

## IICEC Energy Market Newsletter

30 March, 2017

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## 1. Summary

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### Oil Market

- Oil benchmark prices continued their decline last week due to crude stock builds throughout the OECD, despite nearly 100% OPEC compliance in production cuts in February. Continued increases in U.S. crude production, rig counts, and storage levels suggest that production cuts from OPEC and non-OPEC producers are not having the desired effect in reducing global oversupply. Likewise, crude petroleum storage in Turkey is increasing to an 85% capacity factor.
- The impact of record crude stockpiles in the United States on oil prices were somewhat muted by higher demand for gasoline. Many refiners in the United States and globally have responded to the OPEC production cuts by scheduling refinery maintenance. Meanwhile, global demand for products remains strong.

### Natural Gas & LNG

- Speaking recently at CERA Week (Houston, USA), IEA Executive Director Fatih Birol said: “The countries in Turkey's surrounding region have profound natural gas resources and Turkey should benefit from these resources as much as possible...Turkey has to diversify its own natural gas and it needs to play an important role in the distribution of gas coming from Iraq and the Eastern Mediterranean.”
- European gas spot prices declined last week due to lower demand expectations after forecast temperatures continued to increase. Meanwhile U.S. gas prices were mixed as parts of the country experienced unseasonably cold temperatures due to a late-winter storm.
- In Asia, weak oil prices continue to weigh on gas and LNG prices. In Australia, gas prices in many domestic markets have been increasing due to growing perceptions that a gas supply shortage is on the horizon. Recent estimates put Japan LNG spot prices near \$9.00/mBtu and average domestic prices in Western Australia are between \$13-\$17.00/mBtu.
- Three of the world's top LNG buyers, Korea's KOGAS, Japan's JERA and China's CNOOC, signed an agreement in March to “cooperate in the joint procurement of LNG.”

### Economics

- U.S., European and Asian economies remain positive, while Japan and China continue to battle slowing growth. The Turkish government forecasts strong GDP growth in 2017 and 2018.

### Geopolitics & Supply

- As OPEC considers extending supply cuts, Saudi Arabia is likely to insist that Iran contributes more to reductions at OPEC meeting in May. Meanwhile, Russia has not committed to the idea of continuing to cut production. In Venezuela, gasoline shortages are the latest sign of a deteriorating oil sector.

### Renewables

- The Kalyon-Hanwha Group consortium won Turkey's tender bid for a 1-GW solar park in Karapınar, offering a power take-off price of USD 0.0699 (EUR 0.065) per kWh.
- In the United States, wind surpassed hydro as the largest source of renewable electricity generation capacity in 2016.

## 2. In the News: Australia's Domestic Gas Market is Feeling the Impact of New LNG Export

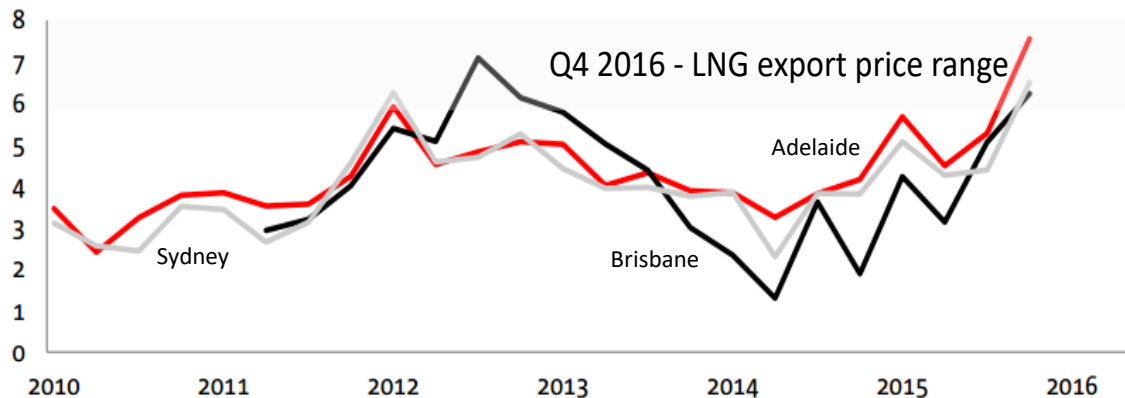
As Australia's ramps up production of new LNG export facilities this week, the Prime Minister met with experts in the country's gas sector to discuss the issue of rising domestic prices and the potential of gas shortages to the domestic market.<sup>i</sup>

Australia's LNG export capacity is growing at historic levels. Last year, Australia exported nearly 37 million tonnes (MT) of LNG, behind only Qatar, an increase of almost 40% from 2015. By the end of 2017, total production capacity could reach 60 MT with an additional 25 MT due by the end of 2019. This rapid growth in export capacity was partly driven by high oil and gas prices in Asia and new gas discoveries in Australia during the last decade. However, since 2014, oil and gas prices have fallen significantly and are likely to remain below previous peaks for the mid-term.

