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IICEC Energy Market Newsletter

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IEA TAKES PART IN G20 ENERGY AND ENVIRONMENT MINISTERIAL IN JAPAN



Dr. Fatih Birol, IEA's Executive Director and IICEC's Honorary Board Chairman emphasized the importance of hydrogen for a clean and secure energy future, in a statement made for the IEA's newly launched report. "The world should not miss this unique chance to make hydrogen an important part of our clean and secure energy future" said Dr. Birol.

The International Energy Agency has provided in-depth support for the meeting of G20 energy and environment ministers, including the publication of a major new study on hydrogen's potential role in global energy transitions. ¹ The IEA carried out this landmark report at the request of Japan's G20 presidency, to analyze the current state of play for hydrogen and to offer guidance on its future development.²

Dr. Birol presented findings from the new IEA report on hydrogen; "The Future of Hydrogen: Seizing Today's Opportunities" that analyses hydrogen's current state of play and offers recommendations for its future development and how it can help to tackle critical energy challenges. It was launched by Dr Fatih Birol, the IEA's Executive Director, alongside Mr. Hiroshige Seko, Japan's Minister of Economy, Trade and Industry.



¹ IEA, (June 16, 2019) IEA takes part in G20 Energy and Environment Ministerial in Japan.

² IEA, (June 14, 2019) International action can scale up hydrogen to make it a key of a clean and secure energy future.

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The report finds that clean hydrogen is currently receiving strong support from governments and businesses around the world, with the number of policies and projects expanding rapidly. It concludes that now is the time to scale up technologies and bring down costs to allow hydrogen to become widely used. The pragmatic actionable recommendations and

to governments and industry that are provided will make it possible to take full advantage of this increasing momentum.



According to the report, hydrogen is one of the leading options for storing energy from renewables and looks promising to be a lowest-cost option for storing electricity over days, weeks or even months.³ Clean hydrogen is currently enjoying unprecedented political and business momentum, with the number of policies and projects around the world expanding rapidly. "Hydrogen is today enjoying unprecedented momentum, driven by governments that both import and export energy, as well as the renewables industry, electricity and gas utilities, automakers, oil and gas companies, major technology firms and big cities," Dr. Birol said. "The world should not miss this unique chance to make hydrogen an important part of our clean and secure energy future," he added. To build on this momentum, the IEA report offers seven key recommendations to help governments, companies and other stakeholders to scale up hydrogen projects around the world.

The IEA's 7 key recommendations to scale up hydrogen:

- 1. Establish a role for hydrogen in long-term energy strategies.
- 2. Stimulate commercial demand for clean hydrogen.
- Address investment risks of first-movers.
- 4. Support R&D to bring down costs.
- 5. Eliminate unnecessary regulatory barriers and harmonize standards.
- 6. Engage internationally and track progress.
- 7. Focus on four key opportunities to further increase momentum over the next decade.

The IEA also provided several other important contributions to the G20 this year at the presidency's request, including an analysis identifying more than 100 innovation gaps across the energy system and recommendations for how to fill them; a report on securing investment in low-carbon power generation; and other activities and analyses to encourage greater international collaboration on data gathering. Dr. Birol also spoke about other important topics, including energy access in Africa, tracking progress towards clean energy goals and developments in the global trade in liquefied natural gas (LNG).

³International Energy Agency, (May 16, 2019) Gas Market Liberalisation Reform

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SEMINAR BY KEREM TOPUZ "THE MISSING PIECE IN THE TURKEY'S GAS HUB AMBITIONS"

As part of the IICEC Energy and Climate Research Series, IICEC hosted a seminar on Turkey's prospects to establish a natural gas trading hub on June 13 at the Minerva Palas. MNCM Consulting Founding Partner, Kerem Topuz, presented his paper titled: "The Missing Piece in the Turkey's Gas Hub Ambitions". (Please click here In Mr. Topuz's for the paper). presentation, among other things, he emphasized the factors that placed Turkey in a unique position to establish a physical regional trading hub, a theme that was subsequently discussed by panelists Country President and CEO of ENGIE Turkey Gökalp Özkök, retired Ambassador Mithat Rende and moderated by IICEC Director Carmine Difiglio.

The recent developments in gas markets, most notably, the increased diversity of LNG supplies, deserve particular attention in terms of more sustainable and competitive gas supplies. The advantages can be realized by an improved international trade of gas molecules. A transparent international natural gas trade requires regional pricing at hubs that provide physical supply and commodity trading in a competitive market framework. In spite of the fact that gas-to-gas competition has been emerging across Europe, the gas markets still remain exposed to developments in global oil market, a situation completely different than the U.S. where gas prices are de-



linked from oil prices.

