SUBMISSION COVER SHEET

***IMPORTANT*: Check box if Confidential Treatment is requested** ☒

Registered Entity Identifier Code (optional): 20-113 (3 of 3)

Organization: New York Mercantile Exchange, Inc. ("NYMEX")

Filing as a: ☒ **DCM** ☐ **SEF** ☐ **DCO** ☐ **SDR**

Please note - only ONE choice allowed.

Filing Date (mm/dd/yy): 03/05/2020 Filing Description: Initial Listing of Three (3) European Butane Futures Contracts

SPECIFY FILING TYPE

Please note only ONE choice allowed per Submission.

Organization Rules and Rule Amendments

☐	Certification	§ 40.6(a)
☐	Approval	§ 40.5(a)
☐	Notification	§ 40.6(d)
☐	Advance Notice of SIDCO Rule Change	§ 40.10(a)
☐	SIDCO Emergency Rule Change	§ 40.10(h)

Rule Numbers:

New Product Please note only ONE product per Submission.

☒	Certification	§ 40.2(a)
☐	Certification Security Futures	§ 41.23(a)
☐	Certification Swap Class	§ 40.2(d)
☐	Approval	§ 40.3(a)
☐	Approval Security Futures	§ 41.23(b)
☐	Novel Derivative Product Notification	§ 40.12(a)
☐	Swap Submission	§ 39.5

Product Terms and Conditions (product related Rules and Rule Amendments)

☐	Certification	§ 40.6(a)
☐	Certification Made Available to Trade Determination	§ 40.6(a)
☐	Certification Security Futures	§ 41.24(a)
☐	Delisting (No Open Interest)	§ 40.6(a)
☐	Approval	§ 40.5(a)
☐	Approval Made Available to Trade Determination	§ 40.5(a)
☐	Approval Security Futures	§ 41.24(c)
☐	Approval Amendments to enumerated agricultural products	§ 40.4(a), § 40.5(a)
☐	"Non-Material Agricultural Rule Change"	§ 40.4(b)(5)
☐	Notification	§ 40.6(d)

Official Name(s) of Product(s) Affected:

Rule Numbers:

Christopher Bowen
Managing Director and Chief Regulatory Counsel
Legal Department

March 5, 2020

VIA ELECTRONIC PORTAL

Mr. Christopher J. Kirkpatrick
Office of the Secretariat
Commodity Future Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, DC 20581

Re: CFTC Regulation 40.2(a) Certification. Notification Regarding the Initial Listing of Three (3) European Butane Futures Contracts.
NYMEX Submission No. 20-113 (3 of 3)

Dear Mr. Kirkpatrick:

New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") is notifying the Commodity Futures Trading Commission ("CFTC" or "Commission") that it is self-certifying the listing of three (3) European Butane futures contracts (the "Contracts") for trading on the CME Globex electronic trading platform and for submission for clearing via CME ClearPort effective Sunday, March 22, 2020 for trade date Monday, March 23, 2020.

Contract Title	**European Butane CIF ARA (Argus) Futures**
CME Globex and CME ClearPort Code	BEF
Rulebook Chapter	1426
Settlement Type	Financial
Contract Size	1,000 metric tons
Pricing Quotation	U.S. dollars and cents per metric ton
Minimum Price Fluctuation	$0.001 per metric ton
Value per tick	$1.00
First Listed Month	April 2020
Termination of Trading	Last business day of the contract month
Listing Schedule	Monthly contracts listed for the current year and the three (3) consecutive calendar years. Additional monthly contracts will be listed for a new calendar year following the termination of trading in the December of the current year.
Block Trade Minimum Threshold	5 contracts – subject to a minimum 15-minute reporting window
CME Globex Match Algorithm	First-In, First-Out (FIFO)

Contract Title	**European Butane CIF ARA (Argus) BALMO Futures**
CME Globex and CME ClearPort Code	BEB
Rulebook Chapter	1427
Settlement Type	Financial
Contract Size	1,000 metric tons
Pricing Quotation	U.S. dollars and cents per metric ton
Minimum Price Fluctuation	$0.001 per metric ton

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Value per tick	$1.00
First Listed Month	April 2020
Termination of Trading	Last business day of the contract month
Listing Schedule	Monthly contracts listed for three (3) consecutive months. A new monthly contract will be listed for a new contract month following the termination of trading in the previous monthly futures contract.
Block Trade Minimum Threshold	5 contracts – subject to a minimum 15-minute reporting window
CME Globex Match Algorithm	First-In, First-Out (FIFO)

Contract Title	**Mont Belvieu Normal Butane (OPIS) vs. European Butane CIF ARA (Argus) Futures**
CME Globex and CME ClearPort Code	TEF
Rulebook Chapter	1428
Settlement Type	Financial
Contract Size	1,000 metric tons
Pricing Quotation	U.S. dollars and cents per metric ton
Minimum Price Fluctuation	$0.001 per metric ton
Value per tick	$1.00
First Listed Month	April 2020
Termination of Trading	Last business day of the contract month
Listing Schedule	Monthly contracts listed for the current year and the three (3) consecutive calendar years. Additional monthly contracts will be listed for a new calendar year following the termination of trading in the December of the current year.
Block Trade Minimum Threshold	5 contracts – subject to a minimum 15-minute reporting window
CME Globex Match Algorithm	First-In, First-Out (FIFO)

