

APEC Oil and Gas Security Newsletter

Expected Realisation of Canadian LNG

by *Yoshikazu Kobayashi*

An LNG project at Canadian west coast made another step forward. LNG Canada, a joint venture between Shell, PetroChina, Kogas, and Mitsubishi Corporation, announced that it selected the joint venture of JGC and Fluor as the EPC (Engineering, Procurement, and Construction) contractor for its liquefaction project whose planned capacity is 13 million tons per annum. The planned capacity is located in Kitimat, a district on the Pacific coast of British Columbia, Canada. The announced EPC contract is conditional on LNG Canada’s final investment decision (FID) of the project, which has not been made yet.

The realization of the Canadian LNG projects brings several gas supply security benefits to the Asia Pacific region. First and foremost is its supply source diversification effect. If the project of LNG Canada starts operation, it will become the second liquefaction project along the west coast of North America after Alaska’s Kenai project. But since the Alaska LNG currently ceased its operation, LNG Canada will reinvigorate the position of North America’s west coast as a major LNG supply base to the Asia Pacific. If the price of Canadian LNG reflects the North American natural gas price benchmark, it will contribute to the diversification of pricing benchmark in the Asia Pacific

The second benefit is LNG Canada’s relative geographical proximity to Northeast Asian market, where the demand has been rapidly growing. Sailing days to Tokyo for instance, is only a little more than one week, compared to two weeks from Qatar or three weeks from Gulf of Mexico of the US. LNG supply source within a short distance plays a very important role in case of unexpected supply disruption.

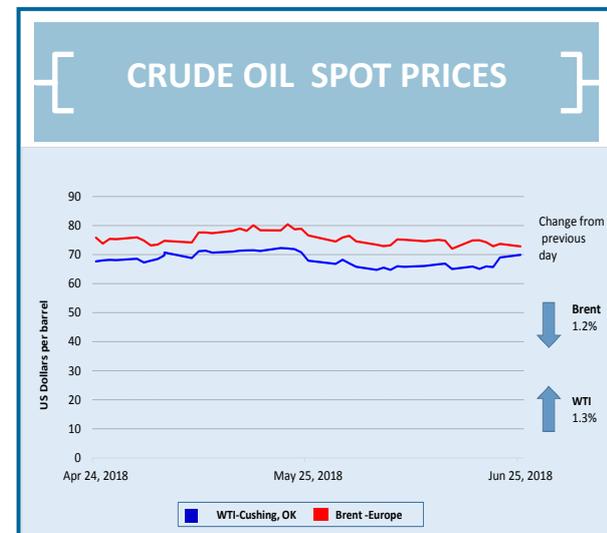
Third, is the ampleness of natural gas resources in Canada. Shale revolution has significantly expanded Canadian shale gas (*next page*)

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- Special Announcement
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- Crude Oil Spot Price (WTI and Brent)
- Natural Gas Spot Price (Henry Hub)



WTI—USD 69.91 (June 25)

Source : US Energy Information Administration

“If one liquefaction project starts operation and proves to be commercially viable, it will induce investments for other liquefaction projects..... ”

Expected Realisation.....

potential, too. The economy’s natural gas proven reserves in fact, increased by more than 30% from 2006 to 2016 according to the BP Statistical Review of World Energy. If one liquefaction project starts operation and proves to be commercially viable, it will induce investments for other liquefaction projects backed by abundant natural gas resources.

The project of LNG Canada has not reached FID yet, and all of the above benefits are still potential ones. The world LNG demand however, showed unexpected increase in 2017 and the recent oil price recovery may improve oil and gas industry’s balance sheet. And thus, might facilitate the project’s investment decision. It is strongly believe then, that Canadian LNG will play a key role in the development of Asian LNG market and natural gas supply security in the near future.