Analyzing the current situation and outlook in natural gas supply, demand, trade and infrastructure, the report presents why Turkey has a credible opportunity to become a physical natural gas trading hub in its region.

Because of the large volume of gas being imported into Turkey from multiple sources and Turkey's already well - advanced natural gas infrastructure, Turkey has unique locational advantages for developing into a regional gas hub. The paper provides an analytical insight to multiple benefits of establishing such a hub and explains why this would be a win-win-win for Turkey, Europe and Turkey's natural gas suppliers. Providing information and analyses on Turkey's natural gas use in each economic sector, pipelines, LNG regasification capacities and distribution infrastructure, gas supply and demand drivers and outlook in Turkey, Europe and the gas supplier regions, the paper outlines requirements for a wellfunctioning trading hub based on defined indicators and presents an assessment of Turkey's ability to meet these requirements

Turkey has achieved notable progress in advancing its natural gas related infrastructure in the past few years. Therefore, the additional infrastructure requirements for a Turkish gas hub are minor compared to the changes that would be required in renegotiating natural gas import contracts to eliminate destination clauses and achieve more flexible pricing terms; and unbundling BOTAŞ contracts sufficiently to meet the requirements of a transparent and competitive gas trading hub.

Topuz's paper emphasizes а transitionary approach towards the realization of the gas hub perspective. BOTAS continues to be necessary to be a counterparty for new pipeline investments and to provide price stability in Turkey in light of the Turkish economy and consumers. At the same time, Turkey would benefit from lessening current dependencies on the state towards a market system. Moving in this direction would be an evolutionary process. BOTAŞ' current long-term contracts will not be terminated until midst of 2020's. A certain amount of time must elapse before BOTAS would be able to unbundle its contracts and other policies be established to protect Turkish consumers. Presenting the pillars for becoming a well-functioning gas hub within an analytical approach, the paper analyzes the current situation in the Turkish natural gas market. Towards the objective of becoming a regional gas trading hub, the recommendations include

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- Renegotiating existing contracts to eliminate destination clauses, resolving take-or-pay obligations, increasing flexibility, and making price revisions mark-to-market
- Taking steps to increase number of market participants, releasing more gas to other players, improving links with the power market, improving the wholesale market, allowing new import licenses
- Improving transparency and predictability that would ensure a clear pricing strategy as well as elimination of any direct or indirect subsidies within a realistic time plan and economic countermeasures to be taken
- Establishing alternative markets like futures markets and financial hedging instruments
- Unbundling of transmission system operator, importer, and wholesaler functions of BOTAŞ

Substantial benefits that would be achieved by establishing such a hub. These benefits for Turkey include

- Enhanced energy security and efficiency gains,
- Lessened exposure to global oil prices in total energy import bill,
- New services, businesses, value add and employment opportunities.

Topuz also concludes that a Turkish gas hub would benefit not only Turkey, but expand opportunities for Europe's gas markets and Turkey's gas suppliers.

ENGIE Turkey CEO Mr. Gökalp Özkök said: "Our natural gas infrastructure is quite new compared to many examples

Europe and investments in are continuing. We are quite advantageous in this regard. However, there is competition among countries in the region for the same goal. Therefore, Turkey's competitive advantages should be further considered to focus on shorter, more flexible contracts as an important element of the gas purchasing contracts. Pricing and predictability in the market are important issues. Overall, market dynamics and a more competitive development of the natural gas market are important aspects."

The fact that having major advantages such as being a large gas consumer and having a developed physical infrastructure is already positioning Turkey as a gas hub was pointed out by retired Ambassador Mithat Rende. Retired Ambassador Rende expressed that there are countries that have the same goal among Turkey's neighbors. Turkey has great advantages in order to become a regional Gas Hub, however there are also aspects that require further improvement. This is not an overnight job, all stakeholders in our country need to work together. Turkey's gas trade should be supported. It is important that prices are formed in the market environment. Market operation, predictability and transparency are crucial to achieving this goal."

Professor Carmine Difiglio emphasized that Turkey has a very important opportunity in the direction of becoming a physical gas trading hub, noting that this constitutes a "win-win-win" situation for Turkey, Europe and Turkey's gas supplier countries. Difiglio highlighted the importance of planning the transition to a more competitive market framework and the private sector's role in achieving this goal.

