

ALASKA STATE LEGISLATURE  
JOINT MEETING  
**SENATE RESOURCES COMMITTEE**  
**HOUSE RESOURCES STANDING COMMITTEE**  
**HOUSE SPECIAL COMMITTEE ON OIL AND GAS**  
February 15, 2001  
12:10 p.m.

**SENATE MEMBERS PRESENT**

Senator John Torgerson, Chair  
Senator Rick Halford  
Senator Pete Kelly  
Senator Robin Taylor  
Senator Kim Elton  
Senator Georgianna Lincoln

**SENATE MEMBERS ABSENT**

Senator Drue Pearce, Vice Chair

**OTHER SENATE MEMBERS PRESENT**

Senator Gary Wilken  
Senator Loren Leman  
Senator Donald Olson

**HOUSE RESOURCES MEMBERS PRESENT**

Representative Drew Scalzi, Co-Chair  
Representative Hugh Fate, Vice Chair  
Representative Joe Green  
Representative Mike Chenault  
Representative Gary Stevens  
Representative Beth Kerttula

**HOUSE RESOURCES MEMBERS ABSENT**

Representative Beverly Masek, Co-Chair  
Representative Mary Kapsner  
Representative Lesil McGuire

**HOUSE OIL AND GAS MEMBERS PRESENT**

Representative Scott Ogan, Chair  
Representative Hugh Fate, Vice Chair

Representative Fred Dyson  
Representative Mike Chenault  
Representative Vic Kohring  
Representative Gretchen Guess

**HOUSE OIL AND GAS MEMBERS ABSENT**

Representative Reggie Joule

**OTHER HOUSE MEMBERS PRESENT**

Representative Jeannette James  
Representative Carl Morgan  
Representative John Davies

**COMMITTEE CALENDAR**

Presentation on LNG Market in Japan and Asia and Alaska's Position In That Market by Mr. Shigeru Muraki, General Manager, Gas Resources Dept., Tokyo Gas Co. Ltd. assisted by Mr. Jeff Lowenfels, President, Yukon Pacific Corporation (who arranged his visit)

**ACTION NARRATIVE**

**TAPE 01-13, SIDE A**  
Number 001

**CHAIRMAN JOHN TORGERSON** called the Senate Resources Committee meeting to order at 12:10 p.m. and introduced Mr. Shigeru Muraki, General Manager of the Gas Resources Department of Tokyo Gas, the largest gas company in Japan and the second largest importer of LNG in the world. "Japan has been a customer of Alaska since 1969. For over 31-years, Alaska has been shipping LNG's to the Tokyo Gas and Tokyo Electric Power Company from the Phillips Marathon Plant that is located in Representative Chenault's district in Nikiski."

MR. SHIGERU MURAKI said Alaska's LNG supply is the second LNG project in the world and first LNG project in the Asia Pacific. Algeria started in 1964 and stopped 10 years ago. Alaska has the longest LNG trade history in the world with Japan, which started importing LNG in 1969. Korea started importing in 1986 and Taiwan in 1990. The growth rate was 12.8 percent per year. Due to the economic slow downs in this region, the growth rate slowed to 4.6 percent for the last three years.

In 1999, three countries imported 69 million tons of LNG - Japan 52 million tons, Korea 13 million tons, Taiwan 4 million tons - from seven countries: Alaska, Brunei, Indonesia, Malaysia, Australia,

and Abu Dhabi and Qatar. In 2000, Omar started to supply gas and now eight countries have 77 million tons of contracts with three importing countries.

MR. MURAKI said that most countries are trying to liberalize the market, which is creating competition in the Asian energy market. Due to increased concerns for the environment, particularly global warming, and the efficient use of energy, the role of natural gas is increasing and he thought it would become the primary fuel of the 21st Century.

MR. MURAKI said that Japan uses 13.2 percent and Asia uses 10.7 percent and are very low compared to the U.S. He said that oil and coal are still dominant in the Asian markets. The main reason is that the discoveries in Asia are a long distance from Asian markets. He said that there was a lot of room for expansion of the LNG market in Asia.

