RBN Energy LLC

Preparing for Peak Demand

Update on Upstream Propane Production and Downstream Logistics

NPGA

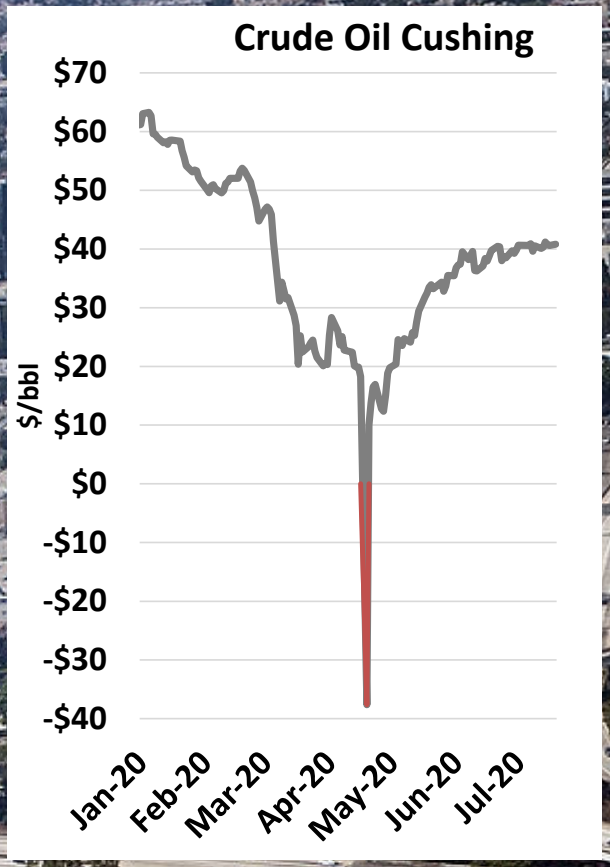
NATIONAL PROPANE GAS ASSOCIATION

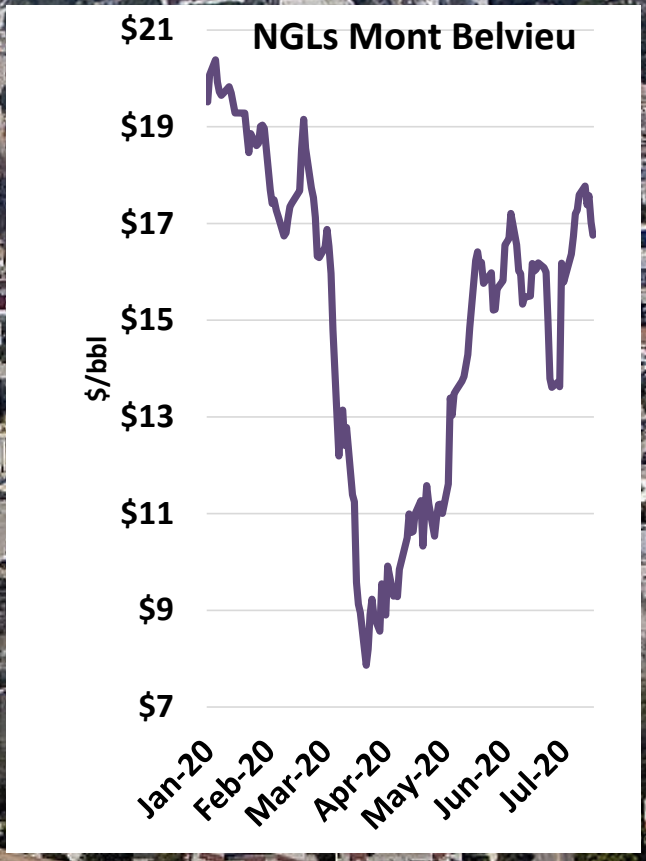
Preparing for Peak Demand

- **COVID, collapse in crude prices, and declines in oil and gas production impact propane supply.**
- **Market experiencing major shifts in product flows due to increases in exports out of British Columbia and Pennsylvania.**
- **Result is a potential squeeze across the propane supply/demand equation.**