The exposure of Australia to other regional LNG markets means that Australians are competing with overseas markets for the supply of domestically produced gas. Already this has implications for domestic gas use. Wholesale gas prices in major markets have increased steadily since 2014 (see Figure 1) with significant increases in the last few months. In the last few years, domestic gas prices in all three markets have risen toward LNG export net-back parity levels. In Victoria, reports from manufacturers suggest that two-year wholesale contracts are currently near AUS\$20 per gigajoule (AUS\$/GJ) compared to historic averages around AUS\$3.50/GJ.<sup>ii</sup> According to an assessment from the National Australia Bank (NAB), spot and domestic contract prices for gas could increase by more than 50% in Australia's five largest cities by 2020.<sup>iii</sup>

Gas shortage concerns do not stem from a lack of domestic resources, but from the fact that low oil and gas prices for years have delayed investment in the Australia's upstream. Meanwhile questions remain over the availability of commercially recoverable gas from coal seam gas fields that have been critical to the development of certain LNG projects. Roughly 30% of the gas feedstock planned for existing and new LNG facilities will come from these unconventional sources, especially on the east coast. Existing and new LNG facilities are located in the country's eastern, northwestern and northern coasts. If these resources prove tough to exploit, the projected gas supply shortfall will be worse than expected.

**Figure 1. Quarterly Average Short-Term Gas Hub Price**



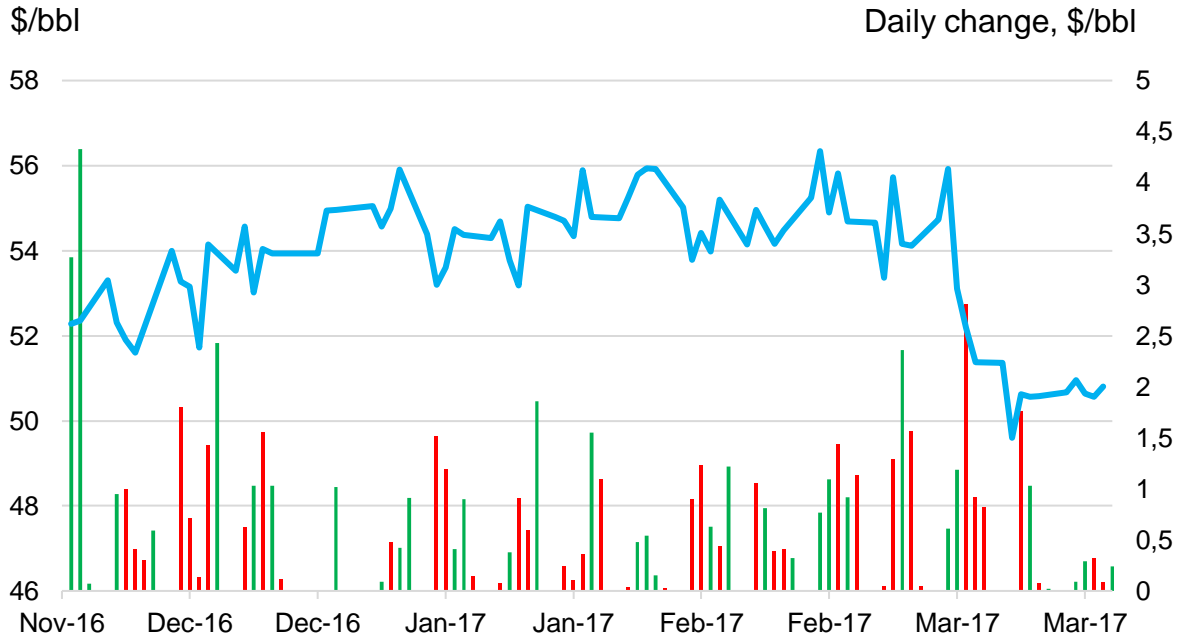
*From National Australia Bank. LNG export price estimates include liquefaction costs.*

