ENERGY LOGISTICS & DISTRIBUTION

Industry In-Sight™

INITIATING COVERAGE




JKC JORDAN KNAUFF & COMPANY

ENERGY EQUIPMENT & INFRASTRUCTURE ALLIANCE

The Voice of the Energy Supply Chain

ENERGYBUILDERS

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All charts in this report are updated to the latest information available at the time of publication. Due to differing reporting dates for various data used throughout the report, all charts are not updated to the same ending period.

INTRODUCTION ... About This Report

We are pleased to offer this quarterly report which provides a comprehensive compilation of energy information, insights and data. It aggregates critical planning and forecasting information from a myriad of sources into one resource for energy supply chain analysts and decision-makers.

The energy supply chain is an increasingly complex network of upstream, midstream and downstream providers of construction, equipment, materials and services. As shale gas-oil and renewable energy continue to expand in the U.S., additional infrastructure is needed to connect the new sources to the current network of pipelines, storage and transmission stations. Current and new members of the supply chain will need to expand in order to build and service the additional infrastructure.

We define the Energy Logistics & Distribution Industry as any energy production, transportation and storage activities that take place from the well-head to the refinery or gas processing plant through delivery to the end user. Industry members include: producers and distributors of oil and natural gas, natural gas liquids, refined fuels and propane; energy storage and pipeline operators; oil and gas field services; producers and distributors of lubricants, oils, greases and fluids; service contractors, capital equipment manufacturers; materials suppliers; as well as logistics, transportation and maintenance providers.

Segments covered in this Industry In-Sight™ include:

- Crude oil and refined products, natural gas, liquefied natural gas (LNG), natural gas liquids including propane and heating/fuel oil, as well as drilling activity.
- Renewables, including solar, wind, hydropower and ethanol.
- Logistics, including storage and terminals, pipelines, trucking, shipping and rail.
- Economic and financial data pertinent to the Energy Logistics & Distribution Industry.

It is our intention that this publication will provide value in the following areas:

- **Aggregate Information** – The Data Center provides comprehensive statistics on the Energy Logistics & Distribution Industry including, among others: prices (domestic and international), production, consumption, inventory, imports/exports, LNG terminals, drilling activity, solar and wind capacities, energy consumption by sector and source, tank and underground storage capacities and utilization, pipeline mileage and trucking conditions. In all, the report offers more than 70 individual charts covering these topics and more. All charts in this report are updated to the latest information available at the time of publication.
- **Input to Business Decisions** – As a relevant and informative reference for use when contemplating decisions that will have a meaningful impact on your business. Accordingly, we welcome any input, feedback and suggestions to help us include meaningful and timely topical content in future publications. We especially would like to receive suggestions for ideas on Hot Topics in the Energy Logistics & Distribution Industry.
- **Identification of Opportunities** – The breadth of information provided will enable owners and operators of energy logistics businesses to track developments in energy segments outside of their day-to-day focus.
- **Public and Transaction Comparables by Segment** – This section provides the tracking of a cross-section of publicly-traded companies and transactions in various segments of the Energy Logistics & Distribution Industry. The data include operating metrics, such as revenues and EBITDA (earnings before interest, taxes, depreciation and amortization); and valuation analyses such as total enterprise value / latest twelve months revenues and total enterprise value / latest twelve months EBITDA.

Thank you for taking the time to review this Energy Logistics & Distribution Industry In-Sight™. Our goal is to provide the most comprehensive and beneficial information possible. Please forward your feedback and suggestions to any member of the Jordan Knauff & Company or Energy Equipment and Infrastructure Alliance team members listed on the last two pages of this report.

INTRODUCTION

Who is the Energy Equipment & Infrastructure Alliance (EEIA)?

EEIA ... The Voice of the Energy Supply Chain

The energy supply chain is over 120,000 companies in sixty industries, annually contributing more than $170 billion to the U.S. economy, with hundreds of thousands of workers in communities throughout every state of the union. They provide construction, well services, capital equipment, supplies, logistics, professional services and technology in support of energy operations. They build energy infrastructure including production sites, transmission infrastructure, pipelines, storage facilities, processing plants and export terminals.

The shale energy revolution is transforming prosperity, security and quality of life in America. In a few short years, it has brought rising employment, income and opportunity to workers and businesses of all sizes and in all fifty states, often to communities that until recently have known limited prospects for growth. It has given Americans a cleaner environment, lower energy costs, renewed national competitiveness and energy security.

Creating a supportive public and policymaker environment for this miracle depends on active public engagement by energy supply chain stakeholders -- the non-oil and gas companies where energy-driven jobs and opportunities are greatest.

EEIA is that voice. We mobilize and lead the North American supply chain in pursuit of government policies that support full development of our energy resources, while protecting public health, safety and the environment. We also work for widespread public support for energy development.

The Energy Equipment & Infrastructure Alliance (EEIA) is active on all fronts: federal and state legislative, regulatory, judicial and public opinion. Our strength is based upon the supply chain's enormous fifty-state contributions to jobs, economic growth and community prosperity. We conduct economic research that measures and reports the facts about the energy supply chain's tremendous contributions to the American economy.

We are an organization of leading supply chain companies, trade associations and labor organizations. We are the voices of the businesses and workers of America's energy miracle.




INTRODUCTION

Who is Jordan Knauff & Company (JKC)?

JKC was founded in 2001 to undertake a distinct mission: to assemble and maintain a staff of top-notch investment banking personnel and offer their knowledge and experience to provide the best available investment banking services to middle-market companies, the entrepreneurs that lead them and the financial entities that transact with them. JKC has been active within the Energy Logistics & Distribution Industry as operators, investors, board members and investment bankers prior to the firm's founding in 2001.

On a combined basis, over the course of their careers our employees have completed over 200 transactions as investors, owners, operators, buyers, sellers and investment bankers of middle-market businesses across a variety of industries. The majority of our firm's broad transaction experience has been with private companies owned by one shareholder, a partnership, a family or private equity investors.

Experience has taught us that the owners and executives of middle-market businesses tend to have very different needs and goals in capital transactions from those that are common to capital events related to larger companies. Our personnel apply their considerable expertise to accomplish important goals: delivery of successful outcomes for our clients. Pursuant to that, we direct and manage all aspects of the capital transaction process, assist our clients with the management of important constituents (employees, customers, vendors and lenders), act as a teammate to other important client advisors (legal counsel, accountant, tax advisor) and collaborate with transaction counsel in the negotiations with the parties on the other side of the transaction.

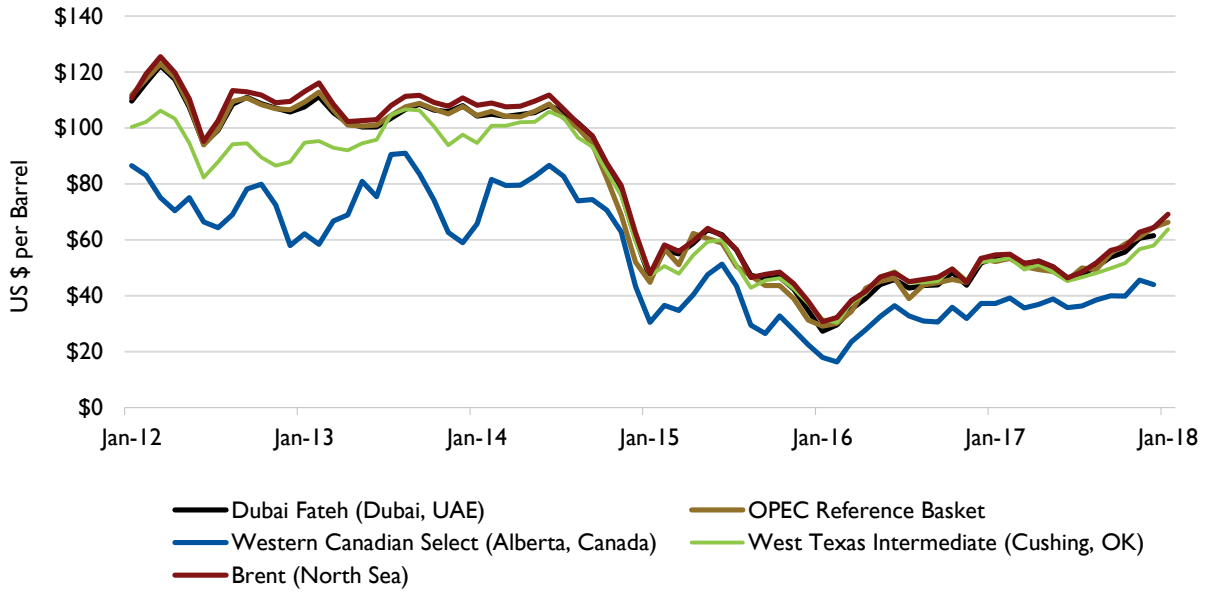
The Services We Provide

- Sell Companies: Generate a liquidity event on behalf of the owner(s) through whole, majority, or minority sale of assets, stock or units.
- Raise Capital: Representation of companies, management teams and entrepreneurs in the raising of senior debt, mezzanine debt or equity capital. Proceeds may be used for a variety of reasons, including, among others, recapitalizations, funding of growth, funding of acquisitions or liquidity for owners and investors.
- Acquisition Advisory: Assistance in sourcing and closing acquisitions -- whether it be a single transaction or a series of acquisitions as part of a consolidation strategy in an Industry Development Project™ (IDP) - a proprietary method for assisting private equity groups, companies or private investors that want to pursue multiple non-auction transactions within a single industry.
- Strategic Business Services: A suite of services for middle-market business owners and executives. Comprised of three components – Company Specific Valuation, Capital Road Map® and Strategic Industry Analysis – these services can be packaged together or used on an à la carte basis.

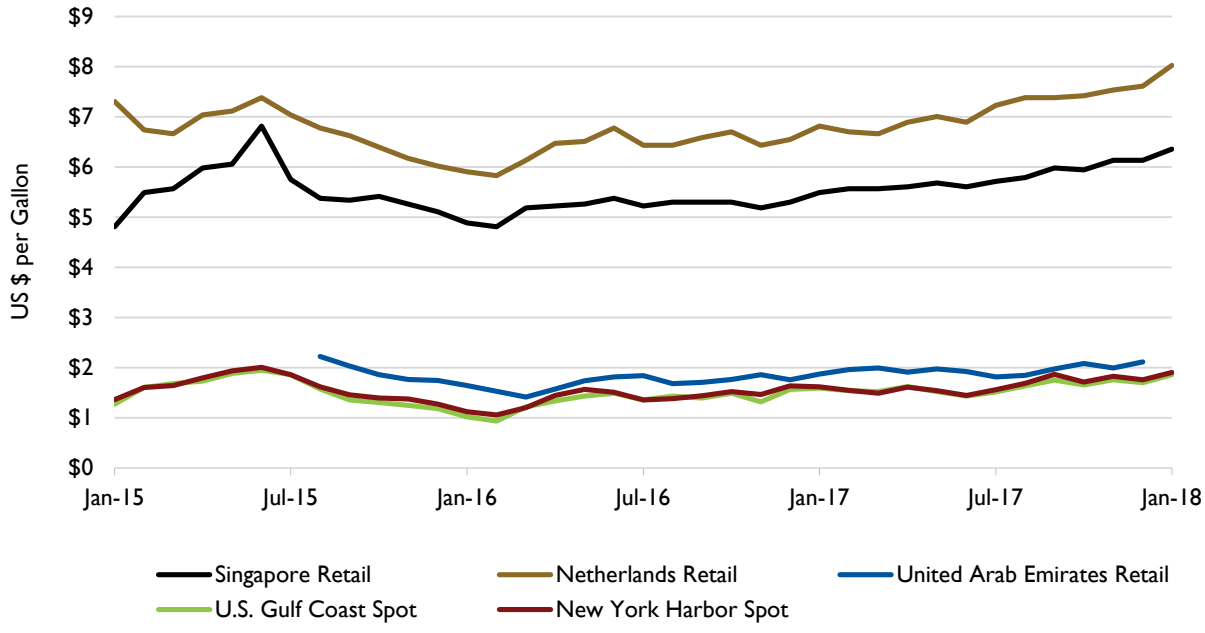
DATA CENTER

OIL

CRUDE OIL PRICES (MONTHLY AVERAGE) (1)



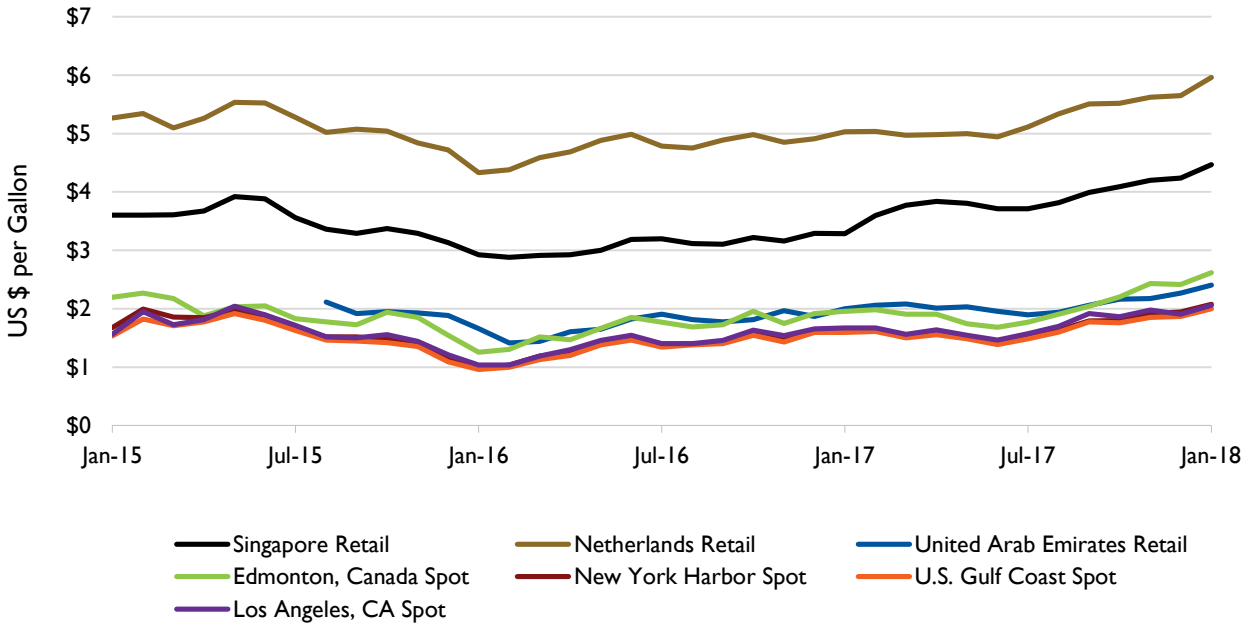
GASOLINE PRICES (MONTHLY AVERAGE) (2)



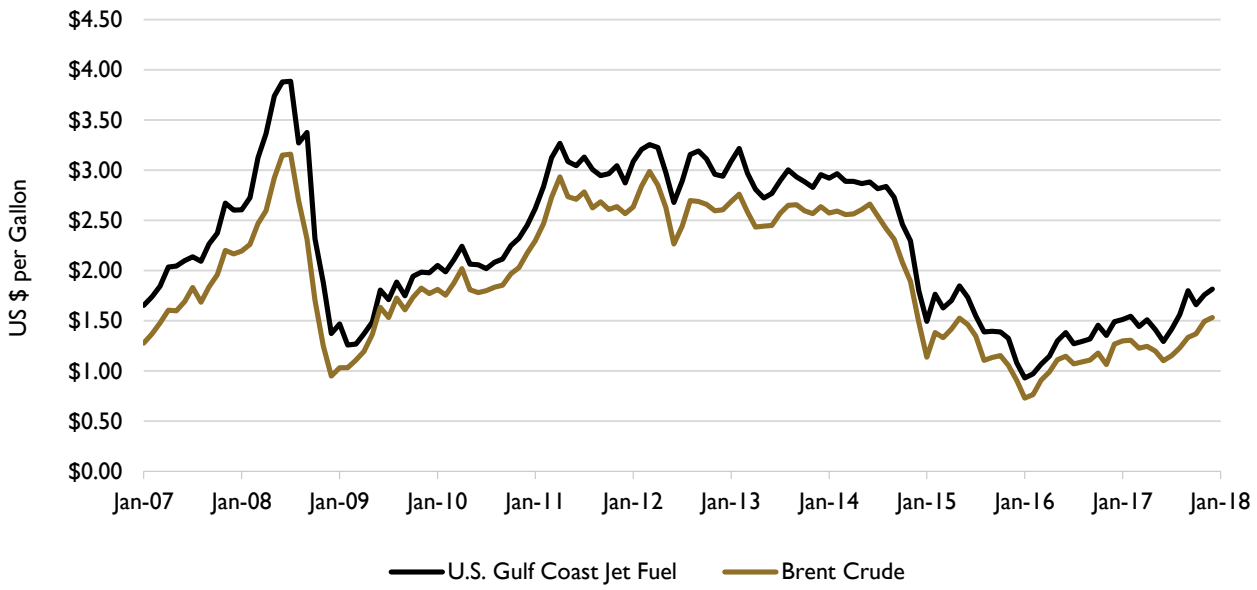
DATA CENTER

OIL

DIESEL PRICES (MONTHLY AVERAGE) (3)



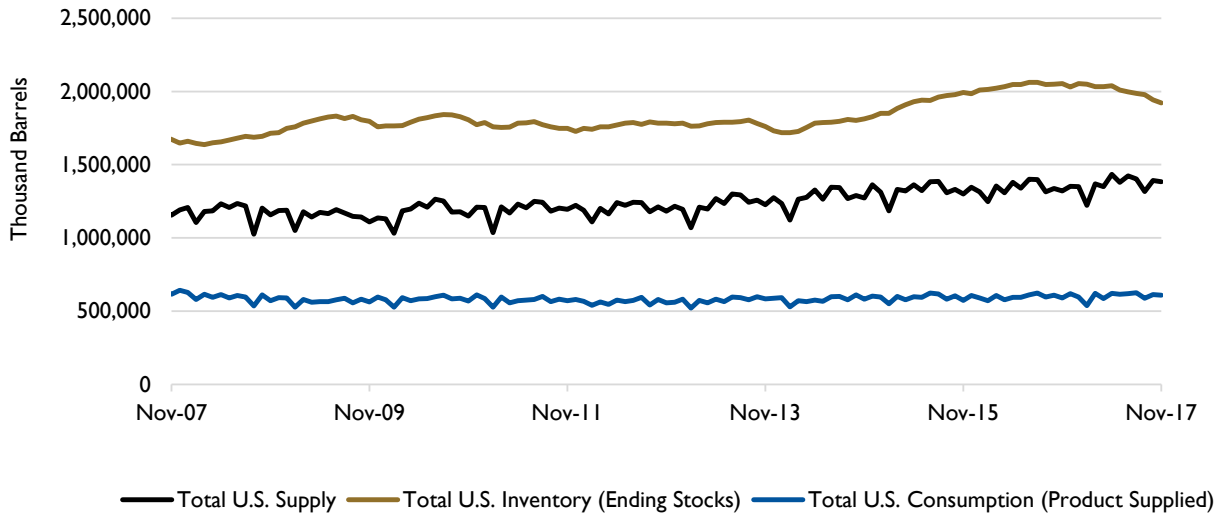
JET FUEL PRICES (MONTHLY AVERAGE) (4)



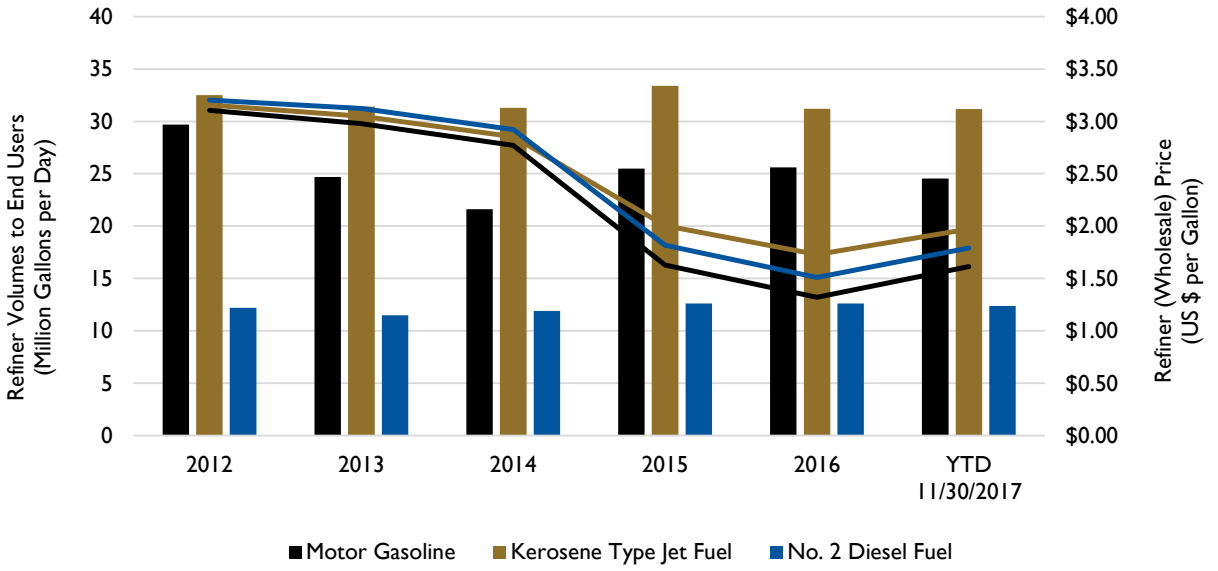
DATA CENTER

OIL

U.S. Crude Oil and Petroleum Products Supply, Inventory and Consumption (Monthly) (5)



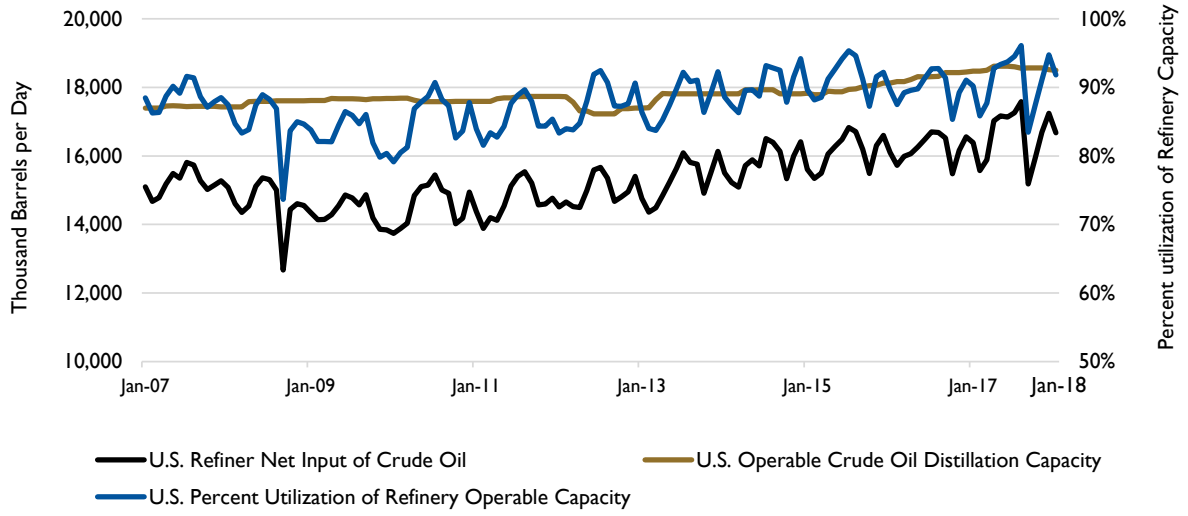
U.S. Refinery Volumes and Wholesale Prices of Petroleum Products (Annual Average) (6)



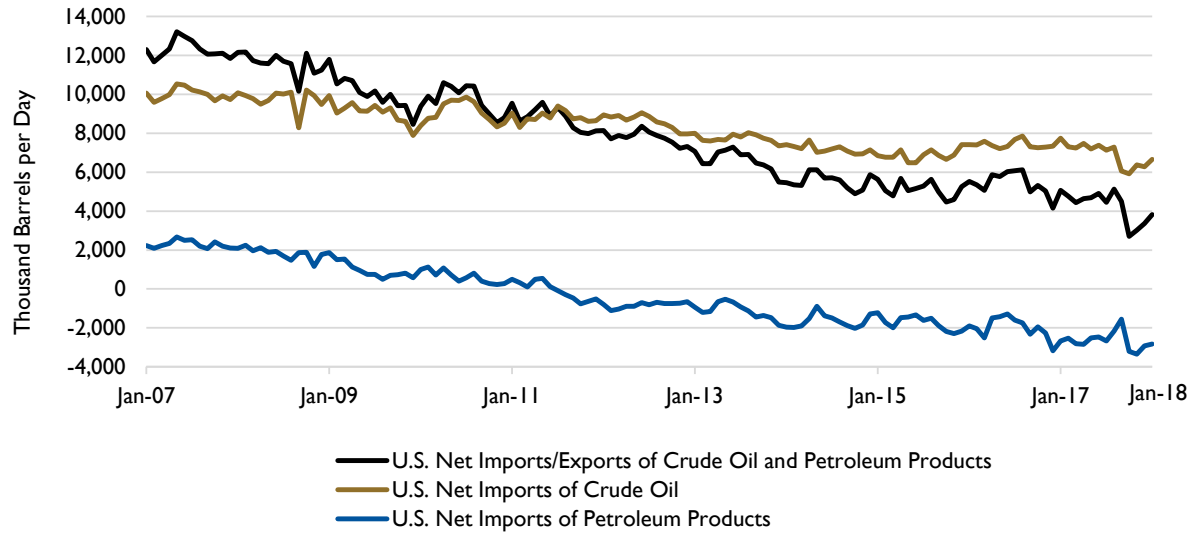
DATA CENTER

OIL

U.S. Crude Oil Refinery Input, Distillation Capacity and Refinery Utilization (Monthly Average) (7)



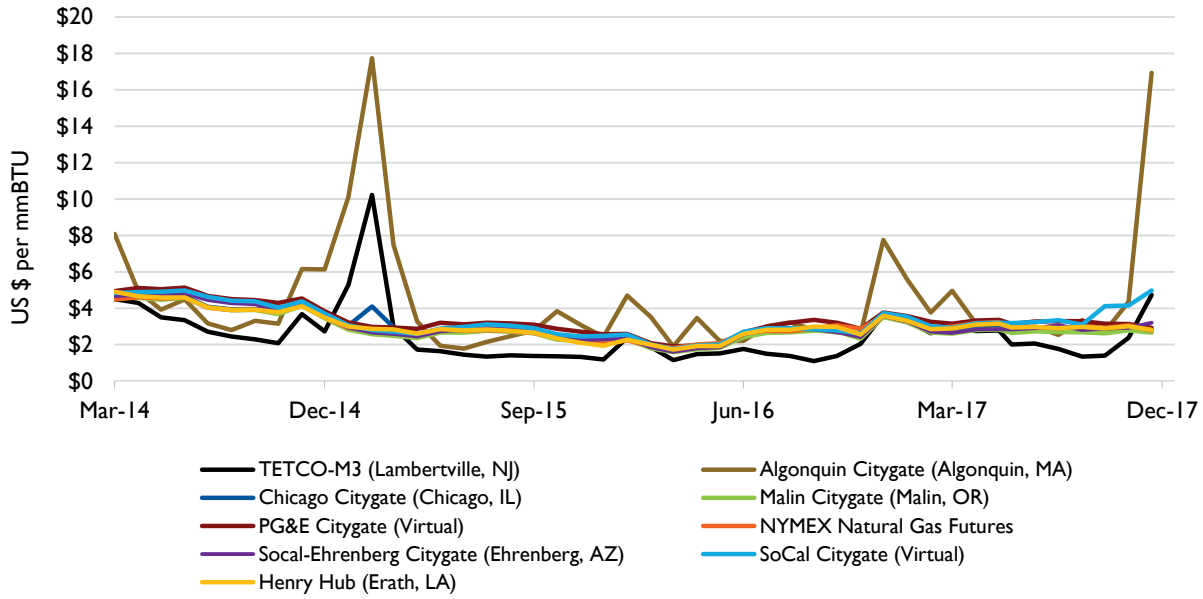
U.S. Crude Oil and Petroleum Products Imports and Exports (Monthly Average) (8)



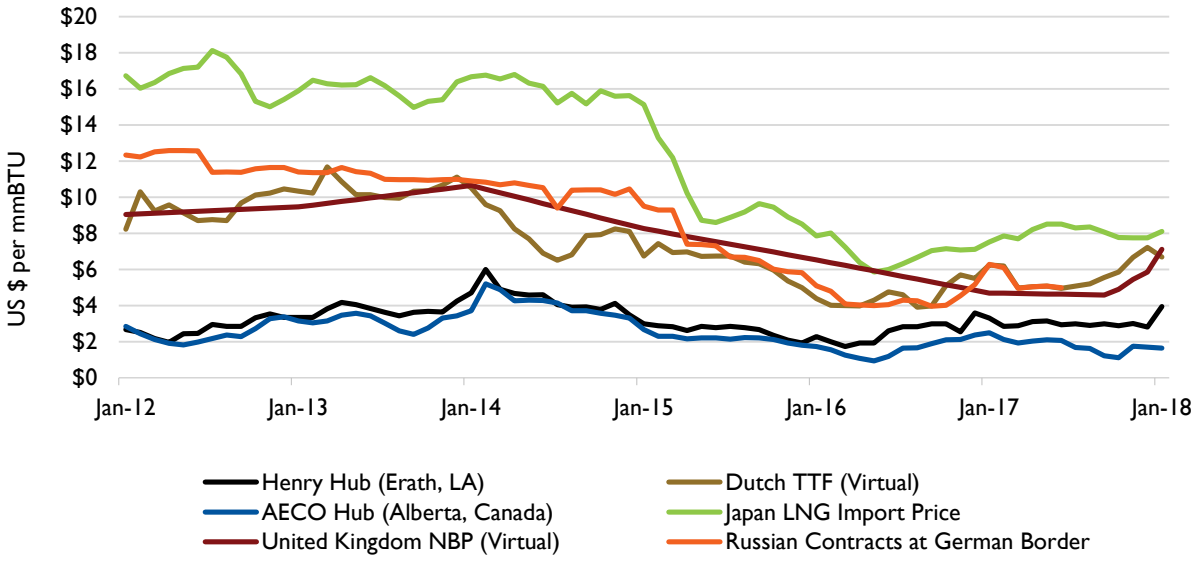
DATA CENTER

NATURAL GAS

DOMESTIC NATURAL GAS PRICES (MONTHLY AVERAGE) (9)



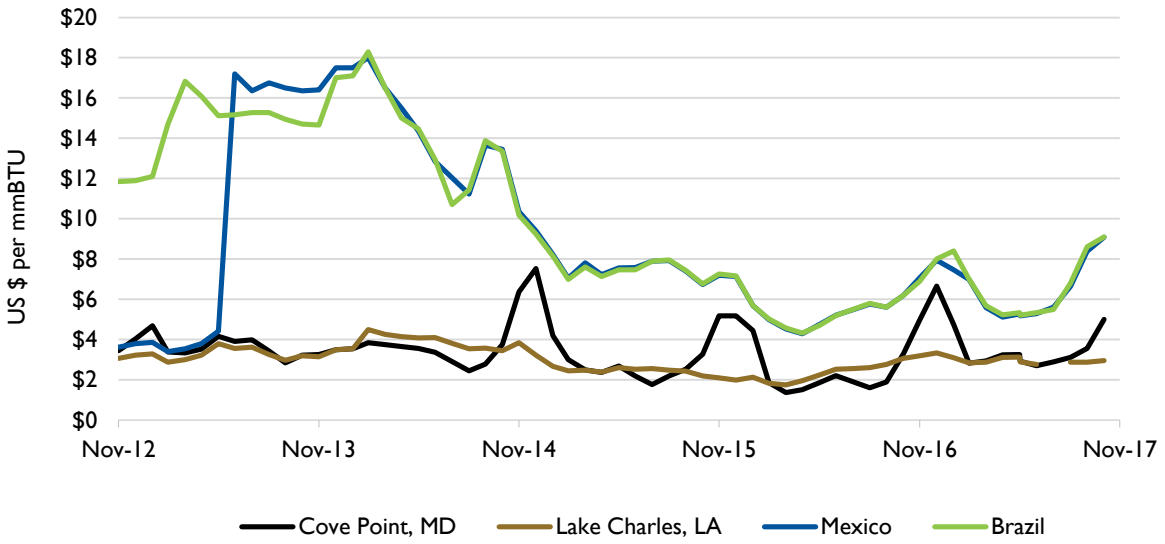
INTERNATIONAL NATURAL GAS PRICES (MONTHLY AVERAGE) (10)



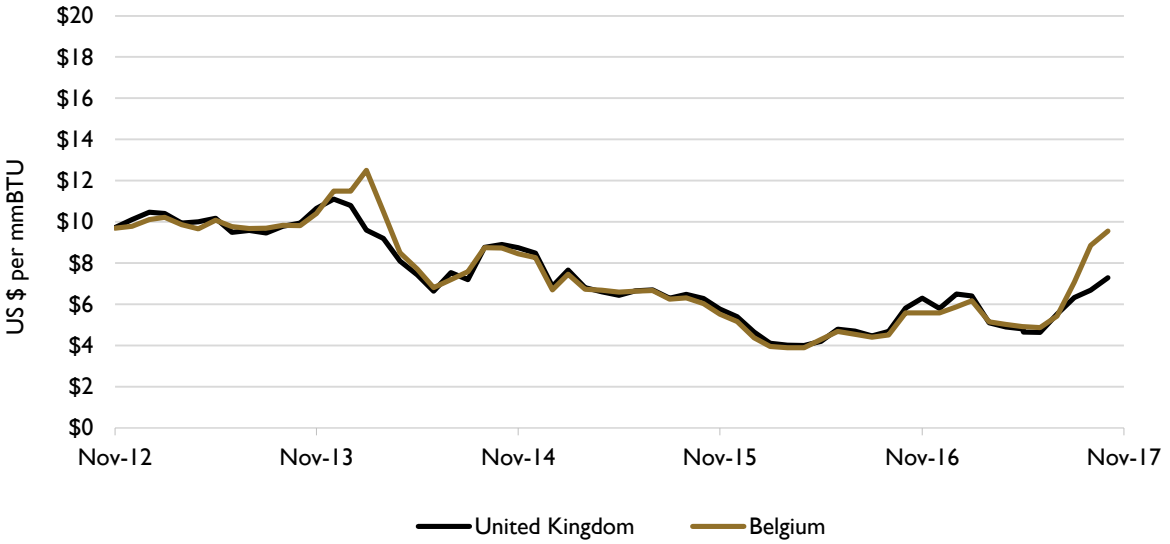
DATA CENTER

NATURAL GAS

AMERICAS LIQUEFIED NATURAL GAS PRICES (MONTHLY AVERAGE) (11)