ENERGY, ENVIRONMENT MINISTERS OF G20 COUNTRIES MEET IN JAPAN



Energy and environment ministers of the G20 countries gathered in Japan for the first time in the group's history on June 15, 2019.4 Speaking at the gathering, Turkish Energy and Natural Resources Minister Fatih Dönmez said that; during Turkey's presidency in 2015, they started discussions of access. energy adding that these were "very effective" in raising global awareness, and added that "In this regard, continuity, follow-up, and monitoring are very valuable." "For a sustainable future we have to benefit from energy efficiency, as well as renewable energy, fossil fuels and nuclear power technologies." Dönmez noted. 5

⁴ Anadolu Agency, (June 15, 2019) G20 energy, environment ministers meet in Japan

⁵ Anadolu Agency, (June 16, 2019) Turkey aims to increase share of renewables: Minister.

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SOCAR TURKEY SUCCESFULLY FINALIZES ACQUISITION OF EWE TURKEY

SOCAR Turkey, the biggest foreign investor in Turkey, completed the takeover of EWE Turkey Holding's subsidiaries Bursagaz, Kayserigaz, Enervis, EWE Enerji and Millenicom Telecommunication, according to a statement from the company⁶. EWE Turkey Holding, headquartered in Istanbul, was founded by EWE at the beginning of 2007 in order to seize the opportunities offered in the dynamic energy market of Turkey. It holds a majority interest in the regional gas distribution companies Bursagaz and Kayserigaz (each 80 percent of the shares), the trading and sales company EWE Enerji, the energy service company Enervis Enerji Servis and the telecommunications company Millenicom (each 100 percent).7

In January 2019, SOCAR Turkey and EWE Turkey Holding agreed on the transaction and Turkish authorities granted all necessary approvals last month. As of June 17, SOCAR Turkey and EWE Turkey Holding representatives signed the final agreement for the takeover. Thus, Bursagaz, Kayserigaz, Enervis, EWE Enerji and Millenicom became the subsidiaries of SOCAR Turkey as of June 17. With the acquisition, SOCAR Turkey will start operating in natural gas distribution, energy services and telecommunication sectors after the refinery, petrochemicals and wind



energy sector in Turkey. SOCAR has been supplying natural gas to the Turkish market for the last 12 years and began expanding its operations this year through the Trans-Anatolian Natural Gas Pipeline (TANAP), a major joint project between Turkey and Azerbaijan.⁸

"The synergy of this integration will contribute to the economies of both Turkey and Azerbaijan." said SOCAR Turkey Chairman Vagif Aliyev. He also reminded that SOCAR operates in natural gas distribution sector of Georgia excluding Tbilisi and will transfer the experience in that region to Bursagaz and Kayserigaz maximizing the consumer bv satisfaction. "We want to grow in natural gas and will continue to look for opportunities," Aliyev noted.

"With SOCAR Turkey, we have found a reputable and reliable partner for our Turkish companies, who is already active in the country and wants to extend its value chain with the entry into gas distribution to end customers," explains Stefan Dohler, CEO of EWE AG. Following a strategy review in the summer of 2018, the company decided to concentrate primarily on the opportunities in the German home market. "We are pleased about the successful conclusion and wish all the employees a further successful future as part of SOCAR Turkey."⁹

IICEC's Board Member SOCAR Turkey, has around \$15 billion investment in Turkey with STAR Refinery, Petkim, Petlim -largest integrated port of the Aegean-, TANAP, and wind power plant having 55 MW of installed capacity. SOCAR Turkey's CEO Mr. Zaur Gahramanov is the member of the Board of Directors of IICEC. The company plans to invest in a second petrochemical facility in Turkey with BP for an estimated value of \$1,5-2 billion.



⁶Anadolu Agency, (June 18, 2019) SOCAR Turkey finalizes acquisition of EWE Turkey.

⁸ SOCAR Turkey, (January 31, 2019) SOCAR to supply natural gas to Kayseri and Bursa.

⁷EWE AG (May 30, 2019) EWE and SOCAR will conclude sale of Turkish companies on 17 June.

⁹ EWE AG (June 17, 2019) EWE succesfully completes sale of Turkish companies.