### 3. Oil Market

#### Oil Supply and Prices:

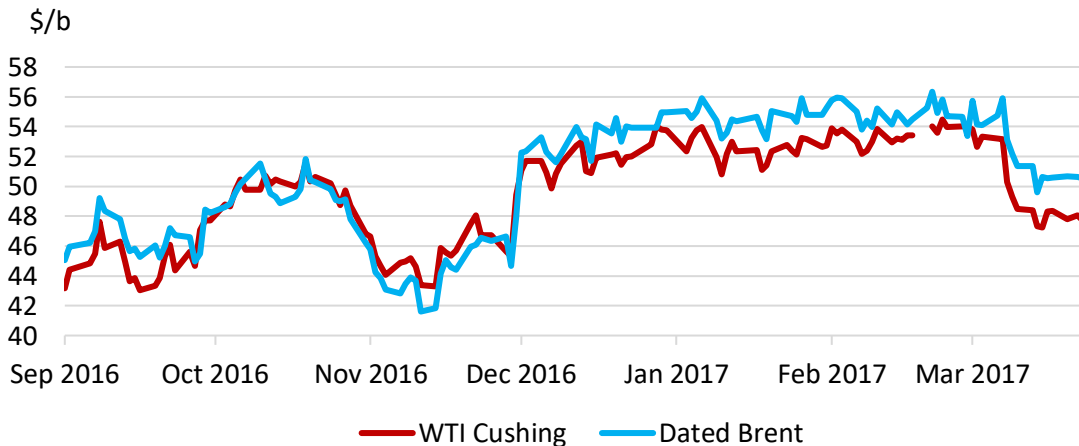
- **The Brent benchmark oil price continued its decline last week**, driven by stock levels throughout the OECD (especially in the United States) and concern about strong U.S. crude production, all despite 100% and 50% compliance from OPEC and non-OPEC production cuts, respectively. The impact of record crude stockpiles in the United States on oil prices were somewhat muted by higher demand there for gasoline.

**Figure 2. Brent Crude Oil Price since OPEC Announced Cut**



- **On March 13, the Brent-WTI spread was \$2.97 and has since shrunk to \$2.83 as of March 26.** It remains, however, more than a \$1.00 higher than the 2017 average of \$1.78. A widening Brent-WTI spread encourages U.S. drillers as export markets become more attractive.

**Figure 3. Benchmark Crude Prices<sup>iv</sup>**

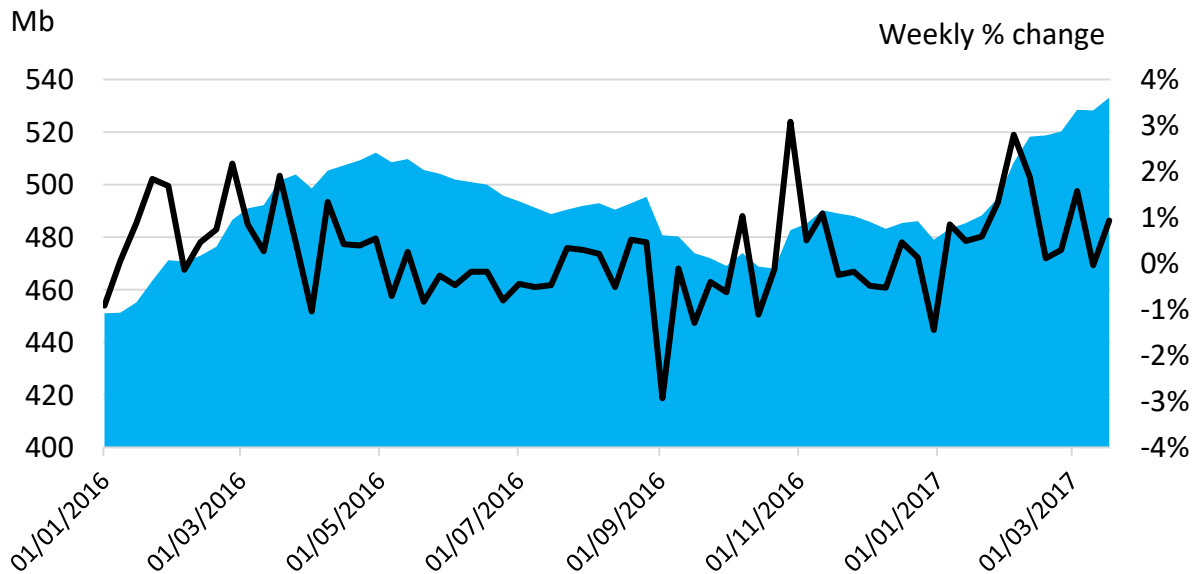


- **United States:** U.S. weekly crude production continues to grow in 2017, reaching 9.13 mb/d as of March 17, up 183 kb/d since January, according to the Energy Information Administration (EIA). Last week, the Trump Administration granted TransCanada a permit to build the Keystone XL pipeline (KXL), a crude oil pipeline designed to connect producers in Western Canada with U.S. Gulf Coast refiners. However, the U.S. oil market has changed dramatically since September 2008 when TransCanada first applied for a permit to build KXL. U.S. oil production has grown at rates far greater than expected in 2008 and current low oil prices have caused expectations of the rapid growth of Canadian oil sands production to be unfulfilled. Consequently, the economic payback from completing the northern section of KXL, connecting Alberta, Canada to Steel City, Nebraska, has dimmed.<sup>1</sup>
- **Turkey:** Oil imports surged by nearly 25% in January 2017, compared to January 2016, with Iran, Iraq, and Russia providing the majority of crude shipments. Turkey's Minister for Energy and Natural Resources announced last week that Turkey will soon begin exploring for oil and gas resources in the Mediterranean and the Black Sea. According to Minister Albayrak, more than 60% of the world's oil and gas are located in Turkey's region.