Trading and Clearing Hours

CME Globex and CME ClearPort	Sunday - Friday 6:00 p.m. - 5:00 p.m. Eastern Time/ET (5:00 p.m. - 4:00 p.m. Central Time/CT) with a 60-minute break each day beginning at 5:00 p.m. ET (4:00 p.m. CT)

Exchange Fees

	Member	Non-Member	International Incentive Programs (IIP/IVIP)
CME Globex	$7.00	$9.00	$8.00
EFP	$7.00	$9.00	
Block	$7.00	$9.00	
EFR/EOO	$7.00	$9.00	
Processing Fees			
Cash Settlement	$1.00		
Facilitation Fee	$0.60		
Give-Up Surcharge	$0.05		
Position Adjustment/Position Transfer	$0.10		

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The Exchange is also notifying the CFTC that it is self-certifying the insertion of the terms and conditions for the new futures contracts into the Position Limit, Position Accountability and Reportable Level Table and Header Notes located in the Interpretations and Special Notices Section of Chapter 5 of the NYMEX Rulebook in relation to the listing of the new contract. These terms and conditions establish the all month/any one-month accountability levels, expiration month position limit, reportable level, and aggregation allocation for the new contract. Please see Exhibit B, attached under separate cover.

In addition, NYMEX is self-certifying block trading on the Contract with a minimum block threshold of five (5) contracts, which represents 5,000 metric tons. This aligns with the existing LPG futures contracts listed on NYMEX and matches the OTC market convention. The submission of blocks for these contracts will be subject to a 15-minute reporting period.

The Exchange reviewed the designated contract market core principles ("Core Principles") as set forth in the Commodity Exchange Act ("CEA") and staff identified that the Contract may have some bearing on the following Core Principles:

- **Compliance with Rules**: Trading in the Contracts will be subject to the rules in Rulebook Chapter 4 which includes prohibitions against fraudulent, noncompetitive, unfair and abusive practices. Additionally, trading in this Contract will also be subject to the full range of trade practice rules, the majority of which are contained in Chapter 5 and Chapter 8 of the Rulebook. As with all products listed for trading on one of CME Group's designated contract markets, activity in this product will be subject to extensive monitoring and surveillance by CME Group's Market Regulation Department. The Market Regulation Department has the authority to exercise its investigatory and enforcement power where potential rule violations are identified.

- **Contracts Not Readily Subject to Manipulation**: The Contracts are not readily subject to manipulation because of its structural attributes, underlying market and reliance on a well administered index. The Contract final settles against an index based on market assessments published by Argus Media and OPIS and licensed to the Exchange.

- **Prevention of Market Disruption**: Trading in the Contracts will be subject to Rules of NYMEX, which include prohibitions on manipulation, price distortion and disruption to the cash settlement process. As with any new product listed for trading on a CME Group designated contract market, trading activity in the Contracts proposed herein will be subject to monitoring and surveillance by CME Group's Market Regulation Department.

- **Position Limitations or Accountability**: The speculative position limits for the Contracts as demonstrated in this submission are consistent with the Commission's guidance.

- **Availability of General Information**: The Exchange will publish on its website information regarding the Contracts' specifications, terms, and conditions, as well as daily trading volume, open interest, and price information.

- **Daily Publication of Trading Information**: The Exchange will publish the Contracts' trading volumes, open interest levels, and price information daily on its website and through quote vendors for the Contracts.

- **Execution of Transactions**: The Contracts will be listed for trading on the CME Globex electronic trading and for clearing through the CME ClearPort. The CME Globex trading venue provides for competitive and open execution of transactions. CME Globex affords the benefits of reliability and global connectivity.

- **Trade Information**: All requisite trade information for the Contracts will be included in the audit trail and is sufficient for the Market Regulation Department to monitor for market abuse.

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- **Financial Integrity of Contract**: The Contracts will be cleared by the CME Clearing House, a derivatives clearing organization registered with the CFTC and subject to all CFTC regulations related thereto.

- **Protection of Market Participants**: NYMEX Rulebook Chapters 4 and 5 set forth multiple prohibitions that preclude intermediaries from disadvantaging their customers. These rules apply to trading in all of the Exchange's competitive trading venues.

- **Disciplinary Procedures**: Chapter 4 of the Rulebook contains provisions that allow the Exchange to discipline, suspend or expel members or market participants that violate the Rulebook. Trading in the contract will be subject to Chapter 4, and the Market Regulation Department has the authority to exercise its enforcement power in the event rule violations in the product are identified.

- **Dispute Resolution**: Disputes with respect to trading in the Contracts will be subject to the arbitration provisions set forth in Chapter 6 of the Rulebook. Chapter 6 allows all nonmembers to submit a claim for financial losses resulting from transactions on the Exchange to arbitration. A member named as a respondent in a claim submitted by a nonmember is required to participate in the arbitration pursuant to Chapter 6. Additionally, the Exchange requires that members resolve all disputes concerning transactions on the Exchange via arbitration.

Pursuant to Section 5c(c) of the Act and CFTC Regulation 40.2(a), the Exchange hereby certifies that listing the Contracts comply with the Act, including regulations under the Act. There were no substantive opposing views to listing of the Contracts.

The Exchange certifies that this submission has been concurrently posted on the Exchange's website at http://www.cmegroup.com/market-regulation/rule-filings.html.

Should you have any questions concerning the above, please contact the undersigned at (212) 299-2200 or e-mail CMEGSubmissionInquiry@cmegroup.com.