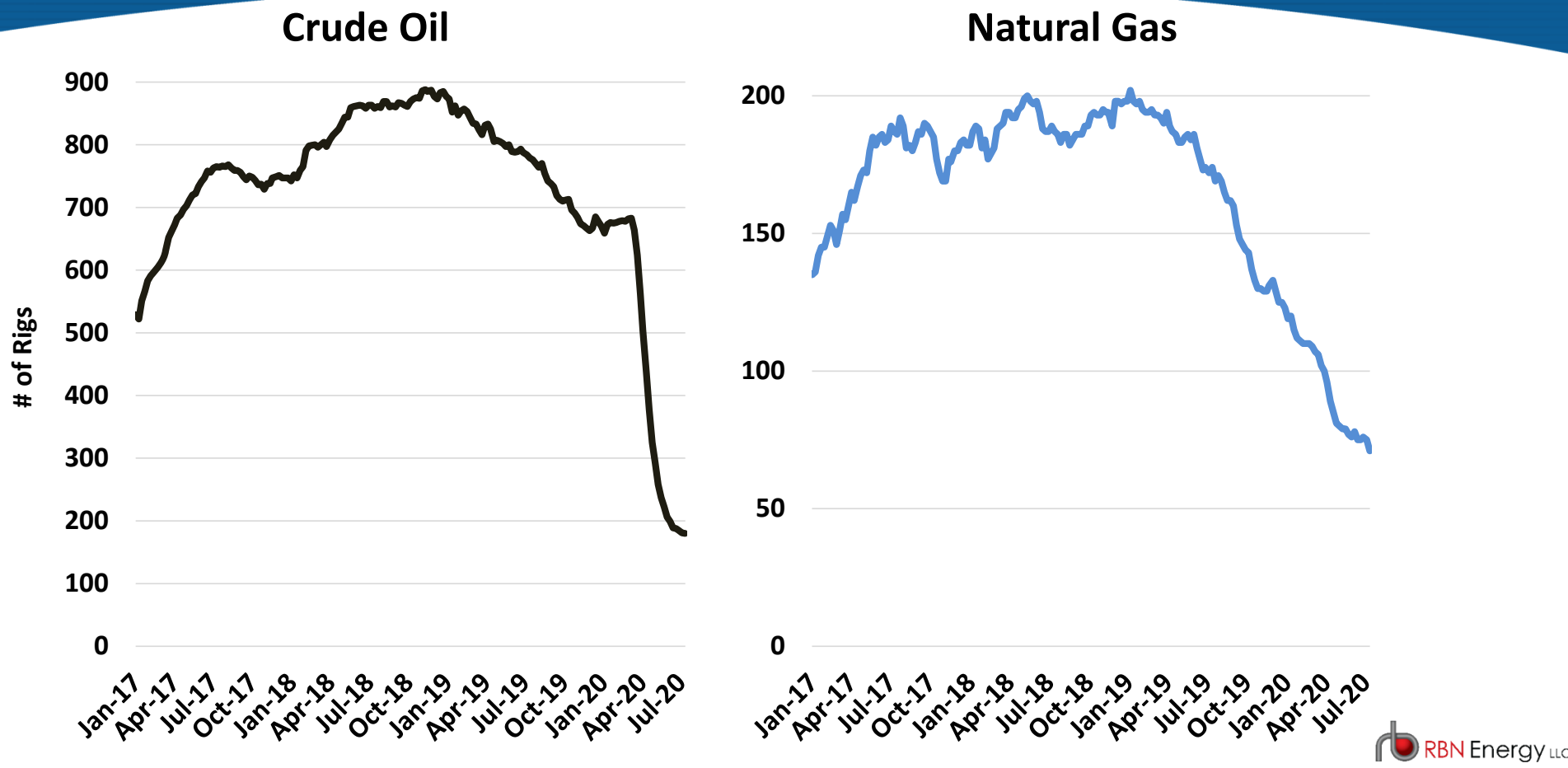
RBN Energy LLC

2020 COVID Era Energy Market Meltdown



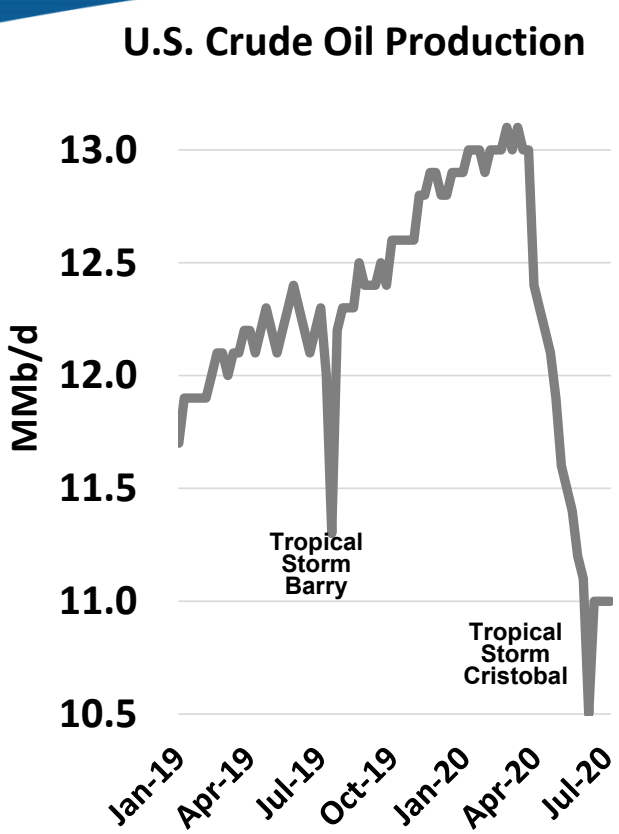


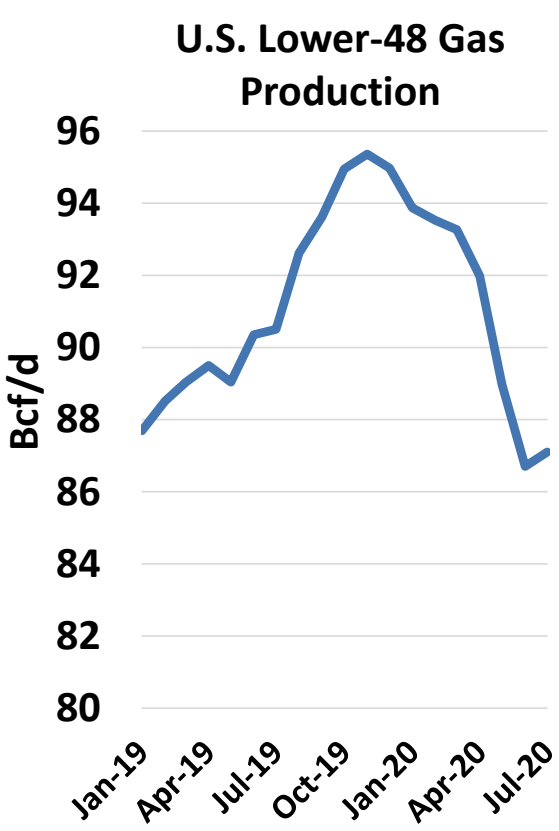
U.S. Rig Count

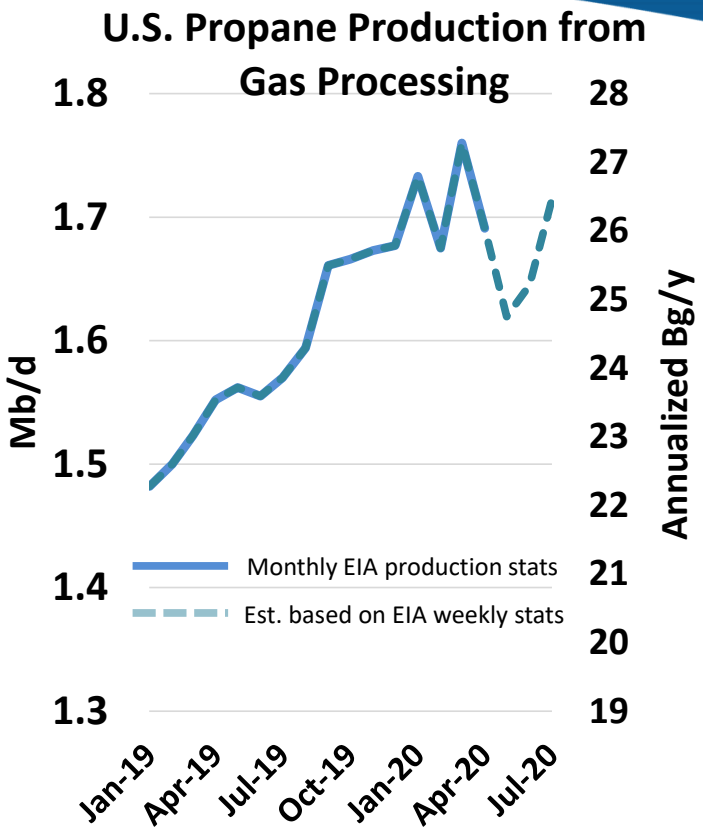


RBN Energy LLC

Crude Oil and Natural Gas Production