### Crude Storage:

- **Following the first draw of the year two weeks ago, U.S. crude inventories increased by around 5 mb last week due to a resurgence in imports that exceeded refinery runs growth of 230 kb/d.** Total crude inventories were 533.1 mb. Imports increased by almost 1 mb/d to average 8.3 mb/d, with notable increases from Iraq and Kuwait, offsetting declines from Nigeria and Venezuela. (see Figure 4).

Figure 4. Weekly U.S. Crude Oil Stocks



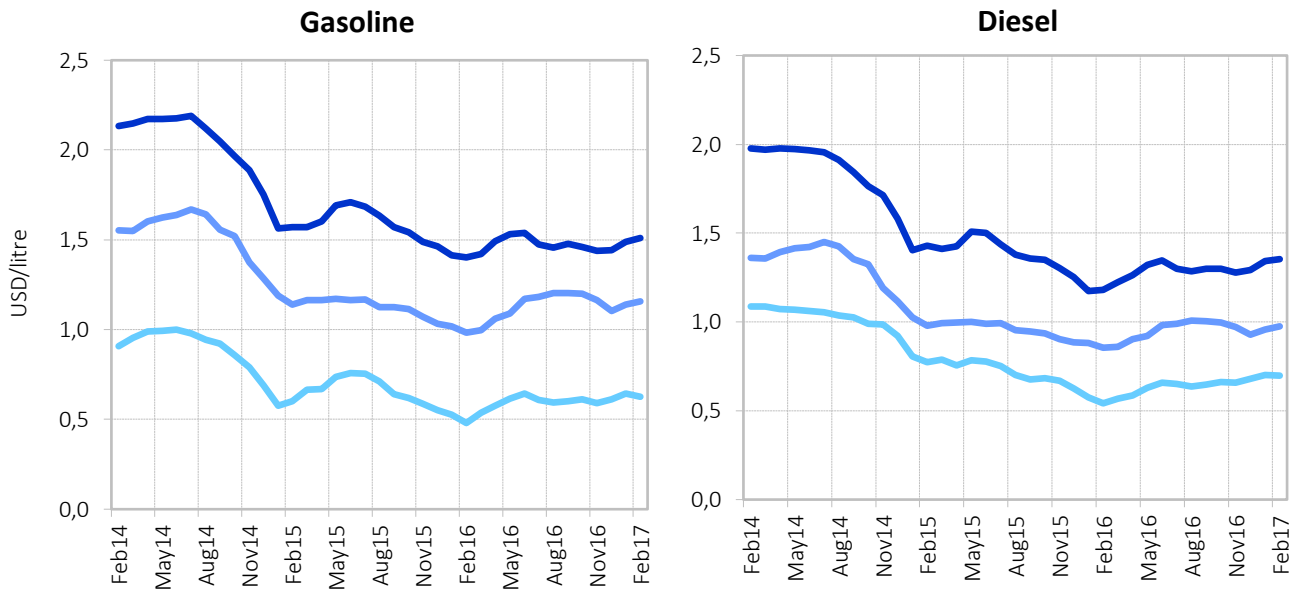
<sup>1</sup> The southern leg of KXL, connecting Cushing Oklahoma to Gulf Coast refiners, was built in 2012 as it did not require a Presidential permit since it did not cross an international border. This pipeline (renamed the "Gulf Coast Project") helped relieve the "congestion" between the major oil storage depot at Cushing (the pricing point for WTI) and Gulf Coast refiners. The lack of transport between Cushing and the Gulf Coast had caused the Brent-WTI spread to increase to as much as \$25/b.

- **Crude storage in Turkey also higher:** Crude petroleum storage in Turkey is increasing to an 85% capacity factor due to low oil prices and a contango oil market.

#### Selected Product Markets:

- **Many refiners in the United States and globally have responded to the OPEC production cuts by scheduling refinery maintenance.** Global demand for products remains strong.
- **Gasoline spreads in Europe increased in February by \$1.7/b,** driven by refinery maintenance and firm demand in other markets. Meanwhile, as Saudi Arabia and Iran build out new oil processing plants, the Gulf region is poised to become a net exporter of refined products in 2017, adding additional pressure to European refiners. The Middle East's refinery processing capacity increased by around 20% since 2013.<sup>v</sup>
- **Regional product prices have mostly tracked crude prices since the end of December** (see Figure 6). Average U.S. gasoline prices remained mostly flat last week, though remain up \$0.31/gal. from this time last year. Gasoline stocks in the Amsterdam-Rotterdam-Antwerp (ARA) hub fell more than 24% last week to their lowest level since November, while fuel oil hit a record high. Gasoline demand in China, West Africa, and the United States contributed to the draw.