From “Statoil” to “Equinor”

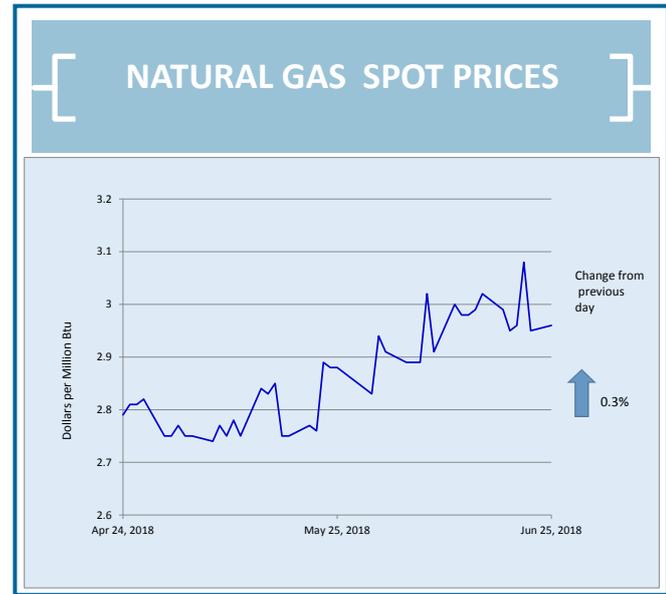
by Ichiro Kutani

In May 2018, Statoil, one of the classics in oil and gas society has “disappeared” from the market. Statoil was a well-known name in oil and gas upstream business operation, based in Norway. The company decided to change their name from “Statoil” to “Equinor. According to their explanation, “Equi” is the Latin root of words like equal, equality and equilibrium and “Nor” represent their identity in Nordic region. The purpose of name change is to reflect their strategy to evolve from oil and gas company to broad energy company. Currently most of their revenue comes from oil and gas business around the world. But they anticipate great change of business environment entailed in world’s climate actions. They are now operating several off-shore wind parks and carbon capture and storage business. This move has been more than a name change. It was intent on growing another business segment—clean energy—in the future.

Paradigm shifts in businesses, from oil and gas to clean energy have been inevitable, especially when aiming to address climate change, and seeing that renewable energy is gradually becoming competitive against fossil energy. More money is more likely to flow into clean energy rather than oil and gas in the future. It would be natural for a company, to move to a market where they can expect larger business opportunity and thereby profit. *(next page)*

“...supply security should always be a priority.

Amid paradigm shifts in businesses, nothing has changed on the importance of oil and gas security, and low carbon society cannot be established overnight. Until such time that a country becomes free from oil and gas import risk, its supply security should always be a priority. Although the name change from “Statoil” to “Equinor” alongside its business model, is an epoch making, the fact remains that revenue from clean business becoming dominant, would take a decade. At the same time though, this case signals a precedent of fundamental change in energy business. We might need to think through how oil and gas supply can be more secure in the future under changing reality.



Oil Market Updates

by Yasuaki Kawakami

On June 22nd, the OPEC regular meeting was held in Vienna and the organization agreed on a moderate increase in oil production from July 2018. The similar decision was made next day with 10 non-OPEC countries participating in the joint production cut. The reduction target set in the end of 2016 was about 1.2 mb/d for OPEC countries and 0.6 mb/d for non-OPEC participants, while the conformity level in May 2018 substantially surpassed the target: 152% for OPEC and 147% for the combined OPEC and non-OPEC. Although a concrete figure for production growth is not revealed, the agreement expects to lower the conformity level to 100%. Saudi Arabia energy minister Khalid al-Falih stated that an additional 1mb/d would come into the market.

The decision is driven by the successive rise of oil prices from April this year. On the back of several factors including the realization of rebalancing supply and demand and heightened geopolitical tensions, Brent surpassed an intraday high of \$80/b on May 22nd for the first time since November 2014. Prior to the OPEC meeting, on May 24th, Russian energy minister and the Saudi’s counterpart held talks in St Petersburg, discussing possibility of returning the output to the October 2016 level. In this sense, easing the production cut itself seems to bring no surprise to the market. Rather, Brent on June 22nd settled up by \$2.5/bbl to \$75.55/bbl because market participants doubted the increase would not be adequate.

Henry Hub—USD 2.96 (June 25)

Source : US Energy Information Administration

With regard to the future demand and supply balance, the role of the US production is obviously essential. The US oil production as of May reached 14.9 mb/d, up by 1.8 mb/d from 2017 average. Shale oil production grew steadily and it accounted for about 54% of the total crude oil production in May, up from 48% year on year. The Energy Information Administration has made a bullish projection for the near-future US oil production: 15.1 mb/d for 2018 and 16.5 mb/d for 2019. Given the decided curb of OPEC-led production cut and the strong US output, the market could be oversupplied again in 2019.