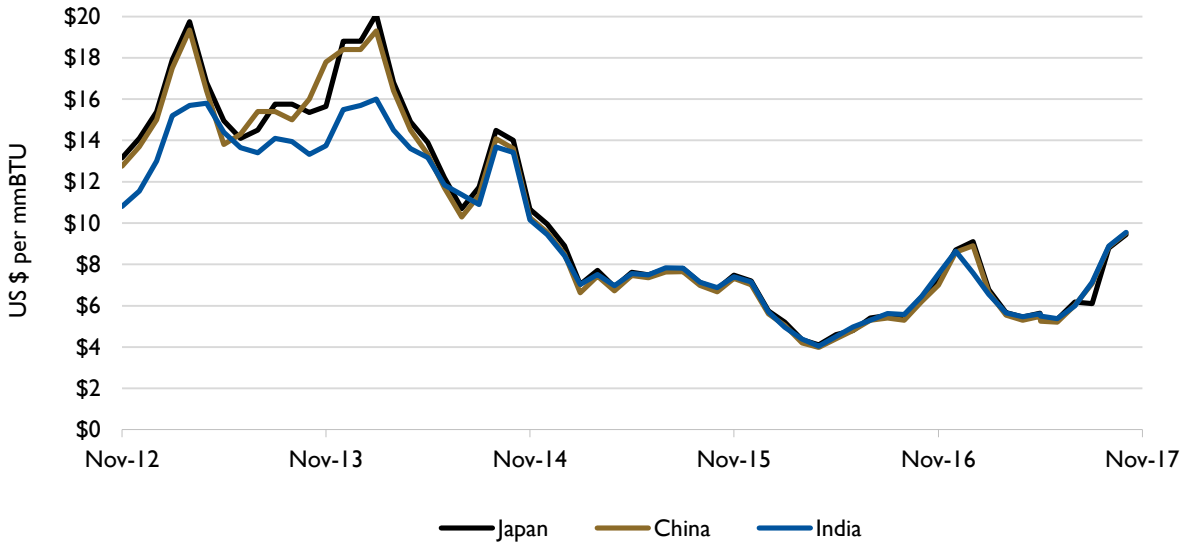
WESTERN EUROPE LIQUEFIED NATURAL GAS PRICES (MONTHLY AVERAGE) (12)



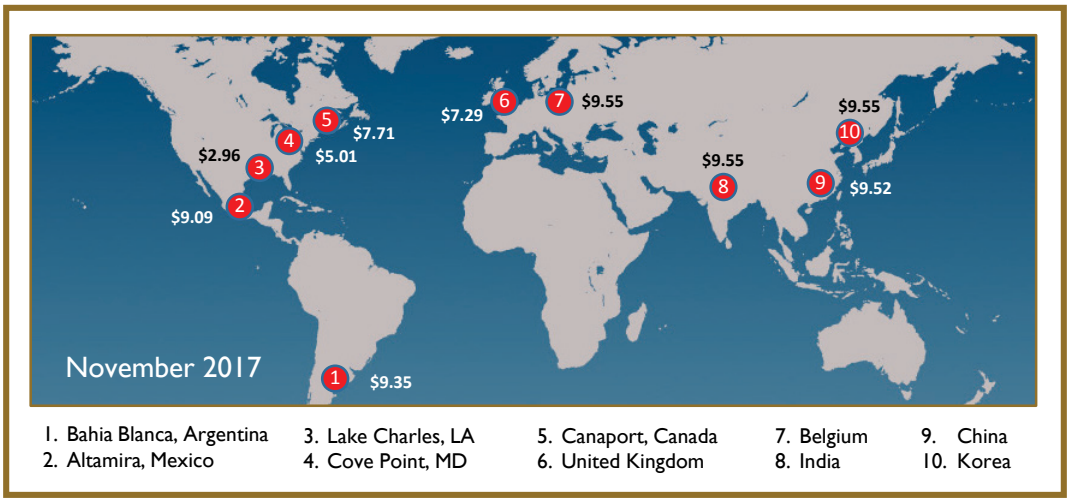
DATA CENTER

NATURAL GAS

ASIA LIQUEFIED NATURAL GAS PRICES (MONTHLY AVERAGE) (13)



WORLD LIQUEFIED NATURAL GAS PRICES MAP (MONTHLY AVERAGE) (14)

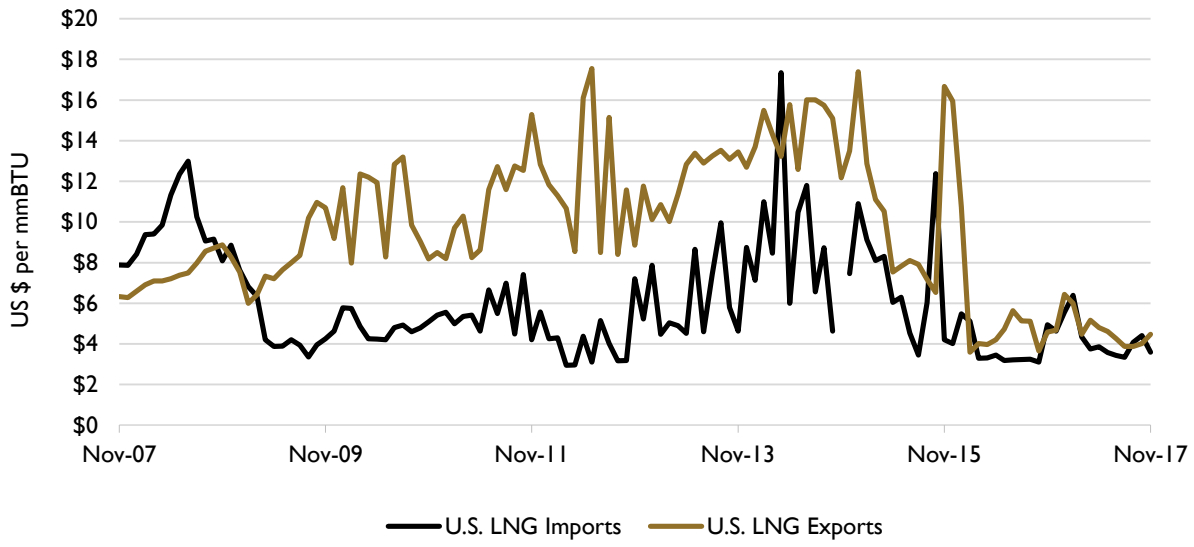


1. Bahia Blanca, Argentina
2. Altamira, Mexico
3. Lake Charles, LA
4. Cove Point, MD
5. Canaport, Canada
6. United Kingdom
7. Belgium
8. India
9. China
10. Korea

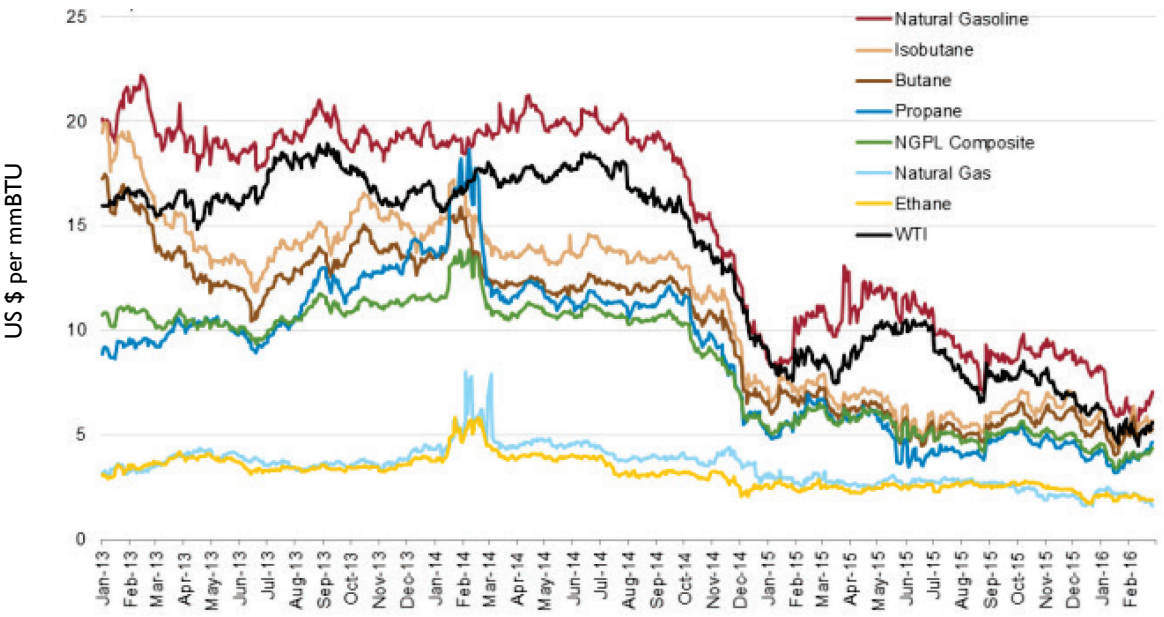
DATA CENTER

NATURAL GAS

U.S. Import / Export Liquefied Natural Gas Prices (Monthly Average) (15)



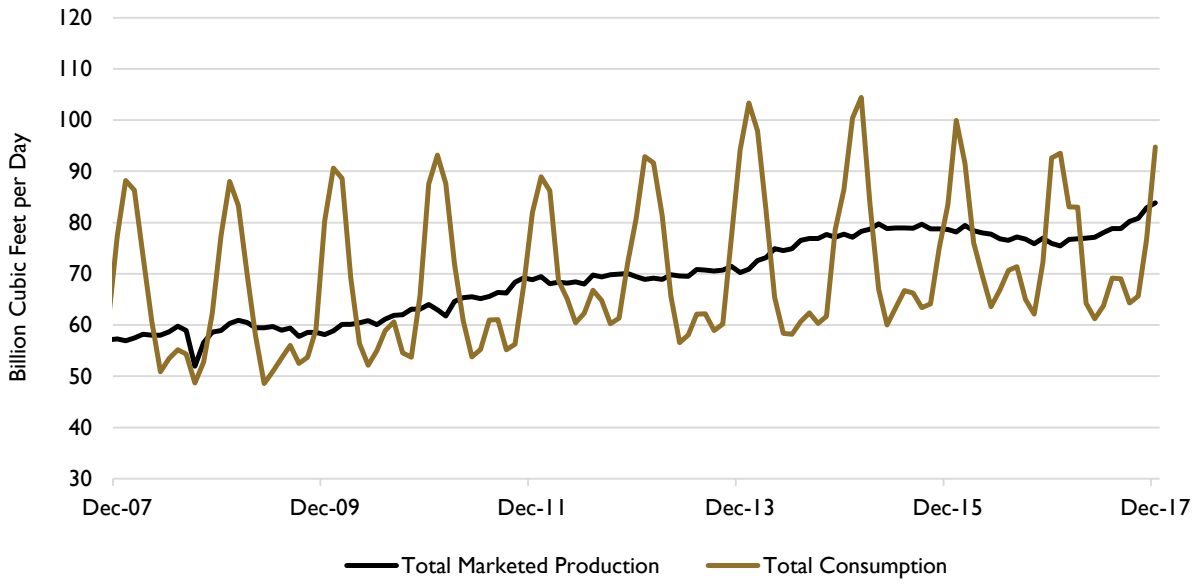
Natural Gas Liquids Prices (Monthly Average) (16)



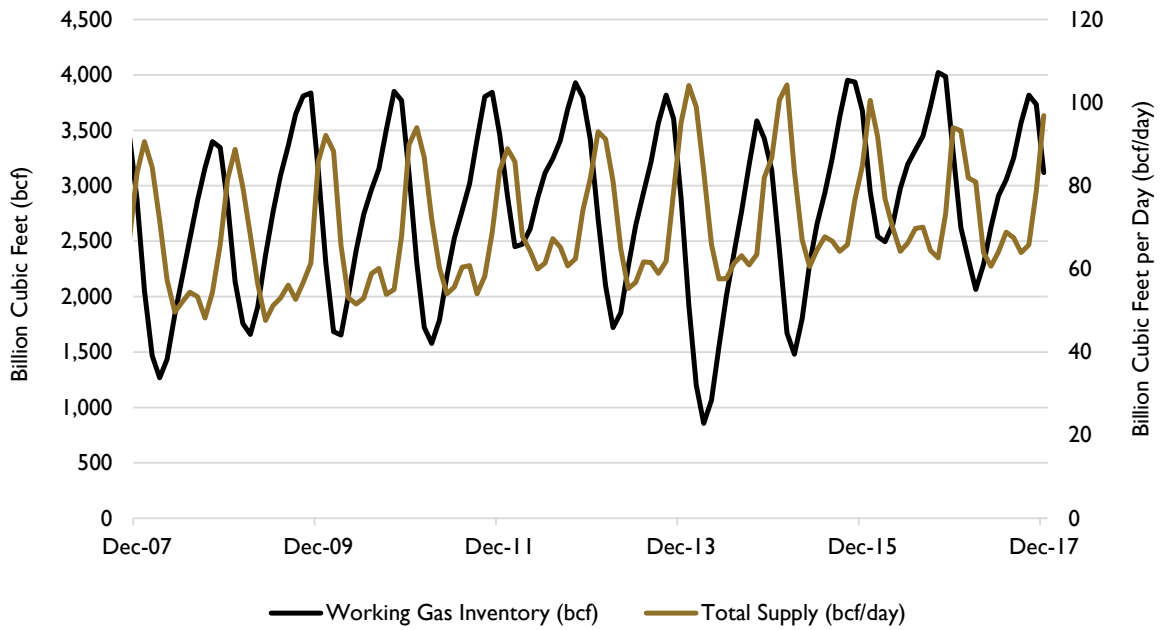
DATA CENTER

NATURAL GAS

U.S. Natural Gas Production and Consumption (Monthly) (17)



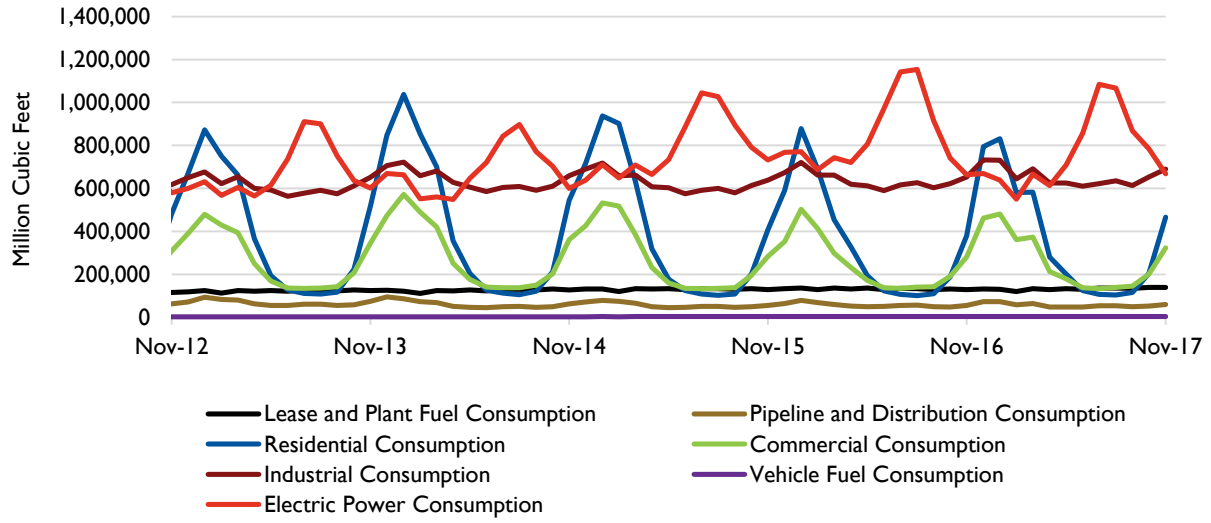
U.S. Natural Gas Supply and Inventory (Monthly) (18)



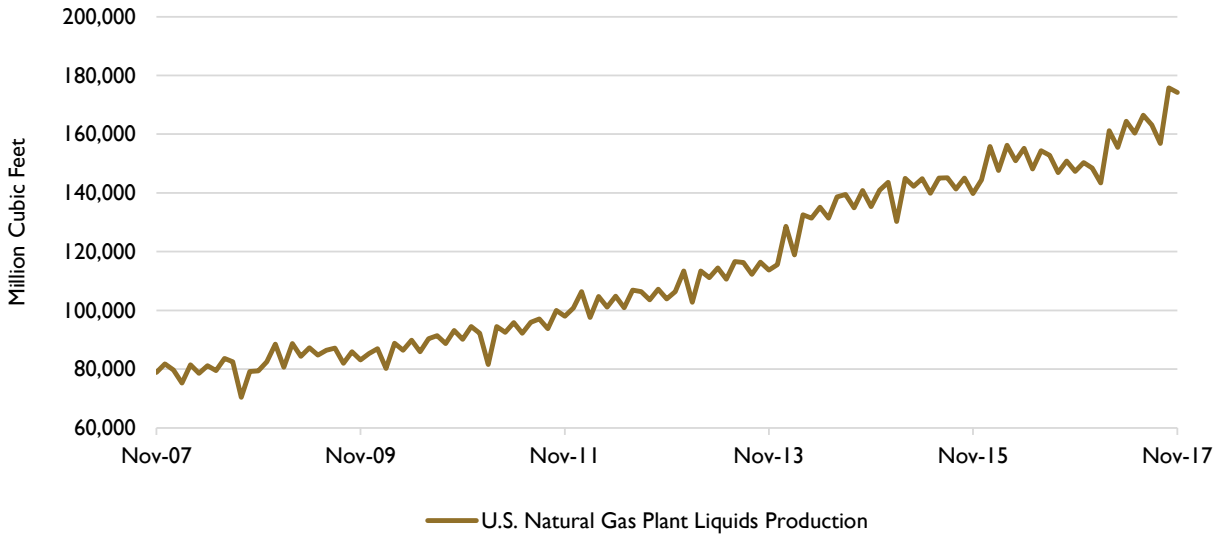
DATA CENTER

NATURAL GAS

U.S. Natural Gas Consumption by End Use (Monthly) (19)



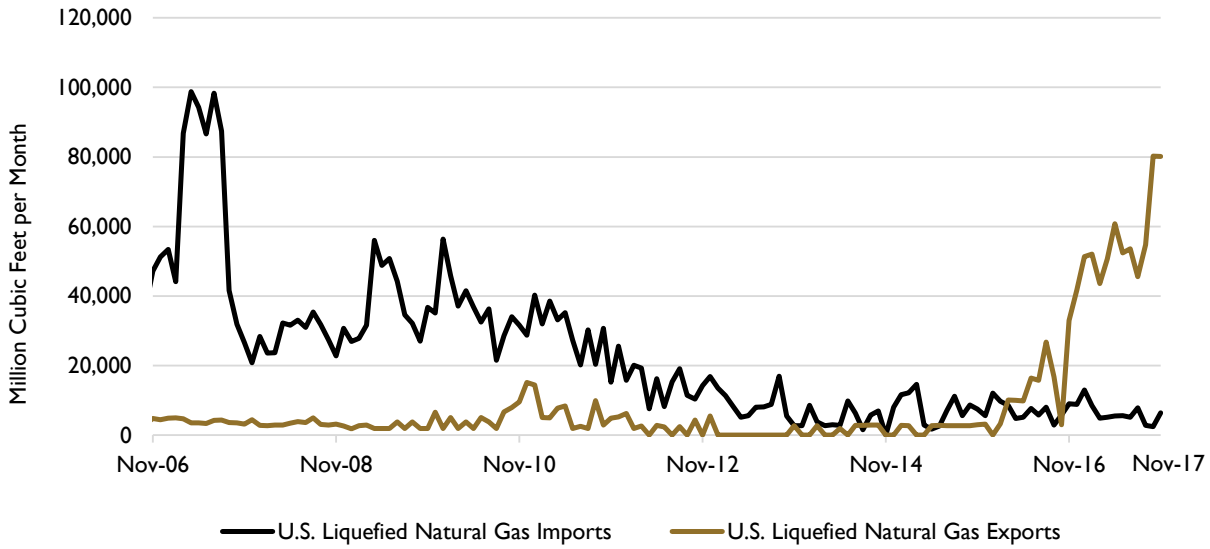
U.S. Natural Gas Plant Liquids Production (Monthly) (20)



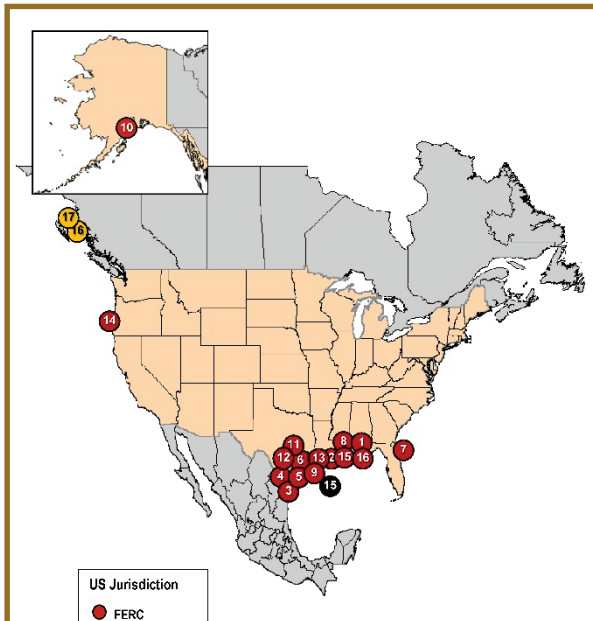
DATA CENTER

NATURAL GAS

U.S. LIQUEFIED NATURAL GAS IMPORT AND EXPORT VOLUMES (MONTHLY) (21)



NORTH AMERICAN LNG EXPORT TERMINALS – *PROPOSED* (22)



PROPOSED TO FERC
Pending Applications:
1. **Pascagoula, MS:** 1.5 Bcfd (Gulf LNG Liquefaction) (CP15-521)
2. **Cameron Parish, LA:** 1.41 Bcfd (Venture Global Calcasieu Pass) (CP15-550)
3. **Brownsville, TX:** 0.55 Bcfd (Texas LNG Brownsville) (CP16-116)
4. **Brownsville, TX:** 3.6 Bcfd (Rio Grande LNG – NextDecade) (CP16-454)
5. **Brownsville, TX:** 0.9 Bcfd (Annova LNG Brownsville) (CP16-480)
6. **Port Arthur, TX:** 1.86 Bcfd (Port Arthur LNG) (CP17-20)
7. **Jacksonville, FL:** 0.132 Bcf/d (Eagle LNG Partners) (CP17-41)
8. **Plaquemines Parish, LA:** 3.40 Bcfd (Venture Global LNG) (CP17-66)
9. **Calcasieu Parish, LA:** 4.0 Bcfd (Driftwood LNG) (CP17-117)
10. **Nikiski, AK:** 2.63 Bcfd (Alaska Gasline) (CP17-178)
11. **Freeport, TX:** 0.72 Bcfd (Freeport LNG Dev) (CP17-470)

Projects in Pre-filing:
12. **Corpus Christi, TX:** 1.4 Bcfd (Cheniere – Corpus Christi LNG) (PF15-26)
13. **Cameron Parish, LA:** 1.84 Bcfd (G2 LNG) (PF16-2)
14. **Coos Bay, OR:** 1.08 Bcfd (Jordan Cove) (PF17-4)
15. **Cameron Parish, LA:** 1.18 Bcfd (Commonwealth, LNG) (PF17-8)
16. **LaFourche Parish, LA:** 0.65 Bcfd (Port Fourchon LNG) (PF17-9)

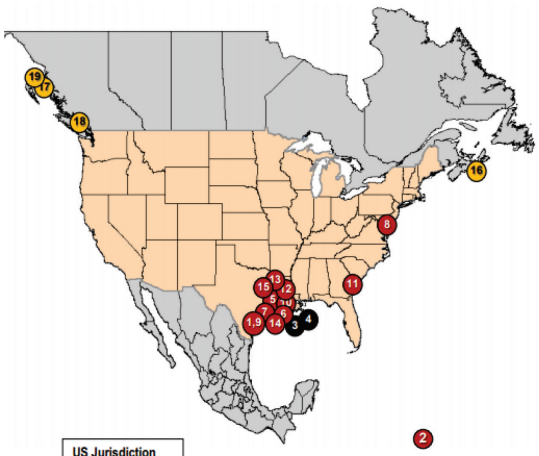
PROPOSED TO U.S.-MARAD/COAST GUARD
15. **Gulf of Mexico:** 1.8 Bcfd (Delfin LNG)

PROPOSED CANADIAN SITES
16. **Kitimat, BC:** 1.28 Bcfd (Apache Canada Ltd.)
17. **Douglas Island, BC:** 0.23 Bcfd (BC LNG Export Cooperative)

DATA CENTER

NATURAL GAS

NORTH AMERICAN LNG IMPORT/EXPORT TERMINALS – *APPROVED* (23)



Import Terminals

U.S.

APPROVED - UNDER CONSTRUCTION - FERC
1. **Corpus Christi, TX:** 0.4 Bcfd (Cheniere – Corpus Christi LNG) (CP12-507)

APPROVED – NOT UNDER CONSTRUCTION - FERC
2. **Salinas, PR:** 0.6 Bcfd (Aguirre Offshore GasPort, LLC) (CP13-193)

APPROVED - NOT UNDER CONSTRUCTION - MARAD/Coast Guard
3. **Gulf of Mexico:** 1.0 Bcfd (Main Pass McMoRan Exp.)
4. **Gulf of Mexico:** 1.4 Bcfd (TORP Technology-Bienville LNG)

Export Terminals

U.S.

APPROVED - UNDER CONSTRUCTION - FERC
5. **Sabine, LA:** 0.7 Bcfd (Cheniere/Sabine Pass LNG) (CP11-72 & CP14-12)
6. **Hackberry, LA:** 2.1 Bcfd (Sempra–Cameron LNG) (CP13-25)
7. **Freeport, TX:** 2.14 Bcfd (Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction) (CP12-509) (CP15-518)
8. **Cove Point, MD:** 0.82 Bcfd (Dominion–Cove Point LNG) (CP13-113)
9. **Corpus Christi, TX:** 2.14 Bcfd (Cheniere – Corpus Christi LNG) (CP12-507)
10. **Sabine Pass, LA:** 1.40 Bcfd (Sabine Pass Liquefaction) (CP13-552) ★
11. **Elba Island, GA:** 0.35 Bcfd (Southern LNG Company) (CP14-103)

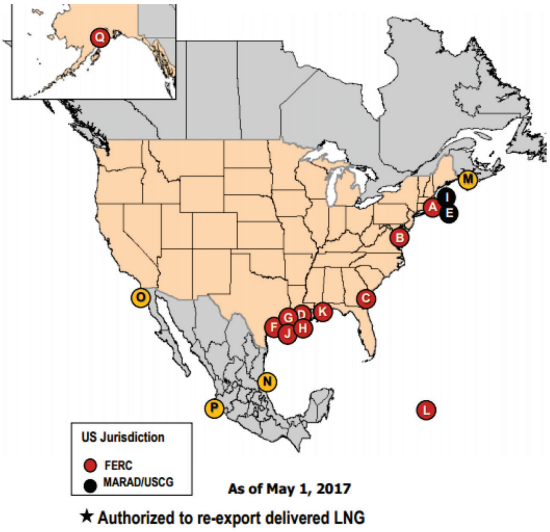
APPROVED – NOT UNDER CONSTRUCTION - FERC
12. **Lake Charles, LA:** 2.2 Bcfd (Southern Union – Lake Charles LNG) (CP14-120)
13. **Lake Charles, LA:** 1.08 Bcfd (Magnolia LNG) (CP14-347)
14. **Hackberry, LA:** 1.41 Bcfd (Sempra - Cameron LNG) (CP15-560)
15. **Sabine Pass, TX:** 2.1 Bcfd (ExxonMobil – Golden Pass) (CP14-517)

Canada

APPROVED – NOT UNDER CONSTRUCTION
16. **Port Hawkesbury, NS:** 0.5 Bcfd (Bear Head LNG)
17. **Kitimat, BC:** 3.23 Bcfd (LNG Canada)
18. **Squamish, BC:** 0.29 Bcfd (Woodfibre LNG Ltd)
19. **Prince Rupert Island, BC:** 2.74 Bcfd (Pacific Northwest LNG)

★ **Trains 5 & 6 with Train 5 under construction**

NORTH AMERICAN LNG IMPORT/EXPORT TERMINALS – *EXISTING* (24)



Import Terminals

U.S.
A. Everett, MA: 1.035 Bcfd (GDF SUEZ - DOMAC)
B. Cove Point, MD: 1.8 Bcfd (Dominion - Cove Point LNG)
C. Elba Island, GA: 1.6 Bcfd (El Paso - Southern LNG)
D. Lake Charles, LA: 2.1 Bcfd (Southern Union - Trunkline LNG)
E. Offshore Boston: 0.8 Bcfd (Excelerate Energy – Northeast Gateway)
F. Freeport, TX: 1.5 Bcfd (Cheniere/Freeport LNG Dev.) ★
G. Sabine, LA: 4.0 Bcfd (Cheniere/Sabine Pass LNG) ★
H. Hackberry, LA: 1.8 Bcfd (Sempra - Cameron LNG) ★
I. Offshore Boston, MA: 0.4 Bcfd (GDF SUEZ – Neptune LNG)
J. Sabine Pass, TX: 2.0 Bcfd (ExxonMobil – Golden Pass) (Phase I & II)
K. Pascagoula, MS: 1.5 Bcfd (El Paso/Crest/Sonangol - Gulf LNG Energy LLC)
L. Peñuelas, PR: 0.2 Bcfd (EcoElectrica)

Canada
M. Saint John, NB: 1.0 Bcfd (Repsol/Fort Reliance - Canaport LNG)

Mexico
N. Altamira, Tamulipas: 0.7 Bcfd (Shell/Total/Mitsui – Altamira LNG)
O. Baja California, MX: 1.0 Bcfd (Sempra – Energia Costa Azul)
P. Manzanillo, MX: 0.5 Bcfd (KMS GNL de Manzanillo)

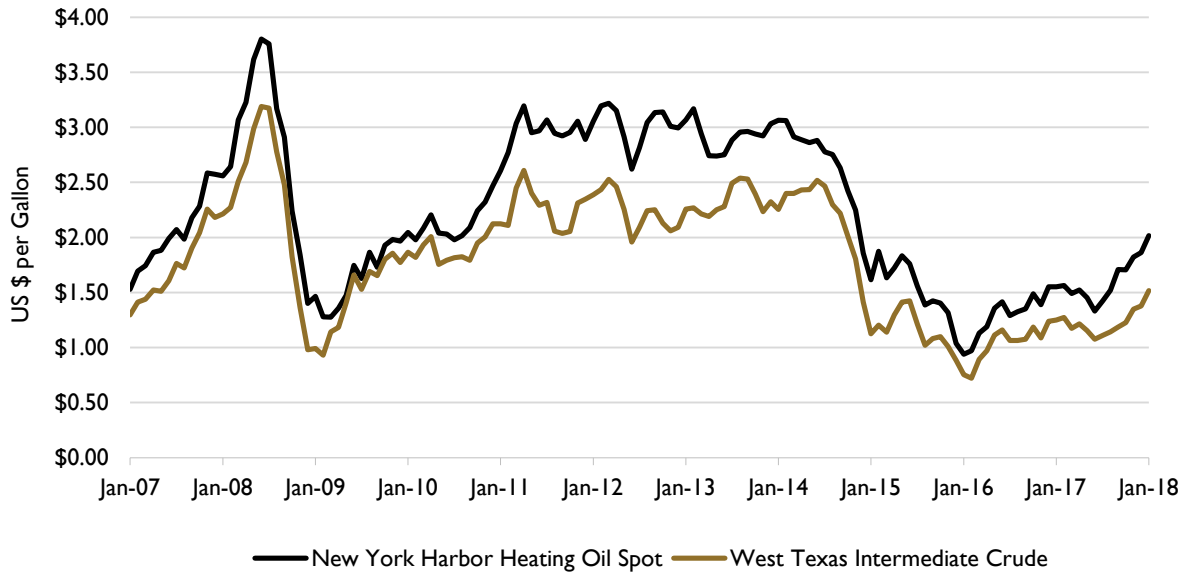
Export Terminals

U.S.
Q. Kenai, AK: 0.2 Bcfd (ConocoPhillips)
G. Sabine, LA: 2.1 Bcfd (Cheniere/Sabine Pass LNG – Trains 1, 2 & 3)

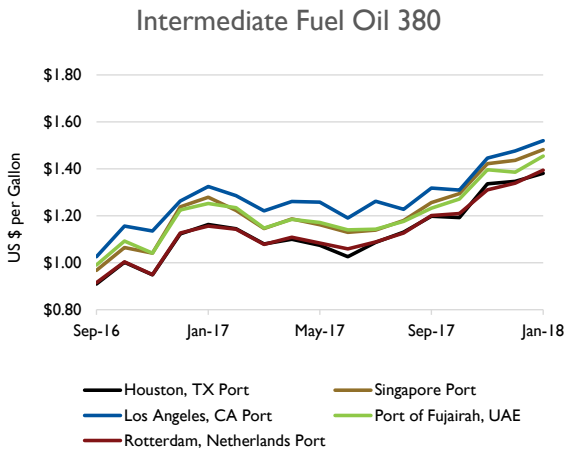
DATA CENTER

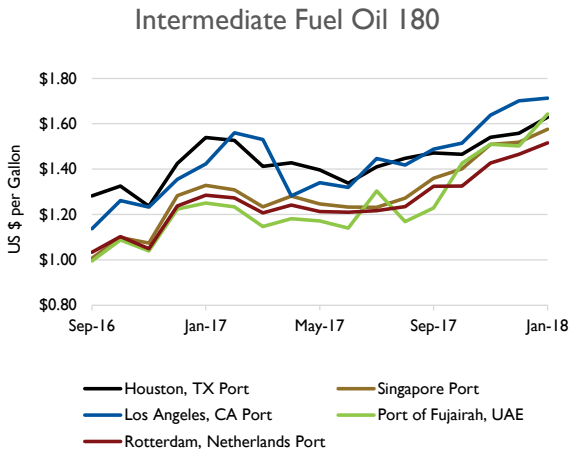
PROPANE AND HEATING/FUEL OIL

HEATING OIL PRICES (MONTHLY AVERAGE) (25)



INTERMEDIATE FUEL OIL AKA "BUNKER FUEL" PRICES (MONTHLY AVERAGE) (26)