Sincerely,

/s/Christopher Bowen
Managing Director and Chief Regulatory Counsel

Attachments: Exhibit A: NYMEX Rulebook Chapters
Exhibit B: Position Limit, Position Accountability, and Reportable Level Table in Chapter 5 ("Trading Qualifications and Practices") of the NYMEX Rulebook (attached under separate cover)
Exhibit C: NYMEX Rule 588.H. – ("Globex Non-Reviewable Trading Ranges") Table
Exhibit D: Cash Market Overview and Analysis of Deliverable Supply

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EXHIBIT A

NYMEX Rulebook

Chapter 1426

European Butane CIF ARA (Argus) Futures

1426100. SCOPE OF CHAPTER

The provisions of these rules shall apply to all contracts bought or sold on the Exchange for cash settlement based on the Floating Price. The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

1426101. CONTRACT SPECIFICATIONS

The Floating Price for each contract month is equal to the arithmetic average of the high and low quotations from Argus Media for Butane CIF ARA for each business day that it is determined during the contract month.

1426102. TRADING SPECIFICATIONS

The number of months open for trading at a given time shall be determined by the Exchange.

1426102.A. Trading Schedule

The hours of trading for this contract shall be determined by the Exchange.

1426102.B. Trading Unit

The contract quantity shall be one thousand (1,000) metric ton.

1426102.C. Price Increments

Prices shall be quoted in U.S. dollars and cents per metric ton. The minimum price fluctuation shall be $0.001 per metric ton.

1426102.D. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

1426102.E. Termination of Trading

Trading terminates on the last business day of the contract month.

1426103. FINAL SETTLEMENT

Final settlement under the contract shall be by cash settlement. The final settlement price will be the Floating Price calculated for each contract month.

1426104. DISCLAIMER

See NYMEX/COMEX Chapter iv. ("DISCLAIMERS") incorporated herein by reference.

Chapter 1427

European Butane CIF ARA (Argus) BALMO Futures

1427100. SCOPE OF CHAPTER

The provisions of these rules shall apply to all contracts bought or sold on the Exchange for cash settlement based on the Floating Price. The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

1427101. CONTRACT SPECIFICATIONS

The Floating Price for each contract month is equal to the balance-of-month arithmetic average of the high and low quotations from Argus Media for Butane CIF ARA starting from the selected start date through the end of the contract month.

1427102. TRADING SPECIFICATIONS

The number of months open for trading at a given time shall be determined by the Exchange.

1427102.A. Trading Schedule

The hours of trading for this contract shall be determined by the Exchange.

1427102.B. Trading Unit

The contract quantity shall be one thousand (1,000) metric tons.

1427102.C. Price Increments

Prices shall be quoted in U.S. dollars and cents per metric ton. The minimum price fluctuation shall be $0.001 per metric ton.

1427102.D. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

1427102.E. Termination of Trading

Trading terminates on the last business day of the contract month.

1427103. FINAL SETTLEMENT

Final settlement under the contract shall be by cash settlement. The final settlement price will be the Floating Price calculated for each contract month.

1427104. DISCLAIMER

See NYMEX/COMEX Chapter iv. ("DISCLAIMERS") incorporated herein by reference.

Chapter 1428

Mont Belvieu Normal Butane (OPIS) vs. European Butane CIF ARA (Argus) Futures

1428100. SCOPE OF CHAPTER

The provisions of these rules shall apply to all contracts bought or sold on the Exchange for cash settlement based on the Floating Price. The procedures for trading, clearing and cash settlement of this contract, and any other matters not specifically covered herein shall be governed by the general rules of the Exchange.

1428101. CONTRACT SPECIFICATIONS

The Floating Price for each contract month is equal to the arithmetic average of the OPIS Mt. Belvieu Butane (non-LDH) minus the arithmetic average of the high and low quotations from Argus Media for Butane CIF ARA for each business day that is determined during the contract month (using Non-common pricing). For the purposes of determining the Floating Price, the OPIS Mt. Belvieu Butane (non-LDH) price will be converted each day to a U.S. dollars and cents per metric ton, rounded to the nearest cent. The conversion factors will be 452.8 gallons per metric ton.

1428102. TRADING SPECIFICATIONS

The number of months open for trading at a given time shall be determined by the Exchange.

1428102.A. Trading Schedule

The hours of trading for this contract shall be determined by the Exchange.

1428102.B. Trading Unit

The contract quantity shall be one thousand (1,000) metric tons.

1428102.C. Price Increments

Prices shall be quoted in U.S. dollars and cents per metric ton. The minimum price fluctuation shall be $0.001 per metric ton.

1428102.D. Position Limits, Exemptions, Position Accountability and Reportable Levels

The applicable position limits and/or accountability levels, in addition to the reportable levels, are set forth in the Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5.

A Person seeking an exemption from position limits for bona fide commercial purposes shall apply to the Market Regulation Department on forms provided by the Exchange, and the Market Regulation Department may grant qualified exemptions in its sole discretion.

Refer to Rule 559 for requirements concerning the aggregation of positions and allowable exemptions from the specified position limits.

1428102.E. Termination of Trading

Trading terminates on the last business day of the contract month.

1428103. FINAL SETTLEMENT

Final settlement under the contract shall be by cash settlement. The final settlement price will be the Floating Price calculated for each contract month.

1428104. DISCLAIMER

See NYMEX/COMEX Chapter iv. ("DISCLAIMERS") incorporated herein by reference.