OIL SURGES ON TANKER ATTACKS, BOTH THE U.S. AND IRAN STRESS THEY DO NOT WANT WAR

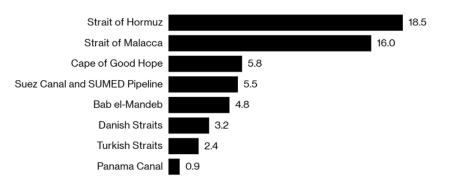
Oil futures rose on June 13 after attacks on two tankers off the coast of Iran. Washington released a video that it said Iran's Revolutionary Guards were behind the attacks near the Strait of Hormuz on the Norwegian-owned Front Altair, which was set ablaze, and the Japaneseowned Kokuka Courageous. The U.S. released a video that alleged to show Revolutionary Guards removing an unexploded limpet mine from the hull. Also, just before this issue went to press, the risk of conflict rose significantly with the downing of a U.S. drone by the Iranian Revolutionary Guard and a U.S. retaliatory strike that was called off at the last moment. The international community is urging both the United States and Iran to exercise restraint to avoid war.

The Strait of Hormuz is a V-shaped body of water that connects the Persian Gulf to the Indian Ocean, with Iran to its north and the United Arab Emirates and Oman to the south. It's about 154 kilometers long and 34 kilometers wide at its narrowest point, with the shipping lanes in each direction just two miles wide. Its shallow depth makes ships vulnerable to mines, and the proximity to land leaves large tankers open to attack from shore-based missiles.

The strait is the world's most important waterway for global trade in crude oil. Tankers hauling about 17.5 million barrels pass through it daily. That's equal to about 40% of all the crude traded internationally. All oil exports from Kuwait, Iran, Qatar and

Oil Tanker Chokepoints

Volume of crude oil and petroleum liquids transported through world chokepoints and around the Cape of Good Hope in 2016, in millions of barrels per day



Sources: U.S. Energy Information Administration analysis based on Lloyd's List Intelligence, Panama Canal Authority, Argus FSU, Global Trade Tracker, BP Statistical Review of World Energy, IHS Waterborne, Oil and Gas Journal, Suez Canal Authority, and UNCTAD

BloombergQuickTake

Oil Tanker Chokepoints

Bahrain, more than 90% of those from Saudi Arabia and Iraq, and 75% of shipments from the U.A.E. pass through.¹⁰

"It is the assessment of the United States government that the Islamic Republic of Iran is responsible for the attacks that occurred in the Gulf of Oman." U.S. Secretary of State Mike Pompeo told reporters on June 14. He said the assessment was based on intelligence, the weapons used, expertise required and similar recent attacks.¹¹ Washington has blamed Iran or its proxies for attacks on May 12 that crippled four oil tankers in the same area. It also said Tehran was behind May 14 drone strikes on two Saudi oil-pumping stations. Tehran has denied all the charges.

"These accusations are alarming."

Iranian Foreign Ministry spokesman Abbas Mousavi said, adding that blaming Iran for attacks was "The simplest and the most convenient way for Pompeo and other U.S. officials." "We are responsible for ensuring the security of the Strait and we have rescued the crew of those attacked tankers in the shortest possible time." he said, Iranian state radio reported.

Iranian-U.S. tensions began ratcheting up after U.S. President Donald Trump pulled out of a deal last year between Iran and global powers that aimed to curb Tehran's nuclear ambitions in exchange for relief from international sanctions. Since then Washington has toughened its sanctions regime, seeking to force Iran's oil customers to slash their imports. Iran has repeatedly warned

¹⁰ Bloomberg, (June 14, 2019) Why the Strait of Hormuz is the world's oil flashpoint.

¹¹ Reuters, (June 14, 2019) U.S. blames Iran for attack on oil tankers, Tehran calls accusation alarming.

it would block the Strait of Hormuz if it is barred from selling oil.

The Trump administration said in May it would send troops and other forces to the Middle East, citing Iranian threats. Tehran has called the move "psychological warfare" and said the U.S. moves offered more of a target than a threat to Iran. Responding to rising regional tension, U.N. Secretary-General Antonio Guterres told a U.N. Security Council meeting that the world could not afford "A major confrontation in the Gulf region."

Iran and the United States have both said they want to avoid a war. "Iran will not wage war against any nation." Iranian President Hassan Rouhani said in a speech broadcast live on state TV. "Those facing us are a group of politicians with little experience." 12 U.S. Central Command said on June 13: "We will defend our interests, but a war with Iran is not in our strategic interest, nor in the best interest of the international community."