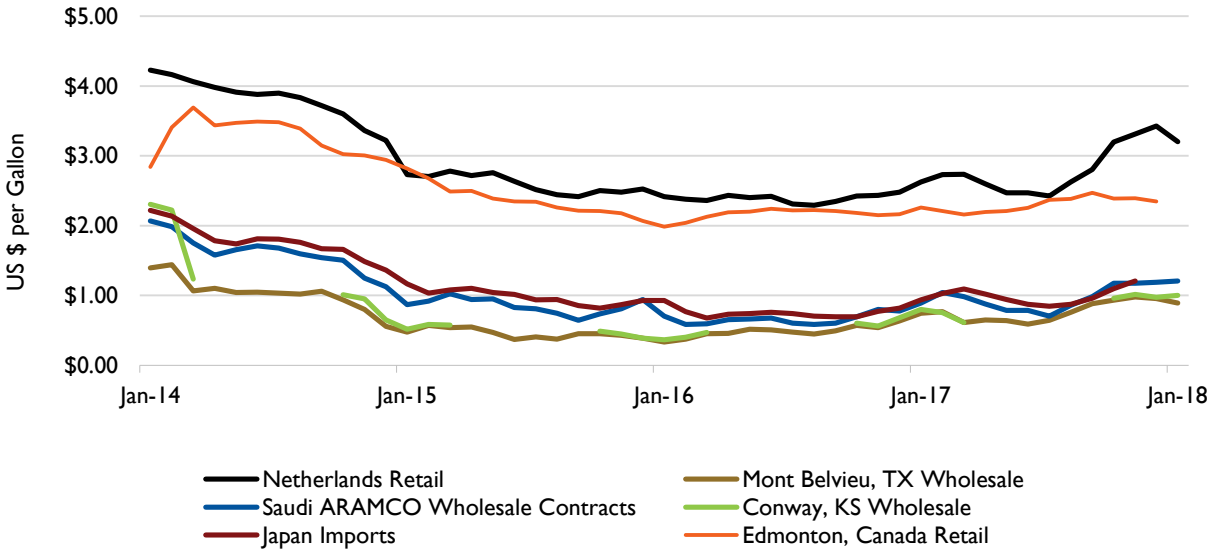




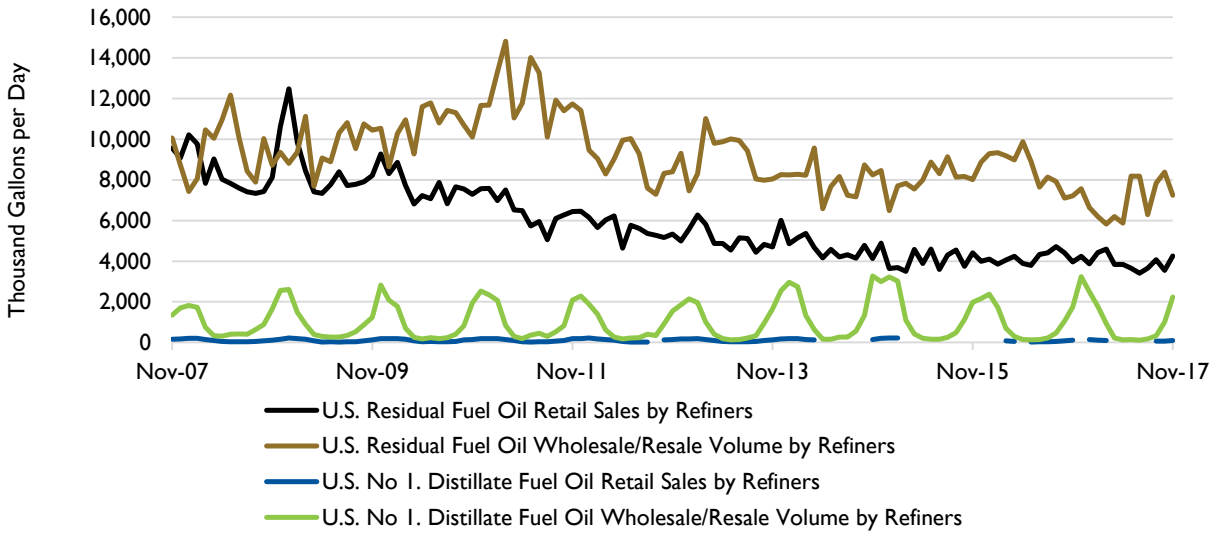
DATA CENTER

PROPANE AND HEATING/FUEL OIL

PROPANE PRICES (MONTHLY AVERAGE) (27)



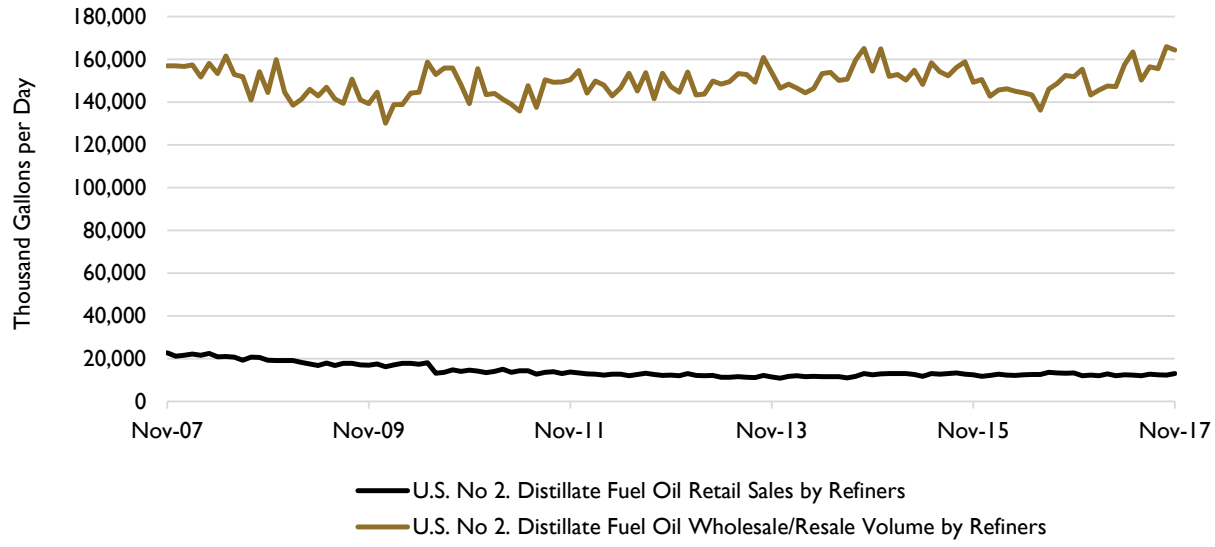
NO. 1 DISTILLATE FUEL OIL, RESIDUAL FUEL OIL WHOLESALE, RETAIL SALES VOLUME BY REFINERS (MONTHLY) (28)



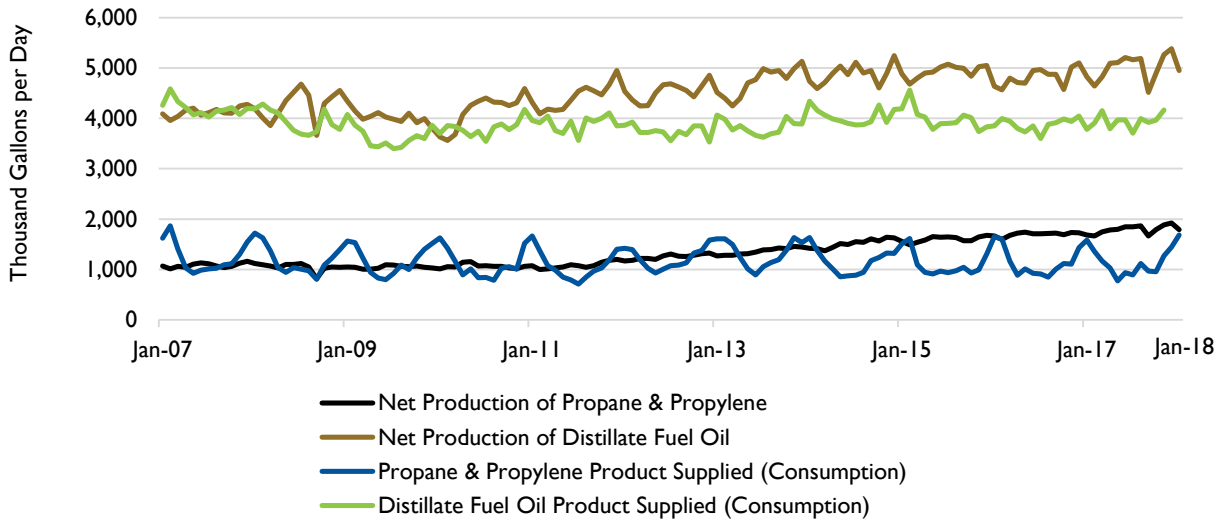
DATA CENTER

PROPANE AND HEATING/FUEL OIL

No. 2 Distillate Fuel Oil Wholesale, Retail Sales Volume by Refiners (Monthly) (29)



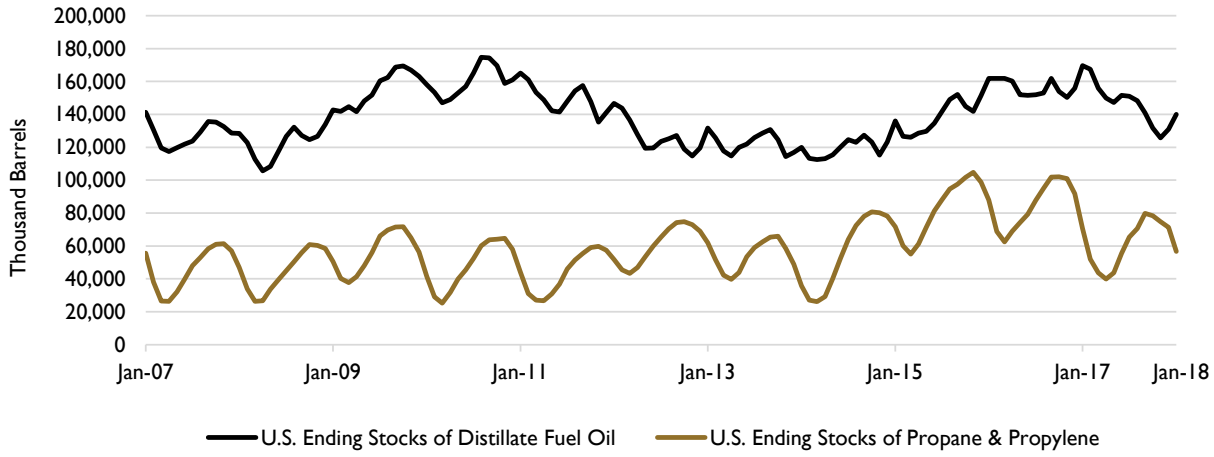
Propane & Propylene and Distillate Fuel Oil Production and Consumption (Monthly) (30)



DATA CENTER

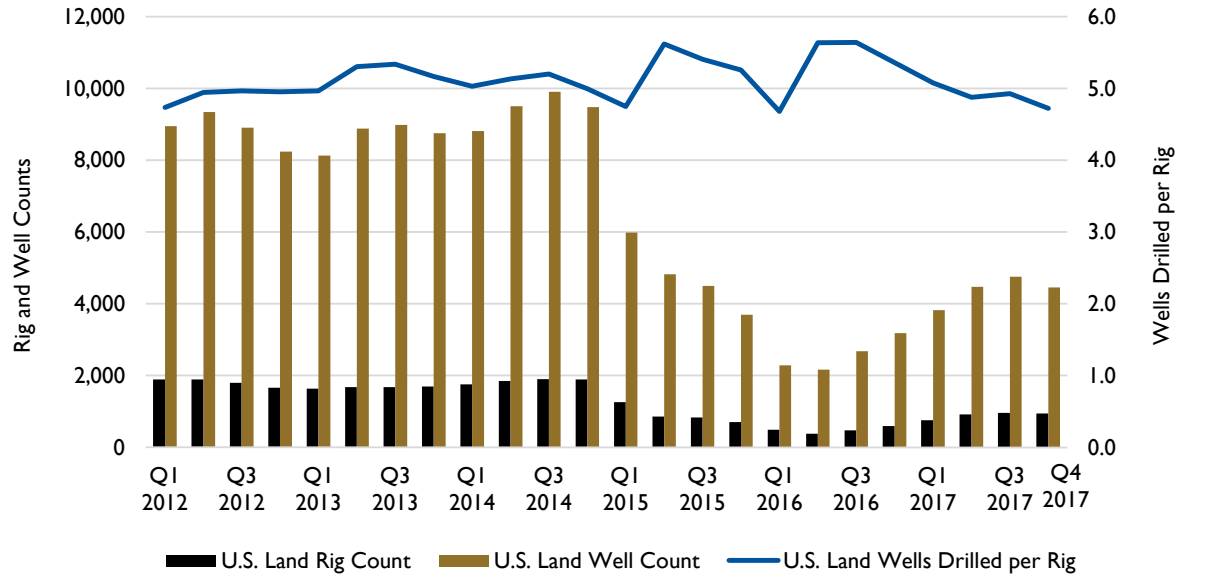
PROPANE AND HEATING/FUEL OIL

U.S. Ending Stocks of Propane & Propylene and Distillate Fuel Oil (Monthly Average) (31)



DRILLING ACTIVITY

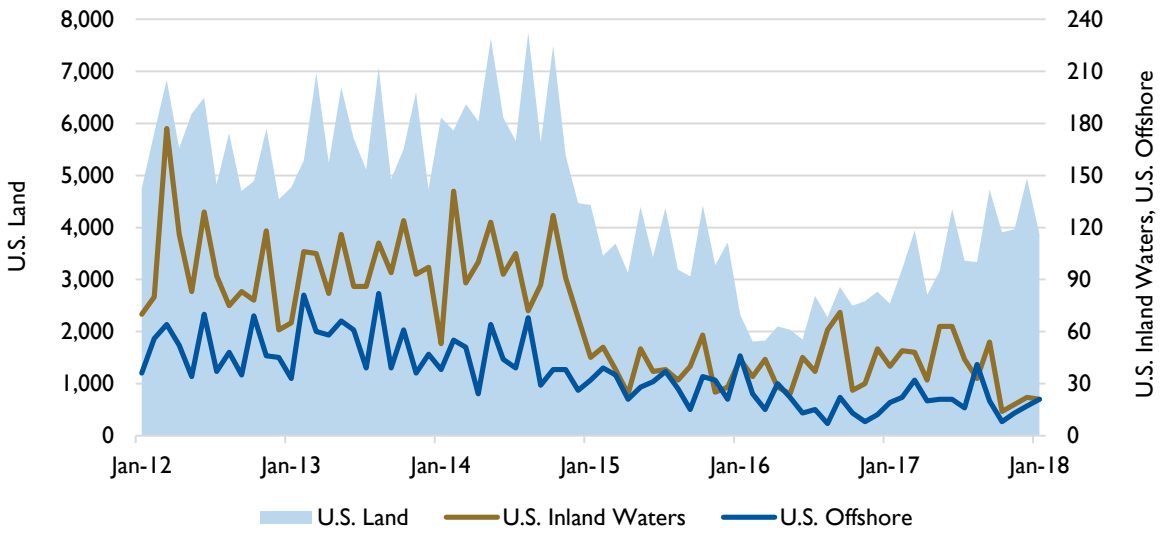
U.S. Land Well Count, Rig Count and Wells per Rig (Quarterly) (32)



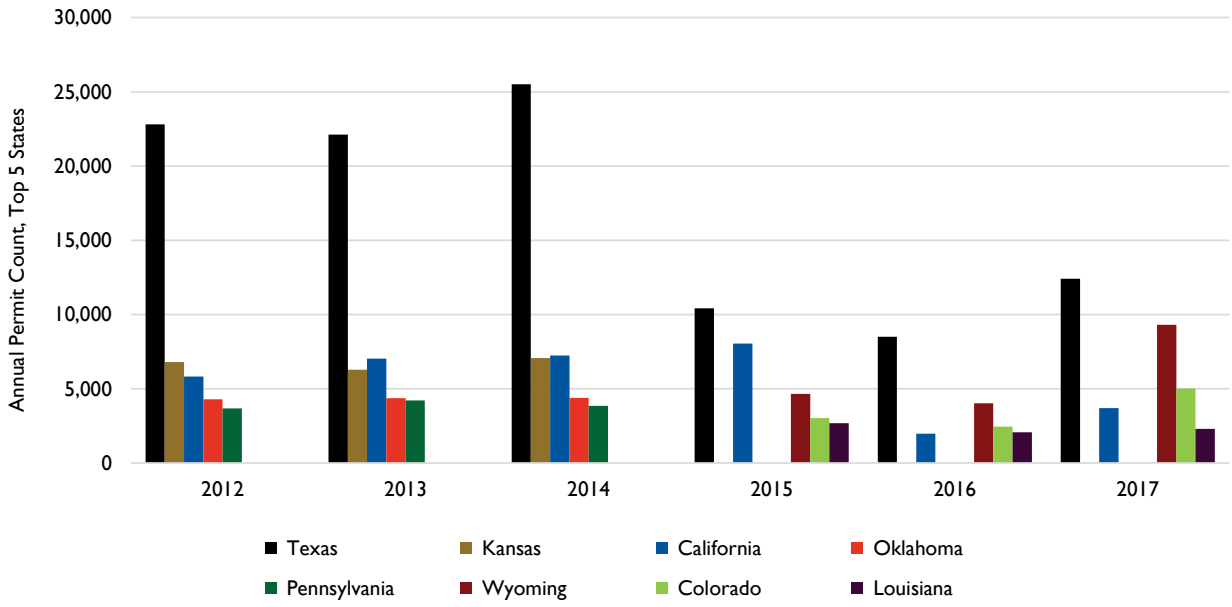
DATA CENTER

DRILLING ACTIVITY

U.S. DRILLING PERMITS (MONTHLY) (33)



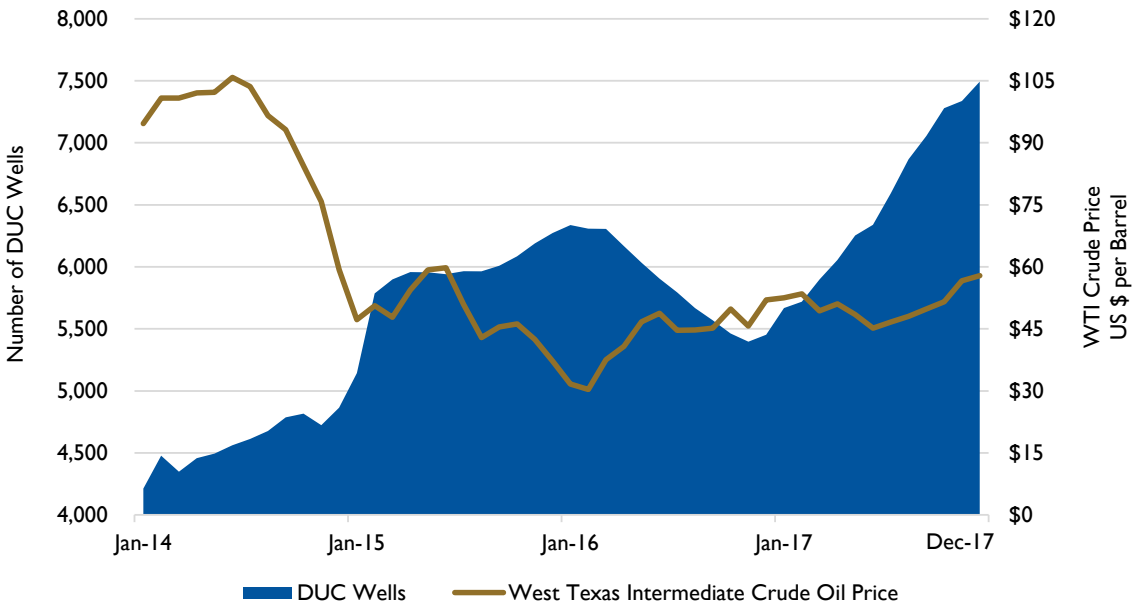
U.S. DRILLING PERMITS, TOP 5 STATES (ANNUAL) (34)



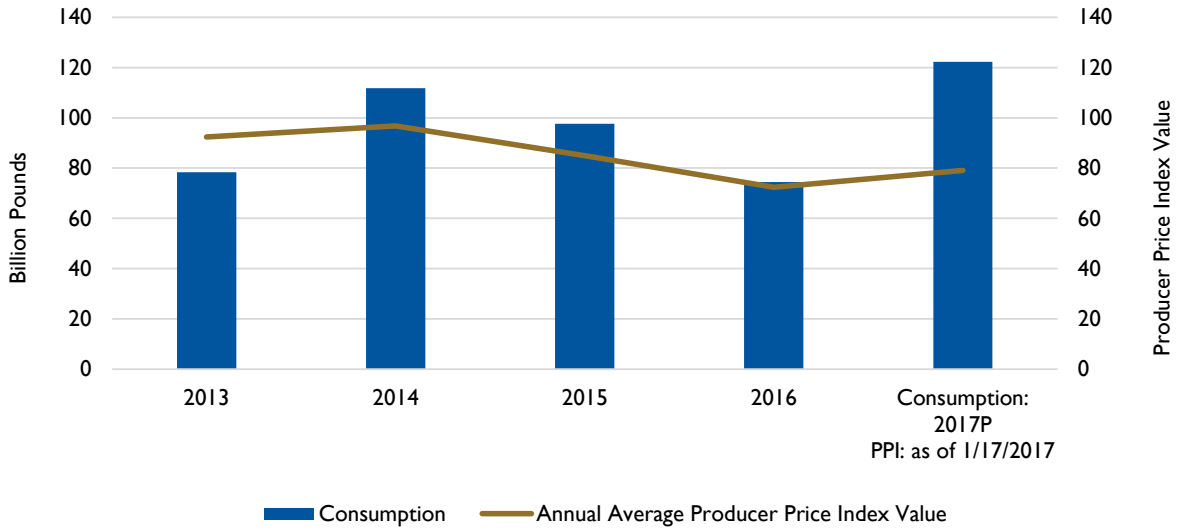
DATA CENTER

DRILLING ACTIVITY

DRILLED BUT UNCOMPLETED (DUC) WELLS VS. CRUDE OIL PRICE (MONTHLY) (35)



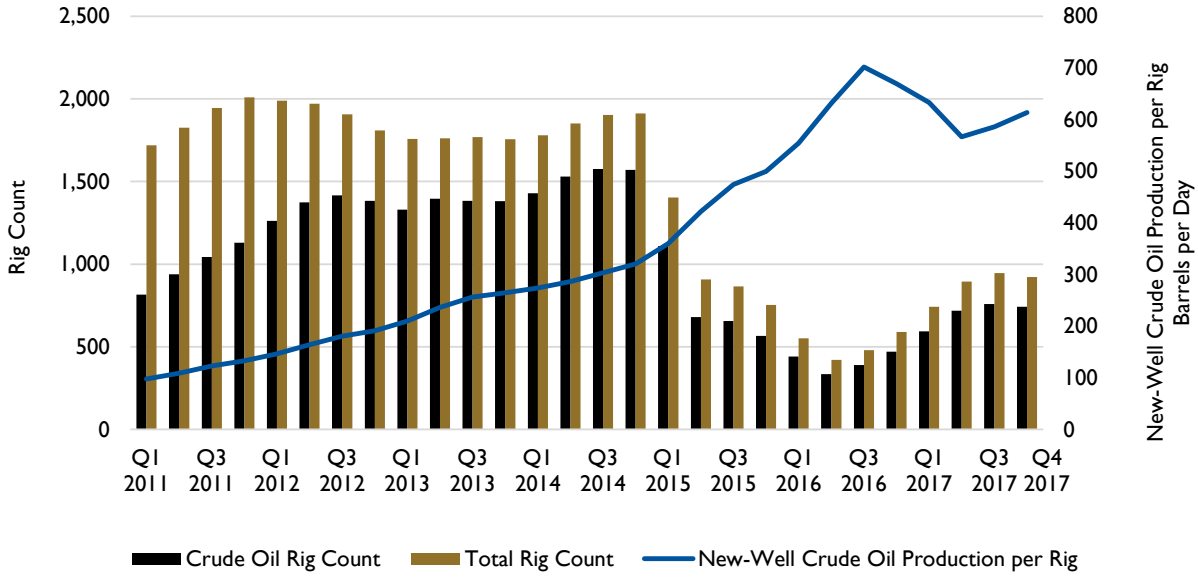
HYDRAULIC FRACTURING SAND CONSUMPTION AND PRODUCER PRICE INDEX (ANNUAL) (36)



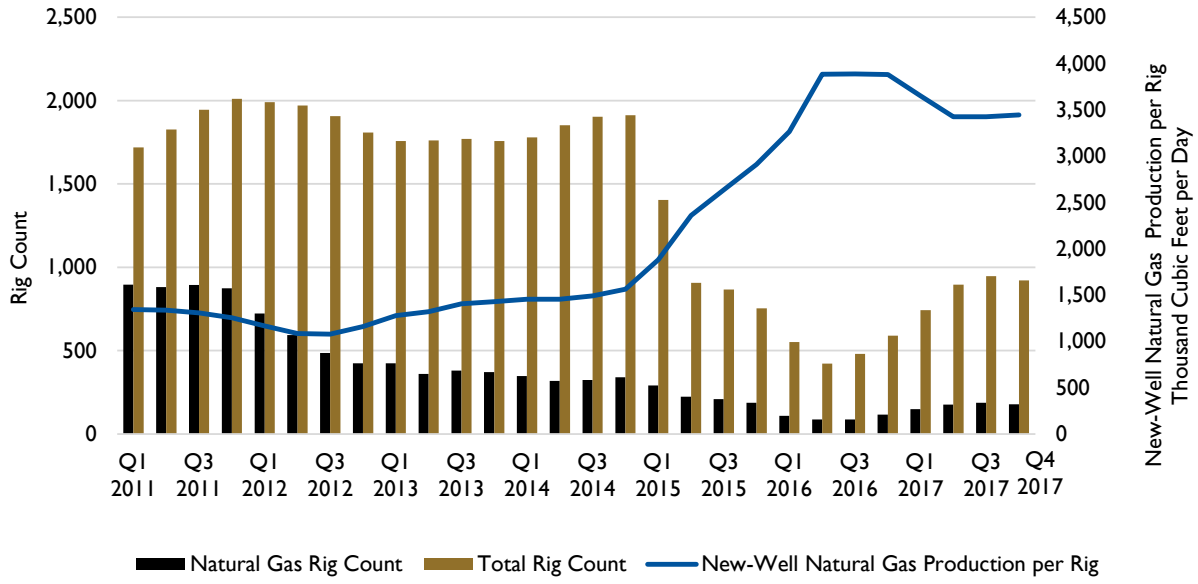
DATA CENTER

DRILLING ACTIVITY

CRUDE OIL PRODUCTION, RIG COUNT AND PRODUCTION PER RIG (QUARTERLY) (37)



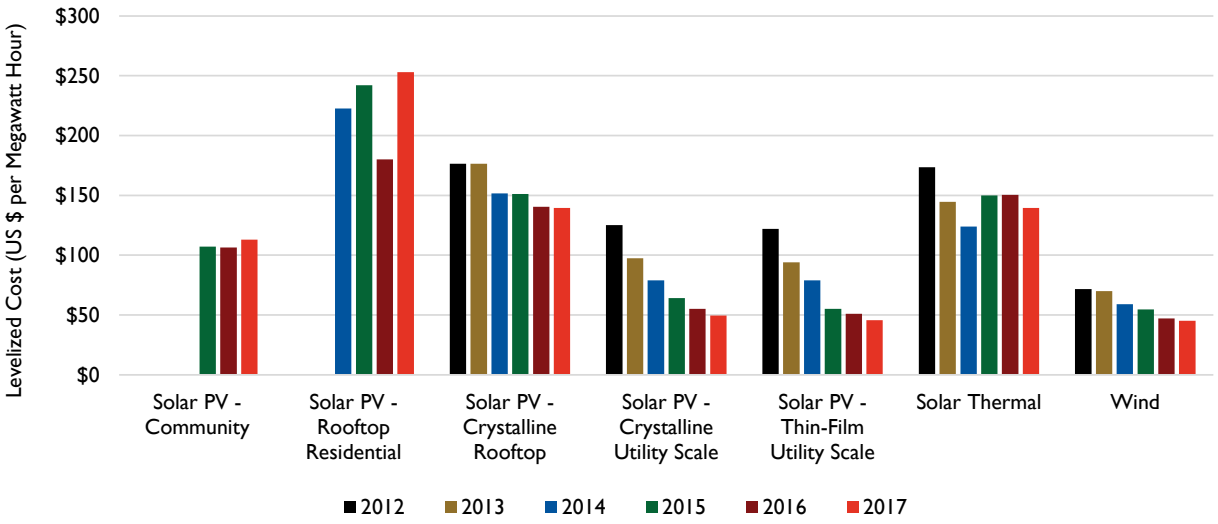
NATURAL GAS PRODUCTION, RIG COUNT AND PRODUCTION PER RIG (QUARTERLY) (38)



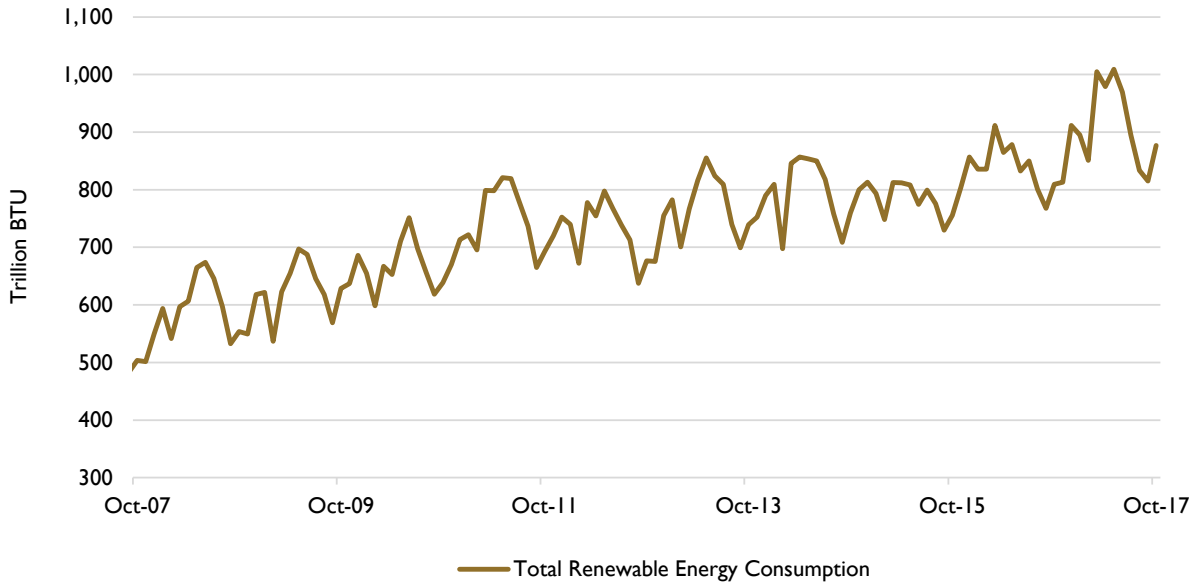
DATA CENTER

RENEWABLES

WIND AND SOLAR PRICES (ANNUAL AVERAGE) (39)



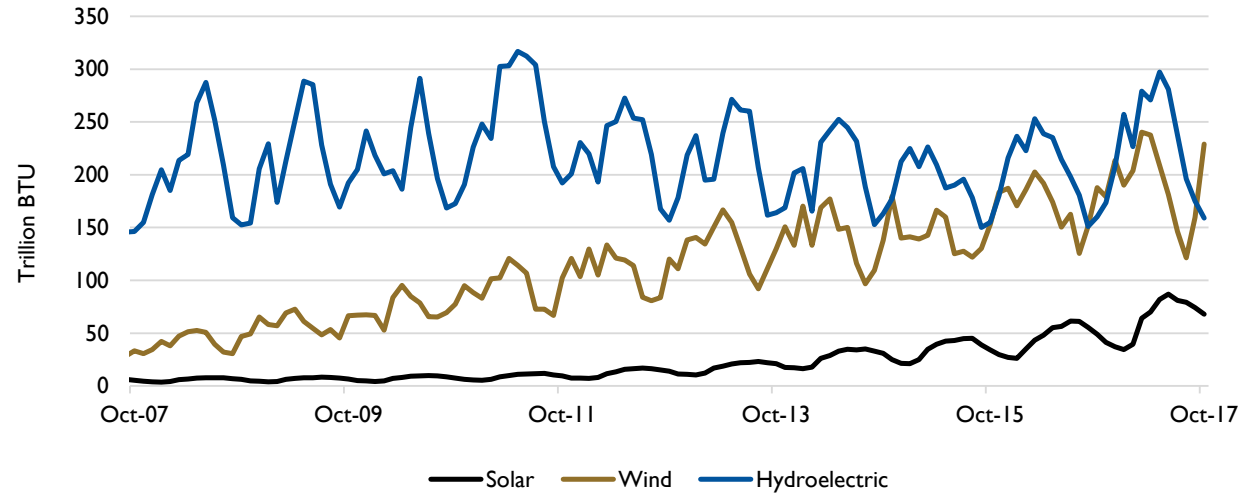
U.S. TOTAL RENEWABLE ENERGY CONSUMPTION (MONTHLY) (40)



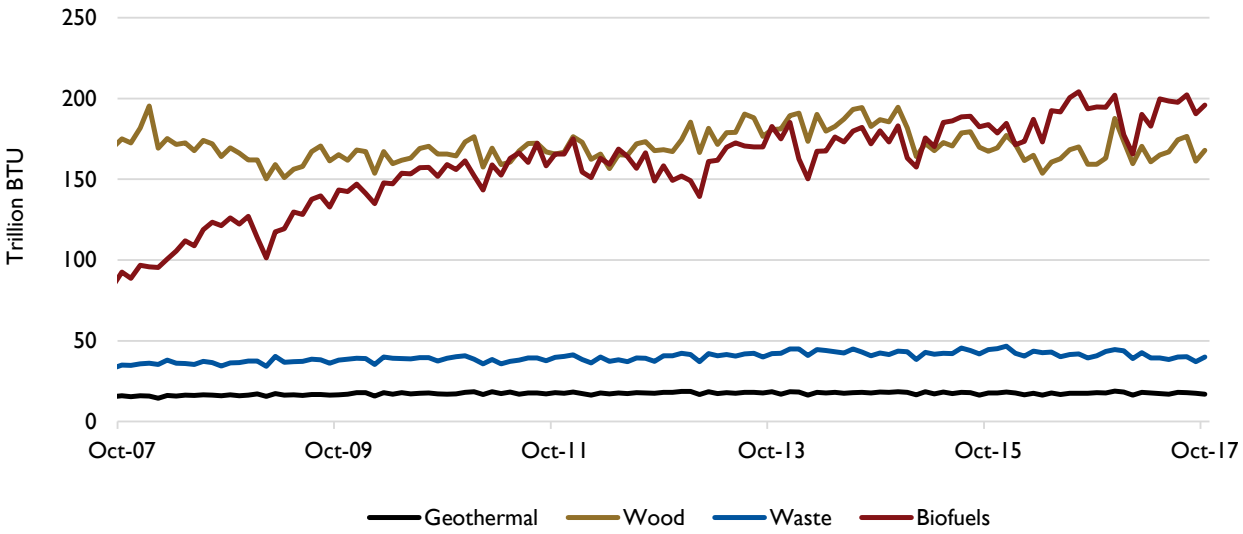
DATA CENTER

RENEWABLES

U.S. Solar, Wind and Hyrdoelectric Energy Consumption (Monthly) (41)