EXHIBIT B

NYMEX Rulebook
Chapter 5
("Trading Qualifications and Practices")

Position Limit, Position Accountability, and Reportable Level Table

(attached under separate cover)

EXHIBIT C

NYMEX Rulebook

Chapter 5

("Trading Qualifications and Practices")

NYMEX Rule 588.H. – ("Globex Non-Reviewable Trading Ranges") Table

(additions underscored)

Outright				
Instrument Name	Globex Symbol	Globex Non-Reviewable Ranges (NRR)	NRR: Globex Format	NRR: Ticks
European Butane CIF ARA (Argus) Futures	BEF	$2.00 per metric ton	2000	2000
European Butane CIF ARA (Argus) BALMO Futures	BEB	$2.00 per metric ton	2000	2000
Mont Belvieu Normal Butane (OPIS) vs European Butane CIF ARA (Argus) Futures	TEF	$2.00 per metric ton	2000	2000

EXHIBIT D

Cash Market Overview and Analysis of Deliverable Supply

New York Mercantile Exchange, Inc. ("NYMEX" or "Exchange") is self-certifying the listing of three (3) Butane Futures contracts for trading on CME Globex and for submission into clearing via CME ClearPort.

Contract Title	CME Globex/ CME ClearPort Code	Rulebook Chapter
European Butane CIF ARA (Argus) Futures	BEF	1426
European Butane CIF ARA (Argus) BALMO Futures	BEB	1427
Mont Belvieu Normal Butane (OPIS) vs. European Butane CIF ARA (Argus) Futures	TEF	1428

To support this launch, Exchange staff conducted a review of the underlying cash market and deliverable supply of Butane in Northwest Europe and at Mont Belvieu in the U.S.

Data sources:

The **Eurostat**[1] data is compiled by the statistical office of the European Union and aims to provide the EU with accurate statistics that enable comparisons between countries and regions. The statistical authorities in each individual member state are responsible for collecting the data. After verification and analysis, the individual authorities send the data to Eurostat who consolidate such data. In addition, Eurostat ensures that all parties are employing the same methodology in collecting and reporting data.

The Exchange determined to use data collected by the U.S. Department of Energy ("DOE") **Energy Information Administration ("EIA")**[2] for its analysis and evaluation of deliverable supply estimates for butane in the Mont Belvieu. The EIA provides detailed data on the key components of deliverable supply. The EIA provides such data on a weekly, monthly, and annual basis.

Argus Media

Argus Media (Argus) is a price reporting service utilized for one leg of the final settlement for the new spread futures contracts and for some of the outright futures. Argus uses a market appropriate methodology to assess prices in the markets it covers. Argus consults with the range of participants involved in different markets and publishes methodologies for each price report on its website[3]. Each methodology is reviewed regularly to ensure that it always meets the needs of market participants and is in line with industry practice. Argus seeks to reflect the way markets are traded, rather than impose its own view. Argus spot market coverage adheres closely to the IOSCO Principles for Oil Price Reporting Agencies.[4]

OPIS (IHS)

Oil Price Information Service (OPIS) by IHS Markit, is a price reporting service for the downstream refined products marketplace. OPIS data is collected by editors via telephone calls, e-mails, instant messaging and

[1] http://ec.europa.eu/eurostat
[2] https://www.eia.gov/about/
[3] Argus Media methodology guide -International LPG
https://www.argusmedia.com/en/methodology/methodology-listing?market=LPG&page=1

electronic transfer of back office deal sheets; and will be utilized for one leg of the final settlement for the new spread futures contracts. Market data is provided to OPIS Editors on the day the market is assessed; or it will not be considered in the daily assessment. OPIS spot market coverage adheres closely to the IOSCO Principles for Oil Price Reporting Agencies.[5]

Market Overview:

The European Liquefied Petroleum Gas (LPG) market

LPG is the term for a group of products that is further split into Propane or Butane. They are flammable mixtures of hydrocarbon gases used as fuel in heating appliances, cooking equipment and vehicles. Butane and Propane are also used in the petrochemical markets and will typically be used to produce products like Ethylene and Propylene. These products form part of the light ends product suite, produced at an oil refinery resulting from the first cut of processing of a crude oil.

The most liquid European hub is Amsterdam-Rotterdam-Antwerp (ARA) where there are extensive storage facilities and refining capacity. Cargoes are sold on a delivered basis i.e. basis cif ARA. In the UK, there is a large LPG terminal on Canvey Island[6] in Essex (in the Southeast of England). Cargoes that are offered on a non-ARA related basis will be netted back using a price adjustment to account for the difference in the freight costs. LPGs are traded in both barges or coasters and large cargoes and there are two separate pricing points for each of these markets. The large cargo markets are more liquid than the coasters markets, based on feedback from market-based sources.

The growth in US shale production has resulted in a huge growth in the expansion of US LPG exports and significant volumes of imports are expected to show up in Europe (and Asia) The Oxford Institute of Energy studies noted in a 2014 report[7] that the US has become one of the world's biggest exporters of LPG. According to the US Energy Information Administration, exports[8] of Normal Butane from the US to all European countries were 29,000 b/d in 2018 or the equivalent of 2,700 metric tons per day or 80,900 tons per month (using a conversion factor of 10.75 barrels per metric ton and multiplying this by 30 days to get a total volume per month[9]). Volumes are expected to increase due to the relative cheap availability of feedstock in the U.S. markets. Eurostat reports LPG data for Europe per country rather than reporting a single data point for the Northwest European region. Propane and Butane both fall under this category therefore an appropriate split between both products has been applied. Based on discussions with traders, both as end-users and producers, the consensus was that Butane represented about 40% of the total LPG volume with the remaining 60% as Propane.