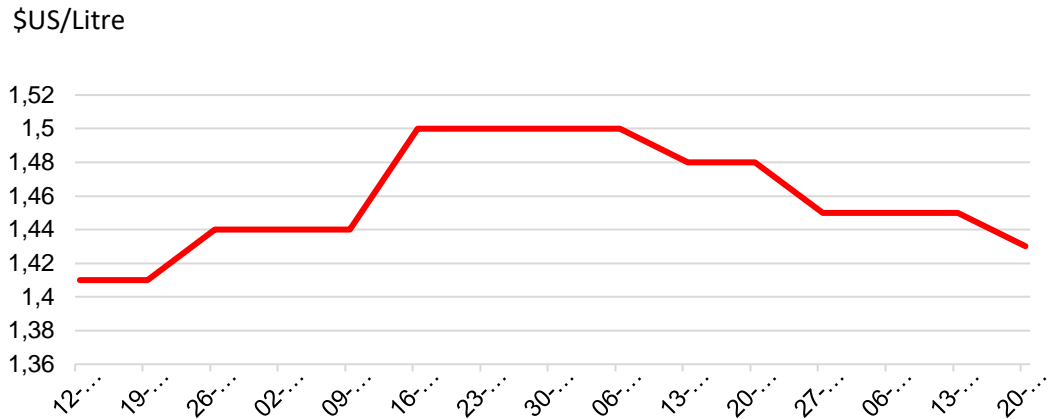
**Figure 5. Select Monthly Product Prices in Europe, Japan, and North America**



top line = Europe; middle line = Japan; lowest line = North America

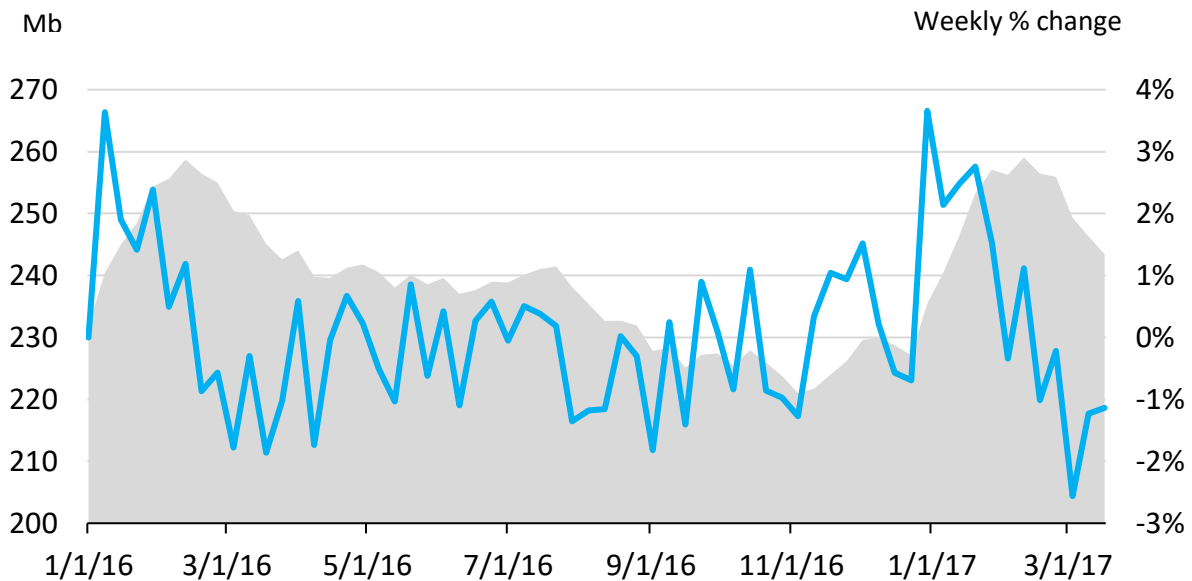
- **Turkish gasoline prices** are shown in Figure 6, with the slight downward adjustment a reflection of movements in the \$/₺ exchange rate. Between March 13 and 20, gasoline prices decreased from \$1.45 to \$1.43 per liter, according to government data.

Figure 6. Weekly Average Gasoline Prices in Turkey



- For the week ending March 17, U.S. total gasoline stocks experienced a larger-than-expected drop (see Figure 7) of 2.8 mb. Expectations of higher demand for gasoline during the forthcoming summer driving season contributed to the decline.