The amount of gas reported by the International Gas Union (IGU) in 2000 was 3.4 percent growth per year in Asia and 3.5 percent in East Asia. The energy demand growth for the next 10 years is expected to be 2.2 percent per year in the world and as much as five percent in Asia. LNG will increase from 10 percent to more than 60 percent in 2030.

MR. MURAKI followed with this review of the energy markets in Japan, Korea, Taiwan, Indian and China:

## **JAPAN**

He said that pipeline access to pipeline network full major introduced in 1999. Japan is a small country with 238 gas utilities, most of them very small. Discussions of further liberalization of the gas market just started in January 2001. The major issues will be the expanded liberalization of the market and open access to LNG terminals and pipeline networks for all the gas companies in Japan.

In the electricity industry, wholesale bidding was introduced in 1996. Nine power utilities regionally dominate the market in Japan. Forty-one independent power producers (IPP) total 6,725 MW with four gas-fired projects producing 733MW. This is because gas cannot compete with coal and oil. All new entrants are required to go through the bidding system.

Most consumers are eligible to purchase electricity from independent power suppliers. This liberalized market represents about 30 percent of the total power demand in Japan. Several

companies have already announced to participate in this new market. One of them is Tokyo Gas Company who created a joint venture company with Osaka Gas and Nippon Telephone and Telegram (NTT), one of the largest electricity consumers. E Power, a joint venture by Orix and Enron of the U.S., are planning to participate, also.

Discussions for the next step of the liberalization of the power market will start soon. Major issues will be the expansion of the liberalized market and the possibility of introducing the power - pool system. The slowdown in the Japanese economy could have some impact on these discussions and countries that are totally separated geographically may have certain impacts on the next step of the liberalization of gas.

MR. MURAKI showed the committee a graph of the LNG demand in Japan issued by the Ministry of International Trade and Industry (MITI). He noted that this agency is now called METI. It showed that in 1998 energy demand in 2010 was predicted to be 61 Mt under moderate energy demand growth of 1.1 percent per year. However, considering the slow development of nuclear power and increased concern of greenhouse gas emissions, he thought that LNG demand could reach 70 Mt in 2010, an 18 Mt increase from 1999, requiring more than 15 Mt of additional supply to Japan by 2010. They already have contracts for 55 Mt. Japan is still struggling with recovery from the recession and energy demand growth can be lower than 1.1 percent per year. However, Mr. Muraki thought 70 million tons of LNG demand could still be an achievable level.

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## **KOREA**

MR. MURAKI said that liberalization of the electrical industry is moving ahead in Korea. Unbundling of the Korea Electric Power Company and liberalization of the power market was approved by Parliament in December 2000. The power generation sector will be unbundled, privatized and separated into five companies by 2002. They will liberalize the wholesale market during 2003 and then finally after 2009, they will liberalize the retail market. Nuclear power and hydropower will be owned by the government in different companies as private companies will own the natural gas, coal and oil power generation plants.

Plans for liberalization of the gas power industry were announced in November 1999 - same time as the power industry. However, they are still under discussion. Liberalizing LNG imports will occur this year. Korean Gas Corporation (KOGAS), the sole importer of LNG in Korea, owns LNG terminals and trunk pipelines to distribute gas

to the power stations and local gas utilities. Korean Gas Corporation in the current plan will be separated into one company that will own LNG terminals and pipelines and three LNG importers. "So anyone can import LNG to the market through the LNG terminals and pipelines owned by one company." When that plan will be implemented is not clear, yet.

MR. MURAKI showed the committee a graph of demand in Korea. He said that energy demand was to be 22 Mt in 2010. He said this was shown by MOCIE, which is the government agency to regulate energy markets. The previous estimate was 29 Mt. In September 2000, Korean Energy Economics Institute (KEEI) issued a median energy demand forecast that indicated higher demand growth than the government predicted. This is because of the recovery of the economy. In this forecast LNG demand is expected to increase to 24.6 Mt in the base case, 28.3 Mt in high case and 19.5 Mt in low case, which is still higher than the government forecast (18.5 Mt). He thought the high case and the base case were unlikely to happen because no one can commit to a new supply source right now. He predicted about 30 Mt of LNG demand in 2010 in Korea.