The delivery point for the Butane is cif ARA. In the case of Butane this is using a delivery period of 10-25 days forward on an average cargo size of 7,000 to 12,000 tons. We consider cif ARA to be for delivery into Belgium, the Netherlands, Germany, France, the United Kingdom (UK) and Sweden. In the case of France, we have reduced the volume by 50% to reflect deliveries into ARA only since some locations within each country can't be considered as ARA (the other half of France is considered to be in the Mediterranean region). No further adjustments to the import volumes have been made.

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[5] OPIS Market methodology guide
https://www.opisnet.com/about/methodology/

[6] UK Canvey Island LPG storage – Calor Gas https://www.calor.co.uk/news/calor-gas-delighted-to-unveil-new-road-on-canvey-island/

[7] https://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/07/The-US-Shale-Revolution-and-the-changes-in-LPG-Trading-Dynamics-A-Threat-to-the-GCC.pdf

[8] US EIA Data – LPG Exports from the US market
http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mlpexus1&f=m

[9] JODI conversion factors – Butane (page 92 and table A2.5)
https://www.jodidata.org/_resources/files/downloads/manuals/jodi-oil-2nd-manual.pdf

Mont Belvieu Butane

Natural Gas Liquids ("NGLs") also referred to as Liquefied Petroleum Gases ("LPGs"), are liquid condensed hydrocarbons suspended as particles in gas under pressure and are comprised of propane and other related liquids like ethane, butane, natural gasoline (pentane) and iso-butane. NGLs are by-products of either of the following two processes: natural gas plant processing or petroleum refining and blending. Over the 3-year period to November 2019, natural gas processing accounted for 87% of total NGL production in the U.S. while 13% was produced at petroleum refineries. Data for a number of product categories as shown by an * is considered to be insignificant by volume. Table 1. below illustrates the share of each production method in the production of various types of NGLs over the 3-year (average) period up to and including November 2019. According to the EIA, total NGL production in the U.S., which is referenced as "natural gas processing and refiner and blender net production" was 4.9 million barrels per day ("B/D") or 149.6 million barrels per month over the 3-year average period to November 2019.

Negative production can occur when the amount of a product produced during the month is less than the amount of that same product that is produced (input) or reclassified to become another product during the same month.

Table 1. Total U.S. NGL Production by Production Method (thousand barrels per day)[10]

Production Method	12 months to Nov-17	12 months to Nov-18	12 months to Nov-19	3-year average	% of Production Method	% of Total NGL Production
Natural Gas Processing						
Ethane	1399	1697	1817	1,638	38%	33%
Propane	1222	1385	1568	1,392	33%	28%
Pentanes (Natural Gasoline)	449	500	549	499	12%	10%
Normal Butane	310	360	423	364	9%	7%
Iso-butane	351	383	416	383	9%	8%
Total	**3,731**	**4,325**	**4,773**	**4,276**	**100%**	**87%**
Refiner/Blender						
Propane	305	304	287	298	48%	6%
Propylene	283	293	285	287	46%	6%
Normal Butane	44	40	49	44	7%	1%
Ethane	5	6	5	5		*
Ethylene	1	0	0	0	*	*
Isobutylene	1	-	-	1	*	*

[10] U.S. NGL Production - Natural Gas Plant
https://www.eia.gov/dnav/pet/pet_pnp_gp_dc_nus_mbblpd_m.htm
U.S. NGL Production - Refinery and Blender,
https://www.eia.gov/dnav/pet/pet_pnp_refp_dc_nus_mbblpd_m.htm

Butylene	6	2	-5	1	*	*
Iso-butane	-6	-14	-14	-11	*	*
Total	**638**	**630**	**607**	**625**	**100%**	**13%**
Total Production	**4,369**	**4,956**	**5,380**	**4,902**		

* Insignificant

NGLs are utilized as processing and blending components, feedstocks in the production of ethylene and propylene, and as fuel for heating and industrial processes. Refineries are both major consumers and producers of NGLs. Petrochemical and industrial companies, including plastics manufacturers are among end-users. The manufacturing sector purchases NGLs to use as inputs for their production process of plastic products and components.

During the natural gas plant production process, NGLs are produced as a result of the extraction of materials such as propane, ethane, and butane from natural gas in order to prevent these liquids from condensing and causing operational problems within natural gas pipelines. Fractionation is the process by which NGLs are removed from natural gas in processing plants. The process begins with the removal of the lighter NGLs from the stream. Separating lighter hydrocarbons from heavier hydrocarbons allows for ease of separating each NGL.

The economics of natural gas processing are based mainly on the natural gas-NGL price spread (“frac spread”). Low natural gas prices combined with high NGL values mean good returns for the NGL processors. Since NGLs sell at a premium to natural gas, there is often an economic incentive for operators to focus exploration and development activities on areas that have natural gas with high liquids content. This "liquids boost" is especially important in the development of unconventional resources (such as shale gas) because of the relatively high cost of drilling and completing horizontal wells. The high liquids content of certain shale formations helps operators to profitably develop shale gas resources during periods of low natural gas prices. In recent years, high levels of natural gas production have pushed prices down. The relatively high value of natural gas liquids has led producers to target “wet gas”, or gas with high liquids content. The result of this liquids price premium is that wet natural gas production is increasing at a faster rate than dry natural gas production.