Figure 7. Weekly U.S. Gasoline Stocks and % Change



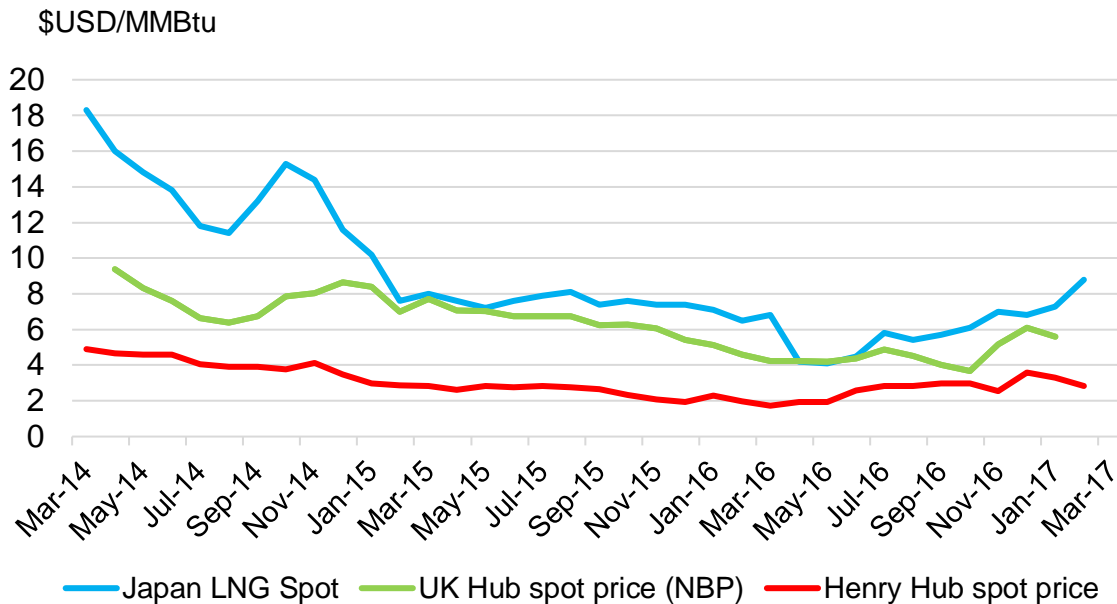
#### 4. Natural Gas & LNG

##### Supply and Price:

- European gas spot prices declined last week due to lower demand expectations after forecast temperatures continue to increase. Dutch, German, and UK markets all experienced slight drops in prices due to weather reports suggesting that temperatures are likely to remain above seasonal norms.<sup>vi</sup>

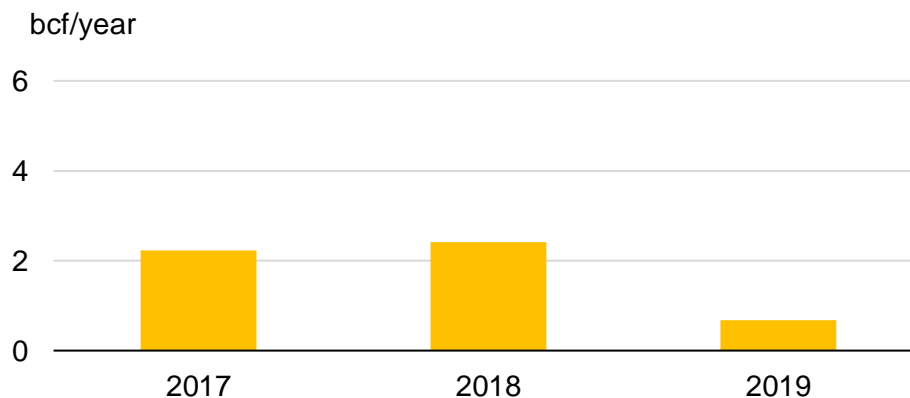
- **U.S. gas prices were mixed last week as parts of the country experienced unseasonably cold temperatures due to a late-winter storm.** Total U.S. consumption fell by 15% due to moderate weather in most parts of the country.
- **Russian gas export to Europe and Turkey averaged 582 million cubic meters per day (mcm/d), down 34 mcm/d from January.** However, January experienced a significant boost on a year-on-year basis. The oil-indexed price range is converging with European hub prices, with the two prices expected to remain in the same range for the near future.<sup>vii</sup>

**Figure 8. Select Natural Gas Prices**



- **Tensions are increasing in Australia between domestic gas market and LNG export market.** Gas prices in many domestic markets have been increasing due to growing perceptions that a gas supply shortage is on the horizon. Weak oil prices have limited gas exploration and new discoveries in recent years, as LNG exports continue to ramp up. Meanwhile, the issue is further compounded by the fact that Japan LNG spot prices are near \$9.00/mBtu and Australia's domestic gas prices are between \$13-\$17.00/mBtu.<sup>viii</sup> Prime Minister Turnbull held a meeting with Australia's key LNG producers in order to address fears of a shortage. Australia is set to become the world's largest LNG exporter by 2019.