Saudi Arabia's crown prince blamed Iran for attacks on two oil tankers in the Gulf of Oman and called on the international community to take a "decisive stand" but said in an interview published on Sunday that the kingdom does not want a war in the region. "The kingdom does not want a war in the region but it will not hesitate to deal with any threats to its people, its sovereignty, or its vital interests." he said.13

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"Salman's charges against Iran in various situations are a continuation of Rivadh's misquided approach and attempts to escape the problems brought on by their own policies." Iranian Foreign Ministry spokesman Abbas Mousavi said, according to state TV. "Saudi Arabia has poured out the wealth of its people and countries in the region with a lack of proper understanding of the region's variables with a militaristic, crisisbased approach."14

The attacks took place while Japanese Prime Minister Shinzo Abe was visiting Tehran with a message from Trump. Japan was a big Iranian oil importer until Trump stepped up sanctions. But Iran dismissed Trump's overture, details of which were not made public. "I do not see Trump as worthy of any message exchange, and I do not have any reply for him, now or in future." Iranian Supreme Leader Ali Khamenei said.

U.S. President Trump said he was prepared to take military action to stop Tehran from getting a nuclear bomb but left open whether he would back the use of force to protect Gulf oil supplies that Washington fears may be under threat by Iran. In

an interview with Time magazine, Trump said tanker attacks had only a "very minor" impact so far. Asked if he would consider military action to prevent Iran from obtaining nuclear weapons or to ensure the free flow of oil through the Gulf, Trump said: "I would certainly go over nuclear weapons and I would keep the other a question mark." 15

Regional analysts said Iran could have carried out the attacks in a bid to gain negotiating leverage. "There is always the possibility that somebody is trying to blame the Iranians." said Jon Alterman of Washington's Center for Strategic and International Studies. "But there is the greater likelihood that this represents an effort to bolster Iranian diplomacy by creating a perceived international urgency to have the United States and Iran talk."

Turkey, on the other hand. condemned the attacks. "We are concerned that commercial ships in the Gulf region have been targeted for second time in the last one month." the Turkish Foreign Ministry said in a statement. "We attach importance to the maintenance of the safety of navigation in the Gulf region, which has a strategic location in terms of international maritime transport." the statement added.¹⁶

¹² Anadolu Agency, (June 18, 2019) SOCAR Turkey finalizes acquisition of EWE Turkey.

¹³ EWE AG (May 30, 2019) EWE and SOCAR will conclude sale of Turkish companies on 17 June.

¹⁴ SOCAR Turkey, (January 31, 2019) SOCAR to supply natural gas to Kayseri and Bursa.

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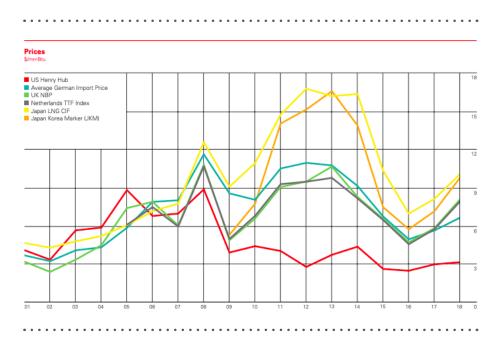
GLOBAL NATURAL GAS CONSUMPTION ROSE BY 5.3% LAST YEAR

Natural gas consumption rose by 195 billion cubic meters (bcm), or 5.3%, one of the fastest rates of growth since 1984, according to BP's recently released 68th edition of BP's Statistical Review of World Energy 2019 report.¹⁷ Growth in gas consumption was driven mainly by the US (78 bcm), supported by China (43 bcm), Russia (23 bcm) and Iran (16 bcm). Global natural gas production increased by 190 bcm, or 5.2%. Almost half of this came from the US (86 bcm), which (as with oil production) recorded the largest annual growth seen by any country in history. Russia (34 bcm), Iran (19 bcm) and Australia (17 bcm) were the next largest contributions to growth.

LNG trade rose by 72.6% over the last decade

Growth in inter-regional natural gas trade was 39 bcm or 4.3%, more than double the 10-year average, driven largely by continuing rapid expansion in liquefied natural gas (LNG). LNG supply growth came mainly from Australia (15 bcm), the US (11 bcm) and Russia (9 bcm). China accounted for around half of the increase in imports (21 bcm). LNG trade rose by 72.6% over the last decade to 431 bcm, according to BP's report.

Global LNG supplies continued their rapid expansion last year, increasing by almost 10% (37 bcm) as a number of new liquefaction plants in Australia, US and Russia were either started or ramped up. For much of



the year, the strength of Asian gas demand, led by China, was sufficient to absorb these increasing supplies. But a waning in the strength of Asian demand towards the end of the year, combined with a mini-surge in LNG exports, caused prices to fall back and the differential between Asian and European spot prices to narrow significantly.