NGLs are utilized as processing and blending components, feedstocks in the production of ethylene and propylene, and as fuel for heating and industrial processes. Refineries are both major consumers and producers of NGLs. Petrochemical and industrial companies, including plastics manufacturers are among end-users. The manufacturing sector purchases NGLs to use as inputs for their production process of plastic products and components.

During the natural gas plant production process, NGLs are produced as a result of the extraction of materials such as propane, ethane, and butane from natural gas in order to prevent these liquids from condensing and causing operational problems within natural gas pipelines. Fractionation is the process by which NGLs are removed from natural gas in processing plants. The process begins with the removal of the lighter NGLs from the stream. Separating lighter hydrocarbons from heavier hydrocarbons allows for ease of separating each NGL.

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Product	Characteristics	Sectors
Methane (C1)	Dry gas; calorific value only; Piped or LNG' GTL feedstock	Power, heating, industry, GTL
Ethane (C2)	Both dry gas & NGL; major value as petchem feedstock; needs pipelines, big gas output	As in methane; also petchem
Propane (C3/LPG)	Needs containment; generally stripped from gas; higher capex and opex in transport; safer than butane	Generally home & business; transport use; gas supplement
Butane (C4/LGP)	Containment needed; higher BTU value; like propane, high capex & opex	Mainly industrial; also in transport
Condensate (C5+)	Light, sweet crude lookalike; almost always > 50% naphtha; Can be naphthenic or paraffinic; Moderate mid-distillate; once a liquid, remains a liquid; from wellhead or gas processing; some output sold as naphtha	Like crude, full range of products; strong impact on gasoline & petchems; can produce large volume of jet & ADO

Mt. Belvieu, Texas

There are two key trading and storage hubs for NGLs in the U.S.: Mont Belvieu, Texas, and Conway, Kansas. With its strategic location along the U.S. Gulf Coast, proximity to major refining complexes, underground storage capacity, and access to onshore and offshore transportation for shipping liquids to market, Mont Belvieu, Texas, continues to attract plans for fractionation expansions alongside North America's flourishing shale gas production. The site is 30 miles east of Houston and above one of the world's largest salt dome formations[11].

Mont Belvieu is the largest storage area for natural gas liquids in the world, with storage capacity of 225.8 million barrels. Natural gas liquids are stored in underground salt caverns that are directly linked to interstate pipelines and are connected to primary production areas in the Gulf Coast. In addition, the interstate pipelines also provide connectivity to the large demand areas in the South, Northeast and Midwest markets. Mont Belvieu is utilized as the price reference point for NGL markets in North America. Roughly 70,000 miles of pipelines are committed to the movement of NGLs in the U.S. market. In addition to pipeline delivery, NGLs are also transported via rail cars, highway transports, delivery trucks, barges, and ocean tankers.

[11] http://www.ogj.com/articles/print/volume-112/issue-6/speical-report-worldwide-gas-processing/what-s-at-mont-belvieu.html

Top NGL producers in the U.S. are midstream companies such as Enterprise, Williams, Devon Gas Services, Enbridge Energy Partners, Oneok Partners, Targa, and Anadarko. Enterprise is the biggest player in the market with 15 NGL fractionation facilities located in Texas, Louisiana, and Ohio. These facilities are linked by pipelines to some of the largest consumers of NGLs in the United States and to international markets through the import/export terminal on the Houston Ship Channel.