“...several factors including the realization of rebalancing supply and demand and heightened geopolitical tensions...”



Mr Takato Ojimi

Mr. Takato OJIMI was the President of Asia Pacific Energy Research Centre (APERC), which was established in 1996 as a body to conduct researches to foster understanding among APEC members of regional energy outlook and energy policies.

Since he joined the Ministry of International Trade and Industry in 1973, he served various posts involved in energy policy formulation at the Agency of Natural Resources and Energy.

As Director for Energy Policy Research and Planning Division, he was involved in energy policy planning as well as conducting METI Energy Demand /Supply Outlook.

He also served as Director for Petroleum Stockpiling Policy Division to work for the construction of stockpiling bases to meet the IEA requirement of 90 days oil reserves in Japan.

He has had a lot of international working experiences in such organisations as OECD, Trade Directorate and as a diplomat at the Japanese Delegation to the OECD in Paris.

He also served as APEC Senior Official representing Japan.

He graduated from Keio University (B.A.) and from Cambridge University, UK. (M.A.)

Interview with Mr Takato Ojimi

In this issue of the Newsletter, we are pleased to give the OGS Newsletter readers, interview with Mr Takato Ojimi, former APERC President. As such, he has been involved in various happenings in the international arena. It would be interesting to learn his experiences, most especially on energy security.

APERC—You have just completed your term as APERC President last 19th June. In your job as President of APERC, what were the major research works or topics that have been conducted under your purview, which APEC members can well benefit from?

First of all, I would like to convey my thanks to the EWG members and OGS members and all other colleagues in APEC, especially those who are in charge of oil and gas security.

In 2012 spring I took up my duty as APERC President. For the last six years, oil and gas security has been kept as a top priority among the APEC energy agenda we've been looking into. I remember when I attended my first Energy Ministers Meeting (EMM10) in St. Petersburg, Russia, oil and gas security was discussed and the launch of Emergency Exercise with the assistance of APERC was agreed by the ministers. I can say in a way, that the result of that meeting was maybe my "destiny" when I was assigned as President of APERC; that is, to address oil and gas security issues and face the challenges that go with the ministers' instructions.

As a background, the start of Oil and Gas Security Exercise (OGSE), in the context of increase of demand on LNG and fossil fuels on the demand side, and on the supply side, the US started to produce shale oil and gas, hence the fossil fuel demand and supply situation has drastically changed. And also, as always, the geopolitical instability in the Middle East has been increasing, so the oil and gas security issue came up as significant and crucial agenda for APEC energy discussion. In the history of EWG, around 2000, there were already heated discussions on energy security and resultant adoption of the RTIS (Real Time Information Sharing). After ten years again, we came up with the sheer necessity to seriously address oil and gas security issues due to the new global energy environment.

Then in 2013, APERC pursued with the conduct of OGSE in Thailand with the Joint South East Asia Exercise and the Indonesia Oil and Gas Security Exercise. After the completion of **(next page)**

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the OGSE project, it was upgraded into OGS (Oil and Gas Security Initiative) with the addition of two pillars namely, OGS Network (Forum and Newsletter) and OGS Studies, which we have successfully conducting up to today.

The comprehensive OGS initiative has become matured, we were looking for a proper forum or expert group to take up discussion on oil and gas security. Then we learned that EGCFE (APEC Expert Group on Clean Fossil Energy) has been dealing only issues on coal. So we decided to revitalise EGCFE as a place to discuss oil and gas issues as well as security issues and now the new format is making a good progress.

So in responding to your first question, as a President, I think security discussion was one of the main issues or topics of research done under my purview altogether with other APERC duty to deal with the Outlook, Data Network, Training, various Peer Reviews, Low Carbon Model Town (LCMT) projects, and so on. So I cannot forget the OGS initiative and security issues as the memorable subject that I've pursued for the last six years.

APERC—During also that time in conducting OGS/OGSE projects, you have a firsthand knowledge on the responses to oil and gas security exercises conducted in several economies in APEC. Some of the ASEAN/APEC members may have mentioned APSA (ASEAN Petroleum Security Agreement), do you think an APSA-type arrangement can be applicable to APEC region as a whole?