**Figure 9. Australia's Incremental LNG Export Capacity**





- **World's top LNG buyers sign agreement to cooperate on LNG purchases.** Three of the world's top LNG buyers, Korea's KOGAS, Japan's JERA and China's CNOOC, signed an agreement in March to "cooperate in the joint procurement of LNG." Together, these three companies represent roughly one-third of global LNG demand. It appears that the buyers aim to extract concessions from producers that would provide flexibility in contracts, such as the right to re-export to third parties.<sup>ix</sup>
- **EU Commission provisionally accepted Gazprom's commitments to address antitrust chargers after a two-year dispute.** The antitrust allegations focused on Gazprom's overwhelming market dominance in former Soviet countries like Poland, Bulgaria, and Lithuania. It appears that Gazprom is willing to allow its customers to resell its Russian gas and to not act on any of its advantages regarding gas infrastructure.<sup>x</sup>

## 5. Economics

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- **United States: U.S. economy remains positive.** Estimates of GDP growth for the first three months of 2017 were 1.7%, which is not surprising considering that is partly due to unseasonably warm weather and relatively low demand for electricity and natural gas. Fourth quarter 2016 GDP growth was 1.9%. In February, the number of jobs increased by 235,000, outperforming market expectations of a 190,000 increase. In its 3<sup>rd</sup> upward move since the financial crisis. The Fed, on March 15, raised U.S. interest rates by 25 basis points in recognition of a stronger U.S. economy.
- **Europe: Eurozone economy continued to grow strongly in February.** IHS Markit's composite figure for the Eurozone economy showed a measurable improvement from January. Output growth was led by the manufacturing sectors in France and Germany, with the average rate of manufacturing production expanding by its highest level since April 2011. In Britain, Prime Minister May formally notified the EU starting the clock on the roughly two-year process of succession. Meanwhile, Scotland's First Minister is pursuing a vote on Scottish independence from Britain during or after Britain's negotiations to leave the EU. The drop in energy prices in recent years has negatively impacted the government's revenue from North Sea oil production. North Sea oil revenues will be an important consideration in estimating the economic consequences of Scottish independence.
- **Turkey: Turkey's economic growth will reach 5% or more in 2018, after reaching its target of 4.4% in 2017, according to the Economy Minister.** Both the World Bank and the IMF estimate that Turkey's economy will grow by closer to 2.8% in 2017.<sup>xi</sup> Meanwhile, the Turkish Statistical Institute reported that their Economic Confidence Index, a composite of other indices and survey, increased 6.8% from January to February, indicating a significant improvement of attitudes toward the retail and construction sectors. On 17 March, Moodys cut its rating outlook for Turkey to "negative" as risks to the country's credit profile have "risen materially" in recent months.
- **Asia: Both Japan and China are battling with slowing economies, despite positive recent data.** For China, GDP officially grew 6.7% in 2016, the slowest in 26 years, despite the fact that 6.5% is the growth target for the government's employment objectives. Meanwhile, the government announced ambitious job plans away from the manufacturing sector. China plans to create 11 million new urban jobs in 2017. For Japan, the Q4 2016 report saw an upward revision in business spending and an increase in investment growth compared to expectations. GDP grew 0.3% from Q3 to Q4 compared to a preliminary estimate of 0.2%. Increased interest rates in the United States are expected to improve profits in Japan's manufacturing sector.<sup>xii</sup>