PRODUCTION

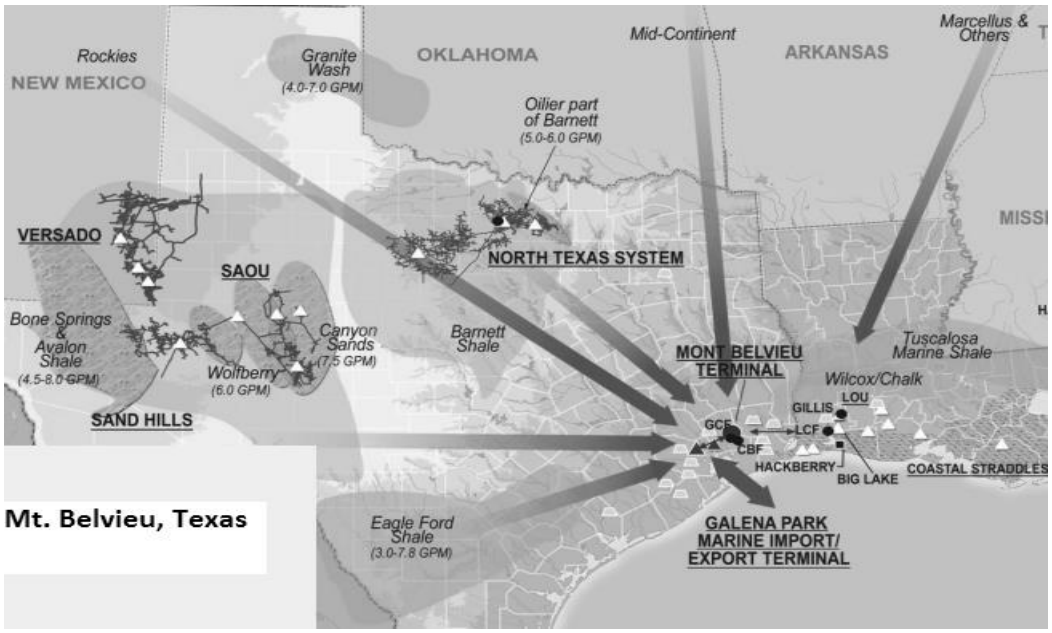
Normal Butane

Butane is used in the petrochemical industry as normal butane and iso-butane. Both are naturally occurring by-products of natural gas production and crude refining. Butane usually is a gaseous straight-chain or branch-chain hydrocarbon extracted from natural gas or petroleum refinery streams, with the former comprising 17% of total domestic volume. The main use of butane is to manufacture gasoline, which accounts for about two-thirds of butane demand, as well as all iso-butane consumption. Butane is also a major feedstock in petrochemicals. Normal butane is primarily used for gasoline blending (roughly 85%) — this is almost exclusively in the winter to boost the RVP and to assist with the start of a cold engine. The largest traded location for butane is at Mont Belvieu, Texas. According to the EIA, total normal butane production was 122,000 barrels per day or 3.71 million barrels per month over the three-year period to November 2019.

Table 4. Normal Butane Production[12]

Butane Production (B/D)	Year to Nov-17	Year to Nov-18	Year to Nov-19	Average
Texas Inland				
Natural Gas Plant	151,000	182,000	215,000	182,700
Refinery and Blender	200	2,400	3,200	1,900
Texas Gulf Coast				
Natural Gas Plant	-91,000	-100,000	-101,000	-97,000
Refinery and Blender	35,000	36,000	33,000	35,000
Total	**95,200**	**120,400**	**150,200**	**122,000**

[12] Natural Gas Field Plant Production
https://www.eia.gov/dnav/pet/PET_PNP_GP_DC_R3B_MBBLPD_M.htm
Normal Butane Refiner Blender volume
https://www.eia.gov/dnav/pet/pet_pnp_refp_dc_r3b_mbblpd_m.htm



STOCKS

Table 6 below provides the averages of monthly EIA stock data for PADD 3 for Normal Butane. According to the EIA, NGL stocks for normal butane averaged 26,400 million barrels over the three-year period, to November 2019.

Table 6. PADD 3 NGL Stocks[13]

Normal Butane Stocks (Thousand barrels)	12 months to Nov-17	12 months to Nov-18	12 months to Nov-19	3-year Average
Normal Butane	24,600	23,900	30,600	26,400

Mont Belvieu serves as a hub to major refining complexes with underground storage capacity and access to onshore and offshore markets. According to the most recent data provided by the EIA, NGL working storage capacity (Bulk terminal and refinery) in PADD 3 was 379.1 million barrels as of September 2019[14] Mont Belvieu storage capacity accounts for 66% of NGL storage in PADD 3, or 250.8 million of the total 379.1 million barrels. Note that Targa Resources reports storage as combined capacity for Mont Belvieu and Lake Charles. These figures are not used in the calculation of total deliverable supply. Illustrated in Table 7 below are the storage capacities of the 3 main operators in Mont Belvieu.

Table 7. Mont Belvieu Storage Capacity

[13] NGL Stock Data – PADD 3 Stocks Normal Butane
https://www.eia.gov/dnav/pet/pet_stoc_typ_c_r30_EPLLBAN_mbbl_m.htm
[14] Bulk Storage Capacity report – EIA November 2019 (data as of Sept-19)
https://www.eia.gov/petroleum/storagecapacity/storagecapacity.pdf

NGL Storage Capacity	Millions of Barrels
Enterprise Product Partners	129.8[15]
Targa Resources LP	71.0*[16]
Lone Star NGL (Energy transfer)	50.0[17]
Total Storage Capacity	250.8

***reported as Mont Belvieu and Lake Charles storage**

According to market participants, the Mont Belvieu storage hub accounts for more than 50% of total inventories reported in EIA's PADD 3 region. The Exchange will utilize 30% of the PADD 3 inventories as part of the estimate of deliverable supply for normal butane for the three-year period up to and including November 2019. Subsequently, after calculating 30% of PADD 3 stocks, the storage component for normal butane is 6.4 million barrels. To be conservative, the Exchange has applied a 10% reduction to account for any potential operational minimum levels of storage, and a further 10% reduction for any potential impacts from long-term contracts, although no such impacts were observed.

Normal Butane Stocks (Thousand barrels)	12 months to Nov-17	12 months to Nov-18	12 months to Nov-19	3-year Average	-70%	-10%	-10%
Normal Butane	24,600	23,900	30,600	26,400	7,920	7,128	6,415

Analysis of Deliverable Supply

The Commission defines deliverable supply as the quantity of the commodity meeting a derivative contract's delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract's delivery points during the specified delivery period, barring abnormal movement in interstate commerce.

European Butane

For the European Butane market, the Exchange has used data from **Eurostat** for LPG. The data is not broken down between Propane and Butane. Therefore, a split between the two products has been established. Based on discussions with market participants, the Exchange has reduced the total deliverable supply for LPG by 60% to reflect 40% of the total pool being Butane. As the Butane is a CIF price, propane imports from this analysis and therefore have reduced the total deliverable supply by 60% to reflect butane imports only. The typical term agreement in the cash market allows flexibility for re-trading of the contracted quantity in the spot market, so the term agreements do not restrict the potential deliverable supply.

