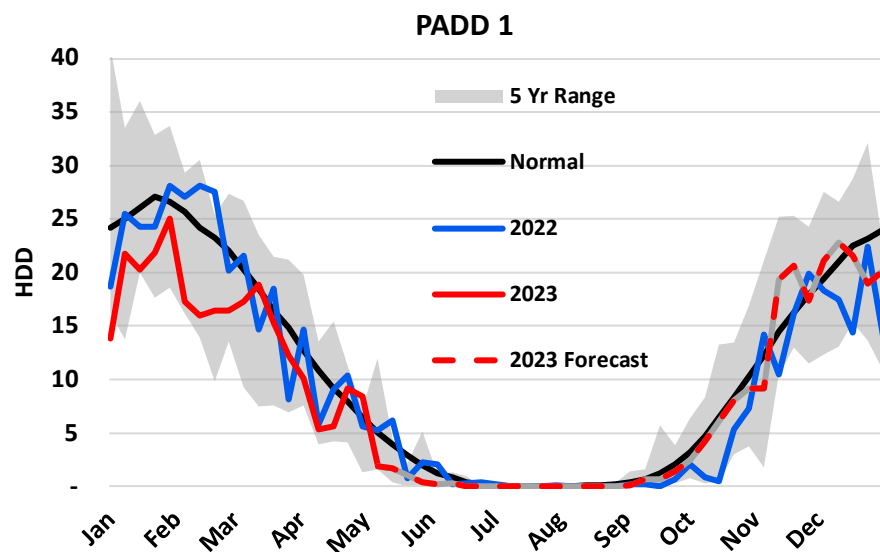


Figure 10.2

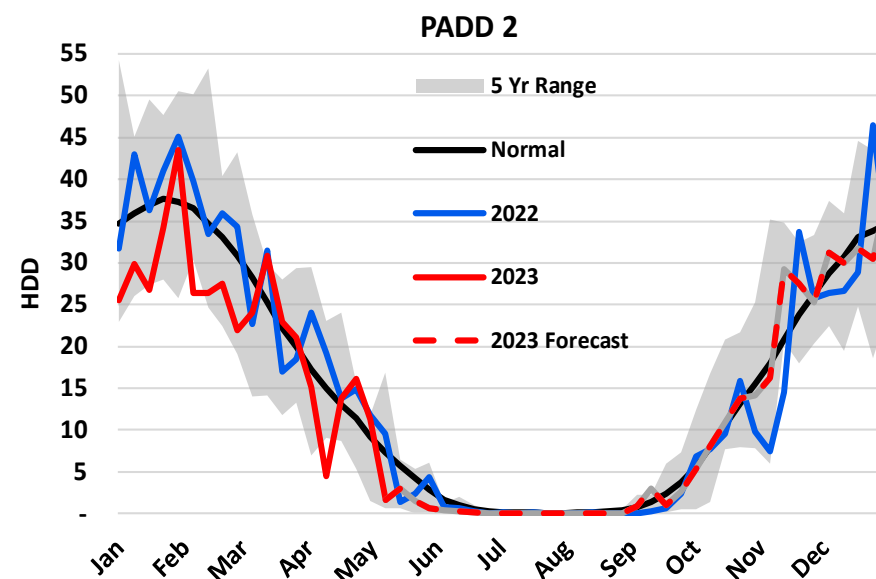
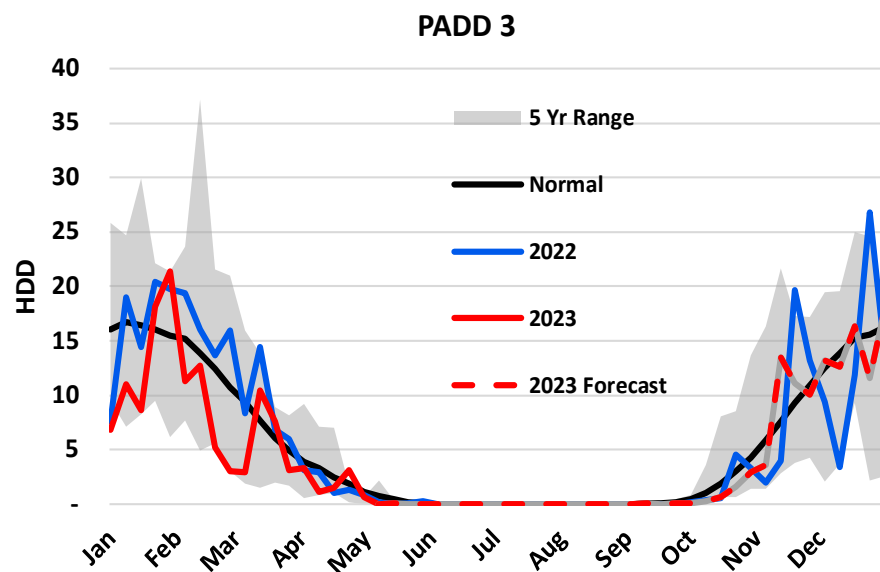


Figure 10.3



2022–23 WINTER SEASON RECAP

The 2022-23 winter season (October–March) was 4% colder than last year and in line with the 5-year average, according to our weather data. We estimate that total ResCom demand for the winter season was 2% above last winter and on par with the 5-year average. Overall, our weather data indicated it was a fairly average winter, with PADD 5 being with only region with colder-than-normal temperatures and higher heating demand.