MR. MURAKI said that Korea may need an additional supply of LNG before 2005 because they have 17 Mt of LNG contracts currently. If the KEEI case becomes a reality, much more LNG will be needed by 2005. He summarized that Korea needs it before 2005 and Japan needs it after.

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TAIWAN:

MR. MURAKI explained that Taiwan is a relatively smaller market compared to Japan and Korea. Liberalization of the market is advancing very slowly there. The IPP bidding system was introduced in 1995 and six natural gas-fired IPPs were approved last July. Natural gas is becoming the primary energy for new power capacity in Taiwan.

Privatization of the Chinese Petroleum Corporation (CPC), the sole importer of LNG in Taiwan, and Tai Power Company (TPC) is planned for this year, but it's unlikely to happen until next year. Together they consume about 1.8 Mt of LNG and new LNG importers using new LNG terminals will be suppliers of gas. Taiwan has only one terminal now with the second terminal being built by Tatan Power Station giving Taiwan more space for imported LNG.

MR. MURAKI said that CPC predicted LNG demand to be about 10 Mt in 2010 - the maximum capacity that could be brought to the existing

terminal. He said Tokyo Gas predicts an LNG demand of 13 Mt. in 2010 partly because of concern with the green house effect. Nuclear development was a commercial issue, but the government decided not to deal with a nuclear power plant. They changed their minds and will probably build the power station. This has had an impact on the LNG demand. The 13 Mt estimate was before the government decided not to build the plant.

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## **INDIA**

MR. MURAKI said the market in India will be really big, but Alaska is too far away to supply it. He said that Dabhol Power is planning to start importing LNG this year and they already have contracts with Middle East suppliers, Oman and Abu Dhabi for a total of 2.1 Mt of LNG. A company owned by Dabhol and Indian Enterprises is planning to build a pipeline to distribute gas to the Indian market and are negotiating a contract for 2.2 Mt with Malaysia. This will be the first LNG project in India.

In addition to the Dabhol project, MR. MURAKI said there are several projects being planned in the states of Gujarat, Maharashtra and Tamil Nadu. He said that some of these projects already have contracts or letters of agreement with suppliers - mostly from the Middle East because of its location. Mr. Muraki said, "I see between 10 to 15 Mt of LNG demand could be created in 2010. Some say 25 Mt, but because of the economy, they cannot import that much LNG in ten years time."

## **CHINA**

MR. MURAKI said, "China could be the potential market for Alaskan gas." The first project is planned for Guangdong Province near Hong Kong. It will start by importing 3 Mt of LNG from 2005 and increase its imports up to 5 to 6 Mt by 2010. China is now in the process of selecting a foreign partner. Their short list of companies are: BP, ExxonMobil, Shell and an Australian company. One of them will be selected. The other potential LNG markets are in the Yantsu Delta area, where Shanghai is located (the largest natural gas market in China), and Fujian Province, located between Guangdong and Shanghai. The Chinese government is planning to build a pipeline over 2200 kilometers to Shanghai. "At this time the Chinese government gives priority to the pipeline project."

MR. MURAKI said he didn't know when the second LNG project will be started in China, but one terminal can receive up to 6 Mt. If the second project is realized before 2010, Tokyo Gas predicts that demand could reach 9 to 10 Mt in China.

In 2005, the five countries combined will demand between 83 to 96 Mt and in 2010, between 108 and 137 Mt. He said that existing LNG projects will continue to fill 80 Mt of demand through 2010. "In 2005, in the high case, around 50 Mt of additional supplies will be required in mainly Korea, India and China," Mr. Muraki said. Japan's additional demand for 2005 and 2006 has already been secured through negotiations with new projects, mainly Malaysian and Australian expansion. Japan needs additional supply after 2006, MR. MURAKI thought. He reiterated that demand in 2010 will require a large volume of natural gas to supply the growing Asian market in addition to the 80 Mt under existing contract.