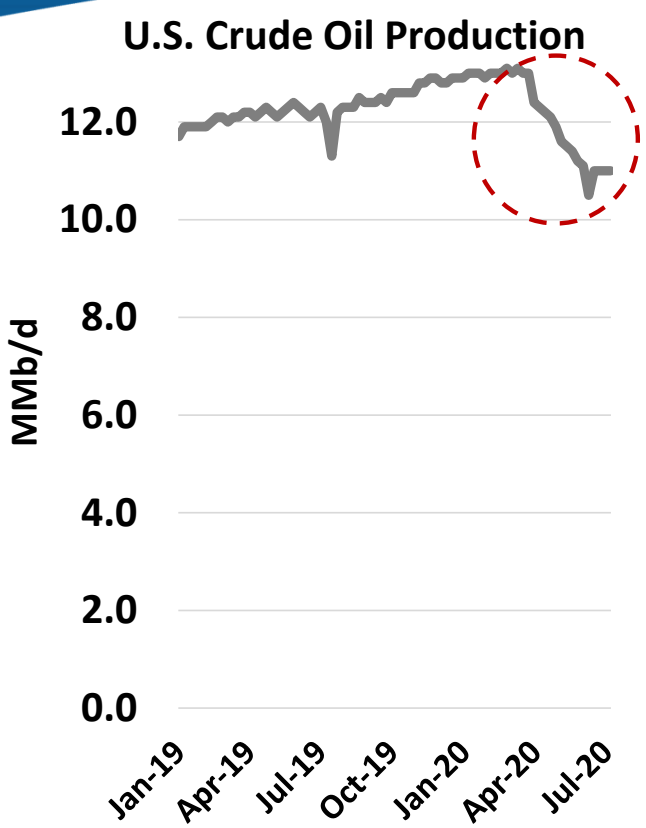


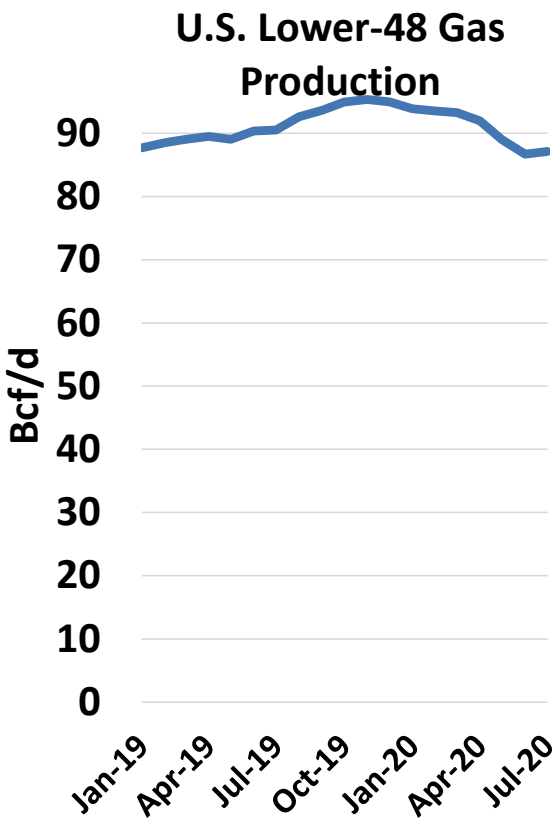


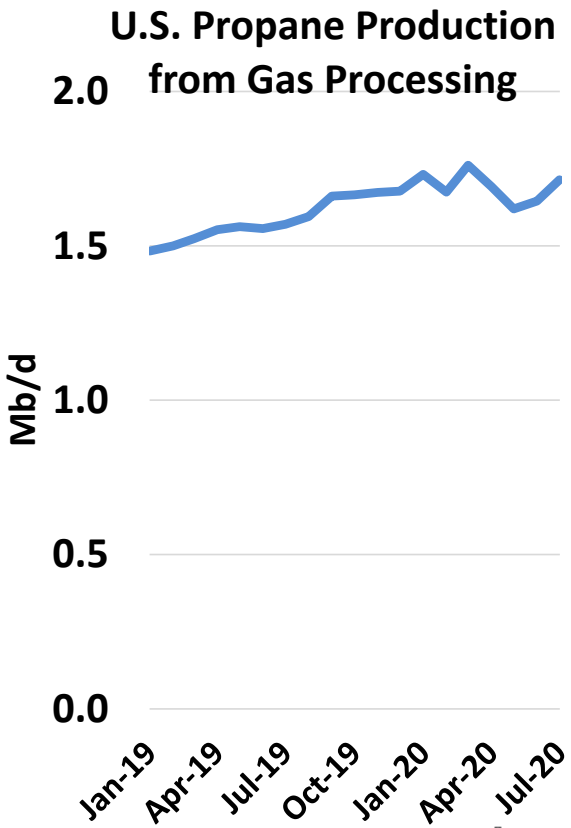


RBN Energy LLC

Crude Oil and Natural Gas Production

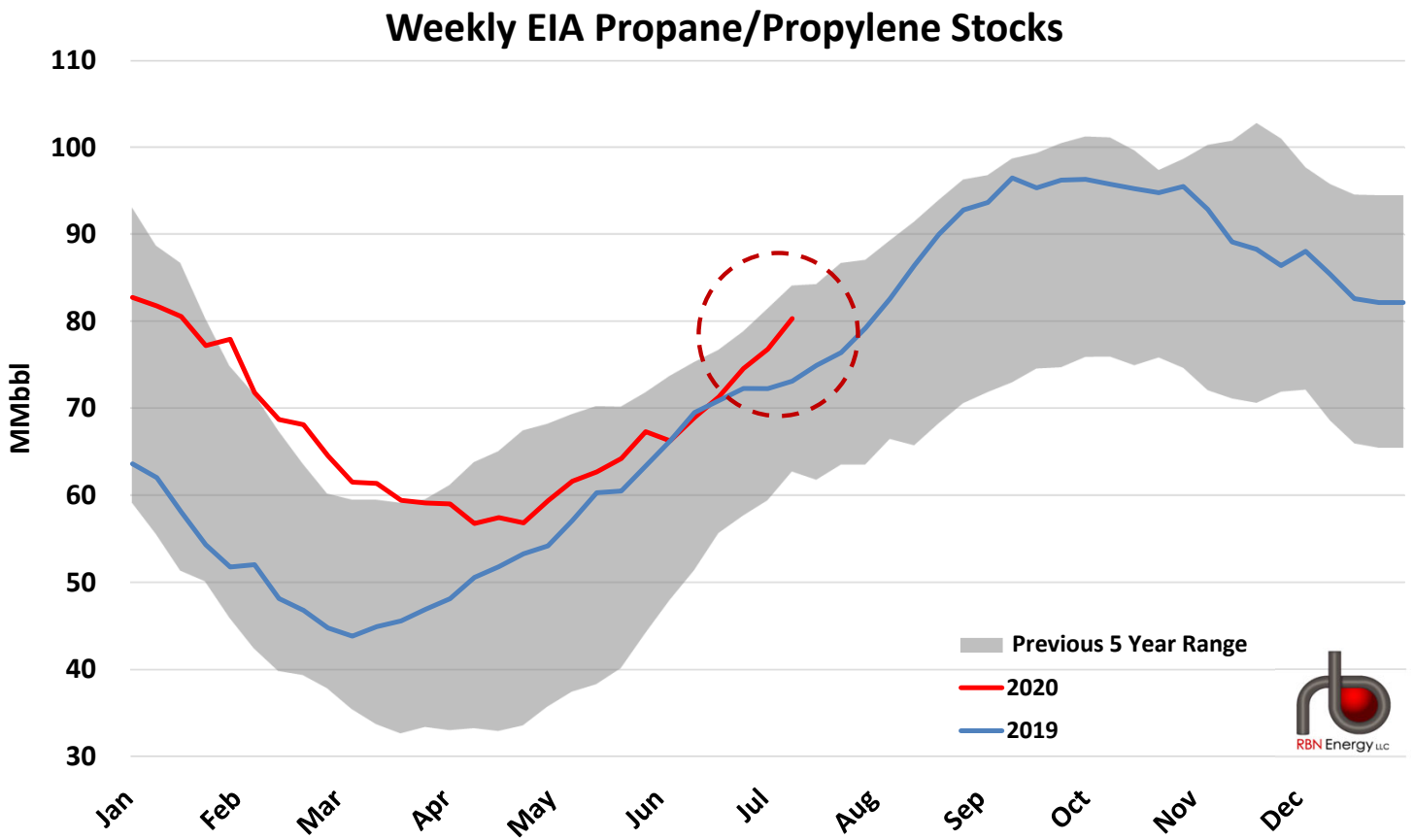






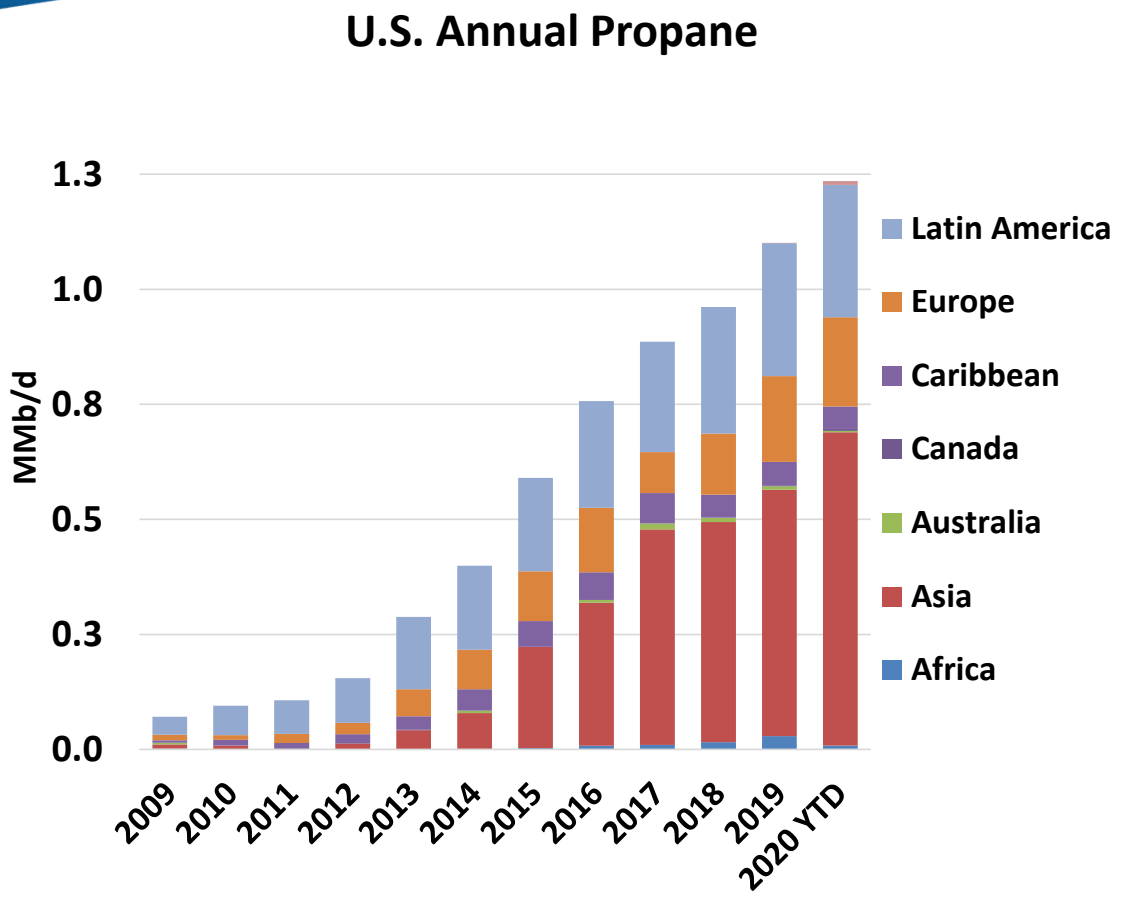
RBN Energy LLC

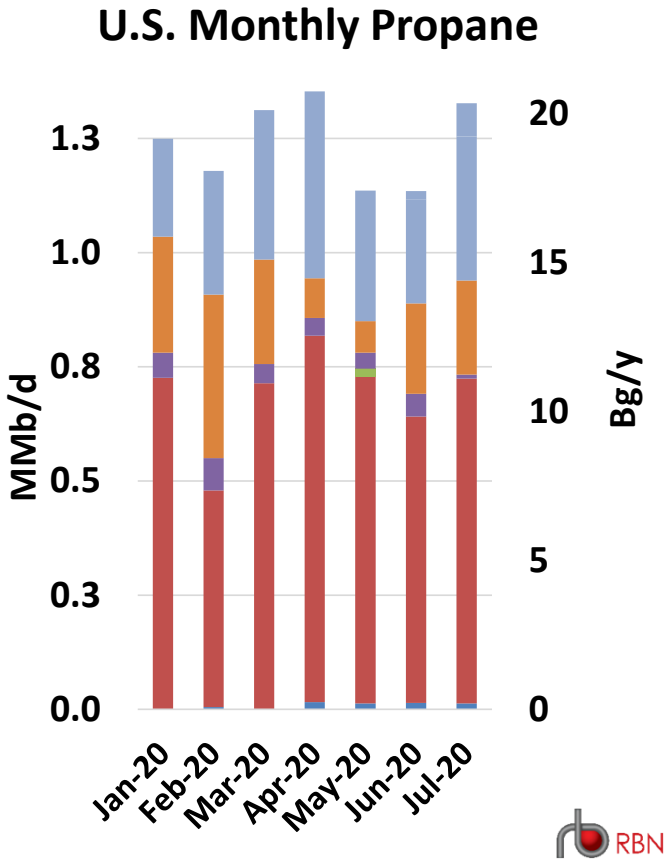