Asian prices have fallen further in the first part of this year, towards the bottom of the price band defined by US exporters' full-cycle and operating costs. The prospect of further rapid increases in LNG supplies this year means there is a possibility of a first meaningful curtailment of some LNG supply capacity. The extent of any eventual shut-in will depend importantly on the European market, which acts as the de facto "market of last resort" for LNG supplies. Europe's gas demand contracted by a little over 2% (11 bcm) last year, but this fall in demand was more than matched (-13 bcm) by continuing declines in Europe's ageing gas fields. The small increase in European gas imports was largely met by LNG cargos diverted from Asia towards the end of the year as the Asian premium over European prices almost disappeared.

Russian pipeline exports to Europe were largely unchanged on the year, maintaining the record levels built up in recent years, although with a slight decline in their share of Europe's gas imports. A key factor determining the role that Europe will play in balancing the global LNG market over coming years will be the extent to which Russia seeks to maintain its market share.

¹⁷ BP (June 11, 2019) BP's Statistical Review of World Energy 2019 report.

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IEA DIMS 2019 OIL DEMAND GROWTH FORECAST ON GLOBAL TRADE WORRIES AND STRESSES PLENTY OF NON-OPEC SUPPLY GROWTH

The International Energy Agency (IEA) revised down 2019 demand its growth estimate by 100,000 barrels to 1.2 million barrels per day (bpd) due to global world trade concerns. "The main focus is on oil demand as economic sentiment weakens. The consequences for oil demand are becoming apparent." the Paris-based agency said in its monthly oil report.18 "The worsening trade outlook is a common theme across all regions." agency added.

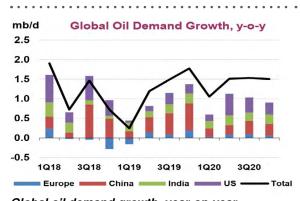
While the global growth was only 0.3 mb/d, and for 2Q19 the estimate is 1.2 mb/d, the IEA expects higher growth in 2H19 at 1.6 mb/d on government measures to mitigate the slowdown economic and robust consumption in the nondeveloped world, and it would climb to 1.4 mb/d for 2020, supported by solid non-OECD demand and petrochemicals expansion.

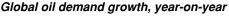
"Stimulus packages are likely to support growth in the short term. In addition, the major central banks have stopped or slowed interest rate increases, which should support growth in 2H19 and 2020," the IEA wrote. The agency underlined that the recent tanker wars in the Gulf, the U.S. sanctions on Iran and Venezuela, a possible output cut by the Organization of the Petroleum Exporting Countries (OPEC) members and ongoing clashes in Libya added only limited uncertainty to supply. According to the IEA's estimates, Iran's production decreased to 2.4 million bpd, its lowest levels since the Iran-Iraq war in 1980s, while its exports fell 480,000 bpd to 810,000 bpd.

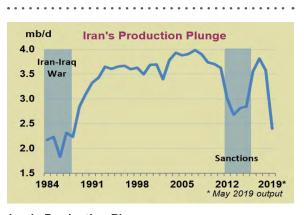
While the total supply from OPEC members fell to its lowest since 2014 as Iranian supply plunged due to sanctions and on lower Saudi and Nigerian output, the agency predicts that the U.S. will contribute 90% of this year's 1.9 mb/d increase in supply and in 2020 non-OPEC growth will be significantly higher at 2.3 mb/d with the U.S. gains supported by important contributions from Brazil, Canada, and Norway.

Global refinery throughput in May 2019 was also at its lowest level in two years on maintenance and unplanned outages. By August, refinery runs could be more than 4 mb/d higher. In 2019-20, the global refining industry will add 3.5 mb/d of new capacity.

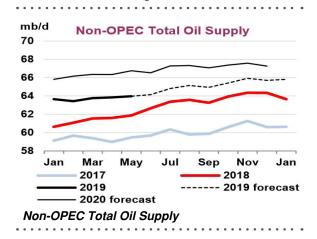
The agency also revealed its first outlook for 2020 in this latest Oil Market Report. While the IEA claims that the "volatility has returned to oil markets" due to a series of uncertainties such as Iran, Libya, Venezuela, and the Vienna Agreement, the markets will focus on demand







Iran's Production Plunge



side in the upcoming period as global economic sentiment weakens. A clear message from the IEA's first look at 2020 is that there is plenty of non-OPEC supply growth available to meet any likely level of demand, assuming no major geopolitical shock, and the OPEC countries are sitting on 3.2 mb/d of spare capacity.

¹⁸ International Energy Agency, (June 14, 2019) Oil Market Report: 14 June 2019.