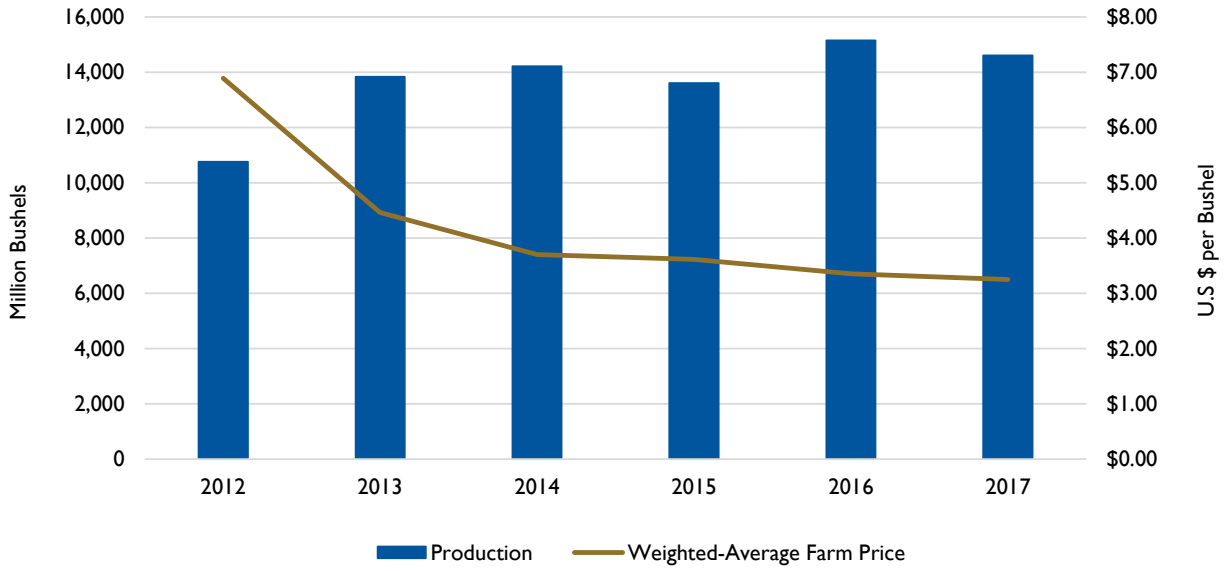
U.S. Wood, Waste, Biofuels and Geothermal Energy Consumption (Monthly) (42)



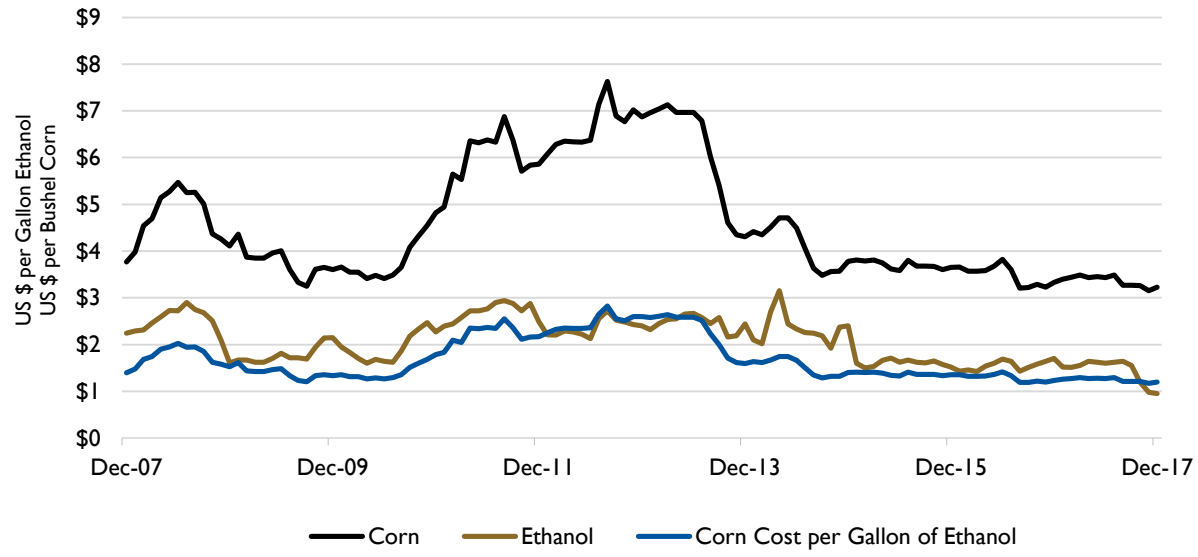
DATA CENTER

RENEWABLES

U.S. Corn Crop Production and Price (Annual) (43)



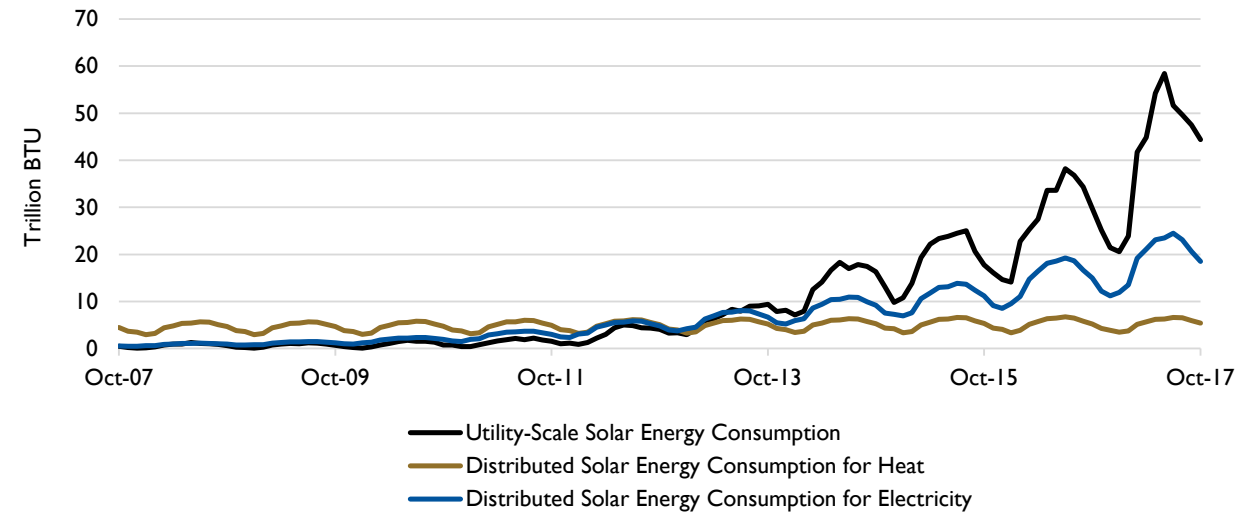
Corn and Ethanol Prices and Corn Cost per Gallon of Ethanol (Monthly Average) (44)



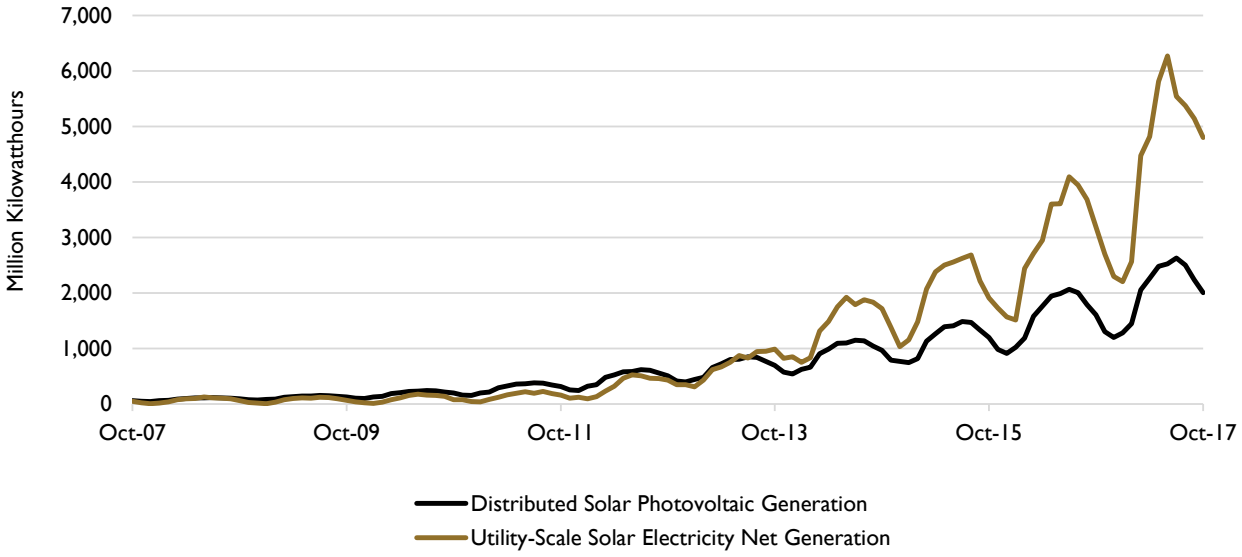
DATA CENTER

RENEWABLES

U.S. SOLAR ENERGY CONSUMPTION (MONTHLY) (45)



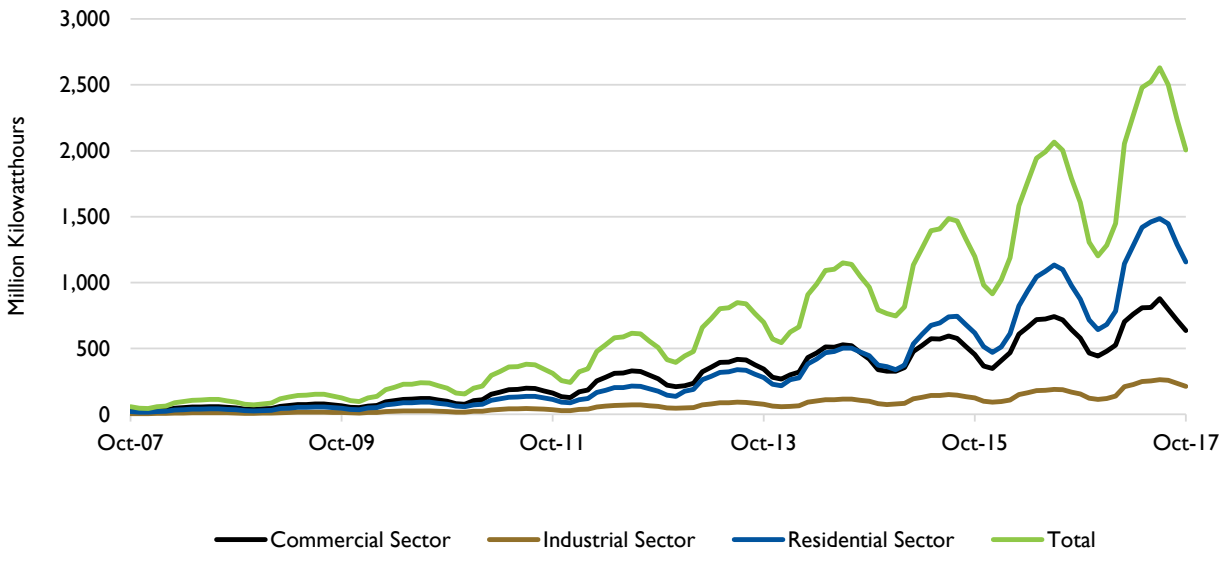
U.S. SOLAR ENERGY NET GENERATION (MONTHLY) (46)



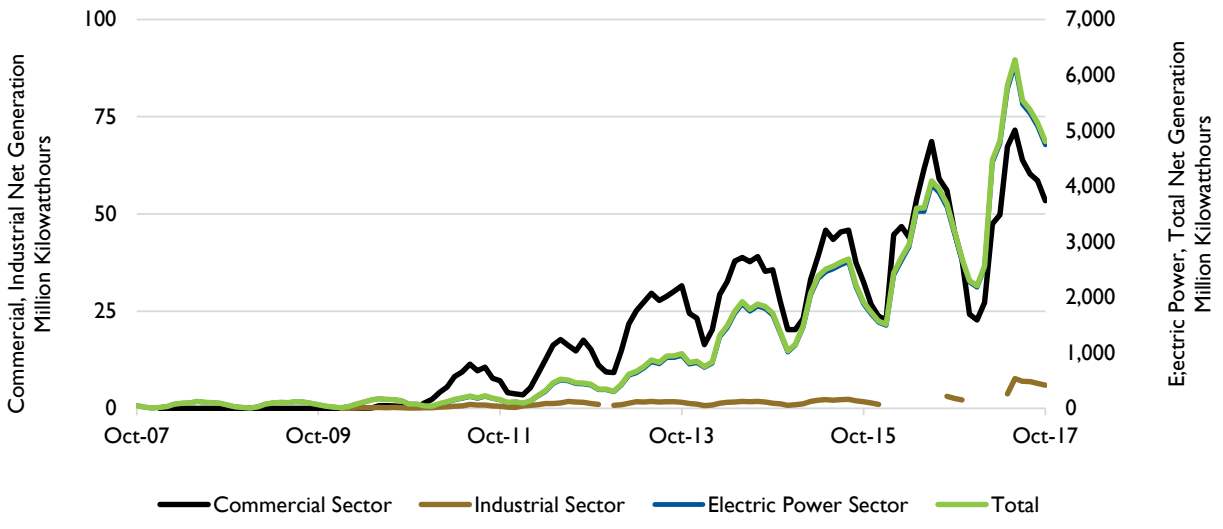
DATA CENTER

RENEWABLES

DISTRIBUTED SOLAR PHOTOVOLTAIC GENERATION BY SECTOR (MONTHLY) (47)



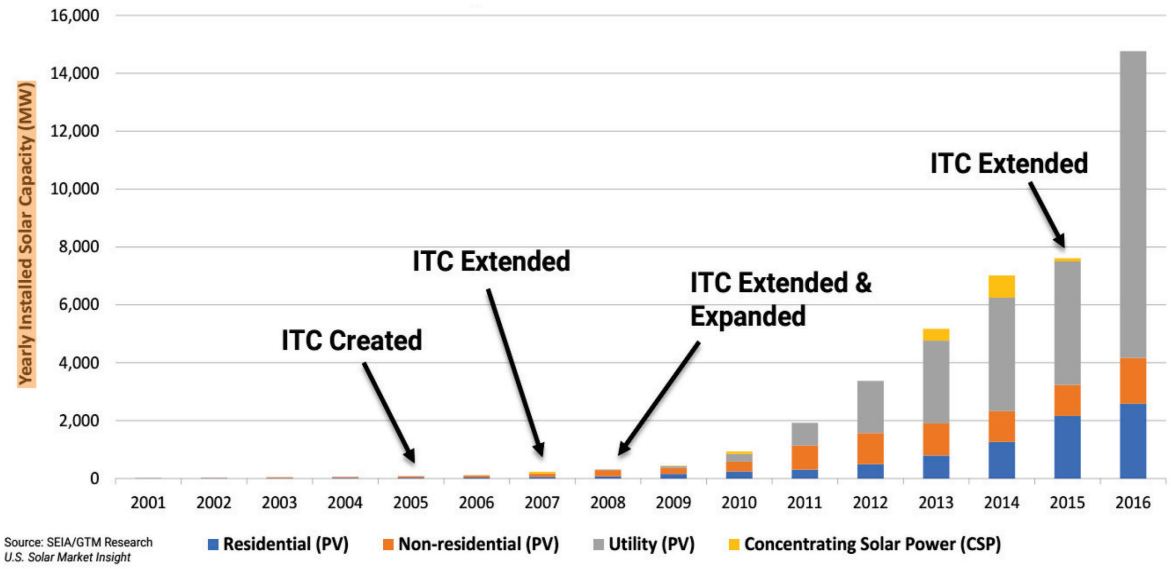
UTILITY-SCALE SOLAR ELECTRICITY NET GENERATION BY SECTOR (MONTHLY) (48)



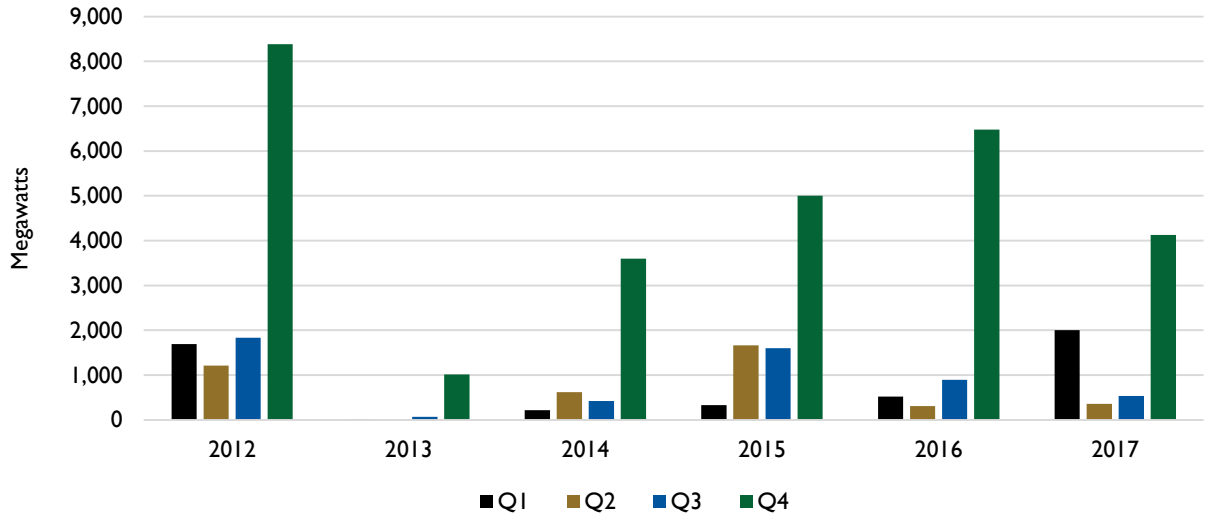
DATA CENTER

RENEWABLES

U.S. Solar Capacity Installations (Annual) (49)



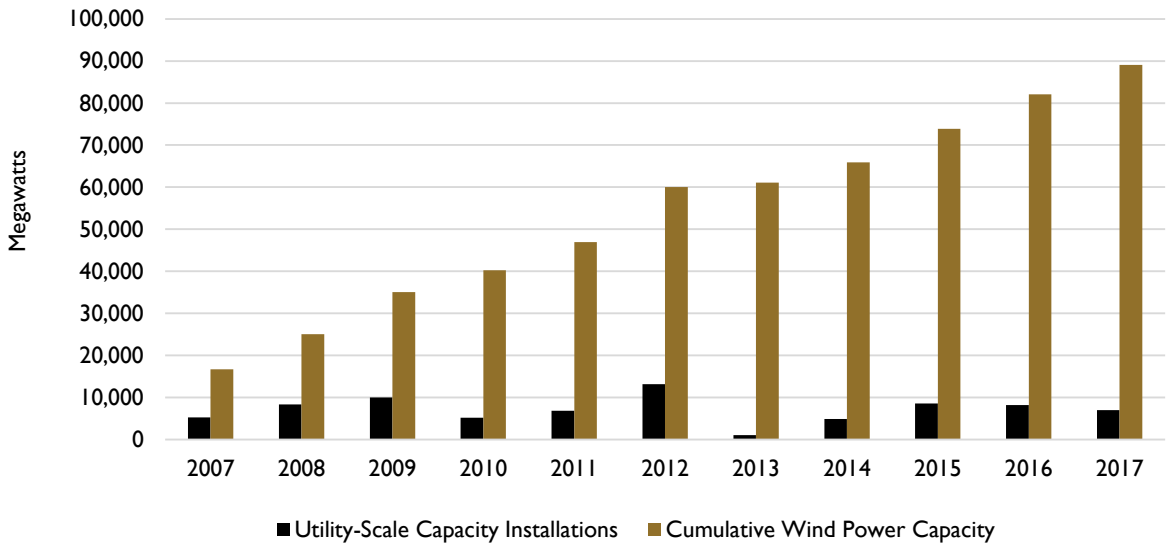
U.S. Wind Power Capacity Installations (Quarterly) (50)



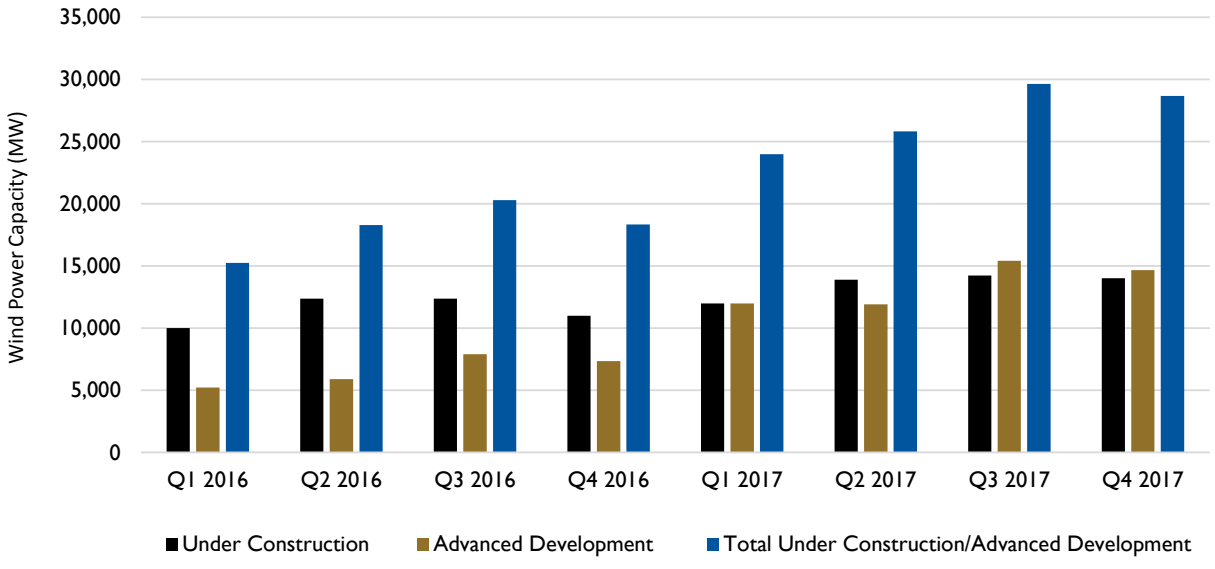
DATA CENTER

RENEWABLES

UTILITY-SCALE WIND POWER CAPACITY INSTALLATIONS (ANNUAL) (51)



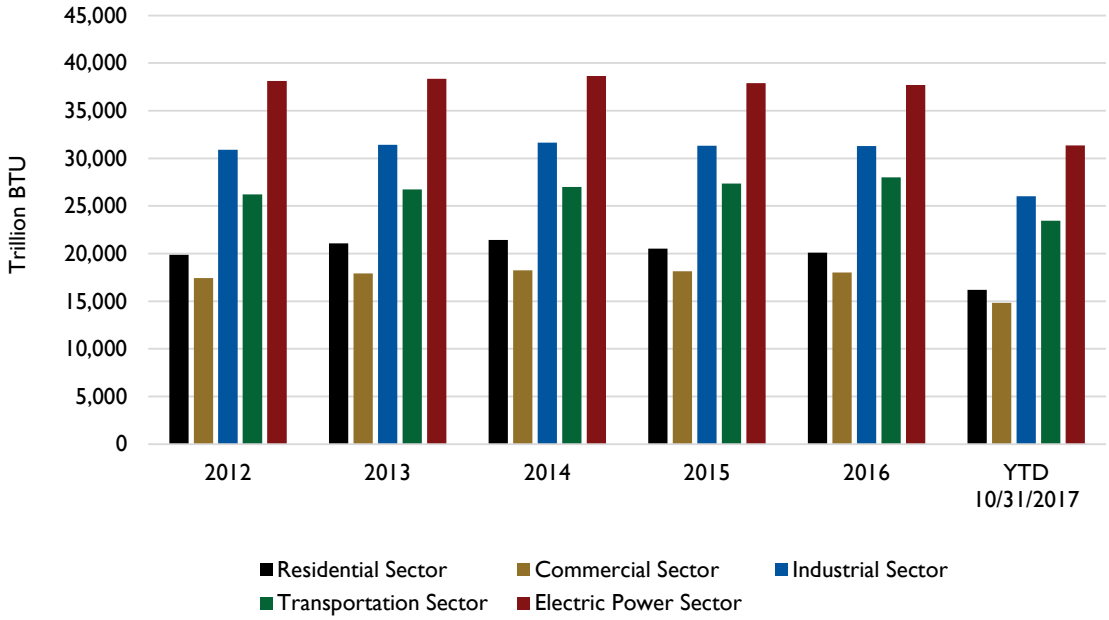
WIND POWER UNDER CONSTRUCTION OR IN ADVANCED DEVELOPMENT (QUARTERLY) (52)



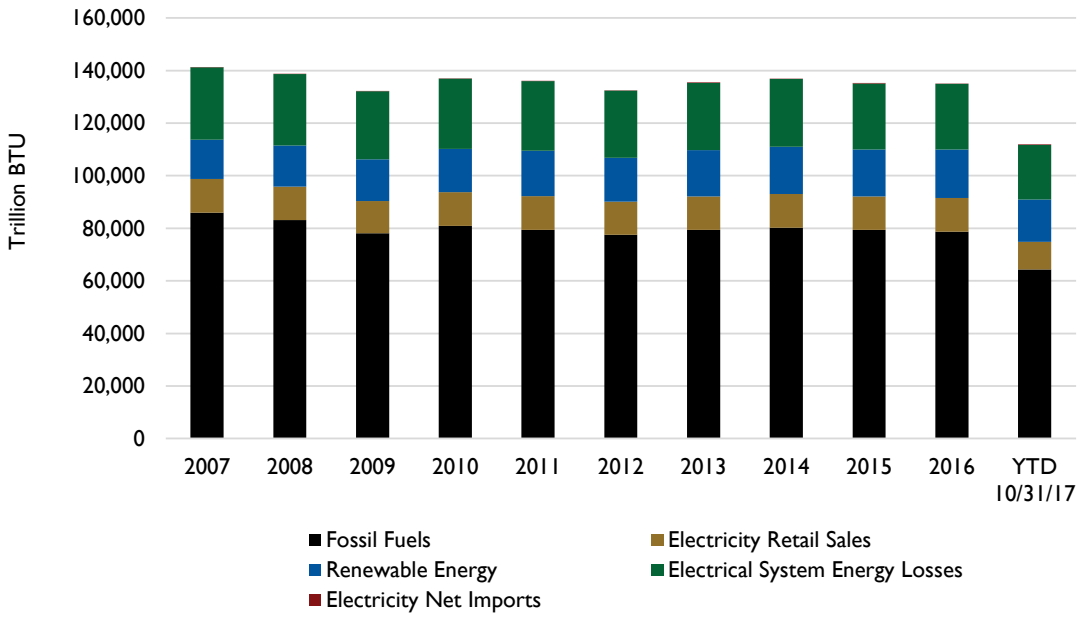
DATA CENTER

U.S. AGGREGATED ENERGY CONSUMPTION

ENERGY CONSUMPTION BY SECTOR (ANNUAL) (53)



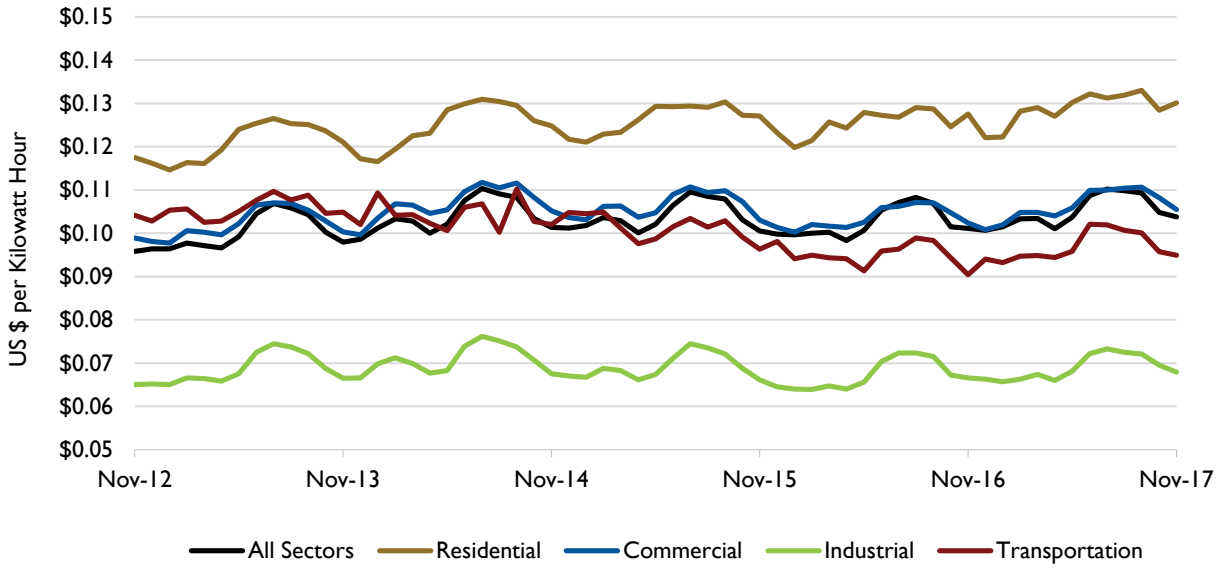
ENERGY CONSUMPTION BY SOURCE (ANNUAL) (54)



DATA CENTER

U.S. AGGREGATED ENERGY CONSUMPTION

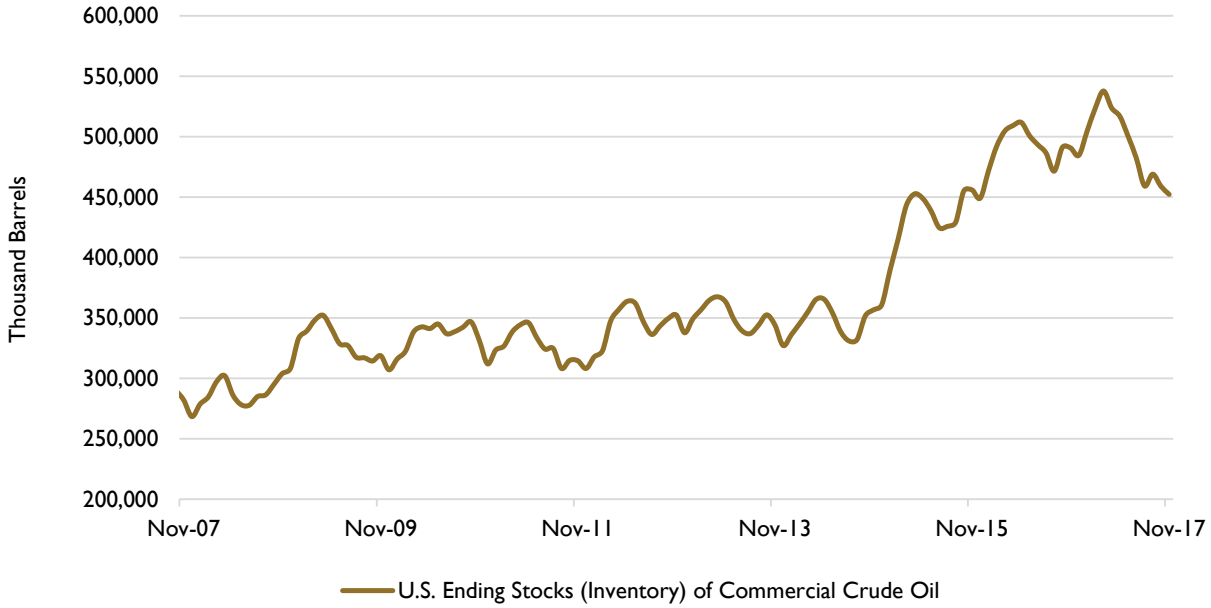
ELECTRICITY PRICES BY SECTOR (MONTHLY AVERAGE) (55)



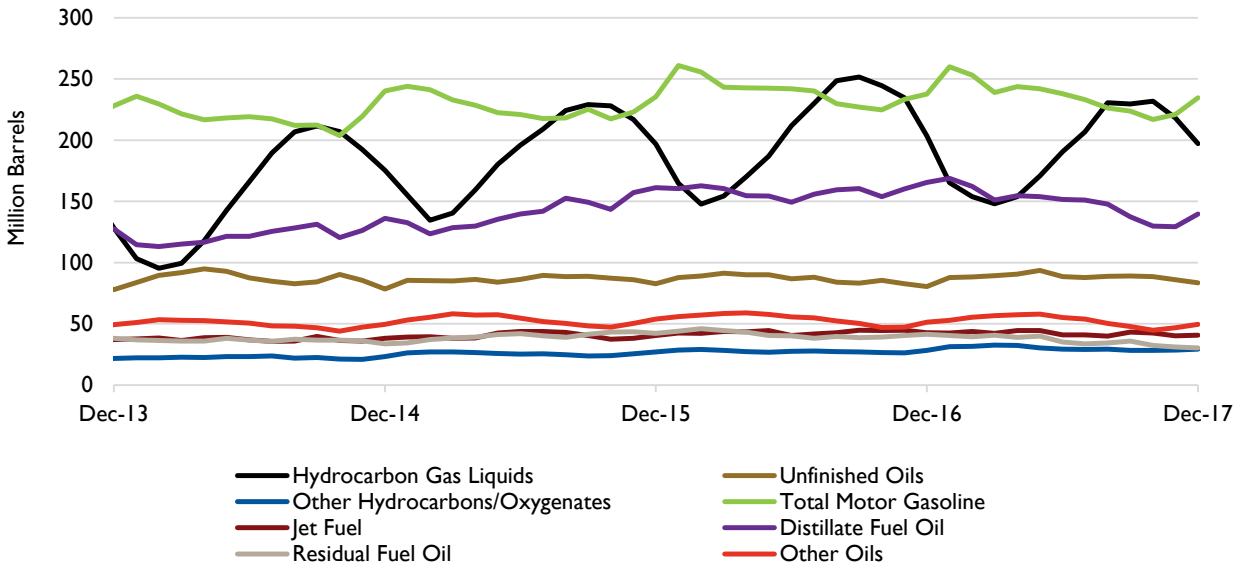
DATA CENTER

LOGISTICS - STORAGE AND TERMINALS

COMMERCIAL CRUDE OIL INVENTORY (MONTHLY) (56)



