

# APEC Oil and Gas Security Newsletter

## The New U.S. Presidential Order

*by Ichiro Kutani*

United States president Donald Trump, laid out a new Executive Order (EO) named “Promoting Energy Independence and Economic Growth” on 28 March. The order instructed to review unnecessary regulations hindering fossil fuel development in the U.S. in order to strengthen energy security and accelerate economic growth. It consisted of eight sections generally directing the review of climate policy such as the Clean Power Plan which aims to reduce CO2 emission in power generation, at the same time reviewing regulation restricting fossil fuel development in the country. The new order seems largely rescinding policies from previous presidency. What would be its implication, then?

If it will result to increase of oil and gas production in the U.S., the presidential order has benefited the energy security of oil and gas importing countries in the world as well as the United States. This is because the increasing production in the U.S. would ease supply-demand balance of global market, and hence would put pressure to lower commodity price. On the other hand, this might bring some concerns for oil and gas exporting country, namely; losing world’s largest oil import market, and the emergence of new competitor in LNG market. In addition, lower international oil and gas prices might urge exporting countries to restructure their economies. And as a consequence, geopolitical balance of power might change among the countries who enjoy the benefit of oil and gas import from the U.S. and other oil and gas exporting countries.

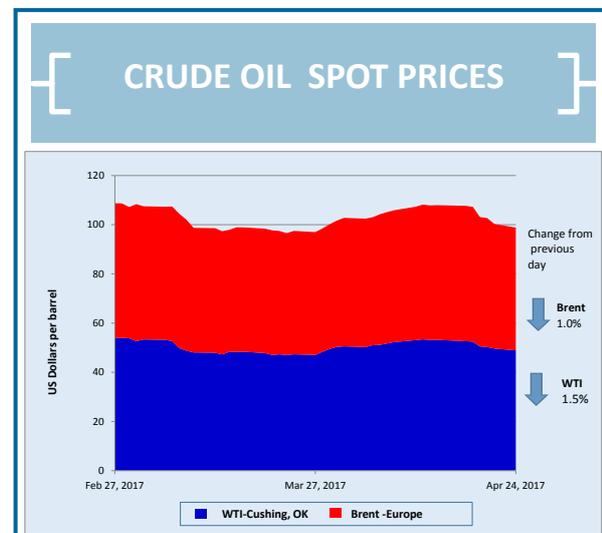
It might also be interesting to discuss another angle of the EO— the climate action. We should bear in mind that improvement of energy efficiency and increase use of renewable energy, are not only key components of climate action and the environment, but also action to enhance energy security of a country. Majority of world’s nations are (*next page*)

### In this issue

The New U.S. Presidential Order .....	1
King Salman’s Visit in Asia .....	2
Scarcity Amid Abundance: Energy Shortage Issues in Australia .....	3
Interview with Dr Michelle Michot Foss.....	4
Middle East Update .....	7
Oil and Gas Security Exercise in Australia ...	7

### Highlights

- Upcoming Event · 3rd Oil and Gas Security Network Forum
- Upcoming Event · APERC Annual Conference 2017
- Crude Oil Spot Price (WTI and Brent)
- Natural Gas Spot Price (Henry Hub)
- Photo and Photo Story



**WTI—USD 48.9 (Apr. 24)**

Source : US Energy Information Administration

“...new order seems largely rescinding policies from previous presidency.”

## The New.....

moving towards low carbon society as indicated in the Paris Agreement in COP 21 and in its swift ratification. If this is the common long-term direction of the global society, whether global warming is true or not, promotion of industrial competitiveness in low carbonisation would be a crucial policy agenda for every country. If the EO results to slow development of technologies and applications for energy efficiency and renewable energy in the U.S., then it's actually hurting rather than helping the country in the long run. We should be watching carefully then, how the EO affects the climate initiatives in the U. S.

