

## **Japan-GCC States Interdependence through\* Energy Security and Investment**

**Dr. Tsutomu Toichi**  
**Senior Managing Director & CKO**

It is a great honor for me to have this opportunity to make a presentation on the subject of “Japan-GCC States Interdependence through Energy Security and Investment”. First of all, I would like to express my deep appreciation to the Gulf Research Center, the organizer of this very important meeting, and the Government of Singapore, a supporter of the event. Today I would like to talk about what we should do to enhance energy security and cross investment between Japan and the Gulf Cooperation Council states, or GCC states.



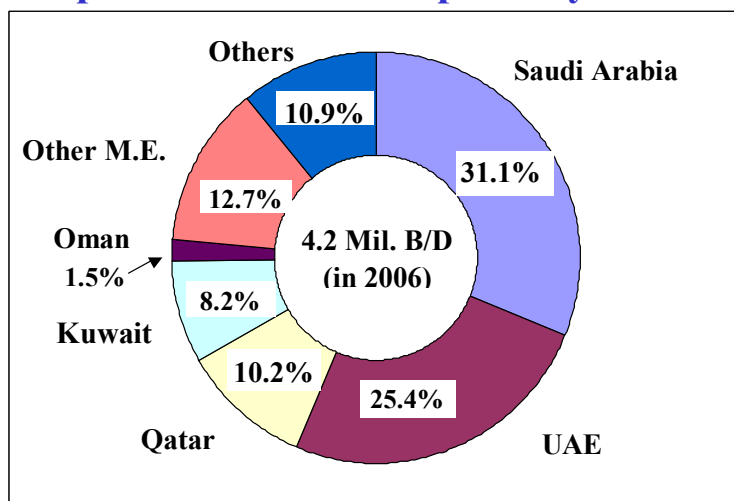
As far as energy security is concerned, I could say that GCC states are the most important energy suppliers to Japan. This slide shows that in 2006 Japan imported 4.1 million B/D of crude oil of which more than 75% came from GCC states. As shown in this figure, Saudi Arabia accounted for 31%, UAE for 25%, Qatar for 10%, Kuwait for 8% and Oman for 1.5%, respectively. I believe that such a high dependence on GCC states for Japan's crude oil imports will persist for the foreseeable future.

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\* This speech was addressed at the Middle East & Asia Energy Summit held in Singapore on November 28, 2007.



## Japan's Crude Oil Imports by Country

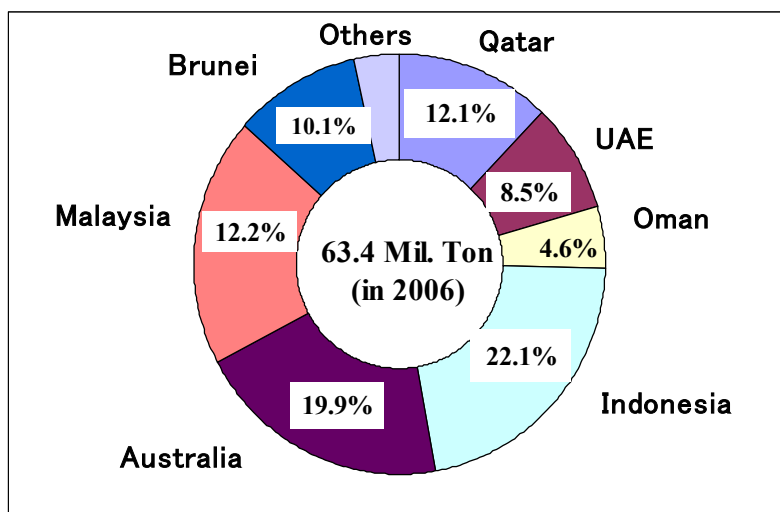


2

In addition to this, GCC states are becoming major suppliers of LNG to Japan in recent years as shown in this slide. In 2006 Japan imported 63.4 million ton of LNG of which more than 25% came from Qatar, UAE and Oman. Our institute predicts that LNG demand in Japan will continue to increase partly due to tackling global warming. As a result, LNG imports from GCC states will significantly increase in coming years, especially from Qatar.