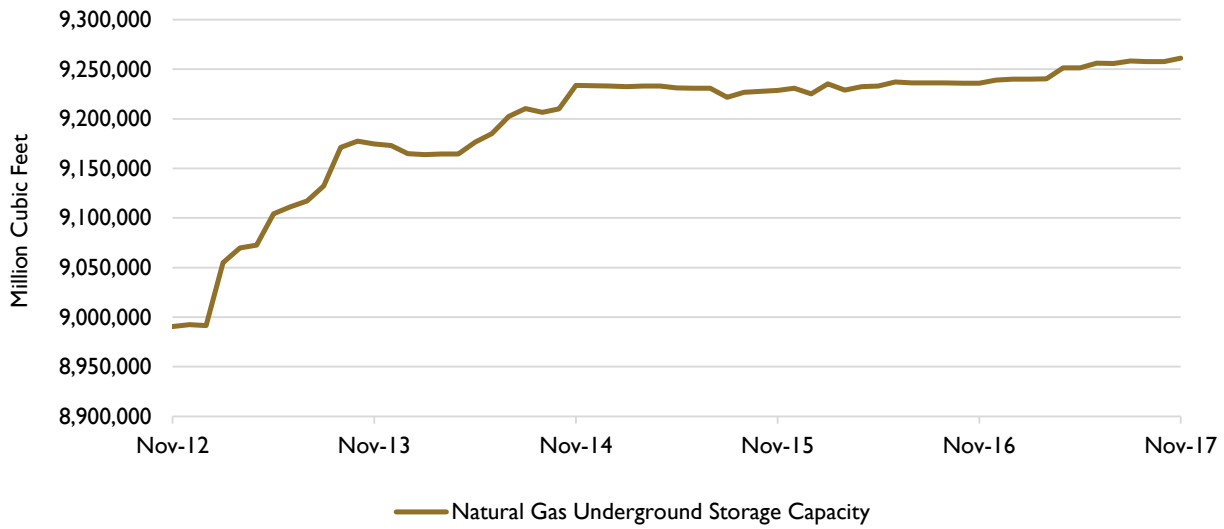
PETROLEUM AND OTHER LIQUIDS COMMERCIAL INVENTORY (MONTHLY) (57)



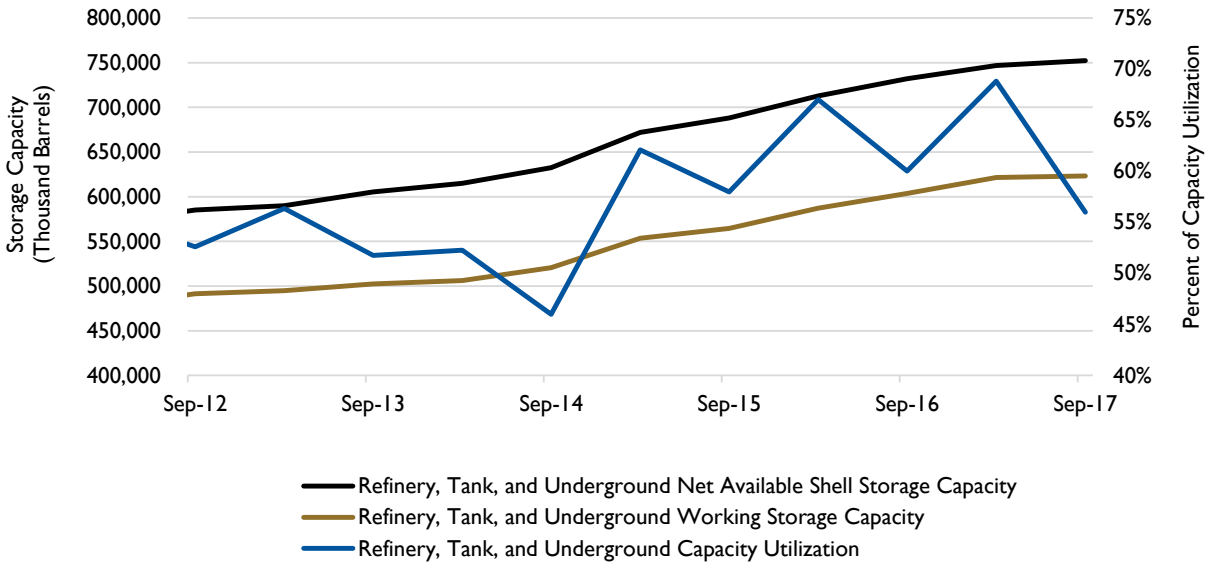
DATA CENTER

LOGISTICS - STORAGE AND TERMINALS

NATURAL GAS UNDERGROUND STORAGE CAPACITY (MONTHLY) (58)



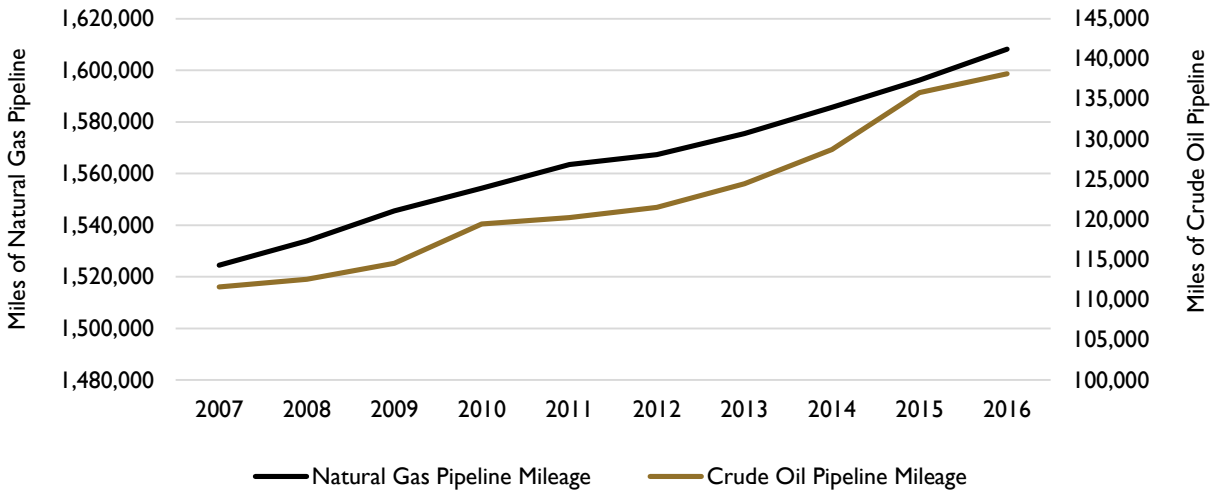
COMMERCIAL CRUDE OIL REFINERY, TANK AND UNDERGROUND STORAGE CAPACITY AND UTILIZATION (MONTHLY) (59)



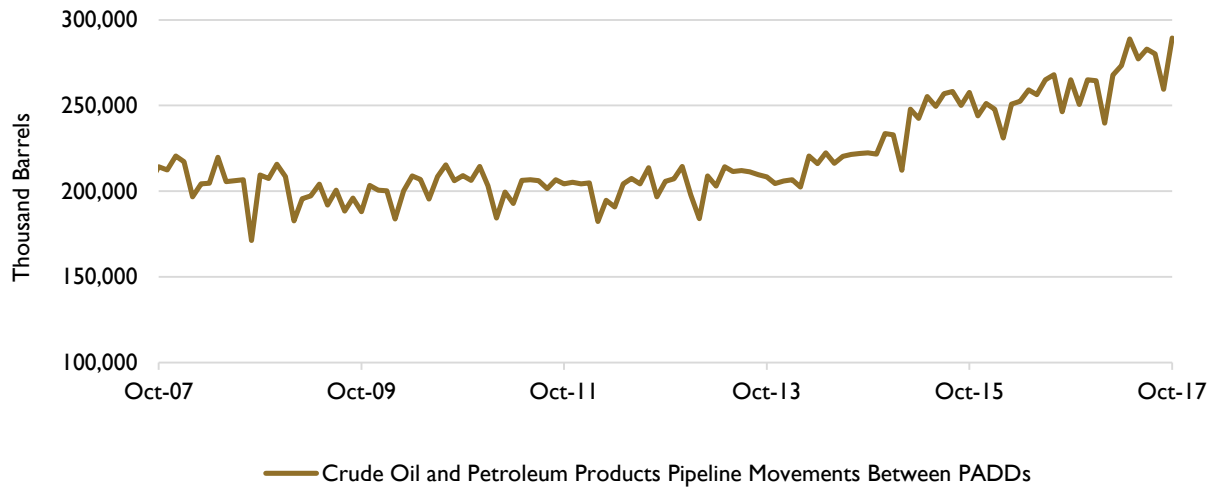
DATA CENTER

LOGISTICS - PIPELINES

Crude Oil and Natural Gas Pipeline Mileage (Annual) (60)



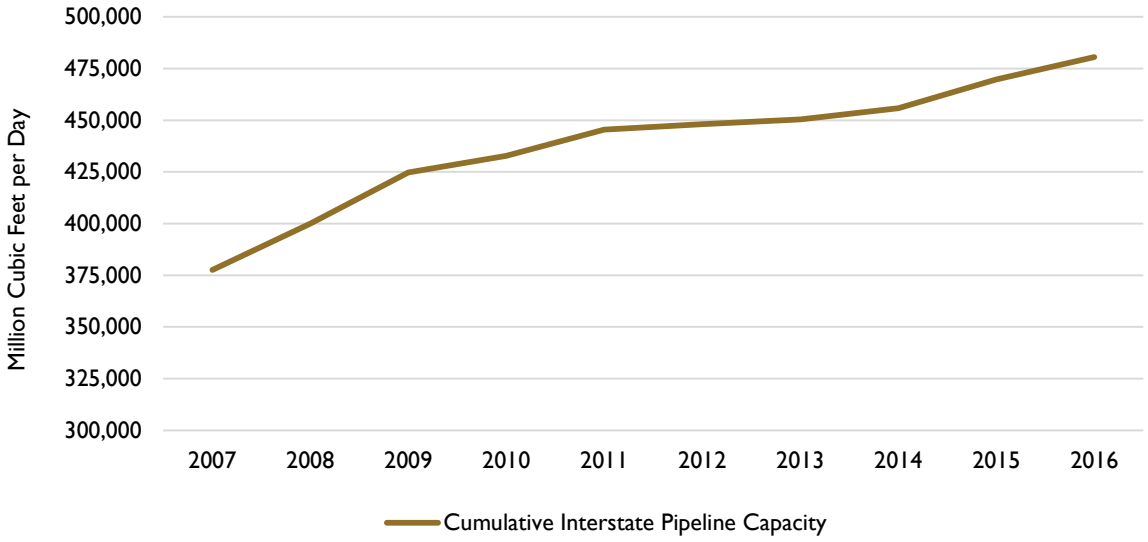
Crude Oil and Petroleum Products Pipeline Movements Between Petroleum Administration for Defense Districts (PADDs) (Monthly) (61)



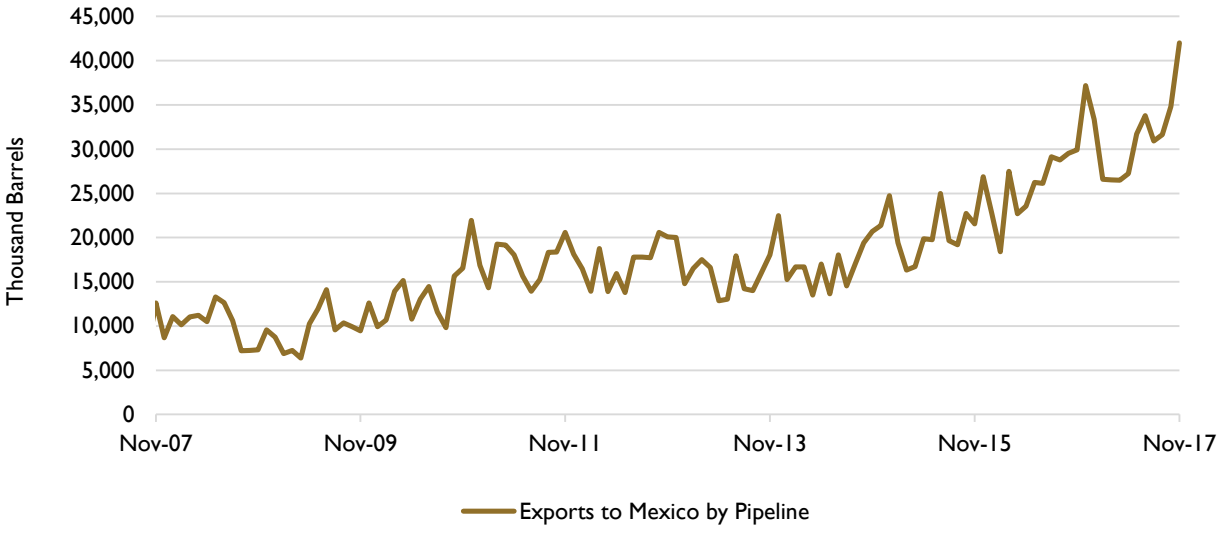
DATA CENTER

LOGISTICS - PIPELINES

NATURAL GAS CUMULATIVE INTERSTATE PIPELINE SYSTEMS CAPACITY (ANNUAL) (62)



CRUDE OIL AND PETROLEUM PRODUCTS EXPORTS TO MEXICO (MONTHLY) (63)

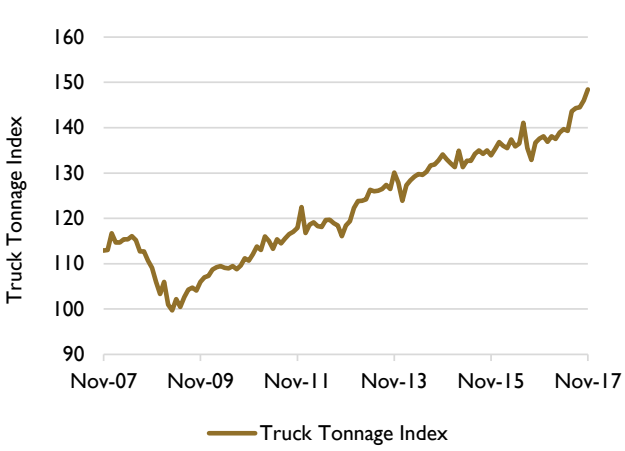


DATA CENTER

LOGISTICS - TRUCKERS

TRUCK TONNAGE INDEX (MONTHLY) (64)

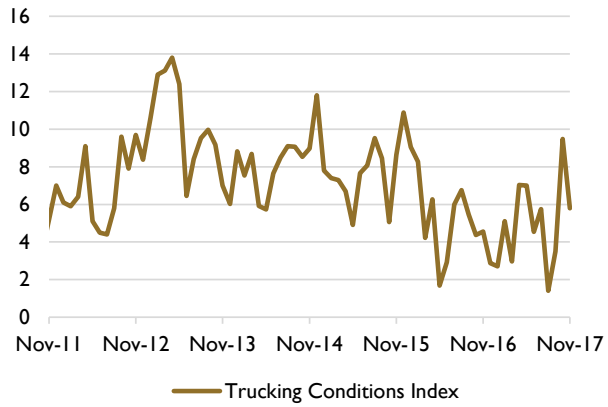
MEASURES GROSS TONNAGE OF FREIGHT



HEAVY TRUCK SALES (MONTHLY) (65)

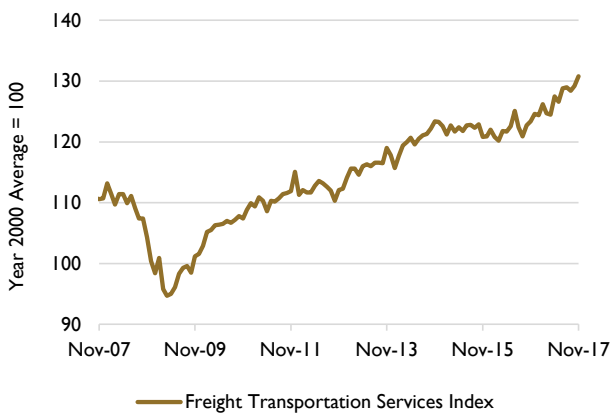
TRUCKING CONDITIONS INDEX (MONTHLY) (66)

INCLUDES FRIGHT VOLUMES, RATES, FLEET CAPACITY, BANKRUPTCIES, FUEL PRICE AND FINANCING



FREIGHT TRANSPORTATION SERVICES INDEX (MONTHLY) (67)

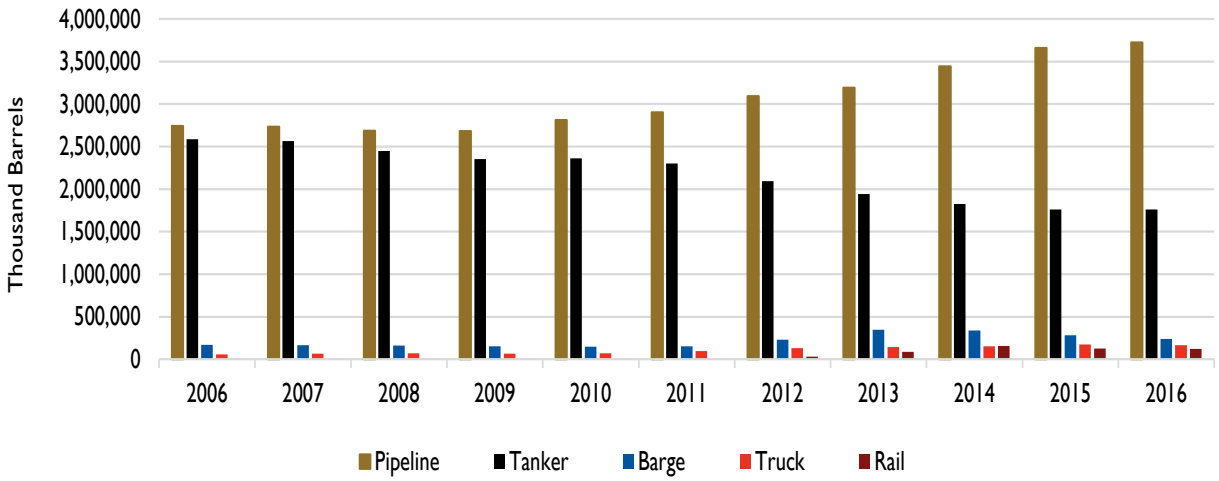
INCLUDES TRUCKING, RAIL, WATERWAYS, PIPELINES AND AIR FRIGHT



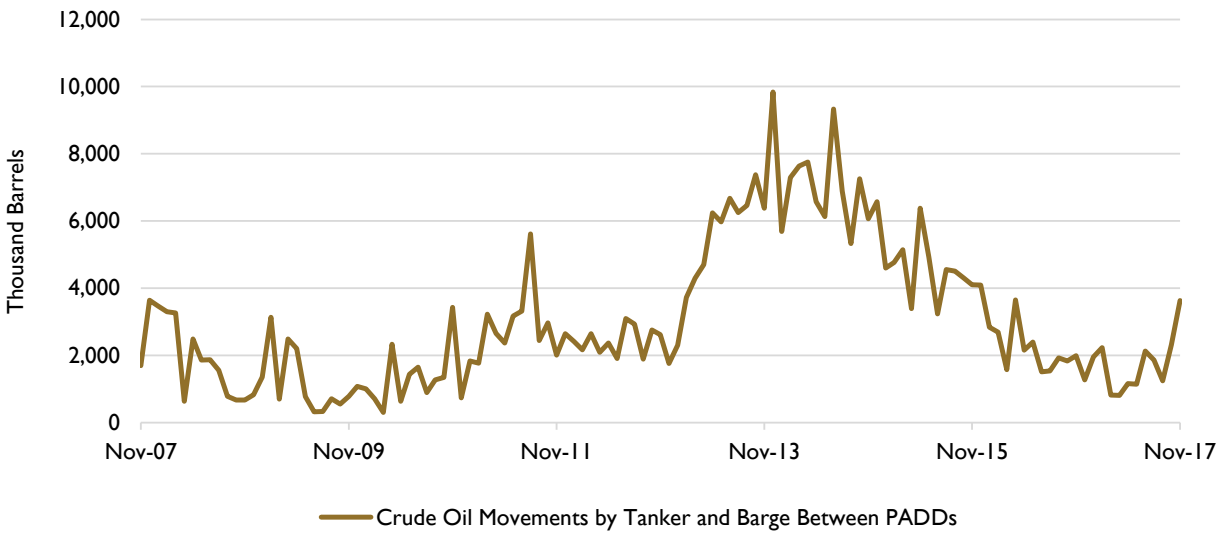
DATA CENTER

LOGISTICS - SHIPPING

Crude Oil Refinery Receipts by Transportation Method (Annual) (68)



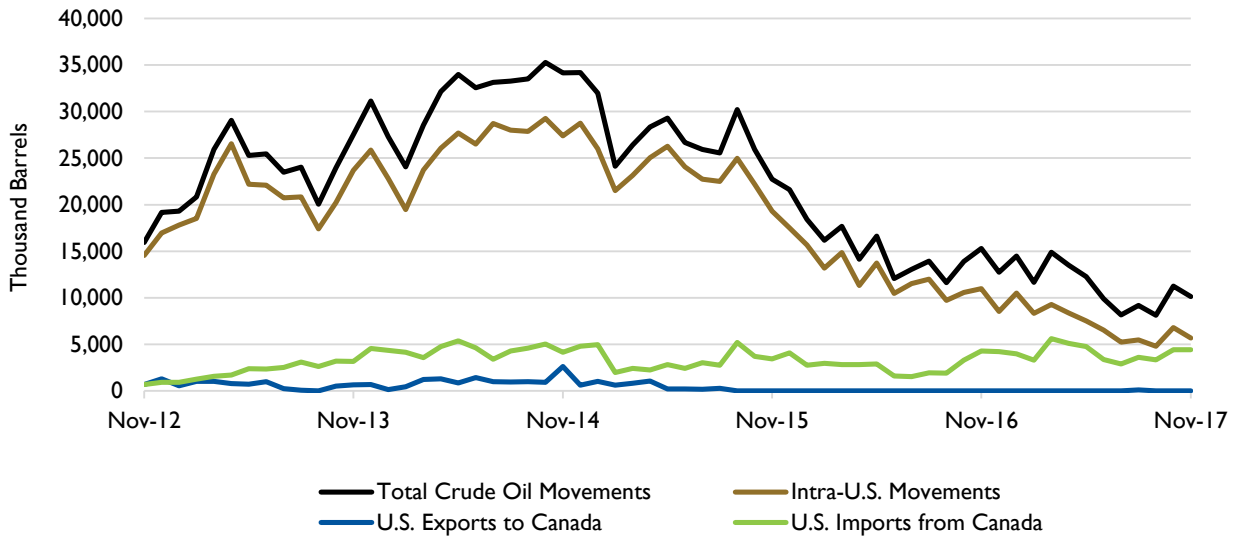
Crude Oil Movements by Tanker and Barge Between Petroleum Administration for Defense Districts (PADDs) (Monthly) (69)



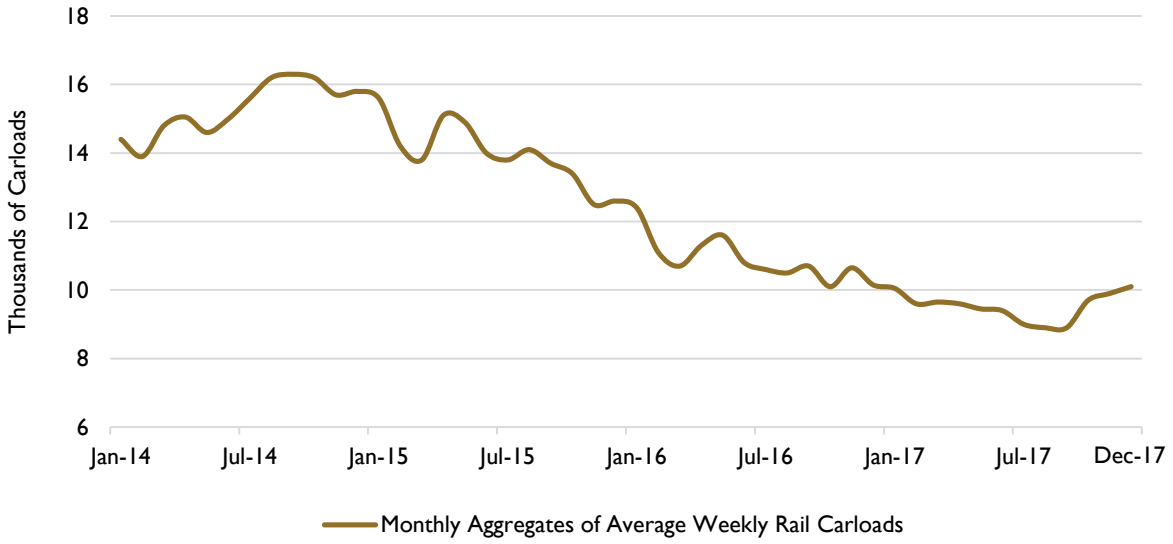
DATA CENTER

LOGISTICS - RAIL

MOVEMENTS OF CRUDE OIL BY RAIL (MONTHLY) (70)



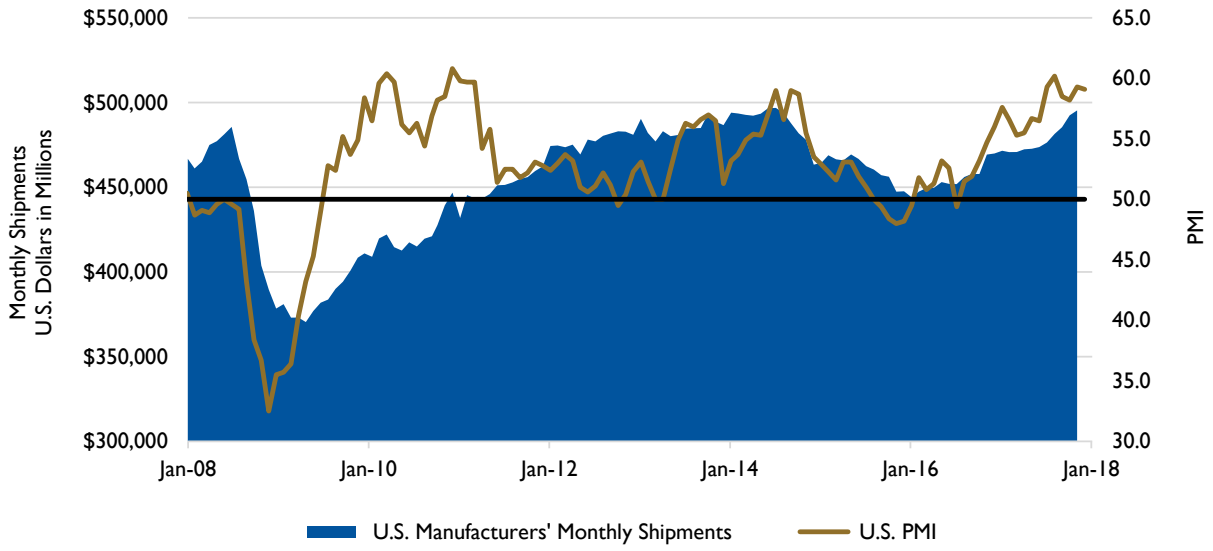
AVERAGE WEEKLY RAIL CARLOADS OF PETROLEUM AND PETROLEUM PRODUCTS (MONTHLY AGGREGATE) (71)



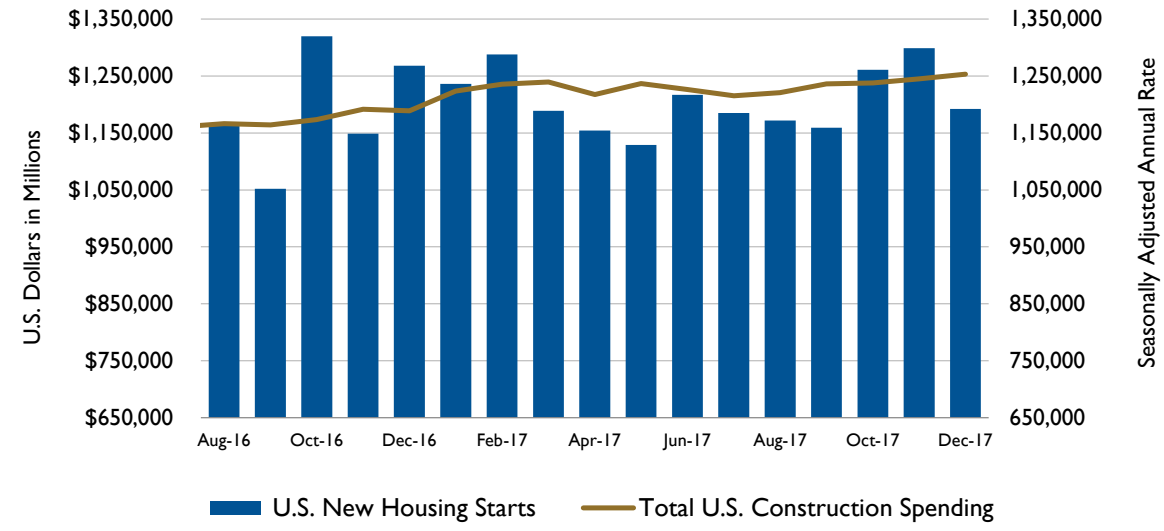
DATA CENTER

ECONOMIC / FINANCIAL

U.S. Manufacturers' Monthly Shipments and U.S. Purchasing Managers' Index (PMI) (Monthly) (72)



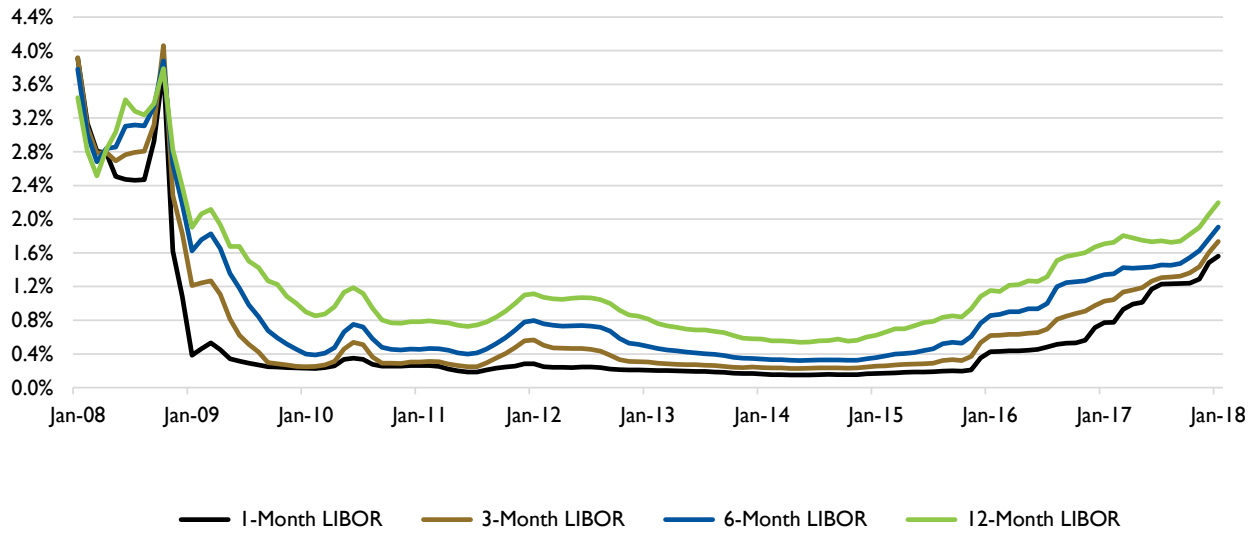
U.S. New Housing Starts and Total U.S. Construction Spending (Monthly) (73)



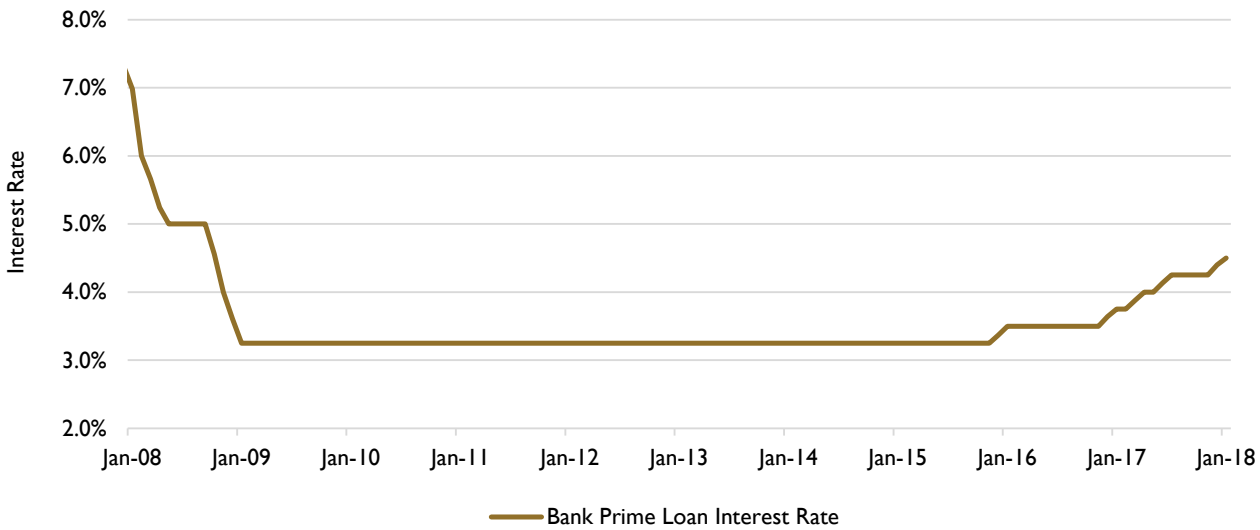
DATA CENTER

ECONOMIC / FINANCIAL

LONDON INTERBANK OFFERED RATE (LIBOR) (MONTHLY AVERAGE) BASED ON U.S. DOLLAR (74)