## 6. Geopolitics & Supply

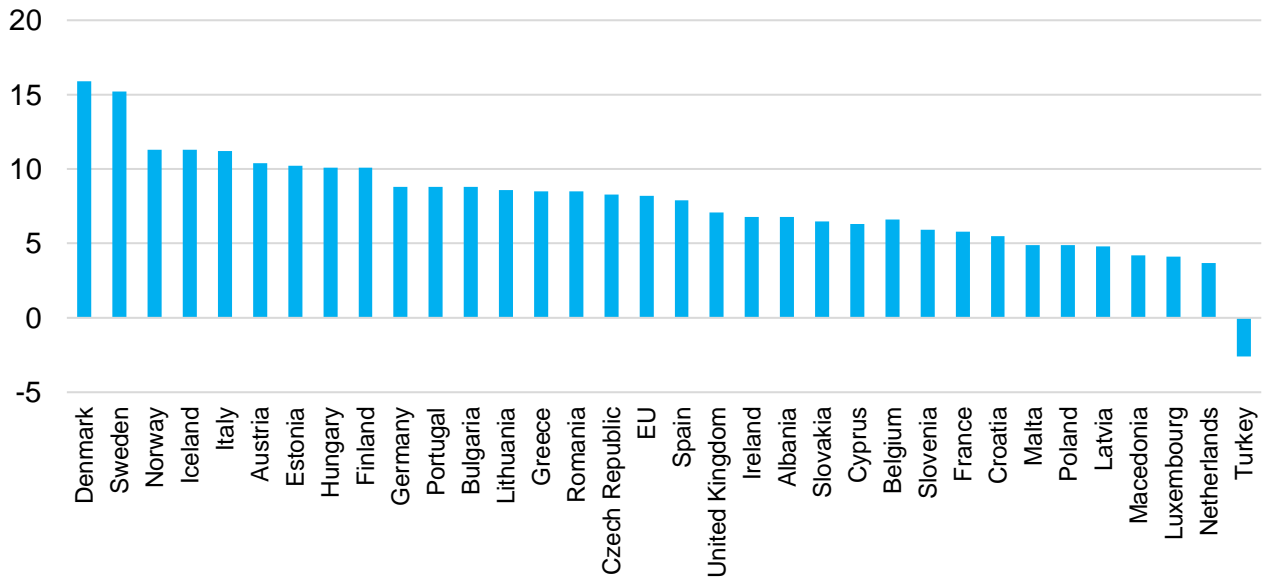
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- **Iran:** Oil minister Zanganeh stated last week that Iran is willing to cap its own production at the current level of 3.8 mb/d for the remainder of 2017.<sup>xiii</sup> This would put Iran in line with its commitment to the OPEC production cuts. According to the OPEC production agreement, Iran's crude production will not average above 3.8 mb/d for the first six months of 2017. It is likely that Iran is reinjecting natural gas to boost oil production from aging fields. Also, oil wells began production at the South Pars gas field. The oil wells are expected to increase production by around 35 kb/d.
- **Iraq:** Oil production exceeded 4.3 mb/d in February, and only met 58% of its cut target for the first half of 2017. Iraq's oil minister said last week that oil production cuts would reach the target of 210 kb/d in the next few days. Minister Luaibi said that Iraq would be interested in supporting continued production cuts, if all other OPEC members agreed.
- **Libya:** Oil production is around 700 kb/d and could reach 800 kb/d by April if oil facilities are provided time necessary to ramp up.<sup>xiv</sup> Production and exports were diminished earlier this month, despite steady gains in both since September, due to clashes at major oil ports. Operations at Es Sider and Ras Lanuf ports restarted this month following clashes there that began on March 3.
- **Russia:** Despite a target cut of 300 kb/d, Russia has reduced its production by 185 kb/d, according to the Energy Minister last week.<sup>xv</sup> While many OPEC ministers (including Saudi Arabia's) have signaled their support for extending the production cuts, Minister Novak said that Russia needs more time to assess the market. Much of Russia's upstream oil market is controlled by public companies, which limits the government's control of production. Oil production averaged 11.11 mb/d in February, representing no further output reduction from January. Relative to October 2016, Russia has reduced output by only 40% of the agreed 300 kb/d cut, according to an analysis of production numbers for each operator in Russia.
- **Saudi Arabia:** Despite the fact that oil production was 263 kb/d higher in February than January, more oil reached the market in January. According to multiple sources, oil production is now around 10 mb/d, down significantly from November's 10.64 mb/d. It appears that recent curtailments resulted in fewer shipments to Europe, the United States, as well as some customers in Asia. OPEC is likely to consider extending the production cuts at its meeting on May 25. The Kingdom's treatment of Iran will be a key issue.
- **Venezuela:** Crude prices fell for the third straight week as global inventories grew and the U.S. demanded fewer barrels. According to PDVSA, the average price for crude fell to \$41.78/b on March 17, down \$3.39/b from the previous week. Venezuela's oil production was around 2.250 mb/d in January. Venezuela agreed to cut production by an average of 95 mb/d for the first six months of 2017, as part of the producers' agreement. As the nation's economy and oil sector continue to struggle, gasoline shortages were reported last week due to a poor refining sector and payment delays for refined product supplies.

## 7. Renewables

- Turkey:** The country's largest solar production plant continues to move forward, after the Kalyon-Hanwha Group won the bid to develop the project at the Karapinar Renewable Energy Resource Area (YEKA). According to the project's scope, the facilities will be able to produce at least 500 megawatts (MW) of solar photovoltaic modules per year and be able to supply YEKA with 1,000 MW within 10 years for research and development.<sup>xvi</sup> Meanwhile, Turkey is behind Europe in the use of renewable energy, according to recent data from Eurostat. Renewable energy use actually fell between 2004 to 2015, from 16.2% to 13.6%.

**Figure 10. Renewable Energy Consumption, Percent Change 2004 and 2015<sup>xvii</sup>**



- United States:** Wind surpassed hydro as the largest source of renewable energy in 2016.<sup>xviii</sup> Installed wind electric generating capacity in the United States surpassed conventional hydroelectric generating capacity, long the nation's largest source of renewable electricity, after 8,727 MW of new wind capacity came online in 2016. Given the hydro fleet's higher average capacity factors and above-normal precipitation on the West Coast, hydro will likely exceed wind in total generation in 2017.

**For any questions and additional information, please contact:**

Prof. Dr. Carmine Difiglio

E: [carminedifiglio@sabanciuniv.edu](mailto:carminedifiglio@sabanciuniv.edu)

P: +90 (212) 292 49 39 / 1111

Dr. Mehmet Doğan Üçok

E: [mdoganucok@sabanciuniv.edu](mailto:mdoganucok@sabanciuniv.edu)

P: +90 (212) 292 49 39 / 1112

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