## Japan's LNG Imports by Country



3


At the same time, I would like to point out that Japan has been a very reliable buyer of crude oil and LNG from GCC states for many years. Japan has been the biggest crude oil importer from GCC states, although China may take its position in the future. Therefore, it should be

emphasized that the relationships between Japan and GCC states are so important for both sides, and more efforts must be made for increasing mutual benefits. Frankly speaking, Japanese foreign direct investment (FDI) to GCC states had stagnated during the late 1990s to early 2000s. However the tide is remarkably changing in recent years. Next, I would like to briefly describe how Japan and each GCC state are strengthening interdependence through investment in the energy-related sectors.

### Japan-Saudi Joint Investment

This slide shows what kind of joint projects are now going on between Japan and Saudi Arabia in refining and petrochemicals as well as in the Independent Water and Power Producer, the so-called IWPP.

As is well known, Sabic is now operating nine petrochemical companies with foreign investors, two of which are jointly operated with Japanese companies. Eastern Petrochemical Co., owned 50% by the Mitsubishi group, is expanding ethylene production capacity from 2.4 million to 3.6 million ton, and it is scheduled to be completed next year. Saudi Methanol Co., owned 50% by Mitsubishi Gas Chemical Co., etc., has also expanded methanol production capacity from 3.1 million ton to 4.8 million ton this year.

**Japan-Saudi Joint-Investment** 

- **Refining & Petrochemical**
  - Saudi Methanol Co.: Sabic (50%) / JSMC (50%)
  - Eastern Petrochemical. Co.:  
Sabic (50%) / Mitsubishi etc. (50%)
  - Rabigh Refining & Petrochemical Co.:  
Saudi Aramco (50%) / Sumitomo Chemical (50%)
  - Showa-Shell Co.:**  
**R.D. Shell(35%) / Saudi Aramco (15%)**
- **IWPP**
  - Shuqaiq: Mitsubishi (20%)

4

Particularly, I would like to stress that the Rabigh project of Sumitomo Chemical Co. with Saudi Aramco has a significant possibility to enhance mutual benefits between the two countries. This Rabigh project is one of the largest integrated refining and petrochemical complexes in the world, with total operating expenses of about \$10 billion. When Sumitomo Chemical Co. announced to enter into a joint venture with Saudi Aramco in 2004, it was

received with very mixed feelings of both admiration and skepticism in Japan. That is because we were given to thinking that the Middle East including Saudi Arabia is in a state of constant turmoil. But top management of Sumitomo Chemical Co. has a quite different view from the prevailing ones and it was decided to go ahead. It is well reported in various media that Saudi Aramco has highly appreciated Sumitomo's capabilities in technology and overseas joint-venture experiences.

This Rabigh project is truly enormous in scale, and simply supplying electricity, steam, and fresh water requires a major effort, being conducted by Mitsubishi Heavy Industries, Ltd. As a project involving numerous entities among corporate groups, the tale of this extremely "hot" project now underway looks to become one that will be handed down over the years as a great success story.


On the other hand, Saudi Aramco has decided to enter into the Japanese downstream market by obtaining a total of 15% share of Showa-Shell Oil Co. from R.D. Shell in 2004 and 2005. Showa-Shell Oil Co. has three refineries with total capacity of about one half million B/D, and 11% market share of oil products in Japan. As a result of this business tie-up, Saudi Aramco has increased crude oil supply to Showa-Shell Oil Co. about 30-40% from 2003 to 2006. From the viewpoint of energy security, I am convinced this investment has contributed not only to "security of supply" for Japan, but also to "security of demand" for Saudi Arabia.

#### Japan-UAE Joint Investment

This slide shows how mutual investments between Japan and the UAE are proceeding in the energy sector these years. Historically speaking, the UAE used to be the number one crude oil exporter to Japan until 2003, although Saudi Arabia has taken the position now. With regard to the exploration and development sector, Japan Oil Development Co. (JODCO), a subsidiary of INPEX, is engaged in expanding production capacity of crude oil by ADMA-OPCO and ZADCO.