## King Salman's Visit in Asia

by Tetsuo Morikawa

King Salman of Saudi Arabia toured Asia in March, visiting Malaysia, Indonesia, Brunei, Japan, and China. Main purposes of this tour are reportedly, seeking support for Saudi Vision 2030 that intends to reform Saudi economy as well as strengthening ties with Muslim countries in Asia.

During the king's visit, Saudi Arabia and Japan signed a number of memorandums of cooperation in economy and other areas, including cooperation for implementation of Saudi Vision 2030. Investment on refinery and petrochemical plants in Saudi Arabia by Japanese companies will also be studied. In Beijing, Saudi Arabia signed a \$65 billion economic cooperation package with China. Cooperation reportedly includes petrochemical and renewable, as well as other non-energy areas.

While the king was in Southeast Asia, Saudi Aramco formally agreed to invest two refinery projects in the region. First is the Refinery & Petrochemical Integrated Development (RAPID) project in Malaysia. Saudi Aramco signed a Share Purchase Agreement with Petronas to take part in this project that will refine 300,000 barrels of crude per day and produce 3.5 million tonnes per annum of petrochemical products. Second, in Indonesia, the king confirmed that Saudi Aramco will invest \$6 billion to upgrade Cilacap Refinery in Java to refine 400,000 barrels of crude per day. These projects are important for Saudi Aramco to secure the demand for its crude in Southeast Asia, where the demand is growing rapidly and refinery capacity is lacking. (*next page*)

### NATURAL GAS SPOT PRICES



**Henry Hub—USD 3.06 (Apr. 24)**

Source : US Energy Information Administration

## King Salman's .....

Seeking investments from Japan and China and refinery investment in Malaysia and Indonesia reflect the difficulty Saudi Arabia faces. Saudi economy needs to be less dependent on oil, but it is the oil revenue that is expected to finance the policy. Whether Saudi Vision 2030 can be realized will depend mainly on stability of both oil price and the current power structure within the royal family.

*Note: Also in the Middle East Update, issues on the power structure and the current political situation in Saudi Arabia were discussed.*

## Scarcity Amid Abundance: Energy Shortage Issues in Australia

Australia is known for its abundant conventional and unconventional gas resources, and the country is going to be the largest LNG supplier surpassing Qatar in the world toward 2020. Yet, interestingly enough, the country suffers from energy shortage problems in recent years.

First, natural gas shortage is becoming evident in southern states such as Victoria and South Australia. Because of its geographical distance from Western Australia and Queensland where majority of its natural gas resources exist, developing an extensive pipeline network to demand centers in the south does not make sufficient economic sense. Also, while there are conventional gas resources in the southern states, Victoria state government banned its development in October 2016 due to environmental concern. In order to fill in the gap between energy demand and supply, therefore, AGL Energy, an Australian gas and power supplier, announced a plan to "import" LNG from domestic and international sources. We may see then, the world's largest LNG exporter also imports LNG from other countries in the near future.

Second, power supply also has become more unstable. In September 2016, South Australia experienced a state-wide blackout. And in February 2017, the state experienced another blackout although the coverage was smaller than the September blackout. While there were unexpected weather factors behind these power outages; heavy rain and thunder storm in the September case and heatwave in the February case; the rapid penetration of intermittent renewable energy and retirement of fossil fuel power plants were regarded as other causes.

---

*Seeking investments  
.....reflect the difficulty  
Saudi Arabia faces.*

---

*by Yoshikazu Kobayashi*

These issues may be regarded as examples of conflicts between 2Es, namely environment protection and energy security. There is no doubt that environmental protection or emissions reduction is critically important agenda for energy policy. Placing higher weights on environment by having more renewable energy or controlling development of domestic gas resources, however, may sometimes risk the stability of energy supply. Needless to say, identifying the "right" balance between these 2Es is very difficult. We should bear in mind that losing the balance increases the risk of unwanted consequences to our energy supply.