U.S. SHALE OIL OUTPUT TO RISE TO RECORD 8.52 MILLION BPD

U.S. oil output from major shale regions is expected to rise by about 70,000 bpd in July to a record 8.52 million bpd, the U.S. Energy Information Administration said in its monthly drilling productivity report.¹⁹ The largest change is forecast in the Permian Basin of Texas and New Mexico, where output is expected to climb by 55,000 bpd to a fresh peak at 4.23 million bpd in July. Production in North Dakota and Montana's Bakken shale basin is also expected to climb by 11,000 bpd to a record 1.44 million bpd. Output from the nearby Niobrara basin is expected to rise by 10,000 bpd to a record high of nearly 730,000 bpd.

The rig count, an early indicator of future output, has declined over the past six months as independent exploration and production companies cut spending on new drilling as they focus more on earnings growth instead of increased output. The Drilling Productivity Report uses recent data on the total number of drilling rigs in operation along with estimates of drilling productivity and estimated changes in production from existing oil and natural gas wells to provide estimated changes in oil and natural gas production for seven key regions: Anadarko, Appalachia, Bakken, Eagle Ford, Haynesville, Niobrara, and Permian.

The EIA has revised lower its total U.S. crude oil production growth forecast. It said that output will rise 1.36 million bpd to 12.32 million bpd in 2019, 140,000 bpd less than previously forecast. That will top the current all-time high of 10.96 million bpd set in 2018. More than half the total U.S. oil rigs are in the Permian basin, the biggest U.S. shale oil play, where active units decreased by five last week to 441, the lowest since

March 2018, according to data from Baker Hughes.

The EIA said that producers drilled 1,318 oil and gas wells, the least since April 2018, and completed 1,395 in the biggest shale basins in May, leaving total drilled but uncompleted wells down 77 at 8,283, according to data going back to December 2013. That was the biggest decline in drilled but uncompleted wells since March 2018 when they fell by 107.

Separately, U.S. natural gas output was projected to increase to a record 81.4 billion cubic feet per day (bcfd) in July. That would be up 0.8 bcfd over the June forecast and mark a record 18th consecutive monthly increase. A year ago in July, output was 69.5 bcfd. The EIA projected gas output would increase in most of the big shale basins in July, except Anadarko in Oklahoma and Texas and Eagle Ford in Texas.

OPEC+ NEARING ACCORD ON LONG TERM OIL SUPPLY COORDINATION, RUSSIAN ENERGY MINISTER NOVAK SAYS



The alliance of OPEC and other producers including Russia, also known as "OPEC+", are in final talks for an agreement to cooperate on oil supplies on a long-term basis, Russian energy minister Alexander Novak said.²⁰ OPEC, Russia and other producers have since January 1 implemented a deal to cut output by 1.2 million bpd to support prices. Novak told that discussions with OPEC on moving the date of the meeting to early July from the originally-planned dates of June 25-26 were nearly finalized.

A proposal to create a formal body was abandoned earlier this year after the U.S. Congress started moves to legislate against cartels in the oil industry. But the group seems to try to make OPEC+ a permanent framework under an accord to be signed at the next meeting. Some OPEC members had been worried about the recent steep slide in prices, which have tumbled to \$62 a barrel from April's 2019 peak above \$75, due to concern over the U.S.-China trade dispute and a global economic slowdown. OPEC said, in a monthly report published on June 13²¹, that world oil demand would rise by 1.14 million barrels per day (bpd) this year, 70,000 bpd less than previously expected.

¹⁹ U.S. Energy Information Administration, (June 17, 2019) Drilling Productivity Report.

²⁰ Reuters, (June 14, 2019) OPEC, Russia nearing accord on long term oil supply coordination: Nikkei.

²¹ Organization of the Petroleum Exporting Countries, (June 13, 2019) Monthly Oil Market Report.

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SHELL SHIPS FIRST LNG CARGO FROM PRELUDE FLNG FACILITY



Shell, along with its Joint Venture Partners INPEX, KOGAS and OPIC, announced that the first shipment of LNG has sailed from Shell's Prelude Floating Liquefied Natural Gas (FLNG) facility on July 11, located at the offshore of Western Australia.²² Prelude is the last of eight LNG plants built on Australia's eastern and northwestern coasts in a \$200 billion LNG construction boom over the past decade.²³ Its first cargo had been targeted for 2018, but was delayed by a string of teething problems at the world's biggest floating vessel. The 490-metre long (1,600 ft) ship is longer than four soccer fields and six times bigger than the world's largest aircraft carriers. Shell declined to comment on the cost of Prelude. but consultancy Wood Mackenzie estimates it at around \$17 billion.