In addition to this, it should be emphasized that Cosmo Oil Co. has engaged in exploration and development as an operator of Abu Dhabi Oil Co. for almost 40 years. The long experience of Cosmo Oil Co. in Abu Dhabi has produced mutual trust between the companies as reliable business partners. I believe this is an important driving force that Cosmo Oil Co. has agreed with International Petroleum Investment Company (IPIC) of Abu Dhabi for the latter to buy a 20% share of Cosmo Oil Co. this September. IPIC is a state company owned 50% by Abu Dhabi National Oil Company (ADNOC) and Abu Dhabi Investment Agency (ADIA),

respectively. It is expected that this joint venture will help Cosmo Oil Co. extend the term of contract of oil concession in Abu Dhabi after 2012.

**Japan-UAE Joint-Investment** 

- **Upstream of Crude Oil**  
ADMA-OPCO: JODCO (12%)  
ZADCO: JODCO (12%)  
Abu Dhabi Oil Co., Cosmo Oil (63%), Japan Energy (32%)  
El Bundoq Oil Co., JODCO (97%)
- **Downstream of Oil & Gas**  
**Cosmo Oil Co.: IPIC(20%), Acquisition in 2007**  
ADGAS: Mitsui (15%), LNG (5.3 Mt) & LPG (1.7 Mt)
- **IWPP**  
Umm Al Nar: Tepco (14%) & Mitsui (6%), 2.4 GW in 2007  
Taweelah A2: Marubeni (40%), 0.71 GW in 2007  
Taweelah B: Marubeni (14%) & JGC (6%), 2.0 GW in 2008  
Fujaira 2: Marubeni (20%), 2.0 GW in 2010

5


The business tie-up between Cosmo Oil Co. and IPIC is welcomed in Japan, because downstream investment by an oil producing country will contribute to a stable supply of crude oil to Japan. The agreement of this joint venture has also made waves in the Japanese oil industry. Since demand for oil in Japan has already entered into declining stages in the long run, it has been predicted that the Japanese refining industry has to be further restructured in coming years. In such an environment, this joint venture may become a new business model for Japanese refiners, if both parties can enhance competitiveness by investing in upgrading facilities in Japan as well as in upstream and downstream projects in Abu Dhabi and other countries.

I would like to touch on another important joint investment area, the so-called IWPP, in which Japanese companies have recently begun to invest as shown in the bottom part of this figure. I have heard that seven projects of IWPP are now under construction or planned in the UAE, of which Japanese companies are involved in four of them. In the case of Umm Al Nar project, Tokyo Electric Power Company (Tepco) and Mitsui Corp. have an equity share of 14% and 6%, respectively, and a power plant with 2.4 GW generating capacity has nearly been completed this year. It is noteworthy that Tepco is the only buyer of LNG from ADGAS and Mitsui is a joint investor of ADGAS. In the other two cases of Taweelah B and Fujaira 2, Marubeni Corp. is involved, and they are scheduled to complete in 2008 and in 2010, respectively. Since all GCC states are facing serious shortages of electricity and water supply,

FDI in IWPP projects is a very promising area to be jointly invested in with Japanese companies.

### Japan-Qatar Joint Investment

This slide shows that Japanese companies have invested in various parts of Qatari energy sectors though as a minor shareholder of each project. In the upstream sector of oil, Cosmo Oil Co. etc has begun to produce 10,000 B/D of crude oil under the production-sharing contract in 2005. In the downstream sector of oil, the Japanese consortium of Idemitsu Kosan Co. and Cosmo Oil Co. etc has invested in constructing a condensate refinery in Ras Laffan which is scheduled to be completed in 2008.

**Japan-Qatar Joint-Investment** 

- **Oil Sector**  
Al Karkara Oil Field: Cosmo Oil etc in 2005  
Offshore 12 & 13 Block: Marubeni (7.5%)  
Ras Laffan Condensate Ref.: Idemitsu, Cosmo Oil etc.
- **Gas Sector**  
Qatargas: Mitsui (7.5%), Marubeni (7.5%)  
Lasgas: Itochu (4%), LNGJapan (3%)  
Qatargas I : Mitsui (7.5%), Marubeni (7.5%)  
Qatargas III : Mitsui (1.5%)  
Lasgas I : Itochu (4%), LNGJapan (3%)
- **IWPP**  
Ras Laffan B: Chubu Elec.(5%), 1.3GW in 2008  
Messaid A: Marubeni (40%), 2.0 GW in 2010


6

In the upstream sector of gas, Mitsui and Marubeni are minor shareholders of QatariGas, and Itochu and LNGJapan are minor shareholders of RasGas. These Japanese trading companies are engaged in the LNG sector of QatariGas I & III as well as LasGas I. I think that Qatar could play a vital role to stabilize an Asian LNG market, because this market is predicted to become very tight in next several years. One reason is that Indonesia, the biggest LNG exporter, has informed Japanese buyers to cut supply by more than 60% in 2010 and 2011. On top of this, Tepco is additionally purchasing about 7 million tons of LNG equivalent fuel by March 2008 due to suspension of its seven nuclear power reactors after the severe earthquake that happened in July of this year.