I entered Japanese Ministry of International Trade and Industry (MITI, Currently METI) in 1973 when the first oil crisis broke up, just 45 years ago. At that time, OAPEC (Organization of Arab Petroleum Exporting Countries) decided to cut by 25% their oil exports. That time, I was young when I was asked to analyse the impact of the oil export restriction then as well as how to cope with this kind of situation, so security issue was the first serious challenge for me to address as a government official. According to the analysis, some areas of Japan may suffer from the insufficient supply of kerosene for winter and

some people may face living difficulty due to the cold weather. So I encountered for the first time in my life the serious challenges created by energy shortage on security and peaceful life at that time.

I was then involved in establishing IEA (International Energy Agency). As everybody knows, IEA was established to protect oil consuming countries against oil supply disruption as a consumers' cartel in a sense, and to prepare for geopolitical instability in oil supply. We believe that stockpiling was the most effective, important and crucial element of IEA agreement. In case of disruption, member economies have an obligation to lend and borrow or exchange of their stockpiled reserves, 90 days was agreed as the condition by all members. Actually, there has been no serious disruption since 1973 and drawdowns have occurred only when the oil prices skyrocketed and natural disaster.

After its establishment, the IEA share of world oil consumption has been decreasing due to the increasing oil demand of developing countries, especially in the APEC region. Therefore, in order to cope with such kind of disruption risks, I think APEC should, seriously, address this kind of situation. From that point of view, I think APSA is a very important idea especially, for the ASEAN people to protect themselves, learning from IEA experience. However, APSA itself has some aspects to improve in its implementation or operationalisation. As APEC is not a solid, rigid international organisation but simply a cooperation relation among member economies, APEC does not fit to make binding commitments like IEA oil stockpiled targets or others.

However, by introducing or including APSA-type idea, we shall have a soft agreement among members not only the stockpiling or withdrawing but also some elements which strengthen the energy security cooperation. I would like to enumerate a few: 1) resilient infrastructure construction; 2) free energy trade and investment; 3) security exercise; 4) volunteer stockpiling commitment or an APSA type of exchange as well as ticketing and bilateral agreement to prepare for emergency situation (***next page***)

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and also 5) back up by electricity grid and pipeline might be very useful. So not only an APSA type of exchange to address emergency on oil but we should have wider notion of security cooperation should be considered in APEC, of which coverage is wider than IEA but more flexible and cooperative way of addressing issues. That's my rather personal idea which I was not able to attain during my term, but I hope in the future, further we should deepen the discussion about APEC energy security framework, so we can learn a lot from APSA as well, so that's my answer to the 2nd question.

APERC—You are well known to the APEC fora as the APERC President. But maybe, not too many knows you're involvement in Japan's oil supply security during your post as Director for Petroleum Stockpiling Policy Division in METI. Can you describe briefly what was your role then?

When I was a Director for Oil Stockpile in METI, at the end of 1980s, we were building up our oil reserves aiming at 90 days by the government. We established 10 oil stockpiling companies which we constructed 10 stockpiling sites: two underground sites and two floating on the sea and the rest of six on the ground. We experimented various type of stockpiling because Japan does not have any natural capacity like salt dome.

In 2015, we had the Oil and Gas Security Forum in Kitakyushu and we had a site visit at Shirashima Floating stockpiling site. Actually, when I was the Director that time, that site was still under construction. Due to very strong wind during winter and also the tsunami type high wave, the whole site especially the banks surrounding the boat was totally destroyed. Fortunately, we have not yet introduced crude oil that time so we did not have any oil spillage nor contaminate the sea. But if it happened after introducing oil we could have created a major disaster of Japan Sea, because it would have involved a huge amount of oil. After it happened, there was a lot of dispute, discussions, pros and cons to stop the construction but I push to continue with the project and I was able to convince the Diet to continue

building the site. I did not get the chance to see its completion though while I was the Director. Later, 25 years after, I got the chance to see, on a different capacity, the beautiful, wonderful stockpiling site, as a visitor. I realised then that I made the good decision that I did not discontinue that project. The result of the project actually, I have not seen up to the point that we visited the site and I was surprisingly happy to see the completed site, a successful floating oil stockpiling site.

APERC—During that time also, were there cases of threats to oil or gas supply that have confronted APEC in general or Japan in particular? Can you explain what were the causes of such threats? How did you address them?