EIA Propane Stocks



RBN Energy LLC

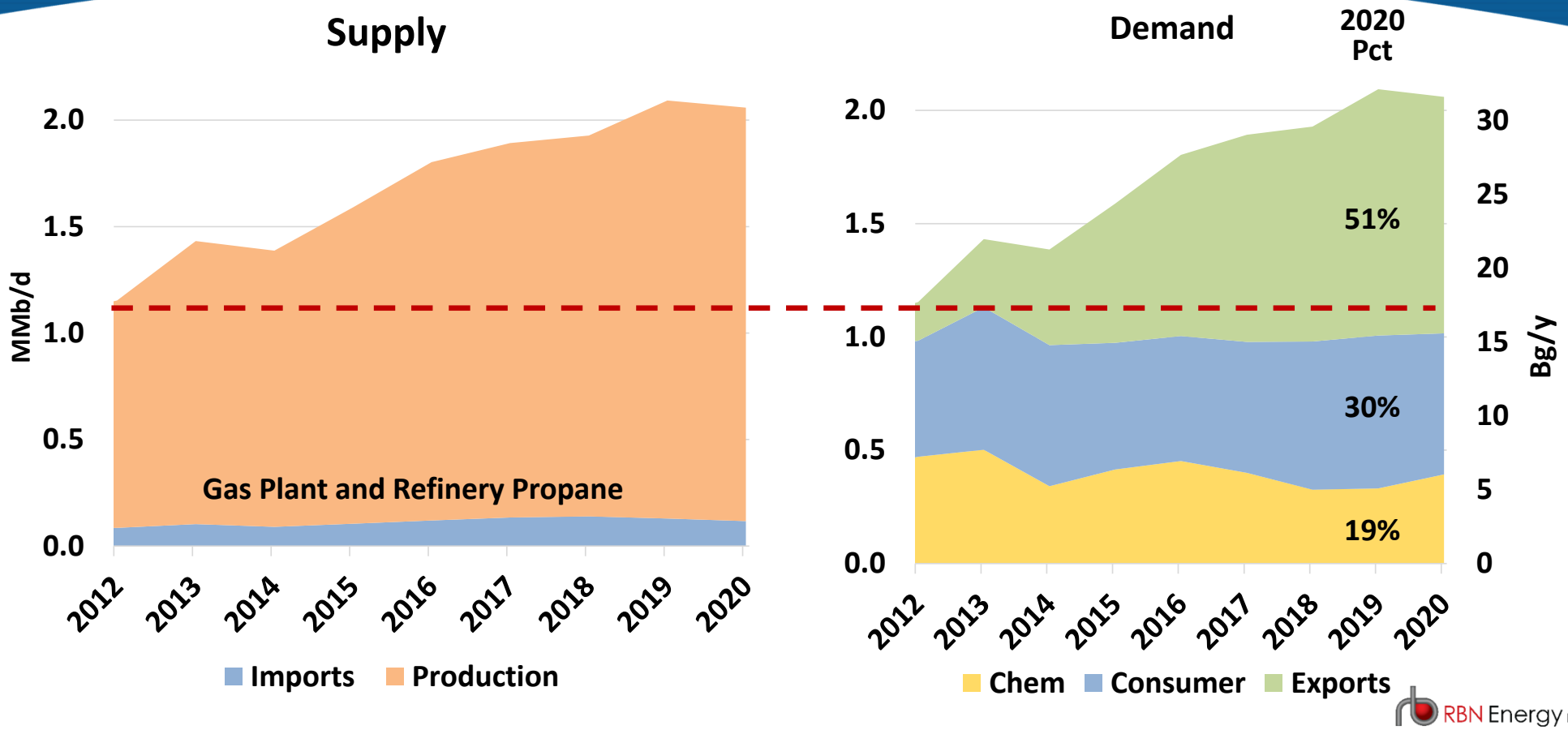
U.S. Overseas Propane Exports





RBN Energy LLC

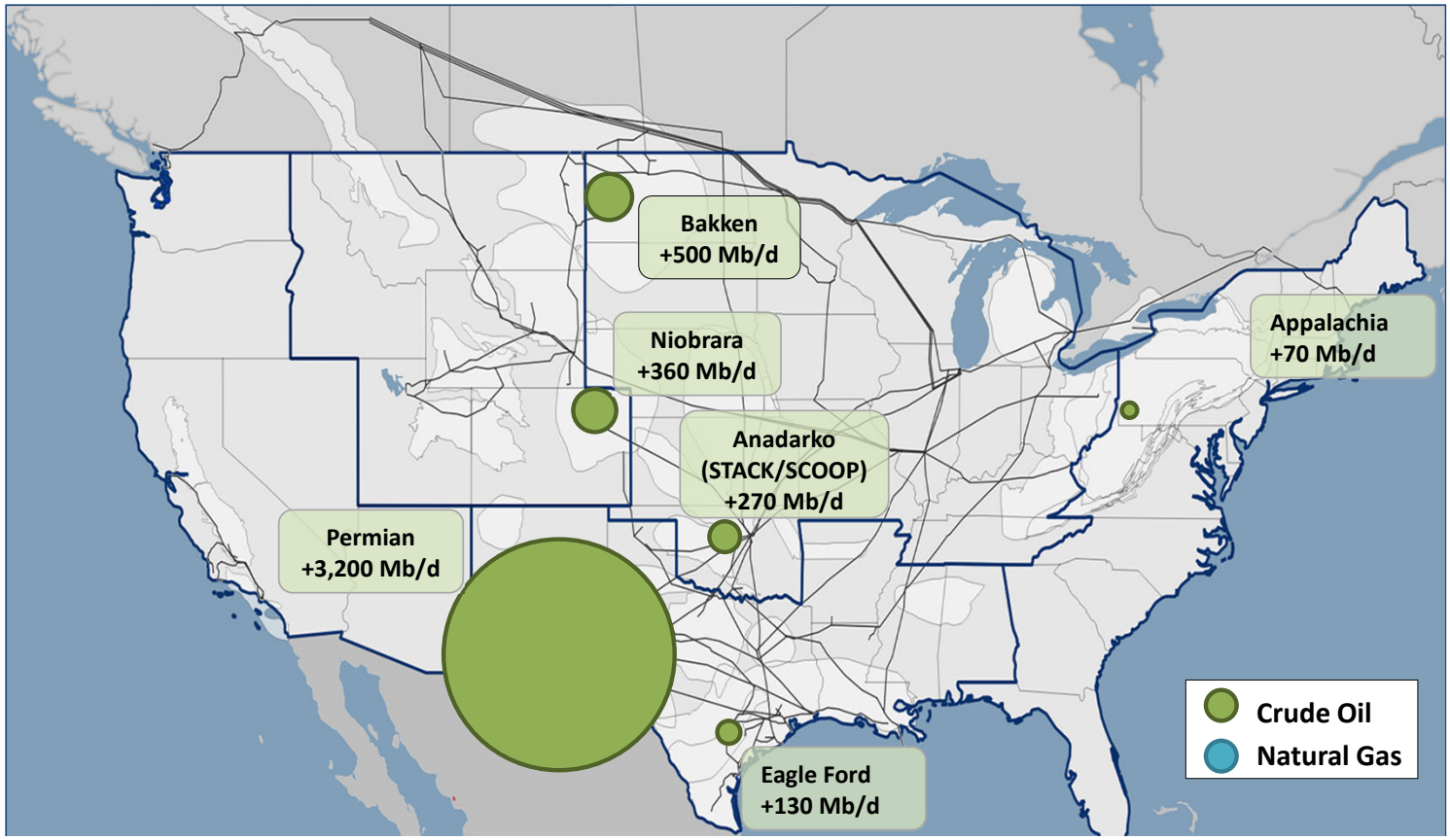
Annual US Propane – Supply/Demand



RBN Energy LLC

Oil & Gas Production Growth by Basin

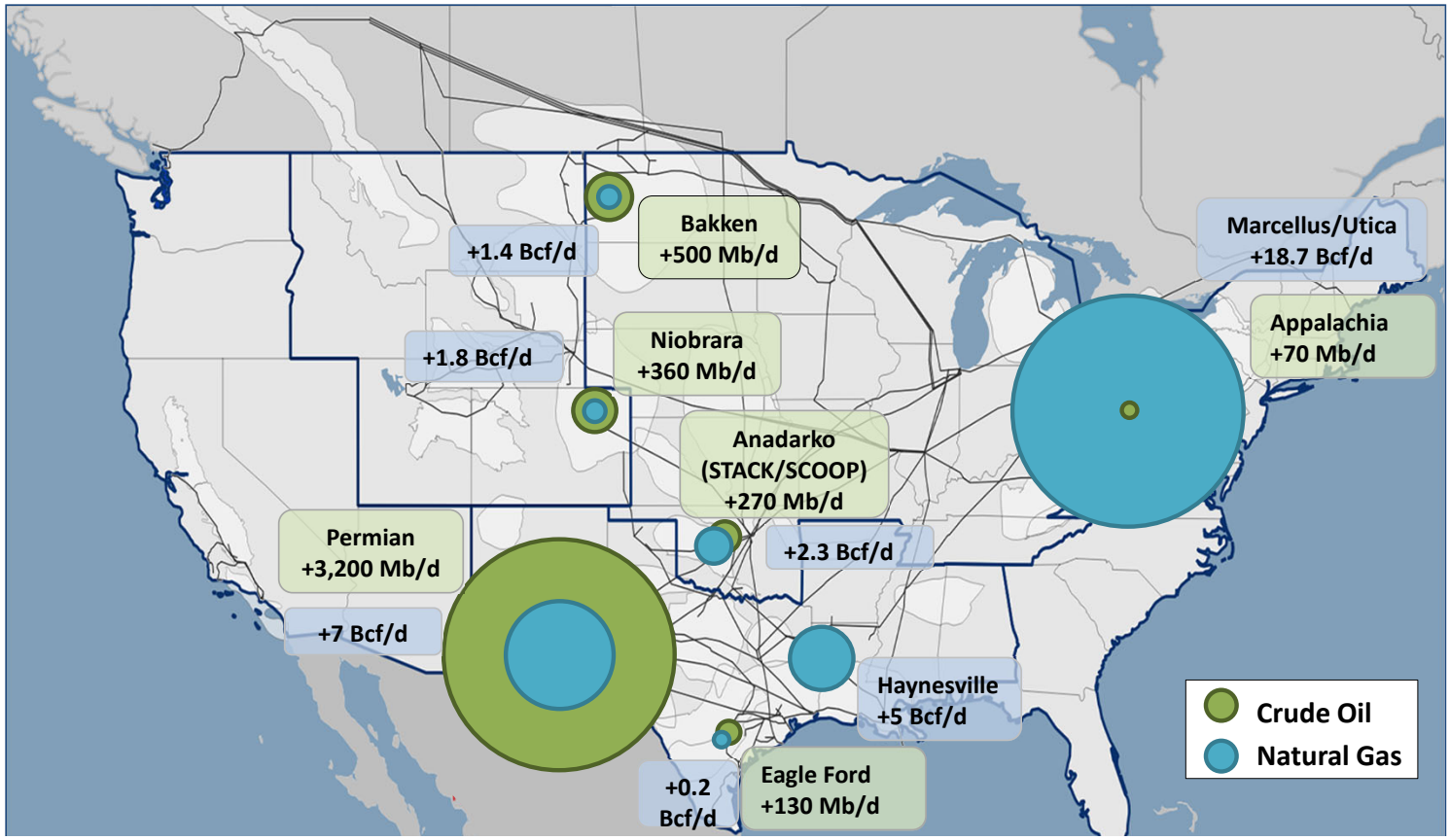
(2014-2020)