MR. MURAKI said that Southeast Asia and Australia will remain the major suppliers to East Asian markets. The Middle East will continue to supply East Asia, because they have 20 to 25 years of contracts. Because of its geographical location, they can supply India and possibly Europe (LNG or pipeline). Southeast Asia may have gas, MR. MURAKI said, but they plan to build a regional pipeline network to get gas to their counties to facilitate industrialization. Gas exports would be limited for this reason.

MR. MURAKI said, "Alaskan North Slope and Sakhalin gas are important potential supplies to the East Asian market, which can improve the stability of LNG by diversification of the supply sources. This is very important for Japan and Korea, who are net importers of energy. Those countries have too much dependence on Middle East supply."

He said further that, "Sakhalin and East Siberia have the potential to supply gas to China, Japan and Korea by pipeline, as well. Currently, feasibility studies of pipelines from Sakhalin to Japan and pipelines from Yakutsk in Siberia to China are under way. Considering this potential supply, I believe there will be the addition of natural gas supply, including Alaskan North Slope gas to support this growing demand in Asia."

#### **CHALLENGES LNG IS FACING:**

MR. MURAKI said, "Liberalization of the market is creating sharpening competition in an energy market in fuel competition and gas-to-gas competition, particularly in the growing industrial commercial market and power generation markets. Power generation markets are very important. It is the same as the United States and Europe. It is becoming more and more important for LNG and natural gas to achieve the competitive pricing and higher productivity to increase its share in the LNG price. LNG in the Asian market is indexed to the crude oil price which has been well accommodated in

the market, because LNG has been an alternative energy to crude oil and oil products in the Asian market. However, natural gas is becoming one of the major energy sources and it is probably the timing to consider the new market oriented pricing mechanism."

Stable income can create a secure financial return for the project. Achieving cost reduction in transportation is also important, because LNG carriers are very expensive. They carry about 60,000 tons of LNG and cost \$160 million. He said that Tokyo Gas will be building two new LNG carriers and they will design them to be versatile in different marine conditions. "These ships are designed for ice resistance, which can make the ships come into Alaskan waters, like Cook Inlet."

MR. MURAKI said, "Long-term contracts will continue to be the base of the LNG trade." Also, he explained that LNG cannot become a commodity like oil and that a combination of short-term and spot cargoes, accounting for 10 to 20 percent of the market, and long-term contracts, accounting for 80 to 90 percent of the market, can create the flexibility to meet market conditions. All participants have achieved cost reductions, but a continuous effort is needed to create benefits to all the industries in the LNG market.

MR. MURAKI concluded: "We are facing a challenging time, but I believe those challenges will make natural gas the primary energy to fuel the 21st century in Asian and LNG will continue to play a key role."

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REPRESENTATIVE DYSON asked if Japan was concerned about Chinese expansion into the Spratly Islands and the Straits of Malacca.

MR. MURAKI answered that was a concern. "Cheap transportation is very important, but not only to energy." This raises a concern about energy supplies from the Middle East and that is why the Alaskan and Sakhalin projects, which come through open water, are move favorable.

REPRESENTATIVE OGAN said it appears from Mr. Muraki's charts that contracted Asian supply through 2010 is about 80 Mt and the demand is between 108 and 140 Mt. Rough math says it's between 28 and 55 Mt of additional demand. He asked which projects were competing with Alaska to meet that demand.

MR. MURAKI responded that he didn't want to create conflict among the suppliers, but for the northeastern Asian market, Sakhalin will compete. Australia has gas and another competitor was Malaysian

Irian Jaya (Tangguh) project. The existing Northwest Shelf project in Australia has a plan to expand and there is a lot of gas in the northern territory of Australia between East Timor and Australia is the future supply to the East Asian markets.

REPRESENTATIVE OGAN asked if Tokyo Gas planned to diversify its supplies. He said that Alaska offers a stable political situation; we have the supply; we have some hurdles getting it to tidewater that make it difficult to be competitive currently. He asked if they were going to diversify for political reasons.