---

*"...the world's largest LNG  
exporter also imports LNG  
from other country in the  
near future."*

---



**Dr Michelle Michot Foss**

*Chief Energy Economist and Program Manager, Bureau of Economic Geology's Center for Energy Economics, The University of Texas at Austin*

*Roughly 40 years of experience; advises U.S. and international energy companies; publishes and speaks widely; provides public commentary and testimony. Expertise includes global oil and gas, LNG, gas-power, coal and non-fuel minerals, energy scenarios and outlooks.*

*Develops and leads U.S. and international, corporate and government funded research. Highlights: industry sponsored research on North American oil and gas/LNG and global gas/LNG; USAID and U.S. Department of State-Energy Bureau technical assistance (Central Asia, South Asia, West Africa, Angola, Uganda, Mexico); U.S. Department of Energy (oil markets, U.S.-China Oil and Gas Industry Forum, Iraq oil and gas); World Bank (NOCs); other research and exchanges (Japan, Trinidad & Tobago, UAE, Europe). Executive instructor, UT McCombs School of Business corporate energy programs (CNOOC, Sinopec, Petrobras); co-developer of UT-ExxonMobil global upstream commercial overview program (Houston and worldwide) and co-recipient of ExxonMobil Teaching Excellence award 2013. CEE maintains an MOU with Oxford Institute for Energy Studies-Natural Gas Programme; supports the University of Ibadan (Nigeria) Center (**next page**)*

**Interview with Dr Michelle Michot Foss**

*Dr Michelle Foss is an energy adviser to both the US government and the private sector. She will be an invited discussant in the forthcoming APERC Annual Conference in May. APERC Secretariat was honored to have her for the APEC OGS Newsletter Interview with the Expert.*

**APERC— You have more than 40 years of experience as advisor to the United States and other international energy companies. In those years, have you given advice, if any, on threats of possible supply disruption in the USA or any of the member economies of APEC? If yes, can you explain briefly how did you address the incident?**

**Dr Foss—**We've only provided advice indirectly, through our USG-sponsored activities in the region. A few years ago, we helped with development of energy security metrics for the SARI-E countries. We incorporated those results into a paper we posted in which we raised many questions about whether we fully understand all of the tradeoffs associated with different energy technologies and sources. You can find that paper, including the energy security matrix (p 14), at this link. <http://www.beg.utexas.edu/energyecon/thinkcorner/Think%20Corner%20-%20Energy%20Webs.pdf>. When you look at that table, a "+" is good, a "-" is not so good, and arrows indicate direction of movement for that region. This is how we tend to think about the world and energy security. When it comes to energy security within the context of environment, we're not convinced that people are making the right choices. We believe that the impacts associated with many alternative energy technologies are not fully vetted. A concern is that the resource input requirements and challenge of managing reliability could be so extreme as to outweigh any benefit of reducing fossil fuels consumption.

**APERC—Do you observe energy companies have changed their approach to energy security issues?**

**Dr Foss—**US and Canadian companies respond to price signals and market openings. If our governments impose overt actions rules intended to affect behavior, private companies in our countries obviously have to evaluate and weigh those. The only exception to private ownership of energy companies are the Canadian Crown corporations engaged in electric power production, transmission and distribution. Like regulated utilities in our country, the Canadian Crown corps generally are subject to oversight intended (**next page**)

## Interview.....

to ensure service. The Crown corps and our rural cooperatives also bear responsibility of service to remote, rural communities. Our rural coops were created for that purpose. European companies tend to function in similar ways, but because there is a higher level of government ownership and/or control and because of EU rules, European companies are much more easily subject to government intervention out of security concerns. Outside of US, Canada, West Europe, the majority of energy companies are heavily influenced by their governments, often through outright and full ownership. Most often government influence stems from security concerns but these really vary a great deal. National oil companies (NOCs) are responsible for oil and gas supplies but are also used for economic development security (especially in countries where government treasuries are dependent upon hydrocarbon export revenues). National (NEC) and/or provincial/state electric power companies, usually kept afloat only through government financial support, are used for all manner of economic and political security imperatives. We've seen many circumstances in which large portions of export earnings by NOCs are used for direct subsidy of below cost, and politically influenced, power supply by NECs.