In contrast, the EIA reported that U.S. propane consumption (measured as product supplied) for the winter heating season averaged 33.6 million barrels per month, the lowest on record. The EIA said that average propane consumption during the three coldest winter months (December–February) averaged 1.1 million b/d, the lowest since they started collecting the data. The EIA also said that above-average temperatures reduced propane consumption in the residential and commercial sectors, particularly in the Midwest and Northeast, where 54% of the more than 6 million U.S. households that report using propane as a primary space heating fuel are located.

Figure 10.4

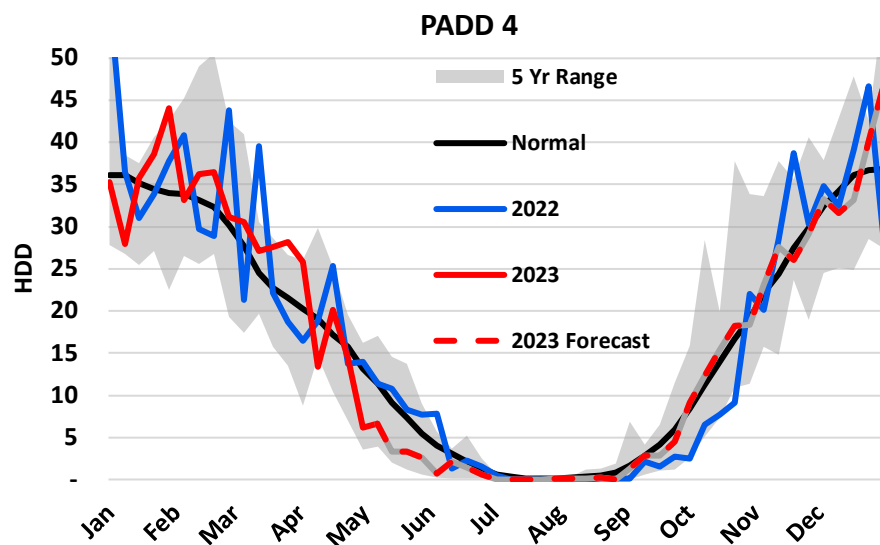
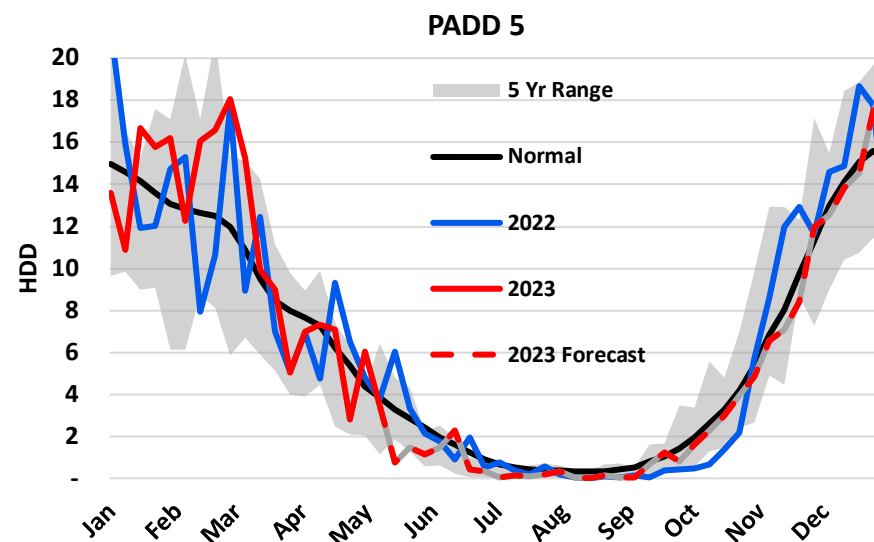


Figure 10.5



DISCLOSURE: This report is provided for the exclusive use of the Subscribing Customer. It is not permissible to make copies of this report for distribution to anyone who is not a Subscribing Customer. RBN Energy (the “Company”) is not an investment advisor. The Company does not provide investment, financial, tax, or other advice, nor does the company operate as a broker-dealer. The Company does not recommend the purchase or sale of any particular securities. The data and information in this report may be wrong. This report has been prepared using information derived from publicly available data sourced primarily from internet websites including www.eia.gov, press releases, and media reports. The topics covered are subject to continuous revision. Some of these revisions may not be reported publicly. Some of the reported information used in this report may be erroneous. Accordingly, this report is subject to errors and inaccuracies. You should not rely on any information provided in this report as the basis for any decision or conclusion regarding the topics covered by this report. The information and data in this report are provided on an “as is” basis. The Company makes no warranties as to the accuracy or completeness of any information or data in this report. The Company shall not be liable for any loss or damage arising from any party’s reliance on the contents of this report and the Company disclaims any and all liability related to the use of this report to the full extent permissible by law, whether based on warranty, contract, tort or any other legal theory. By using this report, you acknowledge and agree that you, and not the Company are solely responsible for your own investment research and decisions. You further agree that the Company assumes no responsibility or liability for your trading and investment results, and you agree to hold the Company harmless for any such results or losses.