7th

International Trading Conference 2017

Technology Innovation and Energy Commodity Market

October 24(Tue.)
10:00 AM

2F Crystal Ballroom,
Lotte Hotel, Ulsan

| Keynote Address |

Energy Market Outlook due to Change in Industry Environment

Session 1 Progress of Northeast Asia Oil Hub Project
Session 2 Strategies for Expanding Northeast Asia Oil Market
Session 3 Application of Big Data to Energy Market

Organizers 울산광역시 ULSAN METROPOLITAN CITY · UNIST ULSAN NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY · UPA ULSAN PORT AUTHORITY

Sponsor 한국경제

Messege

Dear Colleagues,

The International Trading Conference(ITC) has become an international event that discusses trends in the global energy market by bringing together domestic and overseas energy market experts to address the oil hub projects in Northeast Asia.

In Ulsan, many issues related to building financial system have been discussed based on the infrastructures of logistics, storages, and port facilities for oil. In particular, the act on deregulation for oil, which was revised in April of this year, has provided the statutory basis for Ulsan to become an oil hub in Northeast Asia. We look forward that Ulsan will build an energy cluster in Northeast Asia and will be a center of global energy industry beyond the industrial capital of Korea.

While the stagnation of low oil prices is expected to continue, this year's conference focuses on changes that technology development will bring to the energy sector as well as counterstrategies and plans to promote energy trading in Northeast Asia, under the theme of "Technology Innovation and Energy Commodity Market". We hope that this event will provide an opportunity to find new growth engines in the energy market in the 4th industrial revolution era.

We really appreciate your attendance in the ITC 2017, which is co-organized by Ulsan Metropolitan City, Ulsan Port Authority, and Ulsan National Institute of Science and Technology (UNIST), and sponsored by the Korea Economic Daily.

Mayor, Ulsan Metropolitan City
Gi-hyeon Kim

President, UNIST
Mooyoung Jung

President, Ulsan Port Authority
Jong Yeol Kang

Program

Technology Innovation and Energy Commodity Market

Registration	09:00	Registration	
Opening	10:00	Welcome Speech & Congratulatory Address	
Keynote Address	10:50	**Energy Market Outlook due to Change in Industry Environment** MC : Victoria Kim(Professor, UNIST)	
		• Shale Revolution and Paradigm Shift in Energy Market	Jae Hoon Lee [CEO, SK Gas]
		• Big Data, Energy Information, and Market Dynamics	Thomas Lee [Senior Economist, U.S. Energy Information Administration]
Session I	11:50	**Progress of Northeast Asia Oil Hub Project**	
		• Current Status and Future Tasks of Oil Hub Project in Ulsan	Younghoon Kang [Senior Research Fellow, Ulsan Development Institute]
Luncheon	12:10	Luncheon & Networking	
Session II	13:30	**Strategies for Expanding Northeast Asia Oil Market** Chair : Young-Seok Moon(Vice President, Korea Energy Economics Institute)	
		• Strategies for the Active Promotion of Importing of U.S. Crude Oil in Korea	Jae-Kyung Kim [Research Fellow, Korea Energy Economics Institute]
		• Long Term Oil Market Outlook and Opportunities of Northeast Asia	Hiroaki Norita [Analyst, JX Nippon Research Institute Ltd.]
		• Evolution of Oil Benchmarks and Its Impact on Pricing Hubs	Hanwei Ng [Asia Products Editor, Argus Media]
Break	15:00	Coffee Break & Social Meeting	
Session III	15:30	**Application of Big Data to Energy Market** Chair : Daejin Kim(Professor, UNIST)	
		• Benefits of Energy Risk Management by Nonfinancial Firms : Evidence from Academic Research	Betty Simkins [Professor, Oklahoma State Univ.]
		• Managing COP21 using a Stock and Oil Market Integration Index	Jonathan Batten [Professor, Monash Univ.]
		• Inferring Energy Fundamentals through Price-Relationship Data	Hilary Till [Research Council, J.P. Morgan Center for Commodities, Univ. of Colorado]
Closing	17:00	Closing Address	