**APERC—Also, in your experience, how do you think energy security issues have evolved in those years?**

**Dr Foss**—I think energy security issues have shifted from geopolitical risk as the main driver to economic development imperatives, per above. It takes energy to grow economies, there is no getting around that.

**APERC—You have also conducted several researches on oil and gas, what do you think is the nature of the risks to security of supply given developments in the global oil and gas markets?**

**Dr Foss**—Oil and gas is the one arena in which I think security risks have improved! I heard a well-known geopolitical risk expert remark on the “end of geopolitics” as a high priority risk factor for oil. We have many areas of high tension around the world, and oil prices are not responsive. It has been this way for many years (I tend to view the “Arab Spring” price effects as revenue raising in attempts to ensure internal political stability as opposed to an oil price increase associated with heightened risk of external conflict). To a large degree, the situation with hydrocarbon resources reflects the tremendous advances made over the past 20 years, not just in unconventional (tight rock) locations in the US and Canada, but also in deep water and (*next page*)

## **Dr Michelle Michot Foss**

*for Petroleum, Energy Economics and Law; is a non-contributory member of the Society of International Gas Tanker and Terminal Operators; was a finalist in the World Oil Awards, 2006 and 2007; listed as one of the Top Energy and Resource Policy Think Tanks compiled by University of Pennsylvania.*

*University of Texas Service: Jackson School of Geosciences Endowment Committee (FY09-FY11; reappointed for FY17-FY19); Graduate Studies Committee, Energy and Earth Resources program (appointed FY16). Memberships: International/U.S. Association for Energy Economics (IAEE president 2003, USAEE president 2001); Association of International Petroleum Negotiators (past board member); Society of Petroleum Engineers. Recognitions: Women's Energy Network Woman of the Month (August 2015); Senior Fellow, U.S. Association for Energy Economics (2006); Key Women in Energy-Americas (2003); Scientific Council, 50th Anniversary of ENI Commemorative Encyclopedia of Hydrocarbons (2003). Current boards (disclosures): U.S. Chamber of Commerce-Energy Institute Advisory Board; Oil & Gas Journal Economic Advisory Board; Haddington Ventures LLC Advisory Board; CENTRA Technology Board of Experts; Energy Intelligence Group Advisory Board. Recent past employment: The University of Texas at Austin (since 2005); University of Houston (1991-2005); Simmons & Company International (1990-1991); Rice Center (1986-1990). Education: University of Louisiana-Lafayette (BS), Colorado School of Mines (MS), and University of Houston (Ph.D.).*

[www.beg.utexas.edu/energyecon](http://www.beg.utexas.edu/energyecon)

## Interview.....

other frontiers. The world is full of hydrocarbons – we’ve learned that lesson in very hard ways, over and over again, with sharp price collapses following every new tranche of investment. The global oil and gas players and their governments need to learn how to live with price volatility – we always invest in a higher price context and then must “exploit” in lower price environment. That’s just the cycle. I think it’s also important to begin thinking about the importance of materials security. For me, this is a bigger consideration than energy. We need hydrocarbons for all of the advanced materials we want to make – nearly all of which are carbon based. Everything that we do to restrict access to carbon based molecules entails impacts that are magnified many times over in materials. This just does not get enough attention and reflects a failure of thinking when it comes to the role of carbon in human societies.