Maarten Wetselaar, Integrated Gas and New Energies Director said:

"Today's first shipment of LNG departed from Prelude FLNG, safely. Everyone involved should be very proud of the work taken to reach this important milestone. Prelude forms an integral part of our global portfolio and plays an important role in meeting the growing demand for more and cleaner energy for our customers around the world." Zoe Yujnovich, Chairman Shell Australia said: "Prelude FLNG combines human endeavor and ingenuity from across the globe and here in Australia. We are proud to work with our local communities, suppliers and partners to ensure its safe, reliable operations into the future."

According to International Gas Union's (IGU) 2019 World LNG Report²⁴, Global liquefaction capacity remains in the extended phase of build-out that began in 2016, driven largely by capacity additions in Australia, the United States, and Russia.

Between January 2018 and February 2019, 36.2 million tonnes per annum (MTPA) of liquefaction capacity was added, though 5.6 MTPA was assumed to be decommissioned. In an engineering first, the first project utilizing a floating liquefaction conversion, Kribi FLNG in Cameroon, was brought online.

The market where the most liquefaction capacity was added during 2018 was Russia, with 11 MTPA of capacity reaching commercial operations across Yamal LNG T1-2, while Yamal LNG T3 reached commercial operations in February 2019. After Russia, the most capacity was added in Australia, where two trains at Wheatstone LNG reached commercial operations in 2018.

²² Shell (June 11, 2019) First LNG Cargo shipped from Prelude FLNG.

²³ Reuters (June 11, 2019) Shell ships long-awaited first LNG cargo from Australia's Prelude.

²⁴ IGU, 2019 World LNG Report

AFTER EVACUATED EXXON STAFF'S RETURN, WEST QURNA EXONMObil 1 OILFIELD'S PRODUCTION INCREASED TO 465,000 BPD

Production at Iraq's giant West Qurna 1 oilfield has reached 465,000 barrels per day (bpd) after the completion of two new crude processing facilities and five new oil storage tanks. The new facilities would help ExxonMobil to boost production at the field to progressively reach 490,000 bpd. The field, developed by ExxonMobil, was previously producing about 440,000 bpd.

ExxonMobil evacuated all of its foreign staff from the field to Dubai on May 18. The move came three days after the U.S. pulled non-emergency staff from its embassy in Baghdad and consulategeneral in Erbil over increasing tension between Washington and Tehran. The staff were evacuated to Dubai or to its main camp in Basra.

Following the evacuation, Iraqi Oil Minister Thamer Ghadhban claimed the decision had nothing to do with security or threats but was motivated by political reasons. "The withdrawal of multiple employees -despite their small number- temporarily has nothing to do with the security situation or threats in the oilfields in of southern Iraq, but it's for political reasons." Ghadhban said in a statement.²⁵

ExxonMobil progresses growth plans and efforts to advance lower emissions technologies

ExxonMobil is progressing growth plans to substantially increase earnings and cash flow potential while researching technology breakthroughs to reduce emissions, Chairman and CEO Darren Woods told shareholders during the company's annual meeting in May 29, 2019.

"We are committed to sharing the company's success with our shareholders," said Woods. "Higher earnings and increased cash flow from our investments are a good means to accomplish this. We are equally committed to helping society reduce global emissions while supporting growth and prosperity for communities around the word – effectively addressing the dual challenge." said Darren Woods, according to the press release on company's web site.

During the meeting, Woods highlighted progress on major upstream projects that are expected to help increase production to about 5 million oil-equivalent barrels per day by 2025.

Woods highlighted ExxonMobil's continuing efforts to address society's dual challenge of providing affordable energy necessary for economic growth while reducing environmental impacts.

"The world needs additional solutions," he said. "That's where we think we can add significant value – leveraging ExxonMobil's experience in the global energy system and our strong foundation in research and development."

²⁵ Reuters, (May 19, 2019) Iraq oil minister calls Exxon Mobil's evacuation of foreign staff "unacceptable".



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Dr. Mehmet Doğan Üçok E-mail: mdoganucok@sabanciuniv.edu IICEC's Energy Market Newsletter is a complimentary newsletter, published on IICEC's webpage - https://iicec.sabanciuniv.edu - and distributed to its mailing list. IICEC and any IICEC Energy Market Newsletter content providers do not accept liability for commercial decisions based on the content of this report as the complimentary IICEC Energy Market Newsletter is not intended to inform commodity market speculation or to provide advice for any business transactions