Around that time while I was the Director, always the geopolitical instability in Middle East was the major issue. But the threats change slightly from disruption of oil export but rather on higher oil price, because of the very high economic growths in many new developing economies in APEC region and Asia due to strong demand increase and also stable supply, there was very tight demand and supply situation, oil prices went up very high, it gave damage to almost all economies. That time oil producing countries could have huge revenues of money, inflowing money to the region but that imbalance of money allocation would also stop their export because purchasing power decline on the demand side. So the producing side also cannot sell much oil, as high price does not necessarily means revenues, good for producer and bad for consumers, but rather the world would suffer from this kind of imbalance, demand and supply situation, that was the threats I remember. Of course oil price is said to be determined by market forces but the insufficient investment or drastic increase of demand would create imbalance in this situation. So energy plus finance is an issue to address. If I could pick up any threats since that time, it's not the geopolitical supply disruption but rather instability of price, accidents on oil related facilities such as refinery, pipe line and port plants which create some damage (*next page*)

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to the economies. Other increasing threats are for example the attacks on cyber security system and natural disasters. It's not actually security but the final element was the consideration towards CO₂ and climate issues. At that time we have not fully discussed renewables yet, but now the world pay more attention to the climate issue. I think fossil fuels, especially oil, coal have become the targets, how to reduce the consumption from the point of reducing the import dependency of oil. Those were the issues on threats that I can recall when I was in-charge of Oil Section of METI.

APERC—Finally on the lighter side—now that you are retired—what are you looking forward to be doing outside of being a public servant/international arena?

Looking back on my life, as a government official and working on international issues, I was involved happily on energy policy, industrial policy and trade policy including WTO negotiations and also I had a chance to study abroad and I had the chance to be stationed, twice, outside Japan.

Those experiences, working and serving as a government official, my life, to my understanding, I have lived happily and successfully, when I consider I'm retiring. I have spent 45 years, after graduating university, I spent most of my time considering the happiness of the people of Japan and the world. But nobody can continue forever. So, while I am still healthy and have the motivation, I would like to decide the next stage of my life that is, to spend my happy time with my family and spend a very relatively calm and pleasant life, I think I have the right and obligation to choose that option. I think young people are growing and I don't have to worry about the future of the current works of APERC and also APEC. I wish that young people would also succeed in working for APERC and the world for the prosperity of human being.

Towards the end, I would like to cite a Chinese saying *Seiko udoku*(晴耕雨読). It means "plowing the field on fine days and reading books on wet days". That means "when weather is fine I would cultivate my garden and when it

rains I read books and enjoy listening to the music". So that's the kind of life I am thinking of to pursue in the future.

And finally, again I would like to say great thanks to all the readers of this Newsletter. I was very happy to have worked with you as the President of APERC. I would like to relay this message to all my friends and colleagues.

"...always the geopolitical instability in Middle East was the major issue."

Photo and Photo Story



Mr Ojimi (right) together with Mr Keisuke Sadamori (left), Director, Energy Markets and Security Directorate of IEA and Mr Osamu Kawaguchi (middle), Executive VP of Shirashima National Oil Stockpiling Base, during the site visit in April 2015 on the margins of 1st APEC Oil and Gas Security Network Forum held in Kitakyushu, Japan.

This was Mr Ojimi's 1st visit on the floating oil stockpile base after he was involved in the project development in the late 1980s.

Photo courtesy of OGSJ Secretariat

Middle East Update ●

The Resilient Qatar

by Makoto Nakamura

A year has passed since the severing of diplomatic and economic ties with Qatar by the “Quartet,” a group of Middle East countries led by Saudi Arabia and the United Arab Emirates, occurred. While alleging that Qatar is supporting terrorism, the said countries have closed all ports and airspace in front of the gas-rich state. For Qatar, this allegation was far from reality, and they have consistently resisted the 13-point demand and six principles imposed on them by the Quartet.

Since then, Qatar has secured all the indispensables to overcome this blockade, such as provisions for food stock and raw materials, logistics and finance. Qatar has succeeded in strengthening its domestic food production and boosting economic relations with “friendly” countries such as Iran, Turkey and Oman. These countries have now become substitute conduits for the Qataris to receive food and materials, which they used to obtain through their immediate neighbours, namely Saudi Arabia and UAE. And, as the largest exporter of liquefied natural gas (LNG) in the world,

Qatar has amassed significant amount of foreign exchange reserves. By tapping into these resources, Qatar has endured pressure from the Quartet’s deposit-withdrawals and successfully maintained the liquidity of Qatari banks.