RBN Energy LLC

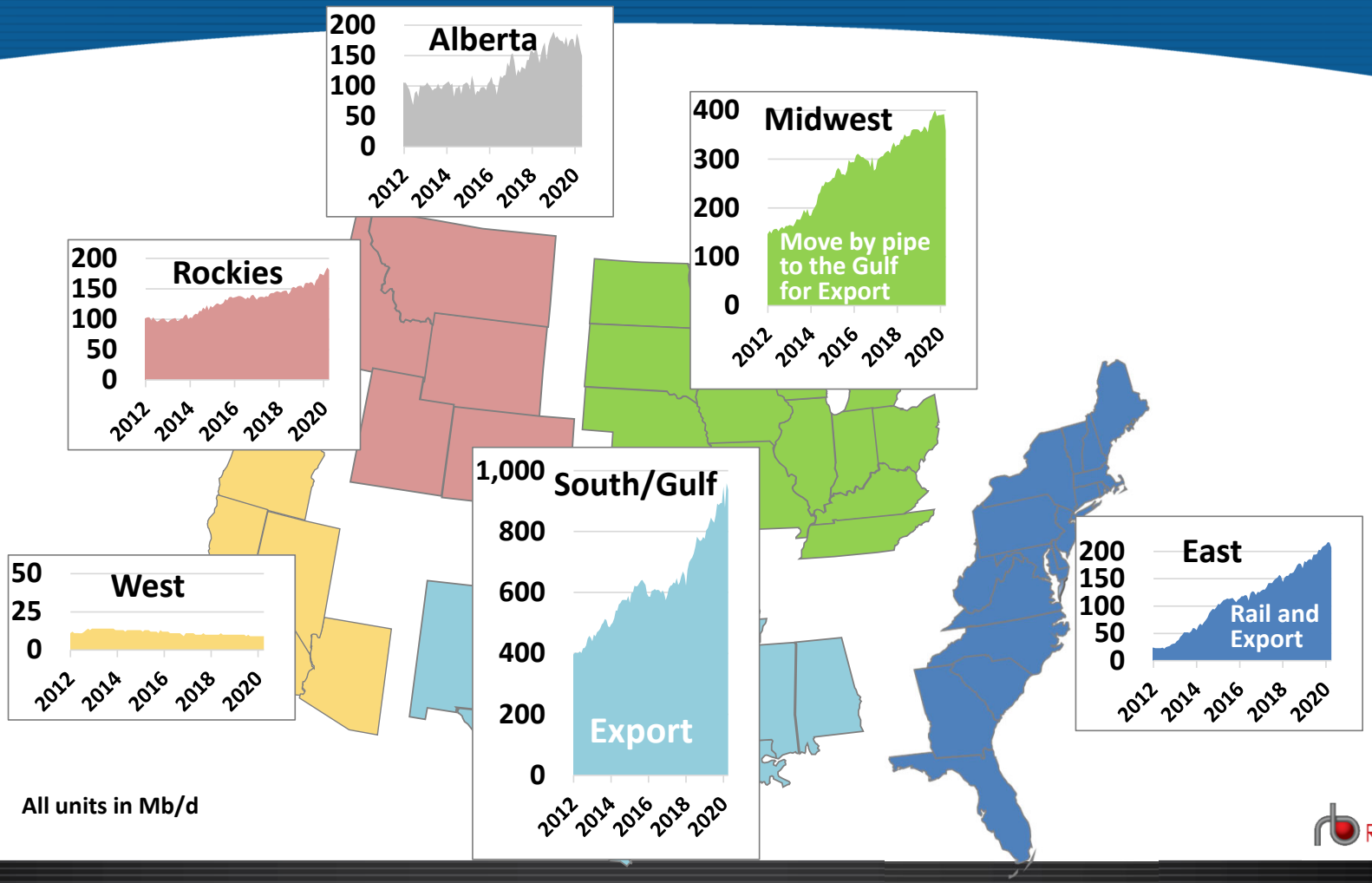
Oil & Gas Production Growth by Basin

(2014-2020)



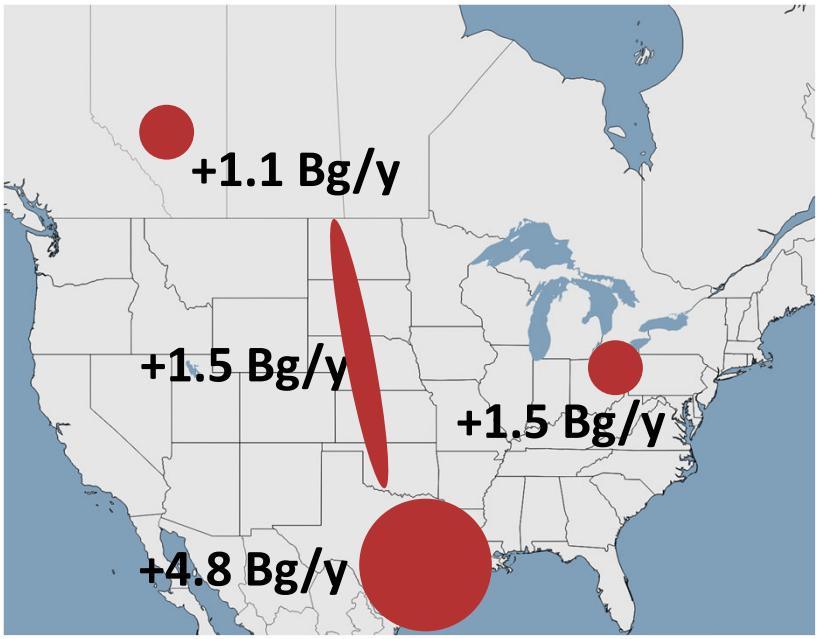
RBN Energy LLC

Regional Gas Plant Propane Production Volume



RBN Energy LLC

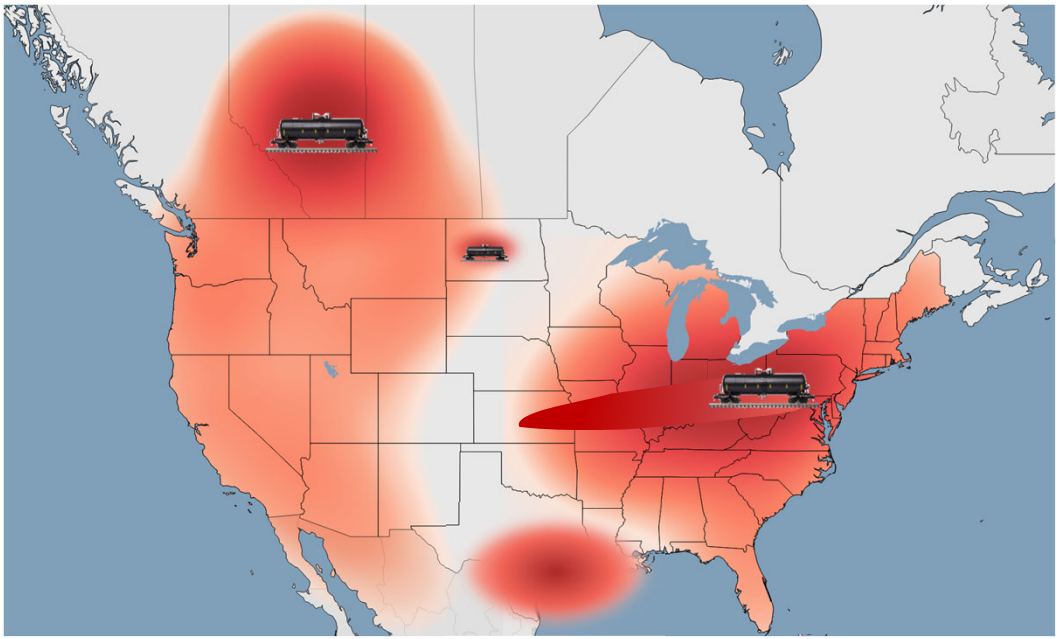
Propane Production Growth Summary – 2015-2020