**APERC—For the last few years, the price of oil has been fluctuating, affecting gas prices as well. As one of the key elements of oil or gas supply security is price stability, how and when do you think this cycle will break?**

**Dr Foss—**Never! As I said, investment gets made during high price signals. In a big cycle, like we experienced, a great deal of investment was expended. When we go through periods of stronger investment, new supply and capacity to deliver supply grow in large lumps – we tend to think of industries like oil and gas as ‘lumpy’ because of the size of capacity additions relative to what existed previously. I consider this last cycle, 2006-2014, to have been dominated by events rather than one driven more by supply-demand fundamentals (initially, a strong emergence by the Chinese economy accompanied by other emerging markets; later the “Arab Spring” pricing policies that set oil prices higher to meet revenue targets). The oil prices we experienced triggered a vast expansion of oil and gas storage as supply chains have grown and become more complicated and interconnected. That storage capacity contributed to falling oil prices in 2014 and is dampening, and will continue to dampen, price increases into the future. The same thing has been true in gas and LNG supply chains. One thing to

consider – gas is a more difficult resource to work with. In the US we are blessed with the best geology to accommodate large volume underground gas storage – our salt caverns along the Gulf Coast are a unique asset. Salt cavern storage is much more responsive than storage in depleted fields and much cheaper than above ground storage (typically LNG satellite facilities). Gas storage is key to balancing gas markets. I’m not sure that robust gas markets can develop without that. It used to be popular to argue that “shale gas” provided a “storage” option because producers would be able to time investment in drilling and production to market price signals. That’s not true, and it would only work in an open market setting like we have in the US and Canada anyway. We have been engaged in a historic reconfiguration of gas pipelines in the US. These changes make it possible for Appalachian gas production in the northeast to move south to the Gulf Coast. This contrasts with the long tradition of flowing gas north from the Gulf Coast and southwest. One of the most important aspects of this great reconfiguration is to enable Appalachian producers to take advantage of Gulf Coast gas storage until that supply can move to markets and end users. Similar geology just does not exist in the Appalachian region and other options are too expensive.

## Upcoming Event •

### APERC Annual Conference 2017

The APERC Annual Conference provides an opportunity for energy experts and policy makers from APEC economies to gather together to discuss key issues influencing energy markets, as well as to share findings from recent research developed by leading energy research institutions. This year’s conference will focus on gathering input for developing the 7th edition of the APEC Energy Demand and Supply Outlook and strengthening regional cooperation in the APEC Region.

The conference is scheduled on 16-17 May and Dr Foss is invited as one of the discussants in *Fossil Fuels and Energy Security Session*.

## Middle East Update • Political Stability of Saudi Arabia

by Shigeto Kondo

The Kingdom of Saudi Arabia is one of the most important oil exporters for Asian and APEC economies, and accordingly, steady supply of oil of these countries is secured by Saudi Arabia. Although there were some concerns over the political stability raised last year, the government seems to and will seem to enjoy its stability now and at least for quite some time in the future.

One of the challenges that the Saudi monarchy faces is the possible power struggle within the royal family that emerged after King Salman assumed the throne in 2015. One self-claimed royal family member circulated letters within the royal family, criticizing King Salman and his government, and calling for his replacement with other princes. The author, however, was not able to attract sympathies from the other royals.

The relationship between Crown Prince Mohammad bin Nayef and Deputy Crown Prince Muhammad bin Salman is another point of concern on political stability. It is widely believed that Prince Muhammad bin Salman might have

gained overwhelming power over Crown Prince Mohammad bin Nayef being the favored son of the King. But Prince Muhammad bin Salman does not exceed his authority, and instead, respects Crown Prince Mohammad bin Nayef's current chairmanship at the Council of Political and Security Affairs, one of the two important decision-making bodies of the country.

The public order of Eastern Province, a hotbed of dissent due mostly by its Shiite inhabitants, remains relatively stable, although protests may happen but in a small scale. For example, following the execution of Saudi Shiite cleric Nimr al-Nimr in January 2016, protestors gathered in a rally, however, the scale of the protest was insufficient and had little impact on Saudi domestic politics.

All in all, the current political environment of Saudi Arabia is stable and causes no threat to the oil supply so far. Nevertheless, we still need to keep monitoring its political development carefully, since the political climate of the Kingdom could change quickly.