Current crude oil prices are also providing tail wind. Contrary to the foreseen oil price of US\$ 45/bbl for the FY2018 national budget, the medium market price of WTI Crude for the current year stands above this level, and the spot price has surpassed US\$70 in May 2018. Qatar is no way in a hurry to seek fresh loans. Under this situation, in March 2018, the International Monetary Fund completed its 2018 Article IV Review and issued a statement that the direct economic and financial impact of the diplomatic rift suffered by Qatar is “fading.”

Even under crisis, Qatar has successfully kept exporting crude oil and LNG. And fortunately, this crisis has exerted unexpectedly little influence on the stable oil and gas supply to world economies, including Asia Pacific. Resilient Qatar does not seem ready in backing down from this race for its survival. However, there is no clear sign as to, when the crisis will come to an end, and how it will affect us.

Cybersecurity Challenges on Energy Supply

by Muhamad Izham Abd. Shukor

The International Telecommunication Union (ITU), a United Nations specialized agency for information and communication technologies, publishes the Global Cybersecurity Index (GCI) every year since 2014. The index is a survey that measures the commitment of ITU members to cybersecurity in order to raise awareness (ITU, 2017). In the GCI 2017 report, five out of top ten economies that are ranked as the most committed in cyber preparedness are APEC members—Singapore; Malaysia; United States; Australia and Canada.

Although some economies are considered as highly prepared to face cyberthreat, cybersecurity always poses a constant challenge to energy supply system. For instance, back in 2012, the Congressional Research Service (CRS) reported

that there has been ongoing cyber intrusions among U.S. natural gas pipeline operators, in particular, the infiltration of supervisory control and data acquisition (SCADA) systems. A successful attack would be able to disrupt pipeline service and cause spills, explosions, or fires—all from remote locations (CRS, 2012).

In the wake of this threat, the US Department of Energy (DOE) released its Multiyear Plan for Energy Sector Cybersecurity, entailing three priority goals to reduce cyber risks in the U.S. energy sector. These goals are - Strengthen Energy Sector Cybersecurity Preparedness, Coordinate Cyber Incident Response and Recovery, and Accelerate Game-Changing RD&D of Resilient energy delivery system (EDS) (DOE, 2018).

As the front runner in addressing cyberthreats, Singapore has been strengthening the resiliency of facing this challenge, riven by five principles as follows: **(next page)**

Cybersecurity Challenges...

1) Enhancing preparedness against cyberthreats; 2) Strengthening international cooperation; 3) Developing a professional cybersecurity workforce; 4) Research and development and 5) Raising cybersecurity awareness.

Many institutions had conducted studies to find the cost of cybercrime. One of the studies conducted by Accenture (a consulting company) and Ponemon Institute (the institute conducts independent research on privacy, data protection and information security policy) concluded that utilities and energy sector have the second highest cost of cybercrime after financial service sector, which means that these sectors have been constantly being attacked by hackers due to high cost to fight cybercrime (Accenture, 2017).

Based on reports, cases and analysis done by many experts, it can be concluded that to stay ahead of the cyber criminals and to ensure cyber threat can always be kept at bay, a few important steps need to be taken in the organization level which are: 1) Increasing the awareness on cyberthreat and cybersecurity issues; 2) Building cybersecurity on a strong system foundation; 3) Changing the culture of treating cybersecurity issues the same way as traditional security issues (physical threat); 4) Undertaking extreme pressure testing and conducting a regular exercise to test the system resiliency; 5) Investing in breakthrough innovation and keeping the hardware and software up to date.

Special Announcement ●

New APERC President and OGS Project Manager

In view of Mr Takato Ojimi's retirement effective 20 June 2018, **Dr Kazutomo Irie**, APERC's former General Manager and OGS Project Manager, succeeds Mr Ojimi as APERC President.

In line with this, a new General Manager has been appointed. **Mr Munehisa Yamashiro**, who assumed office in May 2018 takes the post and concurrently Vice President of APERC. He is also assigned to be in charge of OGS as the Project Manager.

APERC OGS Secretariat highly appreciates your continued support on these changes.



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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.

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