With regard to IWPP, seven projects are now planned in Qatar. Japanese companies are involved in two of them. One is the Ras Laffan B in which Chubu Electric Power Co. is a minor shareholder and a power plant with 1.3 GW is scheduled to start operation in 2008.

The other is the Messaid A project owned 40% by Marubeni and which will be completed in 2010.

Comparing with these three countries of Saudi Arabia, UAE and Qatar, Japanese investments in other GCC states are very limited. In the case of Oman, as shown in this slide, Japanese trading companies have invested in the two projects of Oman LNG and Qalhat LNG. With regard to Kuwait, no major investment has been made in the energy sector from Japan after Arabia Oil Co. had lost the oil concession in the offshore Neutral Zone in January 2003. Arabia Oil Co. is now working with Kuwait Gulf Oil Company (KGOC) under the Technical Service Agreement. As far as Bahrain is concerned, Sumitomo Corp. is engaged in a Hidd IWPP project with 910 MW which will start its operation in 2008.



### Japan- GCC States Joint-Investment

- **Oman**  
Oman LNG: Mitsubishi (2.77%), Mitsui (2.77%),  
Itochu (0.92%)  
Qalhat LNG: Oman LNG (36.8%), Mitsubishi (3%)  
Itochu (3%), Osaka Gas (3%)
- **Kuwait**  
Technical Service Agreement with KGOC  
in the offshore Divided Zone: Arabian Oil Co.
- **Bahrain**  
Hidd IWPP, Sumitomo (30%), 910 MW in 2008

7

#### Exchange of Energy Resources and Technology

Finally, I would like to emphasize the complementary relationship between Japan and GCC states in terms of energy resources and technology. GCC states with abundant oil and gas resources are making efforts to diversify their mono-cultural economy by introducing advanced technologies. On the other hand, Japan is a country with very poor energy resources, but we have succeeded in modernizing our economy through technological innovation. In retrospect, when we had faced the big challenges of the two oil crises in the 1970s, we were able to overcome the crises by innovating technologies for energy conservation as well as nuclear and renewable energy supplies. Now we face the more serious challenges of the climate security issue of global warming. As you know, it is becoming a kind of consensus in the international community that the world has to reduce GHGs emissions by at least 50% by 2050 in order to avoid devastating impacts of global warming. I believe that the only

solution is to innovate new technologies to reduce CO2 emissions and spread those technologies all over the world.

**Future Cooperation  
between Japan and GCC States**



- **Exchange of Energy Resources and Technology**
- **Energy Conservation Technology as a Key to Improve Energy Security as well as to Cope with Global Warming**
- **Education and Development of Human Resources**

8

In this respect, Japan can support GCC states to introduce advanced technologies for energy conservation as well as renewable energy such as photovoltaic power. I understand that most GCC states face serious shortages of power supply, but electricity use is very inefficient partly due to an extremely low pricing policy by the government. I would like to introduce one research project that is conducted by Tepco and our institute. The purpose of this project is to propose specific measures for how energy conservation in electricity use could be achieved in Saudi Arabia. This kind of joint project is very useful to transfer not only technologies but also know-how to improve energy efficiency.

Finally I would like to close my presentation by stressing the importance of education and developing human resources to introduce advanced technologies in every sector of national economy. When our former prime minister, Mr. Abe, visited Saudi Arabia in May of this year, both governments agreed to start a program for young Saudi people to study in Japanese universities and technology research institutes. According to this initiative, the Saudi government has already dispatched about 150 Saudi students to Japan. I believe that this kind of cooperation in education and training is very effective and useful to make a bridge and to strengthen the interdependence between Japan and GCC states in the long run.

お問い合わせ : [report@tky.ieej.or.jp](mailto:report@tky.ieej.or.jp)