- East: Marcellus/Utica – up 1.5 Bg/y, 100 Mb/d
- Midwest: OK to ND - up 1.5 Bg/y, 100 Mb/d
- South/Gulf Coast - up 4.8 Bg/y, 315 Mb/d
- Alberta - up 1.1 Bg/y, 70 Mb/d

RBN Energy LLC

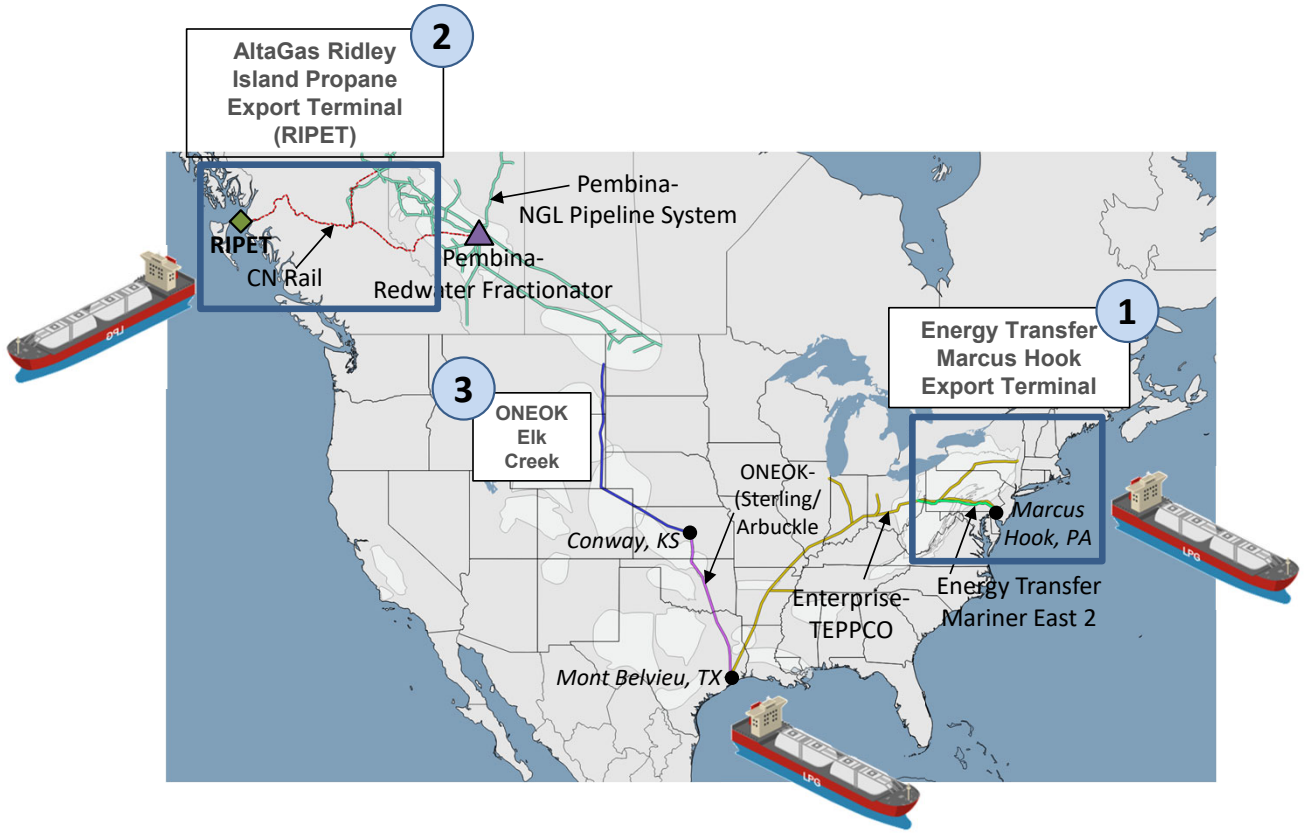
Surplus Supplies Spread out Across the U.S.



- Surplus propane barrels from Marcellus/Utica, Alberta/Edmonton and Bakken were forced to move long distances via rail to find markets.
- Edmonton moved across the west, from the Pacific Northwest, to the Midwest and down to Mexico.
- Marcellus/Utica moved to Conway, the Midwest, Florida and all points between.
- In many cases, suppliers were eating rail cost.
- These rail barrels spread local surpluses across much of the U.S.