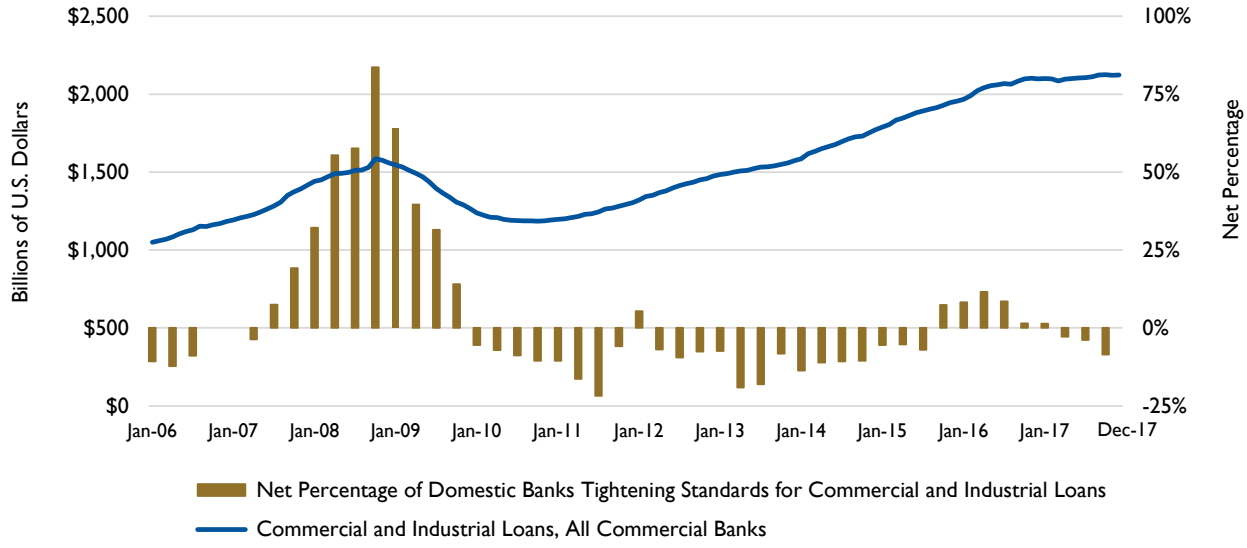
BANK PRIME LOAN INTEREST RATES (MONTHLY AVERAGE) (75)



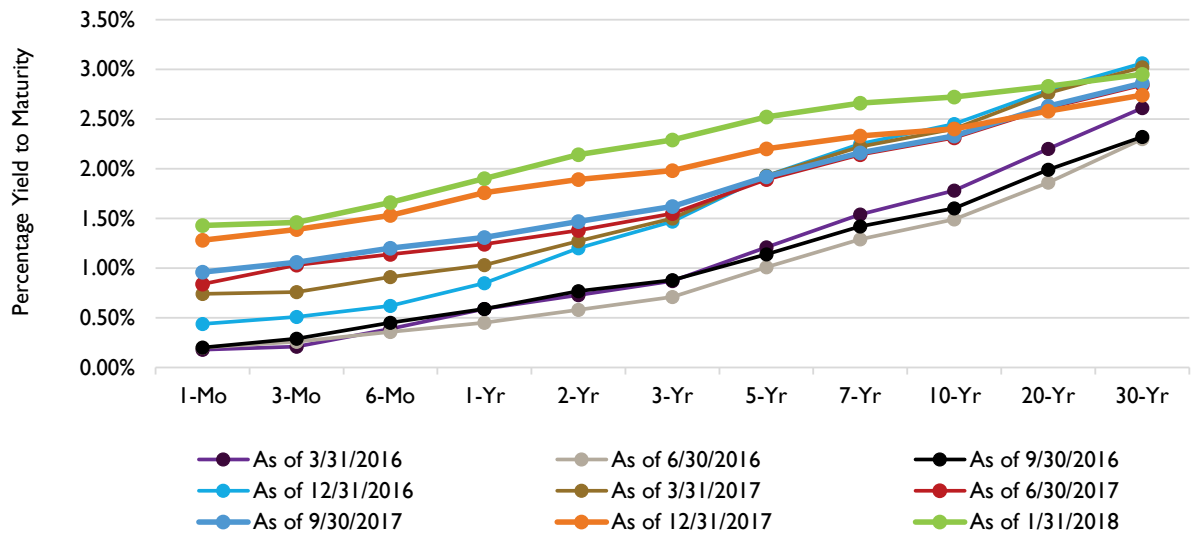
DATA CENTER

ECONOMIC / FINANCIAL

COMMERCIAL AND INDUSTRIAL LOANS VS. BANKING STANDARDS (QUARTERLY, MONTHLY) (76)



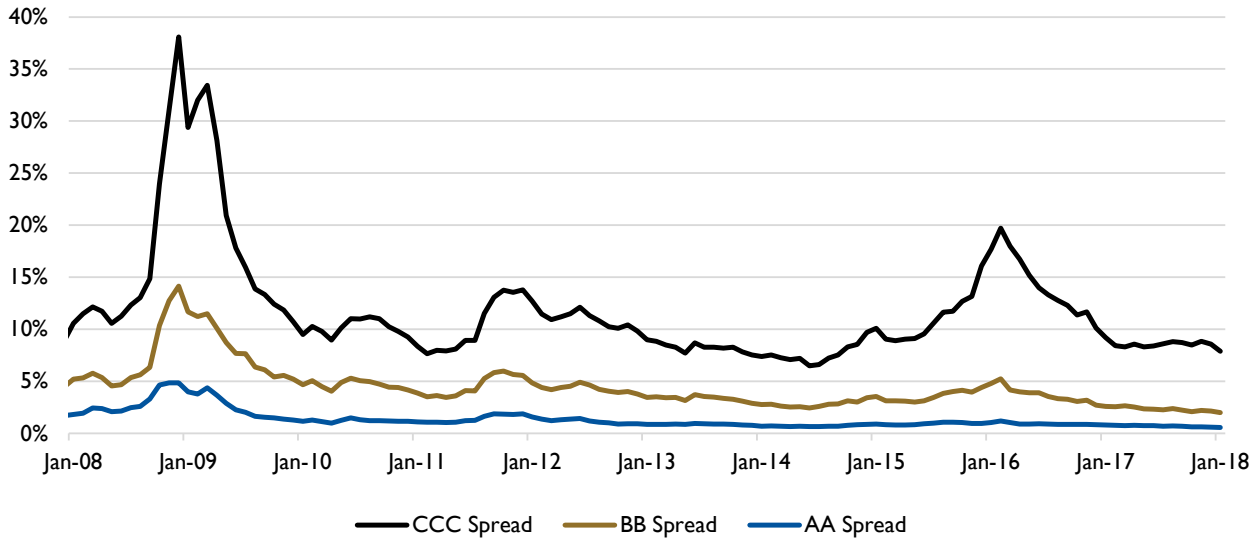
U.S. TREASURY YIELD CURVE (MONTHLY, ANNUAL) (77)



DATA CENTER

ECONOMIC / FINANCIAL

CORPORATE SPREADS TO TREASURIES BY QUALITY
(MONTHLY AVERAGE) (78)



DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

ABBREVIATIONS & ACRONYMS

AECO – Alberta Energy Company
ARAMCO – Saudi Arabian Oil Company, formerly the Arabian-American Oil Company
BCF – Billion cubic feet
BTU – British thermal unit
CIF – Costs, insurance and freight
CMT – Constant maturity treasury
DUC – Drilled but uncompleted wells
EBITDA – Earnings before interest, taxes, depreciation and amortization
IFO – Intermediate fuel oil
ITC – Investment Tax Credit
LCOE – Levelized cost of energy
LIBOR – London Interbank Offered Rate
LNG – Liquefied natural gas
LPG – Liquefied petroleum gas
mmBTU – Millions of British Thermal Units
MTBE – Methyl tertiary butyl ether
MW – Megawatt
NBP – National Balancing Point
NGPL – Natural gas plant liquids
NYMEX – New York Mercantile Exchange
OAS – Option-adjusted spread
OPEC – The Organization of Petroleum Exporting Countries
PADD – Petroleum Administration for Defense District
PG&E – Pacific Gas & Electric
PMI – U.S. Purchasing Managers Index
PV – Photovoltaic
SoCal – Southern California
SPR – Strategic Petroleum Reserve
TETCO-M3 – Texas Eastern Transmission Corporation Pipeline Zone M3
TTF – Title Transfer Facility
UAE – United Arab Emirates
WTI – West Texas Intermediate crude oil

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

DEFINITIONS

Biofuels – liquid fuels and blending components produced from biomass feedstocks, used primarily for transportation.

British Thermal Unit (BTU) – A traditional unit of heat; it is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

Ending Stocks – A proxy for inventory, defined as the total volume of a given commodity held in storage (leases, refineries, processing plants, pipelines, terminals, tank farms) at the end of the last day of a given month.

Distillate Fuel Oil – A general classification for a variety of petroleum fractions produced in petroleum distillation operations. Included within this classification are No. 1, No. 2 and No. 4 diesel fuels (used in on-highway and off-highway diesel engines), as well as No. 1, No. 2 and No. 4 fuel oils (used primarily for space heating and electric power generation).

Distributed Solar Energy – Refers to solar energy generated by small-scale photovoltaic generation plants. Small-scale is defined as a plant with capacity below one megawatt.

Index – A figure in a system or scale representing the average value of specified prices, shares, or other items as compared with some reference figure.

Intermediate Fuel Oil – Also known as IFO and Bunker Fuel, fuel utilized by ships and barges to facilitate international exchange of various commodities across an array of industries.

Investment Tax Credit – A federal policy tax incentive that supports the deployment of solar energy in the United States.

LIBOR – The London Interbank Offered Rate is the average interest rate at which leading banks borrow funds of a sizeable amount from other banks in the London market.

Liquefied Natural Gas – Natural gas that has been cooled to a liquid state, at about -260°Fahrenheit, for shipping and storage.

Liquefied Petroleum Gas – A group of hydrocarbon gases, primarily propane, normal butane and isobutene, derived from crude oil refining or natural gas processing.

Natural Gas Liquids – A group of hydrocarbons including ethane, propane, normal butane, isobutene and natural gasoline. Generally include natural gas plant liquids and all liquefied refinery gases except olefins.

Natural Gas Plant Liquids – Ethane, propane, butane, isobutane, pentane and pentane plus.

Petroleum Administration for Defense District (PADD) – A geographic aggregation of the 50 States and the District of Columbia into five Districts. PADD 1 is the East Coast region, PADD 2 is the Midwest region, PADD 3 is the Gulf Coast region and PADD 5 is the West Coast region.

Petroleum Products – Obtained from the processing of crude oil (including lease condensate), natural gas and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas and miscellaneous products.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

DEFINITIONS

Product Supplied – A widely utilized proxy for consumption of petroleum products, measuring the disappearance of said products from primary sources. Primary sources include, among others, refineries, processing plants, blending plants, pipelines and bulk terminals.

Propylene – Petrochemical feedstock that is recovered from refinery or petrochemical processes. It is an olefinic hydrocarbon that is gaseous at standard temperature and pressure.

Residual Fuel Oil – The general classification for heavy oils that remain after lighter oils are distilled away in the process of petroleum refining.

Spot vs. Wholesale Price – "Spot" prices are defined by the U.S. Energy Information Administration as, "the price for a one-time open market transaction for immediate delivery of a specific quantity of a product at a specific location where the commodity is purchased 'on the spot' at current market rates."

In this report, certain charts contain both "spot" and "wholesale" prices for given commodities alongside each other within the same chart. In these instances, the wholesale prices shown are, in fact, wholesale market "spot" prices. Thus, the terms are interchangeable in charts where both terms are present in describing respective price series.

Strategic Petroleum Reserve (SPR) – An emergency fuel storage of crude oil maintained by the United States Department of Energy for use during periods of major supply interruption.

Virtual Trading Point – Commodity trading center created to service a specific geographic region but does not have a physical location.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

DESCRIPTIONS

General Conversion Information

- International pricing data for various commodities were converted by JKC from the units utilized by the original data source (in the form of currency value per unit of energy content or volume) to appropriate domestic units (in the form of U.S. dollars per common domestic unit of energy content or volume) in order to allow for convenient, informative comparison of international and domestic commodity price series through displaying them on a singular chart in consistent units. Appropriate domestic units for a given commodity are determined by whatever units are most commonly utilized in the United States to denote prices of that commodity, per the U.S. Energy Information Administration.
- International currency units were converted to U.S. dollars using historical exchange rates published by x-rates.com.
- Energy content and volume conversion factors differ by commodity. International energy content or volume units were converted using the various sources listed below:
  - Google.com In-Browser Unit Converter
    - Alberta Energy Co. Hub Natural Gas – gigajoules to mmBTU
    - Dutch TTF Hub Natural Gas – megawatt hours to mmBTU
    - Houston; Los Angeles; Rotterdam; Singapore; Port of Fujairah, UAE IFO 380, IFO 180 Bunker Fuel – liters/kilogram to gallons per metric ton
  - Iowa State University Liquid Fuel Measurements and Conversions
    - Netherlands Retail LPG – liters to metric tons, metric tons to barrels
    - Saudi ARAMCO Propane – metric tons to barrels
    - Japan Propane Imports – metric tons to barrels
    - Holland Retail Gasoline – liters to gallons
    - Singapore Retail Gasoline – liters to gallons
    - UAE Gasoline – liters to gallons
    - Edmonton Diesel Fuel – liters to gallons
    - Singapore Retail Diesel – liters to gallons
    - Holland Retail Diesel – liters to gallons
    - UAE Diesel – liters to gallons
  - Official Nebraska Government Website
    - Netherlands Retail LPG – barrels to gallons
    - Saudi ARAMCO Propane – barrels to gallons
    - Japan Propane Imports – barrels to gallons
  - Lanka IOC Oil Company
    - Houston; Los Angeles; Rotterdam; Singapore; Port of Fujairah, UAE IFO 380, IFO 180 Bunker Fuel – density, in liters per kilogram

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

CHART NOTES

All charts in this report are updated to the latest information available at the time of publication. Due to differing reporting dates for various data used throughout the report, all charts are not updated to the same ending period.

(1) Crude Oil Prices

- Sources: U.S. Energy Information Administration (Brent, West Texas Intermediate), IndexMundi via WorldBank (Dubai Fateh), Alberta.ca Economic Dashboard (Western Canadian Select), OPEC.org and Quandl.com (OPEC Reference Basket).
- The Organization of Petroleum Exporting Countries (OPEC) reference basket is a composite of the following blends of crude oil: Saharan Blend (Algeria), Girassol (Angola), Oriente (Ecuador), Zafiro (Equatorial Guinea), Rabi Light (Gabon), Iran Heavy (Islamic Republic of Iran), Basra Light (Iraq), Kuwait Export (Kuwait), Es Sider (Libya), Bonny Light (Nigeria), Qatar Marine (Qatar), Arab Light (Saudi Arabia), Murban (United Arab Emirates), Merey (Venezuela).
- All prices are spot or wholesale.

(2) Gasoline Prices

- Sources: U.S. Energy Information Administration (New York Harbor, U.S. Gulf Coast), Trading Economics (Singapore, Netherlands Retail), United Arab Emirates Ministry of Energy (UAE Retail).
- New York Harbor Spot, U.S. Gulf Coast Spot, Netherlands Retail and Singapore Retail all represent the price history of conventional gasoline in their respective locations. United Arab Emirates Retail represents an aggregate of unleaded 95, unleaded 98 and unleaded 91 prices in the United Arab Emirates.

(3) Diesel Prices

- Sources: U.S. Energy Information Administration (U.S. Gulf Coast, New York Harbor, Los Angeles, CA), Ec.euopa.eu European Commission (Netherlands Retail), Knoema.com (Singapore Retail), United Arab Emirates (UAE Retail).
- New York Harbor, U.S. Gulf Coast and Los Angeles, CA prices represent ultra-low sulfur No. 2 diesel.
- Edmonton, Canada price represents low-sulfur diesel.
- Singapore Retail, United Arab Emirates Retail and Netherlands Retail prices represent conventional gasoil found at the pump. Gasoil is an alternative term for diesel commonly used throughout Europe.

(4) Jet Fuel Prices

- Source: U.S. Energy Information Administration.
- All prices are spot or wholesale prices.

(5) U.S. Crude Oil and Petroleum Products Supply, Inventory and Consumption

- Source: U.S. Energy Information Administration.
- Crude Oil and Petroleum Products consist of natural gas plant liquids (ethane, propane, butane, isobutane, pentane), other liquids (hydrogen, oxygenates and renewable fuels like fuel ethanol, motor and aviation gasoline blending components, unfinished oils) and finished petroleum products (motor gasoline, aviation gasoline, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, napthas, lubricants, waxes, petroleum cokes, asphalt and road oil, still gas, miscellaneous products).
- Supply is comprised of field production, renewable fuels and oxygenate plant net production, refinery and blender net production, imports and net Petroleum Administration for Defense District (PADD) receipts. Net PADD receipts represent the net volume of product movement into and out of each PADD by tanker, barge and pipeline.
- Ending Stocks is a proxy for inventory and is defined as primary stocks held in storage as of midnight on the last day of the month. Primary stocks include products held in storage at, or in, leases, refineries, natural gas processing plants, pipelines, tank farms and bulk terminals with the capacity to store at least 50,000 barrels or that can receive product by tanker, barge or pipeline. Ending Stocks include volumes in the Strategic Petroleum Reserve (SPR) maintained by the Federal Government for use during periods of major supply interruption.
- Product Supplied is a proxy for consumption as it measures the disappearance of said product from primary sources, including refineries, processing plants, blending plants, pipelines and bulk terminals.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(6) U.S. Refinery Volumes and Wholesale Prices of Petroleum Products
- Source: U.S. Energy Information Administration Petroleum Marketing Monthly.

(7) U.S. Crude Oil Refinery Input, Distillation Capacity and Refinery Utilization
- Source: U.S. Energy Information Administration Petroleum Supply Weekly.
- Net Input is defined as gross inputs less gross production. Crude Oil Refinery Net Input values are monthly aggregates of weekly net input averages, measured in thousands of barrels per day. The resulting values are represented as monthly average refinery inputs, measured in thousands of barrels per day.
- Refinery Capacity refers to the maximum amount of crude oil designed to flow into the distillation (or crude) unit of the refinery. Operable Capacity is equal to the sum of operating and idle capacity. Idle Capacity is capacity that is not in operation, not under active repair, and can be placed in operation within 30 days.

(8) U.S. Crude Oil and Petroleum Products Imports and Exports
- Source: U.S. Energy Information Administration Petroleum Supply Monthly.
- U.S. Net Imports of Petroleum Products data fall below zero at which point the U.S. becomes a net exporter.

(9) Domestic Natural Gas Prices
- Source: U.S. Energy Information Administration and New York Mercantile Exchange (NYMEX).
- Henry Hub located at Erath, LA is a natural gas distribution hub that serves the Texas region and is the primary worldwide pricing benchmark.
- Algonquin, MA Citygate serves the New England region.
- Texas Eastern Transmission Corporation Pipeline Zone M3 (TETCO-M3) serves the region encompassing Pennsylvania, New Jersey and Maryland.
- Chicago, IL Citygate serves the Midwest region.
- Malin, OR Citygate serves the Northwest region.
- Pacific Gas & Electric (PG&E) Citygate is a virtual trading point that serves the Northern California region.
- Southern California (SoCal) SoCal-Ehrenberg Citygate serves the Southwest region.
- SoCal Citygate is a virtual trading point which serves the Southern California region.
- Virtual Trading Point (Virtual) does not have a physical location and was created to serve a specific region.
- All prices are spot or wholesale.

(10) International Natural Gas Prices
- Sources: U.S. Energy Information Administration (Henry Hub), NGX Clearinghouse (AECO Hub), BP Statistical Review of World Energy 2017 (United Kingdom NBP), International Monetary Fund (Russian Contracts at German Border), Knoema via World Bank (Japan LNG Import), my.Elexys.be Market Information (Dutch TTF).
- Henry Hub serves as the primary global pricing benchmark.
- Alberta Energy Company (AECO) Hub serves North America.
- United Kingdom National Balancing Point (NBP) serves the British Isles.
- Dutch Title Transfer Facility (TTF) serves continental Europe.
- Virtual Trading Point (Virtual) does not have a physical location and was created to serve a specific region.
- Japan LNG Import Price represents aggregate import prices of liquefied natural gas in Japan and is a price benchmark serving the Asia-Pacific region. The price includes costs, insurance and freight (CIF).
- All price benchmarks above represent gaseous state natural gas transported by pipeline, with the exception of Japan LNG Import Price, which represents liquid state natural gas transported by ship.
- All prices are spot or wholesale.

(11), (12), (13) and (14) Liquefied Natural Gas Prices
- Source: Federal Energy Regulatory Commission.
- All prices are "landed" prices. Landed price is the price received at the regasification terminal and is based on a netback calculation that removes the costs of pipeline transportation, regasification, waterborne shipping and liquefaction, so as to best represent the effective price to the producer or seller at a specific location or defined point.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(15) U.S. Import / Export Liquefied Natural Gas Prices
- Source: U.S. Energy Information Administration.
- All prices are spot or wholesale.

(16) Natural Gas Liquids Prices
- Source: U.S. Energy Information Administration.
- All prices are daily end-of-day spot prices. Natural gas at Henry Hub, West Texas Intermediate (WTI) at Cushing, OK, and natural gas liquids components at Mont Belvieu, TX.
- Natural Gas Plant Liquids (NGPL) Composite price includes ethane, propane, butane, isobutane and natural gasoline. Daily closing spot prices for each component are averaged into a monthly series, then weighted according to the portion of a representative natural gas plant liquids barrel that they occupy. The NGPL Composite price excludes natural gas liquids produced at crude oil refineries.
- Crude oil and natural gas shown for comparative purposes.

(17) U.S. Natural Gas Production and Consumption
- Source: U.S. Energy Information Administration.
- Marketed Production is equal to gross withdrawals of natural gas from production reservoirs, less gas used for reservoir re-pressuring, nonhydrocarbon gases removed in treating and processing operations, and quantities vented and flared (gas that is disposed of by release into the atmosphere).

(18) U.S. Natural Gas Supply and Inventory
- Source: U.S. Energy Information Administration.
- Working Gas is defined as the total amount of natural gas in storage less the amount of base gas. Base gas is the amount of gas intended as permanent inventory.

(19) U.S. Natural Gas Consumption by End Use
- Source: U.S. Energy Information Administration.

(20) U.S. Natural Gas Plant Liquids Production
- Source: U.S. Energy Information Administration.
- Natural Gas Plant Liquids Production refers to the sum of all production of ethane, propane, butane, isobutane, pentane and pentane plus.

(21) U.S. Liquefied Natural Gas Import and Export Volumes
- Source: U.S. Energy Information Administration.

(22), (23) and (24) North American LNG Import / Export Terminals – Proposed, Approved and Existing
- Source: Federal Energy Regulatory Commission.

(25) Heating Oil Prices
- Source: U.S. Energy Information Administration.
- Spot prices of No 2. heating oil at New York Harbor, alongside the spot prices of West Texas Intermediate crude oil for comparison purposes.

(26) Intermediate Fuel Oil aka "Bunker Fuel" Prices
- Source: Ship & Bunker.
- Intermediate Fuel Oil, also known as IFO and Bunker Fuel, is fuel utilized by ships and barges to facilitate international exchange of various commodities across an array of industries, including energy. It is classified in the maritime field by its viscosity, measured in centistokes. IFO 380 has a maximum viscosity of 380 centistokes, while IFO 180 has a maximum viscosity of 180 centistokes. IFO 380 is comprised of 98% residual fuel oil and 2% distillate fuel oil. IFO 180 is comprised of 88% residual fuel oil and 12% distillate fuel oil.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(27) Propane Prices

- Sources: U.S. Energy Information Administration (Conway, KS and Mont Belvieu, TX spot prices), Government of Canada National Energy Board (Edmonton, Canada trading hub prices), Ec.euopa.eu European Commission (Netherlands Retail prices), LPG Australia and news articles (Saudi ARAMCO contract prices), Knoema.com and Petroleum Association of Japan (Japan Imports prices).
- Conway, KS; Mont Belvieu, TX; and Edmonton, Canada retail prices are propane prices, while Saudi ARAMCO Contracts, Netherlands Retail and Japan Imports are liquefied petroleum gas (LPG) prices.
- Propane and LPG prices are represented on the same chart due to the fact that propane is dealt in international marketplaces as LPG, and is referred to as LPG in many European and Asian countries. LPG is comprised of a mixture of propane and butane.
- Conway, KS wholesale prices are typically available only for the winter months (October through March), during which propane demand is driven by cold weather, therefore, the data series displayed is intermittent.

(28) No. 1 Distillate Fuel Oil, Residual Fuel Oil Wholesale, Retail Sales Volume by Refiners

- Source: U.S. Energy Information Administration.
- No. 1 Distillate Fuel Oil consists of No. 1 diesel fuel and No. 1 fuel oil. The former is used in high-speed diesel engines, including those used by metropolitan buses and smaller automobiles. No. 1 fuel oil is utilized primarily as fuel for portable outdoor stoves and heaters.
- Residual Fuel Oil is the general classification for heavy oils that remain after lighter oils are distilled away in the process of petroleum refining. Residual Fuel Oil includes No. 5 and No. 6 fuel oils. The former is used in steam-powered vessels, and the latter is used for electric power generation, space heating, vessel bunkering and industrial processes.
- All wholesale and retail sales volumes refer to those sold by refiners only.

(29) No. 2 Distillate Fuel Oil Wholesale, Retail Sales Volume by Refiners

- Source: U.S. Energy Information Administration.
- No. 2 Distillate Fuel Oil consists of No. 2 diesel fuel and No. 2 fuel oil (heating oil). No. 2 diesel fuel is utilized in on-and-off highway diesel engines, including those used by railroad locomotives, trucks, automobiles and agricultural machinery. No. 2 fuel oil (heating oil) is used for space heating and moderate capacity industrial/commercial burner units.
- All wholesale and retail sales volumes refer to those sold by refiners only.

(30) Propane & Propylene and Distillate Fuel Oil Production and Consumption

- Source: U.S. Energy Information Administration.
- Distillate Fuel Oil is a general classification for a variety of petroleum fractions produced in petroleum distillation operations. Included within this classification are No. 1, No. 2 and No. 4 diesel fuels (used in on-highway and off-highway diesel engines), as well as No. 1, No. 2 and No. 4 fuel oils (used primarily for space heating and electric power generation).
- Propylene is an important petrochemical feedstock that is recovered from refinery or petrochemical processes. It is an olefinic hydrocarbon that is gaseous at standard temperature and pressure.
- Product Supplied is a proxy for consumption as it measures the disappearance of said product from primary sources, including refineries, processing plants, blending plants, pipelines and bulk terminals.

(31) U.S. Ending Stocks of Propane & Propylene and Distillate Fuel Oil

- Source: U.S. Energy Information Administration.
- Distillate Fuel Oil is a general classification for a variety of petroleum fractions produced in petroleum distillation operations. Included within this classification are No. 1, No. 2 and No. 4 diesel fuels (used in on-highway and off-highway diesel engines), as well as No. 1, No. 2 and No. 4 fuel oils (used primarily for space heating and electric power generation).
- Propylene is an important petrochemical feedstock that is recovered from refinery or petrochemical processes. It is an olefinic hydrocarbon that is gaseous at standard temperature and pressure.
- Ending Stocks are defined as the total volume of a propane and propylene/distillate fuel oil held in storage as of the last day of the period. Ending Stocks are monthly averages of Ending Stocks reported at the end of each week during that month, not the amount of Ending Stocks reported at the end of the month. The resulting values are represented as monthly average inventory levels.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(32) U.S. Land Well Count, Rig Count and Wells per Rig

- Source: Platts S&P Global Quarterly Well Count Report.
- Well and rig count data include only those on United States land. Thus, no offshore data is included.
- Platts RigData U.S. Land Rig Count methodology states that a rig is added to the count every time a new oil platform, or rig, is set up on a given site, or every time an existing rig moves to a new location and drills on that site.
- Platts RigData derives U.S. Land Well Count data through tracking new drilling permits and drilling activity only. Thus, the wells comprising the U.S. Land Well Count do not necessarily have to be completed or produce oil or gas in order to be included. For this reason, the well count represented overstates the amount of completed and producing wells that exist on U.S. land.

(33) U.S. Drilling Permits

- Source: Platts RigData.
- Total number of drilling permits issued per month on U.S. Land, U.S. Inland Waters and U.S. Offshore, respectively.

(34) U.S. Drilling Permits, Top 5 States

- Source: Platts RigData.
- The five states that issued the highest number of drilling permits each year from 2012 to 2017.

(35) Drilled but Uncompleted Wells vs. Crude Oil Price

- Source: U.S. Energy Information Administration Drilling Productivity Report.
- Drilled but Uncompleted (DUC) Wells are oil and gas wells that have been drilled but haven't gone through the process of completion (the process of installing well casing, tubing and other equipment that prepares a well for production). The number of DUC wells has significant implications on the domestic supply response to crude oil price changes. If crude oil prices decrease, it is theoretically likely that the amount of DUC wells will increase, and vice versa in an increasing crude oil price scenario. Therefore, the West Texas Intermediate Crude price is tracked for comparative purposes.

(36) Hydraulic Fracturing Sand Consumption and Producer Price Index

- Sources: IHS Markit (consumption), U.S. Bureau of Labor Statistics (producer price index).
- Hydraulic Fracturing Sand is sand utilized as a proppant in the process of hydraulic fracturing to help facilitate the extraction of oil and gas from subsurface rock formations.
- Total 2017 Hydraulic Fracturing Sand Consumption contains actual data for January through April 2017, while May through December 2017 consumption data is projected based on IHS Markit's ProppantIQ research.
- The Producer Price Index for Hydraulic Fracturing Sand measures the weighted average period-to-period change in the selling prices received by domestic producers of hydraulic fracturing sand.
- 2017 Producer Price Index shows annual average as of 9/29/2017.
- Hydraulic Fracturing Sand Producer Price Index Base = 100 at December 2012.

(37) and (38) Crude Oil and Natural Gas Production, Rig Count and Production per Rig

- Sources: U.S. Energy Information Administration Drilling Productivity Report (new-well crude oil and natural gas production per rig), Baker Hughes Inc. (rig count).
- New-Well Crude Oil or Natural Gas Production per Rig in each quarter represents the average of each month's value. New-well production per rig is estimated by dividing several trailing months of data on total production from new wells in each region by that region's monthly rig count, lagged by two months. New-well production per rig is intended to indicate an average rig's contribution to total crude oil production from new wells.
- The determination between a crude oil rig and a natural gas rig is made by the operating company at the time of issuance of the rig permit by the relevant state's permitting authority. The classification of a given rig as an oil or gas rig is based solely upon the operator's judgment after drilling an appraisal well and determining its specific hydrocarbon content. For example, if a well's production comes 50% from gas, 20% from Natural Gas Liquids and 30% from oil, it could either be listed as a gas rig, because gas comprises the largest share of hydrocarbons, or an oil rig because oil drives the well's economics. This determination is at the judgment of the operator.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(39) Wind and Solar Prices

- Source: Lazard's Levelized Cost of Energy Analysis 2012-2016.
- The Levelized Cost of Energy (LCOE) is the net present value of the per-megawatt hour cost of building and operating a generating plant over an assumed financial life and duty cycle. It is utilized as a means of comparing the cost-competitiveness of various energy-generating technologies of unequal life spans, project sizes, capital profiles and capacities.
- The respective levelized costs of each generation technology for each year are a simple average of the high and low values of the cost range associated with that generating technology during that year.
- Solar PV refers to solar photovoltaic.
- Solar PV – Community refers to a solar power plant whose electricity is shared by more than one household.
- Solar PV – Rooftop Residential refers to a Solar PV system that has its solar panels mounted on the rooftop of a residential structure.
- Solar PV – Crystalline Rooftop refers to crystalline solar panels mounted on rooftops. Crystalline panels are a type of solar panel that achieves the photoelectric effect, the chemical process that converts solar (light) energy to electricity, through use of crystalline silicone solar cells.
- Solar PV – Crystalline Utility-Scale refers to a solar power plant that uses crystalline panels to generate power that is fed into the grid, supplying a utility with energy.
- Solar PV – Thin Film Utility-Scale refers to a solar power plant that uses thin-film solar panels to generate power that is fed into the grid, supplying a utility with energy. Thin-film panels differ from crystalline panels in that the photoemissive materials, those which produce an electric current when contacted by sufficient solar energy, are not cut from crystals.
- Solar Thermal refers to solar technology that generates thermal energy to heat water or other fluids, rather than generating electricity.

(40) U.S. Total Renewable Energy Consumption

- Source: U.S. Energy Information Administration Monthly Energy Review.
- Total Renewable Energy Consumption is comprised of hydroelectric, geothermal, solar, wind, wood, waste and biofuels.
- Waste refers to biomass waste and is organic non-fossil material of biological origin that is a byproduct or a discarded product. Biomass waste includes municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural crop byproducts, straw and other biomass solids, liquids and gases.
- Biofuels are liquid fuels and blending components produced from biomass feedstocks, used primarily for transportation. Biomass is organic, non-fossil material comprised of decayed biological matter.

(41) U.S. Solar, Wind and Hydroelectric Energy Consumption

- Source: U.S. Energy Information Administration Monthly Energy Review.

(42) U.S. Wood, Waste, Biofuels and Geothermal Energy Consumption

- Source: U.S. Energy Information Administration Monthly Energy Review.
- Biofuels are liquid fuels and blending components produced from biomass feedstocks, used primarily for transportation. Biomass is organic, non-fossil material comprised of decayed biological matter.

(43) U.S. Corn Crop Production and Price

- Source: U.S. Department of Agriculture Economic Research Service.
- Weighted-Average Farm Price is the U.S. season-average corn price received by farmers, weighted by monthly marketing volumes. Prices do not include an allowance for loans outstanding and government purchases.

(44) Corn and Ethanol Prices and Corn Cost per Gallon of Ethanol

- Source: U.S. Department of Agriculture Economic Research Service (corn and ethanol price).

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(45) U.S. Solar Energy Consumption

- Source: U.S. Energy Information Administration Monthly Energy Review.
- Utility-scale solar energy refers to solar energy generated by plants with a capacity of at least one megawatt that is transmitted via the transmission grid to a high volume of consumers. Thus, Utility-Scale Solar Energy Consumption represents consumption of solar energy generated at plants with capacity of at least one megawatt.
- Distributed solar energy refers to solar energy generated by small-scale generating plants with capacity below one megawatt that is distributed over a specific locality with a small volume of consumers relative to utility-scale energy consumers. Thus, Distributed Solar Energy Consumption represents consumption of solar energy generated at small-scale generating plants.

(46) U.S. Solar Energy Net Generation

- Source: U.S. Energy Information Administration Monthly Energy Review.
- Distributed Solar Photovoltaic Generation refers to energy generated by small-scale photovoltaic generation plants. Small-scale is defined as a plant with capacity below one megawatt. Photovoltaic generation refers to solar energy generated by photovoltaic solar panels.
- Utility-Scale Solar Electricity Net Generation refers to generation of solar energy by plants with capacity equal to or above one megawatt. Net generation is defined as the amount of gross generation less electrical energy consumed by the generating plant for service or auxiliaries.