---

## Oil and Gas Security Exercise in Australia

by Michael O. Sinocruz

As a continuing commitment of the Asia Pacific Energy Research Centre (APERC) to the APEC Energy Ministers' directive, the Centre conducted the 4th Oil and Gas Security Exercise (OGSE), which was hosted by the Australian government in Melbourne on 29-31 March 2017. The activity was a regional capacity building participated in by Australia, Indonesia, the Philippines and Thailand. Seven experts were also invited composed of the International Energy Agency (IEA), the ASEAN Centre for Energy (ACE), the Economic Research Institute for ASEAN and East Asia (ERIA), the Department of Environment and Energy of Australia, the Ministry of Economy, Trade and Industry (METI) of Japan, the Department of Energy of the United States (US-DOE) and the Institute of Energy Economics, Japan (IEEJ).

In the opening statement, Mr. Takato Ojimi, President of APERC, emphasized that he envisions the economies conducting their own exercises to test how the emergency preparedness system is able to handle and mitigate the impacts of any magnitude of supply disruptions. He also underscored the mutual desire of the APEC economies to foster collaboration and partnership, as an APEC region, to confront any energy security issues in a collective manner.

Australia made a presentation on its energy policy framework with primary focus on the following priorities: (a) to have a secure, reliable and affordable energy system; and (b) to keep commitments on emission reductions under COP21 as the economy transitions to low-carbon and low emission environment. Its energy policy is a shared responsibility of the Commonwealth and states/territories coordinated through the Council of Australian (*next page*)

## Oil and Gas Security.....

Governments (COAG) – Energy Council. Diversification of supply sources is one of the most important elements in supply security and a longer term policy response to energy security in Australia.

The exercise covered supply emergency scenarios for oil and gas. On oil emergency scenario, one of the most important oil transit chokepoints was closed thus affecting around 26% of global crude oil exports. From this scenario, the supply shortfall varies from among the participating economies, ranging from 20% to 40% supply shortage. The amount of shortfall for participating economies depends on the degree of dependency on crude oil imports coming the affected transit route, coupled with the supply cut from their oil product exporters, many of whom may be highly reliant on crude oil imports from the same transit route. For gas scenario, different supply disruption scenarios were designed for each participating economy caused by man-made and/or natural disasters. From these oil and gas scenarios, the participating economies presented their emergency policies and plans in dealing with the supply disruptions. One of the key questions on the scenarios is the importance of regional cooperation in addressing the supply emergencies.



### Editorial Board

Dr Kazutomo Irie	Mr Yoshikazu Kobayashi
Mr Ichiro Kutani	Mr Michael Sinocruz
Dr Tetsuo Morikawa	Ms Sachi Sakanashi

Editorial Support Staff—Ms Yuko Tanaka

Ms Elvira Torres Gelindon  
Editor-in-Chief

### Asia Pacific Energy Research Centre

The Asia Pacific Energy Research Centre (APERC) was established in July 1996 in Tokyo following the directive of APEC Economic Leaders in the Osaka Action

Agenda. The primary objective of APERC is to conduct researches to foster understanding among APEC members of regional energy outlook, market developments and policy.



### Regional Capacity Building in Australia

*The host economy together with its stakeholders and experts from IEA, ACE, ERIA, METI-Japan, the US-DOE, IEEJ and APERC. Participants also include representatives from Indonesia, the Philippines and Thailand.*

### Upcoming Event •

#### 3<sup>rd</sup> Oil and Gas Security Network Forum in Irkutsk, Russia

Preparations are underway for the “3<sup>rd</sup> APEC Oil and Gas Security Network Forum (OGSN)” which will be held in Irkutsk, Russia. The Forum is scheduled to be held on 29-30 June 2017.

As in the previous, the forum will serve as a venue to form a network of working level officials in the APEC economies and experts from international/regional organizations.

The OGS Studies which APERC completed in the previous year as well as the result of the recently held OGSE in Australia, are expected to be presented in the 3<sup>rd</sup> OGSN Forum.

**Fax** (+81) 3-5144-8555  
**Tel** (+81) 3-5144-8551  
**E-mail** [master@aperc.ieej.or.jp](mailto:master@aperc.ieej.or.jp)