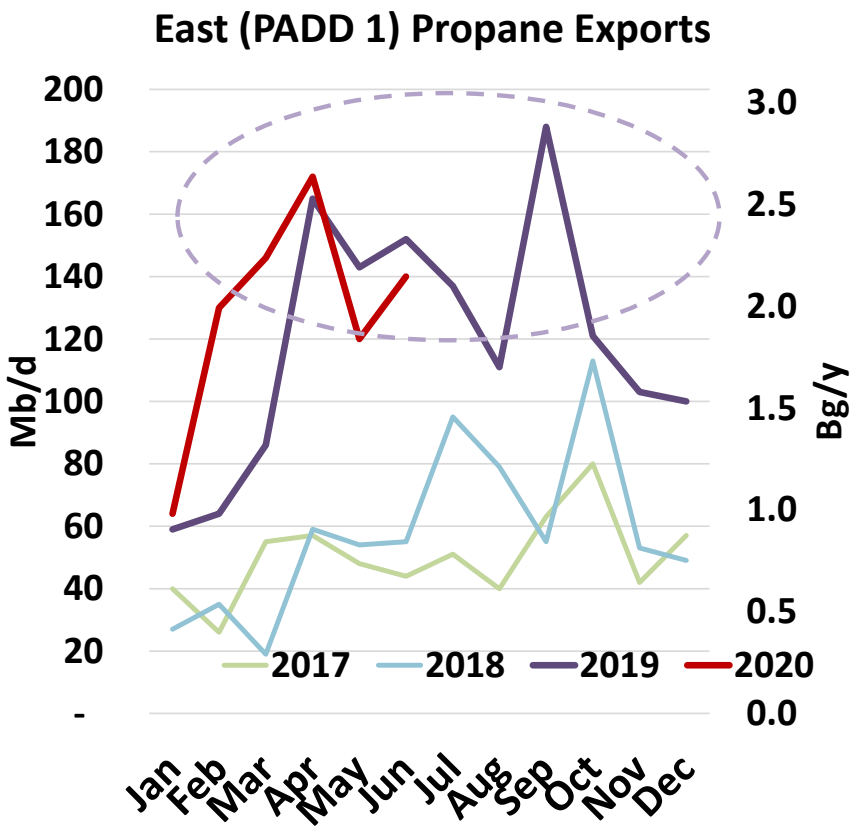
RBN Energy LLC

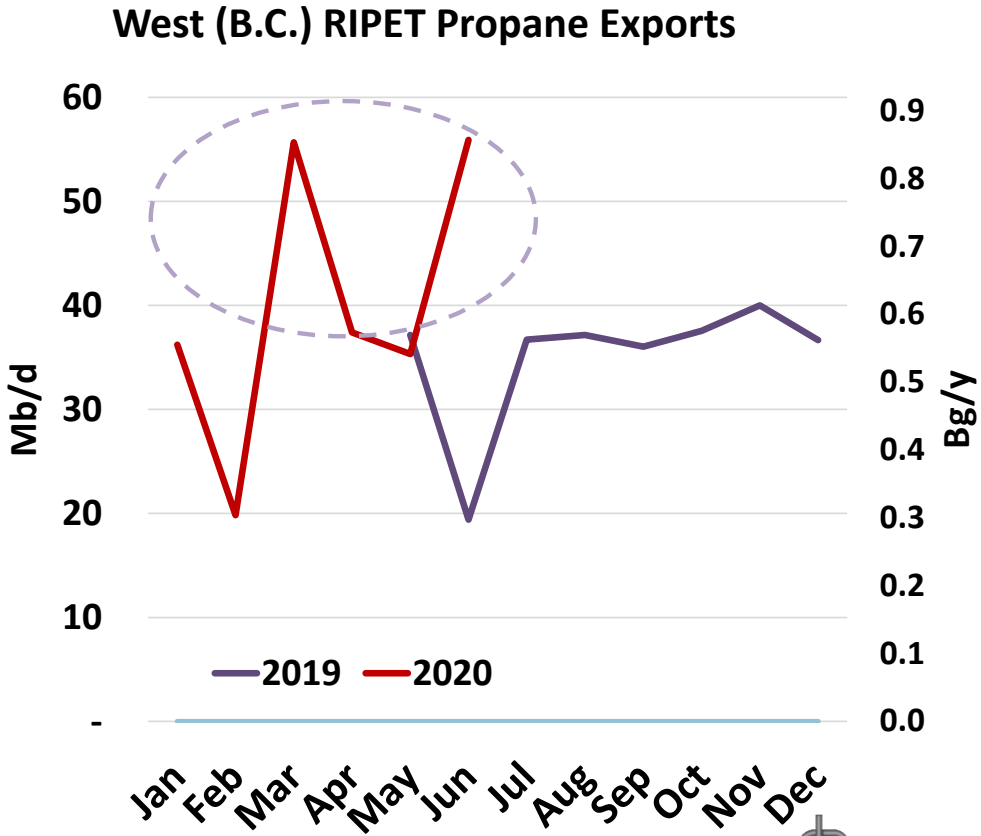
New Propane Export Corridors



RBN Energy LLC

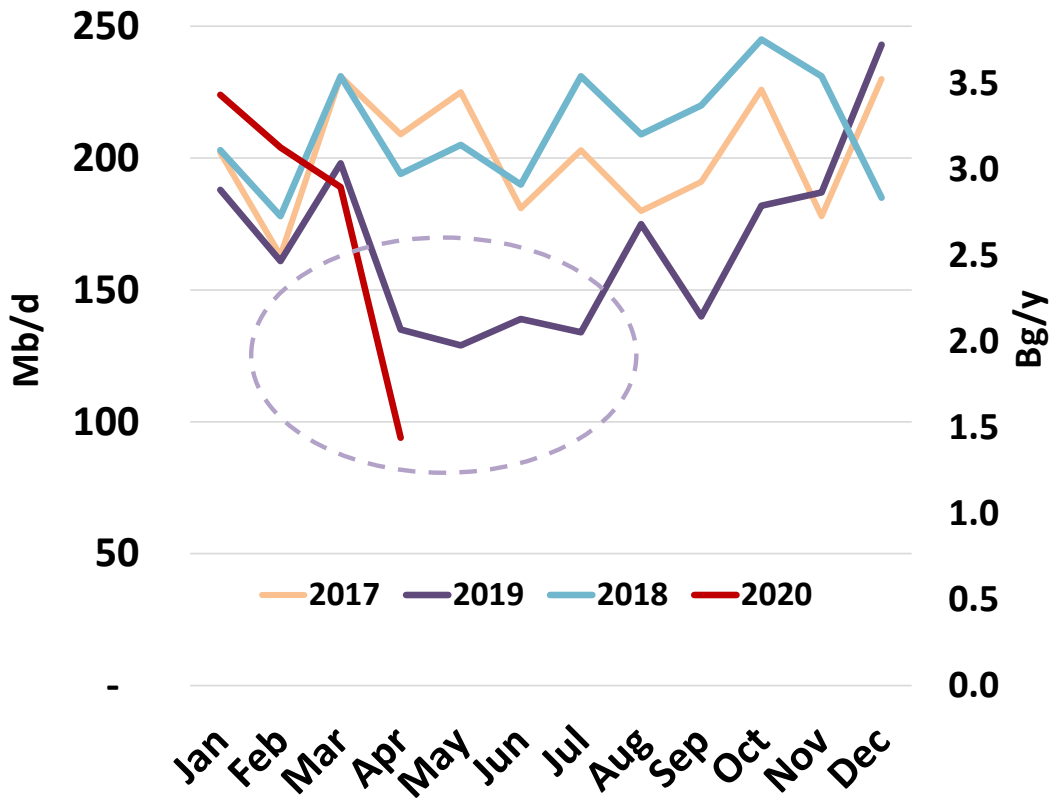
East and West Exports Have Increased





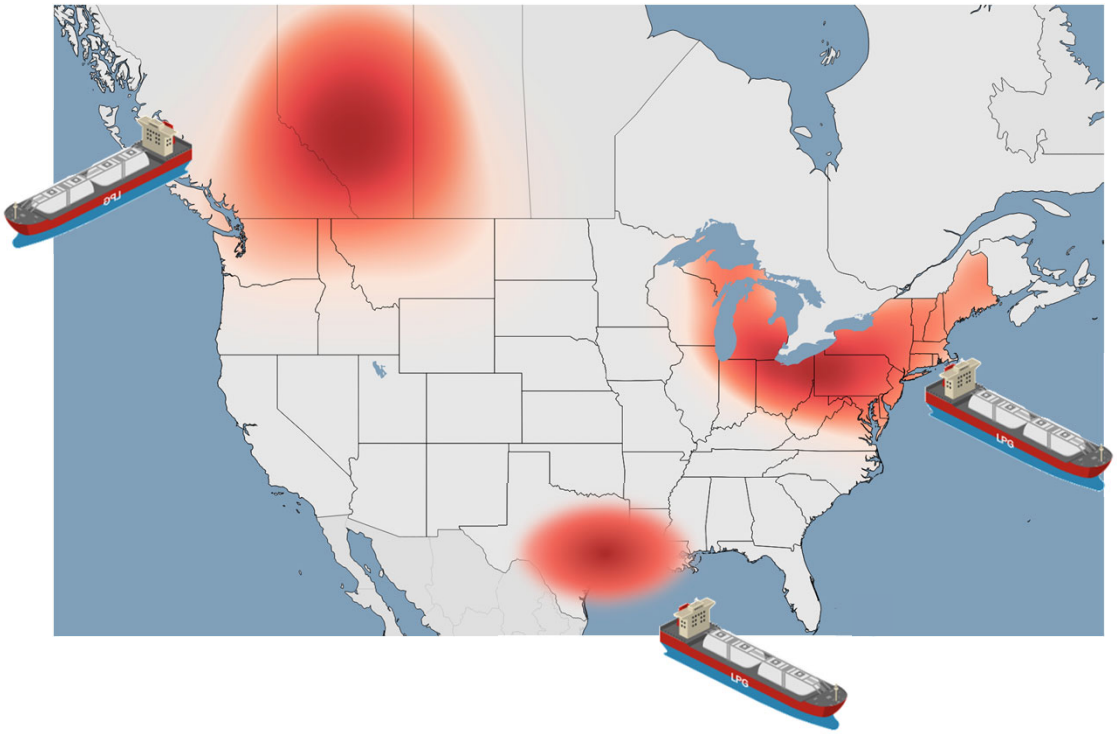
RBN Energy LLC

U.S. Summer Propane Rail Movements Have Decreased



RBN Energy LLC

Surplus Supplies Have Retreated to Local Markets

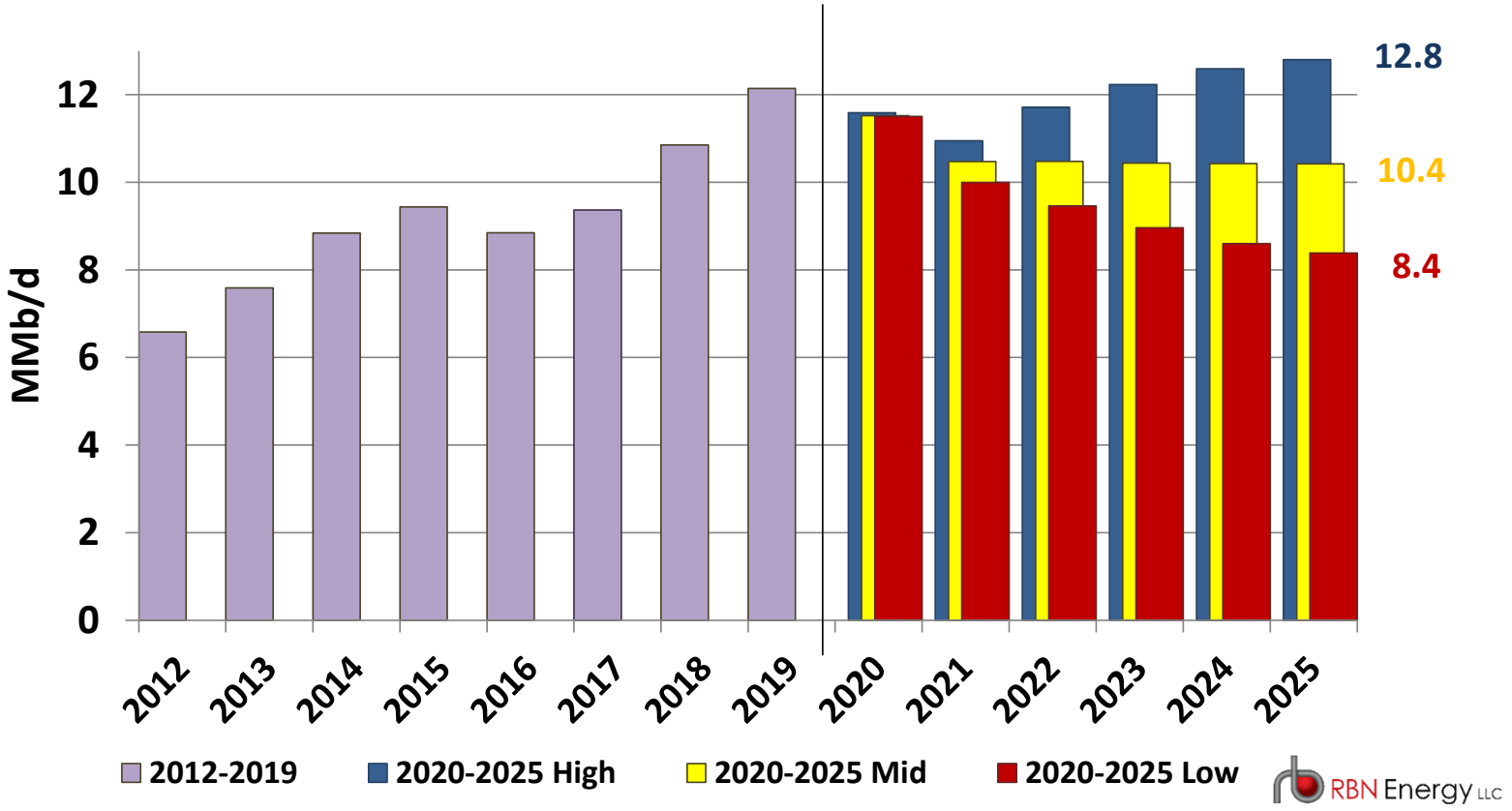


- **Surplus overflow rail supplies from Marcellus/Utica and Alberta/Edmonton were reduced significantly when new export capacity came online**
  - **RIPET started up in mid-2019, ME2 deliveries into Marcus Hook increased between 2X and 3X in the same timeframe.**
- **With those supplies now moving overseas, U.S. propane markets in the Pacific Northwest, Southwest, Midwest and Southeast (rail market) have been impacted as much as Eastern markets (New England, Mid Atlantic) and Alberta/Edmonton.**

RBN Energy LLC

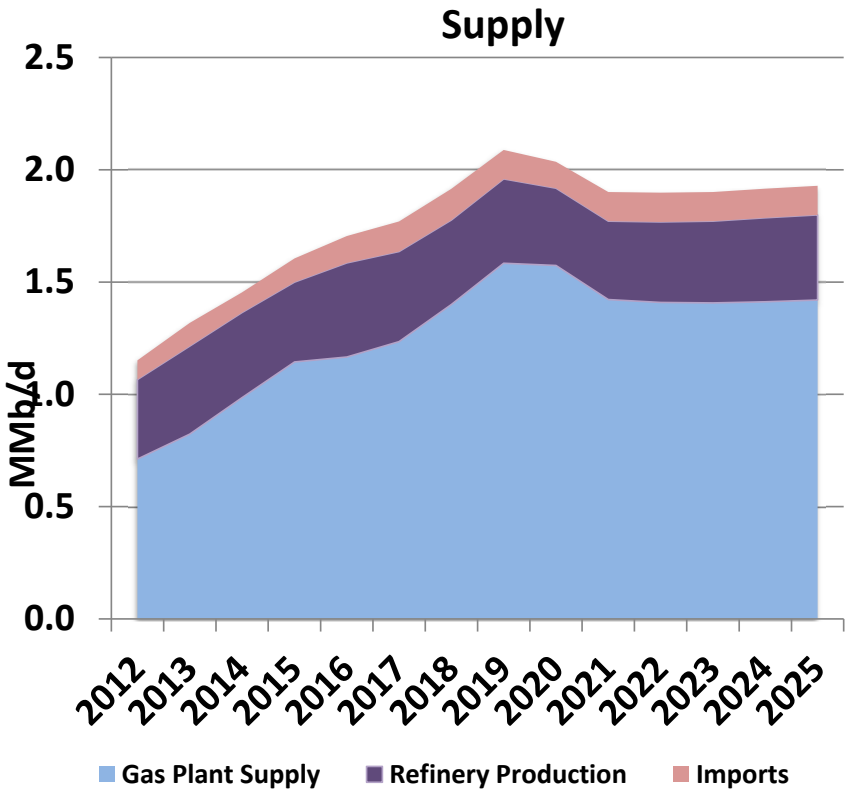
U.S. Crude Oil Production Forecast Scenarios

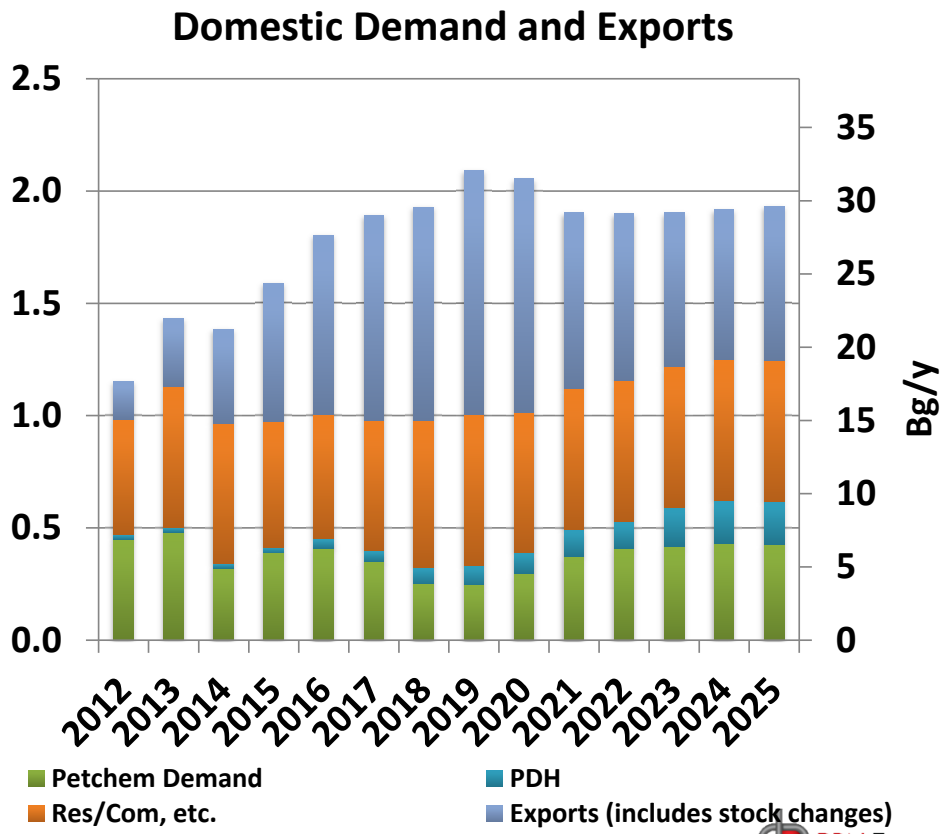
	WTI Cushing $/Bbl	Henry Hub $/MMbtu
High	$50	$2.80
Mid	$40	$2.35
Low	$30	$1.90



Source: RBN Forecast - Unconstrained

U.S. Propane Supply and Demand (Mid Scenario $40/bbl Crude)





RBN Energy LLC

Preparing for Peak Demand