MR. MURAKI answered that they have political reasons, but basically they want to secure a long-term supply. An accident could happen in one supply project, for instance, and stop the project. The political issues have to be considered.

REPRESENTATIVE JAMES asked Mr. Muraki to explain the scope of his company and if they were just a supplier of gas or do they market gas to other markets.

MR. MURAKI replied that their major business is to supply gas to their markets and utilities. They have 8.7 million customers. In the future, the LNG business can grow and they will look at that. They operate jointly with the local gas company. "We want to be an energy company, not just a gas company."

REPRESENTATIVE JAMES asked what percentage of Shell's Sakhalin gas would Japan be interested in.

MR. MURAKI answered that he wasn't sure how much gas Japan would get and added that Sakhalin has two projects. Shell is a major player in one and ExxonMobil is in the other. Shell is planning to create 9 Mt of LNG project and Exxon is planning to supply gas by pipeline to Japan with a capacity of about 6 Mt. Shell is looking at Japan and Korea as major markets, but wants to send majority of its supply to Japan. He added that project would start in 2006; ExxonMobil is planning to start in 2008.

REPRESENTATIVE CROFT asked when a project becomes competitive. He has heard that a project is feasible if it costs \$1 billion and produce 1 Mt per year.

MR. MURAKI answered that the cost of the projects are different. The cheapest LNG project so far is Tangguh for \$1 billion, but he didn't know what costs were included. Usually the lead production terminal for two train projects of 6 Mt to 7 Mt costs \$3 to \$4 billion. "That is what I know," MR. MURAKI said.

REPRESENTATIVE DAVIES asked what price Tokyo Gas paid for contracts through 2006 and what would they be into 2010. He asked if they had negotiated with Alaskan producers, yet.

MR. MURAKI replied that the contract price changes with the oil price, which is \$20 per barrel. To take LNG to Japan and Korea is about \$3.80 Mbtu. A \$1 change for oil up or down makes a change of 15 cents for gas. He explained that a lower limit was required by LNG producers to secure long-term return of investments. Probably the price will be a little bit lower in their negotiations for new supplies. Another option they have is "decoupling for oil." They don't have anything like a New York Mercantile market and that would be very difficult.

MR. MURAKI said, "We haven't had any deep discussions with Alaska. I think the reason is that there are several organizations bringing Alaskan gas coming into the market. That is creating a little bit of confusion. At this moment, I cannot identify who is the real organization we can discuss LNG from Alaska."

REPRESENTATIVE OGAN asked how can Alaskan legislators overcome the "dysfunctional" view of Alaska that overseas markets have.

MR. MURAKI replied, "Alaska needs to create new ties to organizations to market LNG to the Asian market and contact with the potential buyers." He said the market place is becoming more complex. They used to have a large consortium for different buyers, but now there is more competition. He thought the projects needed to contact each buyer to discuss specific proposals.

Number 500

SENATOR TAYLOR said that it appears that there is no sure knowledge of gas nor a secure way to get gas to Japan and asked if that was a fair statement.

MR. MURAKI answered that they know there is gas in Alaska. The gas reserve is not the problem. They have contact with the gas producers and suppliers, but buyers cannot seriously consider buying gas with the confusion of who to deal with who owns it.

SENATOR TAYLOR said, "We are also well-aware and have been for years, of the known reserves of the gas that we have. And yet we, too, find ourselves here as a body very frustrated that there is not a direct linkage going on or a marketing effort going on... It is hard to pin down who is talking to whom about what." He thanked Mr. Muraki for being here and for his candor.

REPRESENTATIVE FATE said his pricing mechanism included long-term contracts, short-term and spot contracts. He asked if he saw a balanced combination of those or that most of them would be short-term or spot, moving away from long-term.

MR. MURAKI answered that long-term contracts would be the base. Short-term and spot contracts would be relatively small. Spot price is influenced by specific markets. Long-term contracts have a different pricing mechanism with different countries and different markets. "We want to have different portfolios for different markets."

CHAIRMAN TORGERSON thanked Mr. Muraki and adjourned the meeting at 1:20 pm.