Based on the Eurostat data, shown in table 1 in the Appendix, total deliverable supply of butane into northwest Europe was 883,000 tons per month on average over the period July 2016 to June 2019. Applying the reduction for butane only, this equates to a total butane import volume of 353,000 tons per month. A full breakdown month by month of the import volumes in **Appendix A** has been provided. For France, a reduction of 50% has been applied to strip out the deliveries considered as Mediterranean.

[15] Enterprise Product Partners http://www.enterpriseproducts.com/operations/ngl-pipelines-services/ngl-storage,
[16] Targa Resources https://www.targaresources.com/operations/logistics-marketing/overview
[17] Energy Transfer (Mont Belvieu) storage https://cms.energytransfer.com/wp-content/uploads/2019/08/Mt-Belvieu-Fact-Sheet-8-23-19.pdf

A conversion factor of 10.75 barrels per metric ton has been used, which is the factor that Joint Oil Data Initiative (JODI) uses.

Mont Belvieu Butane

For the **Mont Belvieu Normal Butane (OPIS) Futures contract**, the Exchange based its estimate of deliverable supply on the sum of Texas Inland and Texas Gulf Coast production plus 30% of stocks in PADD 3. As explained above, the sum of production is approximately 122,000 barrels per day, which is equivalent to 3.71 million barrels per month (122,000 x 365 days/12), or 3,710 contract equivalents (contract size: 1,000 bbls). In addition, the storage component for normal butane is 6.4 million barrels. Therefore, the total deliverable supply for normal butane is 10.1 million barrels per month, which is equivalent to 10,100 contracts. Consequently, the proposed spot month limit of 1,500 contracts represents 14.85% of the monthly deliverable supply.

Based on the deliverable supply for CIF ARA European butane of 353,000 tons or 353 contract equivalents (1,000 metric ton lot size), the Exchange proposes a spot month position limit of 75 lots for the **European Butane CIF ARA (Argus) Futures** which equates to around 21% of the total monthly deliverable supply. Based on the deliverable supply for butane of 353,000 tons or 353 contract equivalents (1,000 metric ton lot size), the Exchange proposes a spot month position limit of 75 lots for the **European Butane CIF ARA (Argus) BALMO Futures** which equates to around 21% of the total monthly deliverable supply.

Positions in the **Mont Belvieu Normal Butane (OPIS) vs European Butane CIF ARA (Argus) Futures** will aggregate into the Mont Belvieu Normal Butane Futures (commodity code D0) and the European Butane CIF ARA Futures (commodity code BEF). The current spot month limit for the Mont Belvieu Normal Butane (OPIS) Futures is 1,500 lots therefore based on the current level of deliverable supply of 10,100 contract equivalents this equates to around 14.85% of the monthly deliverable supply. The proposed spot month limit for the European Butane CIF ARA Futures is 75 lots therefore based on the current level of deliverable supply of 353 contract equivalents, this equates to around 21% of the total monthly deliverable supply.

APPENDIX A

Table 1: Eurostat Data: Monthly Imports for LPG (Propane (60% LPG) and Butane (40% LPG)) Data for the ARA Region

	Belgium	Germany	France	Netherlands	Sweden	UK	Total "net" imports
Jan-16	214	74	278	271	35	99	832
Feb-16	223	90	330	262	92	124	956
Mar-16	188	78	222	141	118	70	706
Apr-16	172	75	206	308	77	109	844
May-16	143	61	205	358	145	61	871
Jun-16	135	47	173	296	185	98	848
Jul-16	228	52	277	441	136	75	1,071
Aug-16	196	44	217	223	136	167	875
Sep-16	169	45	222	376	95	105	901
Oct-16	194	59	251	343	116	77	915
Nov-16	197	70	293	333	93	21	861

Dec-16	235	92	333	367	96	75	1,032
Jan-17	207	108	347	383	58	85	1,015
Feb-17	97	99	295	323	68	84	819
Mar-17	169	89	364	277	99	43	859
Apr-17	205	51	215	283	184	32	863
May-17	138	66	297	224	214	86	877
Jun-17	194	59	187	302	78	110	837
Jul-17	199	64	190	261	126	73	818
Aug-17	156	64	179	253	42	38	643
Sep-17	193	71	179	192	86	68	700
Oct-17	171	79	259	257	125	80	842
Nov-17	164	88	319	220	78	38	748
Dec-17	186	104	305	282	57	95	877
Jan-18	191	119	407	369	85	127	1,095
Feb-18	208	91	272	351	81	116	983
Mar-18	191	126	296	373	42	117	997
Apr-18	190	91	240	341	74	103	919
May-18	167	84	306	302	115	90	911
Jun-18	184	94	189	297	119	130	919
Jul-18	193	56	239	269	156	45	839
Aug-18	187	57	166	301	119	99	846
Sep-18	144	73	204	291	97	86	793
Oct-18	188	86	309	334	87	104	954
Nov-18	165	94	257	321	58	89	856
Dec-18	147	106	298	377	88	112	979
Jan-19	154	110	316	355	51	82	910
Feb-19	175	153	337	304	41	101	943
Mar-19	192	107	310	260	107	82	903
Apr-19	162	97	252	199	135	54	773
May-19	127	88	243	200	38	92	667
Jun-19	122	88	228	361	202	60	947
3-year average	**177**	**84**	**267**	**304**	**100**	**84**	**883**

*French volumes reduced by 50% to reflect northwest Europe