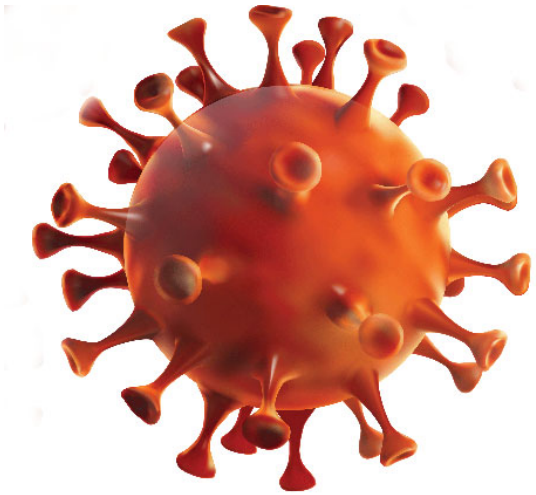
2020-21 Propane Market Assessment

- COVID, lower crude prices, and declines in oil and gas production will reduce propane supplies from all major basins.
- There will be little impact on the Gulf Coast. The supply/demand balance in this region will adjust as necessary through decreases (or increases) in export volumes to overseas markets.
- Marcellus/Utica and Alberta propane surpluses which have moved by rail to markets across the U.S. over the past few years are now being exported via new capacity out of Marcus Hook, PA (Mariner East 2) and Ridley Island (RIPET) in British Columbia. The U.S. propane market can no longer count on the availability of this supply.
- With regional production down and more regional volumes being exported, local markets could face disruption in the event of cold weather events.
- Such a scenario would require transportation of more propane barrels over long distances to meet market demand, resulting in higher costs and potential delivery delays.

RBN Energy LLC

Preparing for Peak Demand

2020-21 Propane Market Assessment



- The world has changed.
- The propane market is more susceptible to disruption than it has been since the onset of shale surpluses.
- Propane marketers should take steps to shore up supply chain deliverability.

RBN Energy LLC