(47) Distributed Solar Photovoltaic Generation by Sector

- Source: U.S. Energy Information Administration Monthly Energy Review.
- Distributed Solar Photovoltaic Generation refers to energy generated by small-scale photovoltaic generation plants. Small-scale is defined as a plant with capacity below one megawatt. Photovoltaic generation refers to solar energy generated by photovoltaic solar panels.

(48) Utility-Scale Solar Electricity Net Generation by Sector

- Source: U.S. Energy Information Administration Monthly Energy Review.
- Utility-Scale Solar Electricity Net Generation refers to generation of solar energy by plants with capacity equal to or above one megawatt. Net generation is defined as the amount of gross generation less electrical energy consumed by the generating plant for service or auxiliaries.
- Gaps in the data represent periods for which there was no data reported, or the data value was trivially small and thus deemed unnecessary to report.

(49) U.S. Solar Capacity Installations

- Source: Solar Energy Industries Association Q1 2017 Solar Market Insight Report.
- The Investment Tax Credit (ITC) is a federal policy tax incentive that supports the deployment of solar energy in the United States. The ITC allows those who install a solar system to claim up to 30% of the price paid to install the system as a tax credit when filing Federal taxes, thereby significantly discounting the cost associated with transitioning to solar energy.

(50) U.S. Wind Power Capacity Installations

- Source: American Wind Energy Association U.S. Wind Energy Quarterly Market Report.
- Wind Power Generation Capacity Installations refers to non-utility-scale wind power capacity additions. Utility-scale is defined as installations of wind turbines larger than 100 kilowatts.

(51) Utility-Scale Wind Power Capacity Installations

- Source: American Wind Energy Association U.S. Wind Energy Quarterly Market Report.
- Utility-Scale Wind Capacity includes installations of wind turbines larger than 100 kilowatts. Capacity installations may not always equate to an equal increase in cumulative wind power capacity due to decommissioned, uprated and repowered wind turbines.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(52) Wind Power Under Construction or in Advanced Development

- Source: American Wind Energy Association (AWEA) U.S. Wind Energy Quarterly Market Report.
- AWEA defines projects as being "in advanced development" if it has not yet begun construction, but has either signed a power purchase agreement, announced a firm turbine order, or been announced to proceed under utility ownership.

(53) U.S. Aggregated Energy Consumption by Sector

- Source: U.S. Energy Information Administration.
- Energy consumed by the electric power sector is primary energy only. Primary energy is energy in its original form, before any transformation to secondary or tertiary forms of energy. For example, coal can be converted to synthetic gas and then to electricity. Under these circumstances, coal is primary energy, synthetic gas is secondary energy and electricity is tertiary energy.

(54) U.S. Aggregated Energy Consumption by Source

- Source: U.S. Energy Information Administration.
- Total consumption of each category of energy is as accurate as possible. However, some data is unavailable or unreported and, thus, some total consumption values may be understated.
- Fossil Fuels includes coal, petroleum-based products, natural gas and natural gas-based products.
- Renewable Energy includes conventional hydroelectric, solar, biomass, nuclear, geothermal and wind.
- Biomass is a renewable energy source derived from organic matter such as wood, crop waste, or garbage, with wood being the largest contributor.
- Fossil Fuels and Renewable Energy consumption represent consumption of primary energy, which is energy in its original form, before transformation to secondary or tertiary forms of energy. Thus, to arrive at total energy consumption, Electricity Retail Sales (representing consumption of secondary and tertiary forms of energy) is added alongside consumption of Fossil Fuels and Renewable Energy.
- Electrical System Energy Losses are a deduction from total energy consumption, and are incorrectly represented as positively contributing to total energy consumption. Thus, total energy consumption figures in each year are overstated by the amount of electrical system energy losses.

(55) Electricity Prices by Sector

- Source: U.S. Energy Information Administration.

(56) Commercial Crude Oil Inventory

- Source: U.S. Energy Information Administration.
- U.S. Ending Stocks of Commercial Crude Oil represents stocks (inventory) of crude oil held in storage for commercial use. This figure excludes both lease stock and volumes in the Strategic Petroleum Reserve (SPR). Lease stock is crude oil stored in tanks at sites where producers are drilling on leased land. They're excluded from total commercial crude oil inventory because they aren't yet available for commercial use. The SPR is petroleum maintained by the Federal Government for use during periods of major supply interruption.
- Ending stocks (inventory) are primary stocks of crude oil held in storage as of midnight on the last day of the month. Primary stocks include crude oil held in storage at, or in, leases, refineries, natural gas processing plants, pipelines, tank farms and bulk terminals with the capacity to store a minimum of 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge or pipeline.

(57) Petroleum and Other Liquids Commercial Inventory

- Source: U.S. Energy Information Administration.
- Hydrocarbon Gas Liquids (HGLs) are molecules of carbon and hydrogen in various combinations. HGLs include alkanes, or paraffins (ethane, propane, butane, isobutene, natural gasoline) and alkenes, or olefins (ethylene, propylene, butylene, isobutylene).
- Unfinished Oils are all oils that require further processing and are produced by partial refining of crude oil. Unfinished Oils include napthas and lighter oils, kerosene and light gas oils, heavy gas oils and residuum.
- Other Hydrocarbons/Oxygenates are substances that increase the amount of oxygen in various gasoline blends when added to them. This category includes fuel ethanol, methanol and methyl tertiary butyl ether (MTBE).
- Total Motor Gasoline includes finished motor gasoline and motor gasoline blending components.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

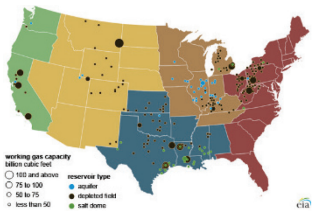
(57) Petroleum and Other Liquids Commercial Inventory (continued)

- Distillate Fuel Oil is a general classification for a variety of petroleum fractions produced in petroleum distillation operations. Included within this classification are No. 1, No. 2 and No. 4 diesel fuels (used in on-highway and off-highway diesel engines), as well as No. 1, No. 2 and No. 4 fuel oils (used primarily for space heating and electric power generation).
- Residual Fuel Oil is the general classification for heavy oils that remain after lighter oils are distilled away in the process of petroleum refining. Residual Fuel Oil includes No. 5 and No. 6 fuel oils. The former is used in steam-powered vessels, and the latter is used for electric power generation, space heating, vessel bunkering and industrial processes.
- Other Oils include aviation gasoline blending components, finished aviation gasoline, kerosene, petrochemical feedstocks, special napthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas and miscellaneous products.

(58) Natural Gas Underground Storage Capacity

- Source: U.S. Energy Information Administration.
- Underground Storage Capacity refers to total natural gas storage capacity in underground storage facilities called "salt domes," which are caverns hollowed out in subsurface salt formations. Salt domes are the primary means of natural gas storage in the United States.

U.S. Underground Natural Gas Storage Facilities by Type (July 2015)



(59) Commercial Crude Oil Refinery, Tank and Underground Storage Capacity and Utilization

- Source: U.S. Energy Information Administration.
- Commercial Crude Oil Storage Capacity refers to working storage capacity. Working capacity is the volume difference between a crude oil storage tank's maximum safe fill capacity and the volume below which pump suction is ineffective, called tank bottoms.
- Crude Oil Shell Storage Capacity is the design capacity of a petroleum storage tank. It includes tank bottoms, working storage capacity and contingency space. Contingency space is defined as available storage space above the defined maximum operating inventory level that remains empty during normal operations. Shell Storage Capacity is always greater than or equal to working storage capacity.
- Crude Oil Storage Capacity data is released only twice per year for the months of March and September. Thus, the data series excludes inventory levels for all months other than March and September of each year.

(60) Crude Oil and Natural Gas Pipeline Mileage

- Source: Pipeline and Hazardous Materials Safety Administration.
- The chart includes information from only Federal Energy Regulatory Commission-regulated pipeline companies.
- Crude Oil Pipeline Mileage represents total mileage of pipelines dedicated to the transport of crude oil and those dedicated to the transport of petroleum products. Pipeline Mileage for crude oil includes trunk lines only.
- Pipeline Mileage for natural gas includes both trunk and gathering lines.
- Trunk lines are synonymous with transmission lines, which are large, cross-country pipelines that move oil or gas from producing areas to refineries. Gathering lines are pipelines that transport oil or gas from the area in which it was produced to a storage facility which acts as an intermediate stop before transportation by truck, railcar, or trunk line.

(61) Crude Oil and Petroleum Products Pipeline Movements Between Petroleum Administration for Defense Districts (PADDs)

- Source: Federal Reserve Bank of St. Louis, with data provided by the U.S. Energy Information Administration.
- Crude Oil and Petroleum Products Pipeline Movements Between PADDs represents the total volume of crude oil and petroleum products transported between each PADD. The data does not include movements within each PADD.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(62) Natural Gas Cumulative Interstate Pipeline Systems Capacity
- Source: U.S. Energy Information Administration.
- Cumulative Interstate Capacity refers to capacity of natural gas pipelines crossing between states. Thus, capacity of intrastate pipelines is not included and the data should not be interpreted as representing total capacity of natural gas pipelines.

(63) Crude Oil and Petroleum Products Exports to Mexico
- Source: U.S. Energy Information Administration.
- Petroleum Products include pentanes plus, liquefied petroleum gases, unfinished oils, finished motor gasoline, motor gasoline blending components, oxygenates, fuel ethanol, distillate fuel oil, kerosene, kerosene-type jet fuel, special napthas, residual fuel oil, waxes, petroleum coke, asphalt and road oil, lubricants and miscellaneous products.

(64) Truck Tonnage Index
- Source: U.S. Department of Transportation, Bureau of Transportation Statistics.
- The Truck Tonnage Index measures the gross tonnage of freight that is transported by motor carriers for a given month. The Index serves as an indicator of shipping activity in the United States.
- Created by the U.S. Department of Transportation, Bureau of Transportation Statistics via information published in the American Trucking Association Monthly Truck Tonnage Report.

(65) Heavy Truck Sales
- Source: Federal Reserve Bank of St. Louis.
- Heavy Trucks are trucks with more than 14,000 pounds gross vehicle weight.

(66) Trucking Conditions Index
- Source: FTR Transportation Intelligence.
- The Trucking Conditions Index summarizes the status of the trucking industry through tracking changes in six major conditions including freight volumes, freight rates, fleet capacity, fleet bankruptcies, fuel price and financing.
- An index value greater than zero represents a positive environment in the truck market, and an index value below zero represents a negative environment. An index value above 10 is a sign that volumes, prices and margin are in a solidly favorable range.

(67) Freight Transportation Services Index
- Source: Federal Reserve Bank of St. Louis.
- The Freight Transportation Services Index measures the output of the for-hire freight transportation industry and consists of data from for-hire trucking, rail, inland waterways, pipelines and air freight.

(68) Crude Oil Refinery Receipts by Transportation Method
- Source: U.S. Energy Information Administration.
- Refinery Receipts by Pipeline, Tanker, Barge, Truck and Rail refer to total volumes of crude oil of domestic and international origin that are in transit to, or received by, domestic refineries. Volumes of crude oil in transit via pipeline are excluded from receipts. Foreign crude oil is included in receipts only after entry through customs.
- Refinery inputs track volumes of crude oil that are entered into refining processes (e.g., distillation units, cokers, etc.).
- The volume difference between refinery receipts and refinery inputs is that which is in transit but not yet received by refineries plus that which has been received and is held in bonded storage, awaiting entry into refining processes.

(69) Crude Oil Movements by Tanker and Barge Movements Between Petroleum Administration for Defense Districts (PADDs)
- Source: U.S. Energy Information Administration.
- The data series shown on the chart is an aggregate of all crude oil movements between Petroleum Administration for Defense Districts (PADDs). This includes crude oil movement from PADD 1 to PADD 2 and PADD 3; PADD 2 to PADD 1 and PADD 3; and PADD 3 to PADD 1, PADD 2 and PADD 5.
- PADD 1 is the East Coast region, PADD 2 is the Midwest region, PADD 3 is the Gulf Coast region and PADD 5 is the West Coast region.

DATA CENTER: ABBREVIATIONS & ACRONYMS, DEFINITIONS, DESCRIPTIONS AND CHART NOTES

(70) Movements of Crude Oil by Rail
- Source: U.S. Energy Information Administration.

(71) Average Weekly Rail Carloads of Petroleum and Petroleum Products
- Source: Association of American Railroads.
- Monthly aggregates of the average weekly number of rail carloads transporting petroleum and petroleum products in the United States.
- Excludes the U.S. operations of Canadian railroads.

(72) U.S. Manufacturers' Monthly Shipments and U.S. Purchasing Managers' Index (PMI)
- Sources: For Manufacturers' Monthly Shipments - U.S. Census Bureau Manufacturers' Shipments, Inventories and Orders Survey; and for U.S. Purchasing Managers' Index (PMI) – Institute for Supply Management Manufacturing Report on Business®.
- A PMI above 50 represents expansion within the manufacturing sector compared with the prior month.

(73) U.S. New Housing Starts and Total U.S. Construction Spending
- Source: U.S. Census Bureau.

(74) London Interbank Offered Rate (LIBOR), Based on U.S. Dollar
- Source: ICE Benchmark Administration Limited via the Federal Reserve Bank of St. Louis.
- The London Interbank Offered Rate is the average interest rate at which leading banks borrow funds of a sizeable amount from other banks in the London market. LIBOR is the most widely used benchmark or reference rate for short term interest rates. The chart values are monthly percent averages of daily figures and are not seasonally adjusted.

(75) Bank Prime Loan Interest Rates
- Source: Federal Reserve Bank of St. Louis.
- The Bank Prime Loan Interest Rate is that posted by a majority of top 25 (by assets in domestic offices) insured, U.S.-chartered commercial banks. Prime is one of several base rates used by banks to price short-term business loans.
- The chart values are monthly percent averages of daily figures and are not seasonally adjusted.

(76) Commercial and Industrial Loans vs. Banking Standards
- Source: Federal Reserve Bank of St. Louis.
- Net Percentage of Domestic Banks Tightening Standards for Commercial and Industrial Loans to large and middle-market firms. Quarterly, not seasonally adjusted.
- Commercial and Industrial Loans, All Commercial Banks. Monthly, seasonally adjusted.

(77) U.S. Treasury Yield Curve
- Source: U.S. Treasury.
- U.S. Treasury Yield Curve rates are commonly referred to as Constant Maturity Treasury (CMT) rates. Yields are interpolated by the U.S. Treasury from the daily yield curve.
- The curve, which relates the yield on a security to its time to maturity, is based on the closing market bid yields on actively traded U.S. Treasury securities in the over-the-counter market.

(78) Corporate Spreads to Treasuries by Quality
- Source: Federal Reserve Bank of St. Louis.
- Corporate Spreads to Treasuries represent the spread, or difference, between the yield curve of an index of corporate bonds of a given rating category and the spot rate U.S. Treasury curve. The spot rate U.S. Treasury curve is a yield curve that uses U.S. Treasury spot rates rather than yields, and represents the rate for a zero-coupon U.S. Treasury bond.
- The corporate bond yield indexes are Bank of America Merrill Lynch Option-Adjusted Spread (OAS) Indexes for all bonds with a given investment rating of AA, BB or CCC or below that are publically issued in the U.S. domestic market. Each respective OAS index is calculated using each constituent bond's OAS, weighted by market capitalization. A bond's OAS is the bond's yield spread relative to the risk-free rate of return, typically the U.S. Treasury securities yield, adjusted to account for an embedded option.

HOT TOPIC

PIPELINES AND MIDSTREAM INFRASTRUCTURE – A VAST OPPORTUNITY

There is underway throughout North America a massive build-out of midstream infrastructure. In excess of $70 billion of pipeline construction projects alone are in various stages of regulatory review or under construction, not to mention the tens of billions of dollars more of processing, storage and export infrastructure planned or underway.

Demand for these investments has been driven by the American shale revolution. Vast new reserves of natural gas and petroleum liquids are being produced in regions outside of legacy conventional production areas. The build-out will connect these new producing regions to energy markets.

The need is also being driven by two important trends. First is the ongoing migration of electricity generation from coal to natural gas, and the need to deliver natural gas to power that new generating capacity. Second is growing exports of natural gas in the form of LNG and via pipeline exports to Mexico and Canada, along with surging export markets for U.S. crude oil, newly accessible as a result of repeal of the law precluding exports in 2015.

This has created a major opportunity for project suppliers: construction companies, equipment suppliers, and materials and services providers, and their workers. The infrastructure construction supply chain is booming, from contractors, to heavy machinery, to tubular steel, to trucking, to the almost infinite variety of materials, supplies and services these projects require.

This phenomenon of economic activity is not without obstacles. At the top of the list is very well-organized and funded opposition to any fossil fuel production and consumption. A collection of "keep it in the ground" advocates has targeted stopping or delaying midstream infrastructure projects as one of the best ways to impair oil and gas as a source of energy. They seek to slow or stop projects during the regulatory process, individual project permitting proceedings, and in the courts. Physical attacks on pipelines and pipeline construction equipment have occurred.

In some cases, such as New York and Massachusetts, senior government leaders with a strong bias against fossil fuels have lead their regulatory apparatus to deny pipeline construction permits, notwithstanding the penalties their states' consumers and businesses pay in the form of sometimes drastically higher energy costs, as we recently saw during the cold weather in late December and early January. Those cost premiums can be tied directly to lack of adequate natural gas transmission pipeline capacity.

PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

PETROLEUM PRODUCTS

EQUITY COMPARABLES (1)

Petroleum Products (United States & Canada)

Company	LTM(2) Revenues	LTM(2) EBITDA	LTM(2) Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value(3)	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt(4)/ EBITDA
Alon USA Partners, LP	$2,038	$136	6.7%	$11.53	90.6%	$721	$840	0.4x	6.2x	0.9x
Andeavor	27,109	1,764	6.5	103.15	97.7	16,498	26,624	1.0x	15.1x	3.7x
Calumet Specialty Products Partners, LP	3,882	225	5.8	8.35	91.8	641	2,723	0.7x	12.1x	9.2x
Chevron Corporation	121,423	20,210	16.6	117.50	98.7	222,663	261,937	2.2x	13.0x	1.7x
CVR Energy, Inc.	5,749	353	6.1	25.90	98.3	2,249	3,442	0.6x	9.8x	0.9x
EnLink Midstream Partners, LP	5,214	781	15.0	16.76	85.6	5,837	11,012	2.1x	14.1x	4.3x
Gibson Energy Inc.	4,249	197	4.6	14.18	87.2	2,023	2,813	0.7x	14.3x	3.9x
Exxon Mobil Corporation	222,508	30,414	13.7	81.98	87.9	347,358	391,911	1.8x	12.9x	1.2x
HollyFrontier Corporation	13,214	1,078	8.2	35.97	98.7	6,310	8,706	0.7x	8.1x	1.5x
Keyera Corp.	2,264	460	20.3	30.51	89.3	5,762	7,265	3.2x	15.8x	3.1x
Marathon Petroleum Corporation	63,500	5,274	8.3	56.08	98.7	28,391	47,475	0.7x	9.0x	2.0x
Parkland Fuel Corporation	6,346	232	3.7	20.31	78.2	2,652	4,134	0.7x	17.8x	8.1x
Phillips 66	83,185	2,609	3.1	91.61	99.4	46,860	56,102	0.7x	21.5x	3.3x
NuStar Energy LP	1,835	606	33.0	40.59	73.0	3,776	7,910	4.3x	13.0x	5.8x
Valero Energy Corporation	82,807	5,375	6.5	76.93	98.9	33,977	38,099	0.5x	7.1x	0.6x
Median			**6.7%**		**91.8%**			**0.7x**	**13.0x**	**3.1x**
Mean			**10.5%**		**91.6%**			**1.3x**	**12.6x**	**3.3x**

SELECTED TRANSACTIONS

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
2/1/2017	ONEOK Partners, LP	ONEOK, Inc. (NYSE:OKE)	$23,721.4	2.7x	12.9x
4/5/2017	Houghton International Inc.	Quaker Chemical Corporation (NYSE:KWR)	$1,415.4	-	11.8x
10/14/2016	Alon USA Energy, Inc.	Delek US Holdings, Inc. (NYSE:DK)	$1,488.1	0.3x	16.6x
9/25/2016	LANXESS Solutions US Inc.	LANXESS Deutschland GmbH	$2,450.7	-	8.2x
3/31/2015	Alon USA Energy, Inc.	Delek US Holdings, Inc. (NYSE:DK)	$1,624.1	0.3x	4.5x

(1) Matching public companies to middle-market companies is an imperfect comparable analysis due to the variables of size, equipment, markets, etc. Nonetheless JKC's research has yielded this list as the closest available.
(2) LTM is defined as last twelve months.
(3) Total Enterprise Value is defined as market capitalization plus total debt less cash and cash equivalents.
(4) Net Debt is defined as total debt less cash and cash equivalents.

PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

NATURAL GAS

EQUITY COMPARABLES (1)

Natural Gas (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	LTM[2] Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
Alliant Energy Corporation	$3,323	$1,064	32.0%	$41.57	95.2%	$9,605	$14,526	4.4x	13.6x	4.5x
AltaGas Ltd.	2,025	555	27.4	22.99	80.8	3,962	7,828	3.9x	14.1x	5.2x
Atmos Energy Corporation	3,624	1,042	28.8	83.84	94.2	8,893	12,257	3.4x	11.8x	3.2x
Avista Corporation	1,450	470	32.4	51.77	98.0	3,335	5,221	3.6x	11.1x	4.1x
Baytex Energy Corp.	636	304	47.8	3.01	51.2	708	2,136	3.4x	7.0x	4.5x
Calumet Specialty Products Partners, LP	3,882	225	5.8	8.35	91.8	641	2,723	0.7x	12.1x	9.2x
Cenovus Energy Inc.	13,134	2,085	15.9	10.01	56.7	12,298	22,638	1.7x	10.9x	4.4x
Chesapeake Utilities Corporation	560	123	21.9	78.25	95.5	1,279	1,636	2.9x	13.3x	2.9x
CONE Midstream Partners LP	230	149	64.8	15.84	62.0	1,007	1,516	6.6x	10.2x	1.0x
Corning Natural Gas Holding Corporation	28	7	23.8	18.89	78.7	57	107	3.8x	16.0x	6.8x
Crestwood Equity Partners LP	3,429	281	8.2	24.40	86.2	1,711	4,117	1.2x	14.6x	5.7x
Dominion Energy Midstream Partners, LP	536	296	55.2	32.00	91.8	3,175	8,441	15.7x	28.5x	2.4x
EnLink Midstream Partners, LP	5,214	781	15.0	16.76	85.6	5,837	11,012	2.1x	14.1x	4.3x
Enbridge Energy Partners, LP	4,414	1,529	34.6	15.98	60.6	6,711	18,837	4.3x	12.3x	4.8x
Enterprise Products Partners LP	27,294	5,040	18.5	26.07	86.2	56,024	79,567	2.9x	15.8x	4.6x
Epsilon Energy Ltd.	30	19	64.6	2.51	83.5	138	126	4.3x	6.6x	(0.6)x
Eversource Energy	7,633	2,638	34.6	60.44	94.2	19,153	30,604	4.0x	11.6x	4.3x
Genesis Energy, LP	1,736	425	24.5	26.35	68.7	3,230	6,237	3.6x	14.7x	8.7x
National Fuel Gas Company	1,580	777	49.2	56.61	92.4	4,841	6,643	4.2x	8.5x	2.4x
New Jersey Resources Corporation	2,201	322	14.6	42.15	95.1	3,648	4,941	2.2x	15.4x	4.0x
Northwest Natural Gas Company	755	257	34.0	64.40	93.9	1,846	2,545	3.4x	9.9x	3.0x
MDU Resources Group, Inc.	4,294	625	14.6	25.95	86.7	5,068	6,790	1.6x	10.9x	2.7x
OGE Energy Corp.	2,290	792	34.6	36.03	96.3	7,195	10,476	4.6x	13.2x	4.1x
ONE Gas, Inc.	1,518	439	28.9	73.64	96.8	3,849	5,116	3.4x	11.6x	3.1x
ONEOK, Inc.	11,036	1,730	15.7	55.41	93.2	21,056	30,502	2.8x	17.6x	5.5x
RGC Resources, Inc.	62	18	28.9	28.57	89.3	207	259	4.2x	14.4x	2.9x
Rice Midstream Partners LP	276	212	76.6	20.94	79.3	2,142	2,336	8.5x	11.0x	1.0x
South Jersey Industries, Inc.	1,227	243	19.8	34.53	89.9	2,740	4,120	3.4x	17.0x	6.1x
Southwest Gas Holdings, Inc.	2,397	568	23.7	77.62	89.6	3,695	5,399	2.3x	9.5x	3.0x
Summit Midstream Partners, LP	489	298	60.9	20.00	75.5	1,461	2,779	5.7x	9.3x	4.3x
Targa Resources Corp.	8,125	1,045	12.9	47.30	76.5	10,198	15,292	1.9x	14.6x	4.7x
TransCanada Corporation	10,664	5,036	47.2	49.34	94.5	43,139	81,042	7.6x	16.1x	6.3x
Valener Inc.	58	0	0.0	17.65	95.0	686	853	14.8x	NM	NM
WGL Holdings, Inc.	2,386	466	19.5	84.20	96.9	4,313	6,361	2.7x	13.7x	4.3x
Median			**28.1%**		**89.8%**			**3.5x**	**13.2x**	**4.3x**
Mean			**30.5%**		**85.3%**			**4.3x**	**13.1x**	**4.2x**

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

NATURAL GAS

SELECTED TRANSACTIONS (1)

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
7/19/2017	Avista Corporation (NYSE:AVA)	Hydro One Limited (TSX:H)	$5,332.4	3.7x	11.3x
5/15/2017	Ceiba Energy Services Inc. (TSXV:CEB)	Secure Energy Services Inc. (TSX:SES)	$28.2	4.3x	30.3x
4/3/2017	Rockies Express Pipeline LLC	Tallgrass Energy Partners, LP (NYSE:TEP)	$4,043.9	-	7.3x
2/21/2017	Delta Natural Gas Company, Inc. (NasdaqGS:DGAS)	PNG Companies LLC	$260.2	3.7x	13.7x
2/1/2017	ONEOK Partners, LP	ONEOK, Inc. (NYSE:OKE)	$23,721.4	2.3x	12.9x
1/25/2017	WGL Holdings, Inc. (NYSE:WGL)	AltaGas Ltd. (TSX:ALA)	$6,634.5	2.7x	15.3x

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

PROPANE AND HEATING/FUEL OIL

EQUITY COMPARABLES (1)

Propane and Heating/Fuel Oil (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	LTM[2] Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
AmeriGas Partners, LP	$2,402	$521	21.7%	$44.94	89.9%	$4,178	$6,880	2.9x	13.2x	5.1x
Ferrellgas Partners, LP	1,930	213	11.0	5.14	44.3	499	2,550	1.3x	12.0x	10.0x
NGL Energy Partners, LP	14,960	318	2.1	11.55	44.8	1,403	4,490	0.3x	14.1x	9.5x
Spire Inc.	1,761	462	26.2	74.65	95.7	3,603	5,970	3.4x	12.9x	5.1x
Star Group, LP	1,304	76	5.8	11.35	97.0	634	617	0.5x	8.1x	(0.2)x
Suburban Propane Partners, LP	1,152	229	19.9	26.09	75.8	1,594	2,841	2.5x	12.4x	5.4x
Tidewater Midstream and Infrastructure Ltd.	132	34	25.5	1.14	81.6	374	424	3.2x	12.6x	1.4x
UGI Corporation	5,983	1,347	22.5	46.86	90.1	8,124	12,482	2.1x	9.3x	2.7x
Median			**20.8%**		**85.7%**			**2.3x**	**12.5x**	**5.1x**
Mean			**16.9%**		**77.4%**			**2.0x**	**11.8x**	**4.9x**

SELECTED TRANSACTIONS

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
5/11/2017	Bell-Gaz Itée	Groupe Filgo-Sonic	-	-	-
3/15/2017	Valley Center Propane, LLC	Ferrellgas Partners, LP (NYSE:FGP)	-	-	-
12/2/2016	DOC Retail, Inc.	Holston Gases, Inc.	-	-	-
11/22/2016	Zephyr Solutions, Inc.	Aterian Investment Partners, LLC	-	-	-
10/11/2016	33 MMcf/d Gas-Processing Facility with Pipelines and Retail Propane Business	Noble Energy Partners	-	-	-
6/17/2016	Caledon Propane Inc.	Superior Plus Corp. (TSX:SPB)	-	-	-
6/15/2016	Selph's Propane, Inc.	Ferrellgas Partners, LP (NYSE:FGP)	-	-	-
1/15/2016	Hopatcong Gas Services Inc.	Combined Energy Services, Inc.	-	-	-
12/28/2015	Gulf Oil LP	ArcLight Capital Partners, LLC	-	-	-
12/11/2015	CenterPoint Energy, Inc. (NYSE:CNP)	Elliott Management Corporation	-	-	2.3x
6/10/2015	Smart Touch Energy	Shipley Energy Company, Inc.	-	-	-

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

LUBRICANTS AND GREASES

EQUITY COMPARABLES (1)

Lubricants and Greases (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	LTM[2] Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
Albemarle Corporation	$2,810	$745	26.5%	$136.31	99.1%	$15,059	$15,919	5.7x	21.4x	1.0x
Ashland Global Holdings Inc.	3,260	443	13.6	65.39	51.0	4,080	6,401	2.0x	14.5x	5.1x
Clean Harbors, Inc.	2,890	412	14.2	56.70	92.0	3,241	4,529	1.6x	11.0x	3.1x
CSW Industrials, Inc.	341	58	17.1	44.35	98.1	705	745	2.2x	12.8x	0.7x
FMC Corporation	3,331	700	21.0	89.31	95.6	11,979	13,665	4.1x	19.5x	2.3x
Ingevity Corporation	954	228	23.9	62.47	96.1	2,632	3,079	3.2x	13.5x	1.7x
KMG Chemicals, Inc.	333	60	18.0	54.88	89.8	653	672	2.0x	11.2x	8.4x
Kraton Corporation	1,910	305	16.0	40.44	99.2	1,262	2,974	1.6x	9.8x	5.3x
NewMarket Corporation	2,140	386	18.0	425.75	88.0	5,046	5,396	2.5x	14.0x	1.3x
Ocean Bio-Chem, Inc.	39	6	15.5	5.05	89.4	47	46	1.2x	7.6x	(0.1)x
Quaker Chemical Corporation	800	107	13.4	147.95	95.8	1,969	1,956	2.4x	18.2x	(0.3)x
Stepan Company	1,872	210	11.2	83.66	90.0	1,885	1,967	1.1x	9.4x	0.2x
Synalloy Corporation	161	7	4.6	12.50	90.9	109	138	0.9x	18.7x	3.9x
Trecora Resources	229	26	11.5	13.30	89.9	323	411	1.8x	15.6x	3.3x
Valvoline Inc.	2,031	520	25.6	23.45	93.9	4,752	5,353	2.6x	10.3x	1.2x
Median			**16.0%**		**92.0%**			**2.0x**	**13.5x**	**1.7x**
Mean			**16.7%**		**90.6%**			**2.3x**	**13.8x**	**2.5x**

SELECTED TRANSACTIONS

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
5/22/2017	Huntsman Corporation (NYSE:HUN)	Clariant AG (SWX:CLN)	$10,790.9	1.1x	9.6x
4/5/2017	Houghton International Inc.	Quaker Chemical Corporation (NYSE:KWR)	$1,415.4	1.8x	11.8x
1/31/2017	Sealweld Corporation	KMG Electronic Chemicals Luxembourg Holdings Sarl; KMG Industrial Lubricants	$17.3	1.4x	6.6x
9/25/2016	LANXESS Solutions US Inc.	LANXESS Deutschland GmbH	$2,450.7	1.4x	8.2x
4/1/2015	Valves Inc. of Texas	KMG Chemicals, Inc. (NYSE:KMG)	$38.9	3.2x	11.4x

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

SOLAR

EQUITY COMPARABLES (1)

Solar (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	LTM[2] Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
Boralex Inc.	$264	$159	60.1%	$17.19	93.4%	$1,309	$3,422	13.0x	21.6x	12.7x
Capital Power Corporation	932	397	42.6	19.74	93.1	2,073	4,040	4.3x	10.2x	4.3x
NextEra Energy Partners, LP	722	478	66.2	40.29	92.2	2,186	6,440	8.9x	13.5x	8.8x
NRG Energy, Inc.	12,155	2,434	20.0	25.59	97.5	8,098	26,834	2.2x	11.0x	6.5x
TerraForm Global, Inc.	229	96	41.7	4.75	93.1	537	1,418	6.2x	14.8x	4.6x
TerraForm Power, Inc.	635	394	62.1	13.22	91.2	1,221	5,994	9.4x	15.2x	8.0x
Vivint Solar, Inc.	209	(61)	(29.1)	3.40	55.8	389	1,380	6.6x	NM	NM
Median			**42.6%**		**93.1%**			**6.6x**	**14.1x**	**7.3x**
Mean			**37.7%**		**88.0%**			**7.2x**	**14.4x**	**7.5x**

SELECTED TRANSACTIONS

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
5/4/2017	Up to 20 Megawatts of Solar Energy Power Generation Assets	Kontrol Energy Corp. (CNSX:KNR)	$22.6	-	4.1x
3/7/2017	TerraForm Global, Inc. (NasdaqGS:GLBL)	Orion US Holdings 1 LP	$1,651.8	6.6x	17.2x
1/20/2016	Capstone Infrastructure Corporation	Irving Infrastructure Corp.	$1,435.1	-	12.7x
12/3/2014	Hawaiian Electric Industries, Inc. (NYSE:HE)	NextEra Energy, Inc. (NYSE:NEE)	$4,398.8	1.3x	8.5x

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

WIND

EQUITY COMPARABLES (1)

Wind (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
Algonquin Power & Utilities Corp.	$1,187	$472	39.8%	$10.55	91.9%	$4,071	$8,421	7.1x	17.8x	7.2x
Avangrid, Inc.	5,921	1,921	32.4	47.42	96.7	14,653	20,059	3.4x	10.4x	3.0x
Boralex Inc.	264	159	60.1	17.19	93.4	1,309	3,422	13.0x	21.6x	12.7x
Brookfield Renewable Partners LP	2,539	1,491	58.7	33.45	92.9	10,669	30,317	11.9x	20.3x	6.6x
Innergex Renewable Energy Inc.	251	184	73.1	11.50	91.4	1,249	3,836	15.3x	20.9x	12.9x
NextEra Energy Partners, LP	722	478	66.2	40.29	92.2	2,186	6,440	8.9x	13.5x	8.8x
Northland Power Inc.	1,101	783	71.2	18.53	92.5	3,235	9,218	8.4x	11.8x	6.6x
Pattern Energy Group Inc.	380	195	51.1	24.10	90.7	2,122	4,996	13.1x	25.7x	8.7x
TerraForm Global, Inc.	229	96	41.7	4.75	93.1	537	1,418	6.2x	14.8x	4.6x
TerraForm Power, Inc.	635	394	62.1	13.22	91.2	1,221	5,994	9.4x	15.2x	8.0x
TransAlta Renewables Inc.	330	201	60.9	11.02	84.7	2,760	3,580	10.9x	17.8x	4.5x
Median			**60.1%**		**92.2%**			**9.4x**	**17.8x**	**7.2x**
Mean			**56.1%**		**91.9%**			**9.8x**	**17.3x**	**7.6x**

SELECTED TRANSACTIONS

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
7/27/2017	Boralex Inc. (TSX:BLX)	Caisse de dépôt et placement du Québec	$3,436.5	12.5x	20.3x
6/19/2017	Pattern Energy Group Inc. (NasdaqGS:PEGI)	Public Sector Pension Investment Board	$4,313.7	12.2x	18.6x
3/7/2017	TerraForm Global, Inc. (NasdaqGS:GLBL)	Orion US Holdings 1 LP	$1,651.8	6.6x	17.2x
1/20/2016	Capstone Infrastructure Corporation	Irving Infrastructure Corp.	$1,435.1	-	12.7x

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

OIL AND GAS FIELD SERVICES

EQUITY COMPARABLES (1)

Oil and Gas Field Services (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
Archrock, Inc.	$780	$267	34.2%	$12.55	76.5%	$890	$2,278	2.9x	8.5x	5.2x
Baker Hughes, a GE company	17,259	1,781	10.3	36.62	53.4	15,675	14,134	0.8x	7.9x	0.1x
Blueknight Energy Partners, L.P.	184	65	35.2	5.70	75.5	218	73	0.4x	1.1x	4.6x
CARBO Ceramics Inc.	157	(60)	(38.1)	8.63	51.7	234	270	1.7x	NM	NM
Cathedral Energy Services Ltd.	109	8	7.6	1.00	86.8	49	46	0.4x	5.5x	(0.4)x
CES Energy Solutions Corp.	751	89	11.9	5.05	72.9	1,341	1,640	2.2x	18.4x	3.7x
Cypress Energy Partners, L.P.	287	15	5.1	7.72	54.1	92	183	0.6x	12.4x	7.9x
Dawson Geophysical Company	148	(3)	(1.9)	4.53	50.3	98	55	0.4x	NM	NM
Eco-Stim Energy Solutions, Inc.	26	(15)	(55.9)	1.54	68.4	115	112	4.3x	NM	NM
ENGlobal Corporation	56	(3)	(5.4)	1.27	41.0	35	24	0.4x	NM	NM
Enservco Corporation	33	(1)	(3.0)	0.53	67.5	27	50	1.5x	NM	NM
Ensign Energy Services Inc.	772	155	20.1	5.64	67.8	886	1,458	1.9x	9.4x	3.6x
Enterprise Group, Inc.	28	5	18.0	0.24	81.1	13	32	1.1x	6.2x	3.3x
Essential Energy Services Ltd.	133	11	8.5	0.50	68.9	70	80	0.6x	7.1x	1.6x
High Arctic Energy Services Inc	177	51	28.9	3.50	69.9	187	169	1.0x	3.3x	(0.3)x
Hyduke Energy Services Inc.	29	(4)	(12.5)	0.22	45.2	15	19	0.6x	NM	NM
Innospec Inc.	1,191	167	14.0	61.65	82.5	1,488	1,695	1.4x	10.2x	1.0x
Keane Group, Inc.	1,192	117	9.8	16.68	72.7	1,865	1,944	1.6x	16.6x	1.8x
Matrix Service Company	1,126	21	1.9	15.20	64.8	406	407	0.4x	19.1x	(0.2)x
McDermott International, Inc.	2,908	378	13.0	7.27	87.3	2,065	2,244	0.8x	5.9x	0.3x
Mullen Group Ltd.	880	135	15.3	13.64	83.9	1,414	1,759	2.0x	13.0x	2.5x
Newalta Corporation	199	36	18.3	0.78	36.9	68	340	1.7x	9.4x	7.6x
Newpark Resources, Inc.	680	46	6.8	10.00	98.0	856	949	1.4x	20.5x	3.5x
North American Energy Partners Inc.	218	44	20.0	4.35	76.3	113	186	0.9x	4.3x	2.0x
Parkland Fuel Corporation	6,346	232	3.7	20.31	78.2	2,652	4,134	0.7x	17.8x	8.1x
Pioneer Energy Services Corp.	392	30	7.6	2.55	35.4	197	573	1.5x	19.2x	12.8x
Precision Drilling Corporation	980	222	22.7	3.10	47.3	910	2,310	2.4x	10.4x	5.9x
Profire Energy, Inc.	35	7	19.6	1.99	98.5	97	83	2.4x	12.0x	(2.0)x
ProPetro Holding Corp.	832	91	10.9	14.35	93.8	1,192	1,183	1.4x	13.1x	(0.1)x
Secure Energy Services Inc.	1,743	94	5.4	6.93	71.9	1,131	1,299	0.7x	13.8x	2.3x
Select Energy Services, Inc.	475	75	15.8	15.92	92.3	483	683	1.4x	9.1x	(0.6)x
ShawCor Ltd.	1,176	152	12.9	22.09	69.1	1,545	1,628	1.4x	10.7x	0.2x
Smart Sand, Inc.	124	36	29.3	6.78	30.8	274	211	1.7x	5.8x	(1.4)x
STEP Energy Services Ltd.	371	69	18.6	8.45	96.3	508	470	1.3x	6.8x	(0.6)x
USA Compression Partners, LP	280	138	49.3	16.72	84.5	1,030	1,762	6.3x	12.8x	5.5x
Willbros Group, Inc.	797	(32)	(4.1)	3.22	83.9	204	251	0.3x	NM	NM
Xtreme Drilling Corp.	45	(1)	(1.9)	1.75	71.8	131	97	2.2x	NM	NM
Median			**10.9%**		**71.9%**			**1.4x**	**10.2x**	**2.0x**
Mean			**9.5%**		**69.9%**			**1.5x**	**10.7x**	**2.7x**

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(4) Net Debt is defined as total debt less cash and cash equivalents.

PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

EQUIPMENT AND PHYSICAL TECHNOLOGY

EQUITY COMPARABLES (1)

Equipment and Physical Technology (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	LTM[2] Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
AKITA Drilling Ltd.	$49	($3)	(6.5)%	$5.76	72.9%	$104	$98	2.0x	NM	NM
Archrock Partners, L.P.	551	222	40.3	14.26	76.9	992	2,382	4.3x	10.7x	6.0x
Aveda Transportation and Energy Services Inc.	142	10	6.8	0.36	37.0	21	83	0.6x	8.5x	6.0x
CSI Compressco LP	295	64	21.8	5.21	38.5	185	769	2.6x	12.0x	9.0x
Enerflex Ltd.	1,157	156	13.5	14.72	89.5	1,303	1,441	1.2x	9.3x	1.0x
Exterran Corporation	1,170	171	14.6	31.61	92.8	1,131	1,454	1.2x	8.5x	1.7x
Forum Energy Technologies, Inc.	718	(15)	(2.0)	15.90	60.6	1,527	1,706	2.4x	NM	NM
Gardner Denver Holdings, Inc.	2,288	291	12.7	27.52	99.5	5,393	7,129	3.1x	24.5x	5.9x
Geospace Technologies Corporation	74	(31)	(42.4)	17.82	73.1	239	186	2.5x	NM	NM
Gulf Island Fabrication, Inc.	189	(19)	(10.0)	12.70	91.0	189	166	0.9x	NM	NM
Halliburton Company	20,620	3,565	17.3	46.03	78.3	40,120	49,104	2.4x	13.8x	2.5x
Hanwei Energy Services Corp.	8	(1)	(16.9)	0.02	33.3	3	5	0.7x	NM	NM
Helix Energy Solutions Group, Inc.	546	89	16.4	7.39	62.3	1,091	1,217	2.2x	13.6x	1.6x
ION Geophysical Corporation	175	49	28.1	9.51	96.5	113	227	1.3x	4.6x	2.3x
Key Energy Services, Inc.	429	(13)	(3.1)	13.17	34.7	265	417	1.0x	NM	NM
McCoy Global Inc.	29	(7)	(24.3)	1.52	76.0	42	35	1.2x	NM	NM
Mitcham Industries, Inc.	50	(19)	(37.0)	3.49	67.9	42	43	0.9x	NM	NM
Nabors Industries Ltd.	2,395	530	22.1	8.07	43.9	2,307	5,839	2.4x	11.0x	7.1x
National Oilwell Varco, Inc.	7,027	(235)	(3.3)	35.73	81.9	13,579	15,332	2.2x	NM	NM
Natural Gas Services Group, Inc.	68	24	35.6	28.40	82.3	367	295	4.4x	12.2x	(3.0)x
Parker Drilling Company Inc.	420	47	11.3	1.10	37.9	152	583	1.4x	12.3x	9.7x
PHX Energy Services Corp.	182	6	3.1	1.90	53.6	112	113	0.6x	20.3x	2.8x
Pure Technologies Ltd.	101	15	15.2	4.14	86.9	226	222	2.2x	14.4x	(0.4)x
RigNet, Inc.	201	23	11.4	17.20	72.0	313	318	1.6x	13.9x	1.2x
RPC, Inc.	1,595	389	24.4	24.79	99.2	5,388	5,262	3.3x	13.5x	(0.4)x
Schlumberger Limited	30,440	6,586	21.6	69.76	79.4	96,930	109,996	3.6x	16.7x	1.9x
SEACOR Holdings Inc.	909	120	13.2	46.11	60.4	818	1,395	1.5x	11.6x	3.4x
Solaris Oilfield Infrastructure, Inc.	49	28	56.0	17.43	98.4	190	246	5.0x	8.9x	(1.9)x
Strad Energy Services Ltd.	94	19	20.6	1.24	79.5	74	91	1.0x	4.7x	1.0x
Superior Drilling Products, Inc.	14	4	24.9	0.80	56.7	19	32	2.2x	9.0x	3.1x
TechnipFMC plc	14,048	1,547	11.0	27.92	77.3	13,045	9,636	0.7x	6.2x	(2.1)x
TerraVest Capital Inc.	154	20	13.1	7.41	90.4	136	186	1.2x	9.2x	2.6x
TETRA Technologies, Inc.	766	92	12.0	2.86	45.1	331	1,178	1.5x	12.8x	7.3x
Weatherford International plc	5,615	(76)	(1.4)	4.58	64.6	4,530	11,693	2.1x	NM	NM
ZCL Composites Inc.	147	25	16.8	10.18	82.3	316	301	2.0x	12.2x	(0.8)x
Median			**13.1%**		**76.0%**			**2.0x**	**12.0x**	**2.3x**
Mean			**9.6%**		**70.6%**			**2.0x**	**11.8x**	**2.7x**

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

OIL AND GAS FIELD SERVICES AND EQUIPMENT AND PHYSICAL TECHNOLOGY

SELECTED TRANSACTIONS (1)

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
5/19/2017	Savanna Energy Services Corp.	Total Energy Services Inc. (TSX:TOT)	$458.2	1.8x	16.6x
5/15/2017	Ceiba Energy Services Inc.	Secure Energy Services Inc. (TSX:SES)	$27.2	4.5x	29.2x
4/24/2017	Flowchem Ltd.	KMG Chemicals, Inc. (NYSE:KMG)	$495.0	N/A	11.5x
3/13/2017	Amec Foster Wheeler plc (LSE:AMFW)	John Wood Group PLC (LSE:WG.)	$4,032.4	0.6x	10.6x
12/12/2016	Seventy Seven Energy Inc.	Patterson-UTI Energy, Inc. (NasdaqGS:PTEN)	$1,878.9	3.1x	18.8x
10/13/2016	Critical Flow Solutions Inc.	CIRCOR International, Inc. (NYSE:CIR)	$214.0	1.8x	8.6x

(1) Total Enterprise Value is defined as market capitalization plus total debt less cash and cash equivalents.

PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

STORAGE AND TERMINALS

EQUITY COMPARABLES (1)

Storage and Terminals (United States & Canada)

Company	LTM[2] Revenues	LTM[2] EBITDA	LTM[2] Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value[3]	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt[4]/ EBITDA
Alliant Energy Corporation	$3,323	$1,064	32.0%	$41.57	95.2%	$9,605	$14,526	4.4x	13.6x	4.5x
AltaGas Ltd.	2,025	555	27.4	22.99	80.8	3,962	7,828	3.9x	14.1x	5.2x
Arc Logistics Partners LP	106	53	50.5	16.70	96.0	326	656	6.2x	12.3x	4.7x
Blueknight Energy Partners, LP	184	65	35.2	5.70	75.5	218	73	0.4x	1.1x	4.6x
Buckeye Partners, LP	3,626	941	26.0	57.00	78.1	8,050	13,117	3.6x	13.9x	5.0x
Chart Industries, Inc.	897	85	9.5	39.23	96.0	1,207	1,219	1.4x	14.3x	5.0x
EnLink Midstream, LLC	5,214	774	14.8	17.25	84.4	3,115	10,129	1.9x	13.1x	4.4x
EQT Midstream Partners, LP	805	650	80.8	74.97	90.3	6,041	7,049	8.8x	10.8x	1.7x
Gibson Energy Inc.	4,249	197	4.6	14.18	87.2	2,023	2,813	0.7x	14.3x	3.9x
Green Plains Partners LP	107	70	65.0	20.10	92.4	639	772	7.2x	11.1x	2.0x
Magellan Midstream Partners, LP	2,449	1,105	45.1	71.06	86.9	16,203	20,417	8.3x	18.5x	3.9x
MPLX LP	3,163	1,522	48.1	35.01	88.8	14,250	21,527	6.8x	14.1x	4.6x
NuStar Energy LP	1,835	606	33.0	40.59	73.0	3,776	7,910	4.3x	13.0x	5.8x
Spectra Energy Partners, LP	2,751	1,706	62.0	44.38	93.5	13,773	23,915	8.7x	14.0x	4.8x
Median			**34.1%**		**88.0%**			**4.3x**	**13.8x**	**4.6x**
Mean			**38.2%**		**87.0%**			**4.8x**	**12.7x**	**4.3x**

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

STORAGE AND TERMINALS

SELECTED TRANSACTIONS (1)

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
8/29/2017	Arc Logistics Partners LP (NYSE:ARCX)	Zenith Energy U.S. Logistics Holdings, LLC	$658.0	6.2x	10.4x
8/14/2017	Western Refining Logistics, LP (NYSE:WNRL)	Andeavor Logistics LP (NYSE:ANDX)	$1,842.8	0.8x	14.4x
6/19/2017	Rice Energy Inc. (NYSE:RICE)	EQT Corporation (NYSE:EQT)	$10,239.2	9.9x	34.1x
6/2/2017	AMTROL Inc.	Worthington Steel of Michigan, Inc.	$283.0	1.1x	7.4x
5/18/2017	PennTex Midstream Partners, LP	Energy Transfer Partners, LP (NYSE:ETP)	$562.6	7.3x	18.9x
5/15/2017	Ceiba Energy Services Inc. (TSXV:CEB)	Secure Energy Services Inc. (TSX:SES)	$28.2	4.3x	30.3x
4/4/2017	World Point Terminals, LP (NYSE:WPT)	World Point Terminals Inc.	$611.3	5.9x	10.0x
2/1/2017	ONEOK Partners, LP	ONEOK, Inc. (NYSE:OKE)	$23,721.4	2.7x	12.9x
10/31/2016	Dominion Energy Questar Pipeline, LLC	Dominion Energy Midstream Partners, LP (NYSE:DM)	$1,700.3	-	10.7x
10/24/2016	JP Energy Partners LP	American Midstream Partners, LP (NYSE:AMID)	$465.0	-	11.3x
9/26/2016	Columbia Pipeline Partners LP	Columbia Pipeline Group, Inc.	$9,695.0	-	13.6x
7/10/2016	Southern Natural Gas Company, LLC	The Southern Company (NYSE:SO)	$4,094.0	-	10.3x
10/12/2015	Casper Crude to Rail, LLC	USD Partners LP (NYSE:USDP)	$215.2	-	8.1x
6/14/2015	Niska Gas Storage Partners LLC	Brookfield Infrastructure Partners LP (NYSE:BIP)	$940.3	-	33.4x
10/1/2014	Oiltanking Partners, LP	Enterprise Products Partners LP (NYSE:EPD)	$7,302.1	-	41.7x

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

PIPELINES

EQUITY COMPARABLES (1)

Oil and Gas Pipelines (United States & Canada)

Company	LTM(2) Revenues	LTM(2) EBITDA	LTM(2) Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value(3)	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt(4)/ EBITDA
Antero Midstream Partners LP	$725	$468	64.5%	$31.53	88.2%	$5,883	$6,827	9.4x	14.6x	2.3x
ATCO Ltd.	3,504	1,427	40.7	36.64	85.8	4,192	13,415	3.8x	9.4x	4.6x
Blueknight Energy Partners, LP	184	65	35.2	5.70	75.5	218	73	0.4x	1.1x	4.6x
Buckeye Partners, LP	3,626	941	26.0	57.00	78.1	8,050	13,117	3.6x	13.9x	5.0x
CONE Midstream Partners LP	230	149	64.8	15.84	62.0	1,007	1,516	6.6x	10.2x	1.0x
Crestwood Equity Partners LP	3,429	281	8.2	24.40	86.2	1,711	4,117	1.2x	14.6x	5.7x
Enable Midstream Partners, LP	2,611	842	32.2	15.98	92.0	6,912	10,325	4.0x	12.3x	3.7x
Enbridge Energy Partners, LP	4,414	1,529	34.6	15.98	60.6	6,711	18,837	4.3x	12.3x	4.8x
Enbridge Inc.	32,664	6,743	20.6	41.70	88.1	68,630	138,049	4.2x	20.5x	7.8x
Energy Transfer Equity, LP	42,145	5,525	13.1	17.38	86.7	18,794	89,574	2.1x	16.2x	8.0x
Energy Transfer Partners, LP	25,528	4,809	18.8	18.29	75.1	21,133	58,295	2.3x	12.1x	6.9x
Enterprise Products Partners LP	27,294	5,040	18.5	26.07	86.2	56,024	79,567	2.9x	15.8x	4.6x
EQT GP Holdings, LP	805	647	80.4	28.96	91.2	7,708	11,846	14.7x	18.3x	1.7x
EQT Midstream Partners, LP	805	650	80.8	74.97	90.3	6,041	7,049	8.8x	10.8x	1.7x
Genesis Energy, LP	1,736	425	24.5	26.35	68.7	3,230	6,237	3.6x	14.7x	8.7x
Gibson Energy Inc.	4,249	197	4.6	14.18	87.2	2,023	2,813	0.7x	14.3x	3.9x
Inter Pipeline Ltd.	1,608	826	51.3	20.68	86.0	7,768	12,262	7.6x	14.9x	5.2x
Kinder Morgan Canada Limited	540	281	52.1	13.86	93.1	1,428	3,147	5.8x	11.2x	(0.5)x
Kinder Morgan, Inc.	13,462	5,996	44.5	19.18	82.1	42,833	81,752	6.1x	13.6x	6.3x
NuStar GP Holdings, LLC	52	0	0.0	22.00	69.8	945	987	19.0x	NM	NM
ONEOK, Inc.	11,036	1,730	15.7	55.41	93.2	21,056	30,502	2.8x	17.6x	5.5x
Plains All American Pipeline, LP	24,569	1,775	7.2	21.19	62.4	15,356	28,094	1.1x	15.8x	5.9x
Sanchez Midstream Partners LP	85	32	37.9	11.25	70.6	160	677	8.0x	21.2x	5.5x
SemGroup Corporation	1,659	147	8.9	28.75	66.6	2,262	3,420	2.1x	23.2x	7.9x
Southcross Energy Partners, LP	628	60	9.5	2.35	49.6	184	715	1.1x	12.0x	8.7x
Summit Midstream Partners, LP	489	298	60.9	20.00	75.5	1,461	2,779	5.7x	9.3x	4.3x
Tallgrass Energy GP, LP	637	358	56.3	28.25	95.8	1,641	5,446	8.6x	15.2x	6.3x
Targa Resources Corp.	8,125	1,045	12.9	47.30	76.5	10,198	15,292	1.9x	14.6x	4.7x
TC PipeLines, LP	483	400	82.8	52.32	80.5	3,630	6,095	12.6x	15.2x	6.0x
The Williams Companies, Inc.	8,001	3,630	45.4	30.01	91.8	24,808	53,041	6.6x	14.6x	5.5x
TransCanada Corporation	10,664	5,036	47.2	49.34	94.5	43,139	81,042	7.6x	16.1x	6.3x
Western Gas Equity Partners, LP	2,127	927	43.6	41.18	86.1	9,016	15,074	7.1x	16.3x	3.5x
Western Gas Partners, LP	2,127	927	43.6	51.28	76.0	7,825	11,118	5.2x	12.0x	3.4x
Williams Partners LP	7,977	3,679	46.1	38.90	91.9	37,181	55,545	7.0x	15.1x	4.2x
Median			**36.5%**		**85.9%**			**4.7x**	**14.6x**	**5.0x**
Mean			**36.3%**		**80.7%**			**5.5x**	**14.2x**	**5.0x**

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

PIPELINES

SELECTED TRANSACTIONS (1)

Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
8/14/2017	Western Refining Logistics, LP (NYSE:WNRL)	Andeavor Logistics LP (NYSE:ANDX)	$1,842.8	0.8x	14.4x
12/20/2016	Howard Midstream Partners, LP	Alberta Investment Management Corporation	$1,394.7	4.3x	14.4x
11/21/2016	Sunoco Logistics Partners LP	Energy Transfer Partners, LP (NYSE:ETP)	$15,527.3	1.5x	13.7x
10/24/2016	JP Energy Partners LP	American Midstream Partners, LP (NYSE:AMID)	$465.0	-	11.3x
5/31/2016	Rose Rock Midstream, LP	SemGroup Corporation (NYSE:SEMG)	$1,649.9	-	10.4x
2/1/2016	Dominion Energy Questar Corporation	Dominion Energy, Inc. (NYSE:D)	$6,092.9	-	9.7x
10/12/2015	Casper Crude to Rail, LLC	USD Partners LP (NYSE:USDP)	$215.2	-	8.1x
5/13/2015	Williams Partners LP (NYSE:WPZ)	The Williams Companies, Inc. (NYSE:WMB)	$52,065.9	7.2x	17.8x
4/6/2015	QEP Midstream Partners, LP	Tesoro Logistics LP (NYSE:TLLP)	$1,133.6	-	11.1x
8/10/2014	Kinder Morgan Energy Partners, LP	Kinder Morgan, Inc. (NYSE:KMI)	$67,027.4	-	12.2x
7/10/2014	Transmontaigne Partners LP (NYSE:TLP)	NGL Energy Partners LP (NYSE:NGL)	$993.4	6.0x	14.1x

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

TRUCKERS

EQUITY COMPARABLES (1)

Truckers (United States & Canada)

Company	LTM(2) Revenues	LTM(2) EBITDA	LTM(2) Margin	Stock Price 09/30/17	% of 52-Week High	Market Cap	Total Enterprise Value(3)	TEV / LTM Revenues	TEV / LTM EBITDA	Net Debt(4)/ EBITDA
ArcBest Corporation	$2,804	$152	5.4%	$33.45	98.5%	$860	$961	0.3x	6.3x	0.6x
Celadon Group, Inc.	1,055	83	7.9	6.75	69.2	187	561	0.5x	6.7x	4.5x
Covenant Transportation Group, Inc.	693	101	14.6	28.98	98.0	530	719	1.0x	7.1x	1.9x
Daseke, Inc.	682	74	10.9	13.05	96.3	579	949	1.4x	12.7x	4.1x
Heartland Express, Inc.	582	147	25.3	25.08	99.5	2,089	1,918	3.3x	13.0x	(0.3)x
J.B. Hunt Transport Services, Inc.	6,920	1,048	15.1	111.08	99.5	12,156	13,092	1.9x	12.5x	1.0x
Knight-Swift Transportation Holdings Inc.	1,355	254	18.8	41.55	93.5	7,379	7,292	5.4x	28.7x	2.1x
Landstar System, Inc.	3,490	276	7.9	99.65	99.7	4,180	4,060	1.2x	14.7x	(0.5)x
Marten Transport, Ltd.	688	134	19.5	20.55	97.2	1,120	1,110	1.6x	8.3x	(0.0)x
Old Dominion Freight Line, Inc.	3,213	747	23.2	110.11	99.7	9,072	9,133	2.8x	12.2x	0.0x
P.A.M. Transportation Services, Inc.	435	52	11.9	23.93	84.2	152	285	0.7x	5.5x	2.5x
Patriot Transportation Holding, Inc.	115	14	11.9	19.94	73.0	66	56	0.5x	4.1x	(0.7)x
Roadrunner Transportation Systems, Inc.	1,972	101	5.1	9.53	80.2	365	765	0.4x	7.6x	4.0x
Ryder System, Inc.	7,119	1,774	24.9	84.55	99.0	4,480	9,809	1.4x	5.5x	3.0x
Saia, Inc.	1,325	172	13.0	62.65	99.8	1,579	1,727	1.3x	10.0x	0.7x
Schneider National, Inc.	4,262	526	12.3	25.30	94.2	4,474	4,618	1.1x	8.8x	0.4x
TFI International Inc.	3,757	405	10.8	25.73	89.8	2,312	3,660	1.0x	9.0x	3.0x
Titanium Transportation Group Inc.	93	10	10.4	0.97	73.3	36	80	0.9x	8.2x	4.3x
Universal Logistics Holdings, Inc.	1,167	63	5.4	20.45	98.8	582	816	0.7x	13.0x	3.6x
USA Truck, Inc.	426	20	4.6	14.05	99.6	112	239	0.6x	12.1x	6.1x
Werner Enterprises, Inc.	2,068	344	16.6	36.55	99.9	2,642	2,694	1.3x	7.8x	0.2x
YRC Worldwide Inc.	4,831	253	5.2	13.80	81.3	463	1,236	0.3x	4.9x	3.1x
Median			**11.9%**		**97.6%**			**1.1x**	**8.5x**	**2.0x**
Mean			**12.8%**		**92.0%**			**1.3x**	**10.0x**	**2.0x**

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PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

TRUCKERS

SELECTED TRANSACTIONS (1)

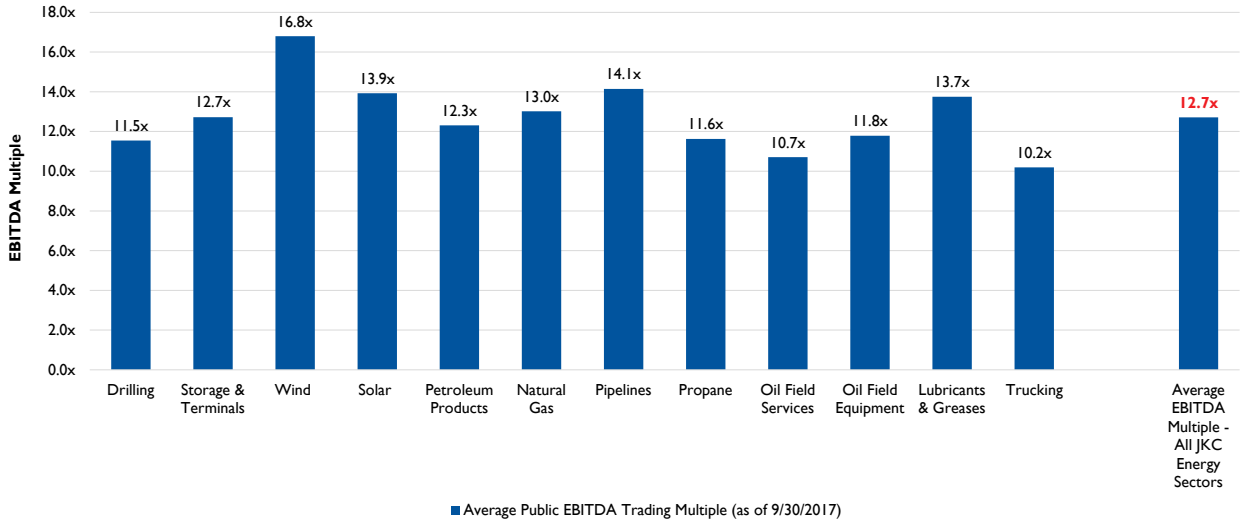
Announced / Closed Date	Target(s)	Acquirer	Total Enterprise Value (TEV)	TEV / Revenues	TEV / EBITDA
7/18/2016	Span-Alaska Transportation, Inc.	Matson Logistics, Inc.	$197.6	-	9.4x
5/2/2016	Trimac Transportation Ltd.	Trimac Corporation	$215.9	-	5.9x
9/9/2015	Con-way Inc.	XPO Logistics, Inc. (NYSE:XPO)	$3,057.0	-	6.2x
8/17/2015	Liberty International Inc.	Janel Corporation (OTCPK:JANL)	$2.3	-	26.6x
7/28/2015	Stagecoach Cartage and Distribution, LLC	Roadrunner Transportation Systems, Inc. (NYSE:RRTS)	$40.0	-	5.7x
5/25/2015	Hodges Trucking Company, LLC	Rodan Transport (U.S.A.) Ltd.	$42.0	-	3.0x
5/6/2015	Quality Distribution Inc.	Apax Partners LLP	$823.3	-	12.0x
5/4/2015	Bridge Terminal Transport Inc.	XPO Logistics, Inc. (NYSE:XPO)	$100.0	-	8.1x
4/21/2015	Command Transportation, LLC	Echo Global Logistics, Inc. (NasdaqGS:ECHO)	$391.0	-	10.6x
1/20/2015	Wheels Group Inc.	Radiant Global Logistics Ltd.	$80.1	-	13.5x
10/1/2014	Barr-Nunn Transportation, Inc.	Knight Transportation, Inc. (NYSE:KNX)	$115.9	-	4.5x
7/24/2014	Contrans Group Inc.	TFI International Inc. (TSX:TFII)	$528.2	-	6.8x

(1) Total Enterprise Value is defined as market capitalization plus total debt less cash and cash equivalents.

PUBLIC AND TRANSACTION COMPARABLES BY SEGMENT

AVERAGE PUBLIC EBITDA TRADING MULTIPLES

ALL JKC ENERGY SECTORS (AS OF 9/30/2017)



FACTOIDS: LITTLE-KNOWN FACTS AND STATS

Petroleum Products

- A U.S. 42-gallon barrel of crude oil yields about 45 gallons of petroleum products in U.S. refineries because of refinery processing gain. (1)
- Gasoline is the petroleum product most demanded by U.S. consumers and represents nearly 50% of the domestic production of all refined products. (2)

Natural Gas (3)

- Natural gas makes up almost 25% of all primary energy used in the U.S.
- Natural gas serves nearly 66.7 million homes, 5.4 million businesses, 192,000 factories and 1,900 electric generating units.

Propane and Heating/Fuel Oil (4)

- More than 660,000 farmers use propane for irrigation pumps, grain dryers, standby generators and other farm equipment. It is an essential fuel for crop drying, flame cultivation, fruit ripening, space and water heating and food refrigeration.

Lubricants and Greases (5)

- About 60% of grease applications are industrial, such as manufacturing, metals, mining and power. The remaining 40% is used in transport, such as construction, fleets and passenger cars.

(1) U.S. Energy Information Administration.
(2) American Petroleum Institute.
(3) American Gas Association.
(4) National Propane Gas Association.
(5) Royal Dutch Shell plc.

FACTOIDS: LITTLE-KNOWN FACTS AND STATS

SOLAR (1)

- One out of every 50 new jobs added in the United States in 2016 was created by the solar industry, representing 2% percent of all new jobs.
- The top five corporate solar users in 2016 were Target, Walmart, Prologis, Apple and Costco.

WIND (2)

- According to the U.S. Bureau of Labor Statistics, wind turbine technician is the country's fastest growing job increasing by 108% over the next ten years.
- Over 500 factories across 41 states build wind turbines and parts for them. Ohio leads the country with over 60 wind power factories.

OIL AND GAS FIELD SERVICES (3)

- Offshore oil drilling platforms are located anywhere from a couple hundred meters to 250 miles off the coast and drill as far down as 2 kilometers beneath the surface.
- Most offshore oil rigs are taller than the world's biggest skyscrapers.

EQUIPMENT AND PHYSICAL TECHNOLOGY (4)

- The country's energy grid loses about 10% of all electricity generated before it can get to consumers. More efficient high-temperature superconducting (HTS) cables are being developed to reduce the amount of electricity lost and expand power grids' capabilities. HTS uses liquid nitrogen as a coolant instead of the dielectric oil used in many conventional high-voltage cables.

(1) Solar Energy Industries Association.
(2) American Wind Energy Association.
(3) The Surge.
(4) Energy4me.

FACTOIDS: LITTLE-KNOWN FACTS AND STATS

Storage and Terminals

- The utilization rate of above and below-ground oil storage capacity in the U.S. has increased by 19% from 2014 to 66%, registering a stock of 435 million barrels in 2016. (1)
- The U.S., China and India combined have planned over $35 billion in investments to build oil storage capacity. (2)

Pipelines

- There are more than 2.5 million miles of pipeline transporting natural gas to more than 177 million Americans. (3)
- Currently, over 95% of natural gas used in the United States moves from well to market entirely via pipeline. (4)

Truckers

- The trucking industry employs 1 in 16 people in the U.S. (5)
- Trucking moves 70% of U.S. freight and 56% of U.S. GDP. (5)
- Tank trucks make up approx. 5%-10% of the overall trucking industry. (6)

(1) Grand View Research.
(2) Global Market Insights Inc.
(3) American Gas Association.
(4) American Petroleum Institute.
(5) American Trucking Association.
(6) National Tank Truck Carriers.

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ABOUT JORDAN KNAUFF & COMPANY

Jordan Knauff & Company was founded in 2001 to undertake a distinct mission: to assemble and maintain a staff of top-notch investment banking personnel and offer their knowledge and experience to provide the best available investment banking services to middle-market companies, the entrepreneurs who lead them and the financial entities that transact with them. On a combined basis, over the course of their careers our employees have completed over 200 transactions as investors, owners, operators, buyers, sellers and investment bankers of middle-market businesses across a variety of industries. The majority of our firm's broad transaction experience has been with private companies owned by one shareholder, a partnership, a family or private equity investors.

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ABOUT THE ENERGY EQUIPMENT & INFRASTRUCTURE ALLIANCE

EEIA is a Washington, D.C.-based trade association representing the North American natural gas and petroleum production, transportation and processing infrastructure supply chain. That supply chain is comprised of 60 industries that provide construction, equipment, materials, services and supplies to energy infrastructure and operations. EEIA advocates for sound legislative and regulatory policies at the federal and state levels. Our members include companies, trade associations and labor organizations operating in the energy sector. We advocate for our industries both directly with policymakers, and through mobilization of business leaders and workers to act and speak for the value and benefits of full and responsible development of our energy resources in their communities and with their political leaders.

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