Keynote Speaker

Jae Hoon Lee

CEO, SK Gas

Curriculum Vitae

2017 ~ Present CEO, SK Gas
2016 EVP, Head of Global Business Division, SK Gas
2015 COO/EVP, Head of PDH Business & Global Business Div., SK Gas

Academic Credential

2007 MBA, Business administration, Korea University
1983 Bachelor, Law, Seoul National University

Shale Revolution and Paradigm Shift in Energy Market

Since its establishment, OPEC Nations have long been exerting significant influence on the world energy market leveraging its massive amount of oil and gas reserves. We have witnessed Shale Revolution led by oil majors in North America and its subsequent increase of production/exports is weakening the hegemony of Middle East over world energy industry, and the price controlling mechanism of OPEC by its conventional methodology, i.e. controlling its members' production level, is not working as effectively as it used to be.

Not only is the US Shale Revolution weakening Middle East Hegemony, but also bringing about a worldwide energy flow change. With fast dwindling influence over Europe due to production/export increase from the US, Russia has turned its focus to the Far East Market.

The same is observed with Canada, planning many LNG projects along its west coast for Far East export to make up for the fast dwindling imports from the US. The scope of supply sources for Far East nations will expand, which in turn will increase their buying power in the long term. For instance, in the LNG industry, growing number of LNG importing nations are continuously negotiating to delete destination clause and take or pay clause in the term contracts, and alter from oil based price index to the ones that reflect the supply and demand more appropriately. The same phenomenon is witnessed in the LPG industry with exponential growth of LPG export from the US.

This worldwide energy industry change will eventually lead to free completion and market participant growth, which is expected to work as a stepping stone for the success of Korea's Far East Oil Hub initiative.

Thomas Lee

Senior Economist, U.S. Energy Information Administration

Curriculum Vitae

2010 ~ Presesnt	Senior economist, Office of Energy Markets and Financial Analysis, Energy Information Administration
1990 ~ 2010	Professor, Finance, MaryMount University

Academic Credential

1998 Ph.D., Economics, The Catholic University of America
1992 M.A., Finance, The Catholic University of America
1984 B.A., Public Administration, Yonsei University

Publication

- "The Price Elasticity of U.S. Shale Oil Reserves" (with James Smith), *Energy Economics*, September 2017
- "Inside the Crystal Ball: New Approaches to Predicting the Gasoline Price at the Pump" (with Christiane Baumeister and Lutz Kilian), *Journal of Applied Econometrics*, March 2017

Big Data, Energy Information, and Market Dynamics

"Rapidly evolving and advanced technologies over the past decade let us to change our doing business in the energy market. In the oil industry, these technological advances have enabled companies to maintain or boost production into the low oil price environment while remaining profitable. Recent data and information suggests that the current price level is a state of equilibrium price path for the mid-term forecast. In the recent short-term energy outlook at the U.S. Energy Information Administration (EIA) forecasts Brent spot prices to average a low range of $50/b in 2018 and U.S. crude oil production to average around 10 million b/d in 2018, which would mark the highest annual average production in U.S. history, surpassing the previous record of 9.6 million b/d set in 1970. However, the recent forecast is the result of given information today.
There is tremendous information in the market, whether this is the data series or artificial intelligence. In the oil market, there is a general consensus that effects of supply and demand, physical fundamentals, are historically the principle factors affecting oil prices. However, physical fundamentals are becoming more global and these global forces are not always well understood. Some of these information in the market is notoriously opaque; yet the arrival of this information into the market can push prices up or down very quickly. Crude oil is the most actively traded commodity in the world and it will continue to be so in the foreseeable future. These trades and the price responses are based on the available information, which are often inaccurate or unconfirmed. To have quality information and to make a right decision, we must continue to adapt the advanced technology and reduce the knowledge gap."

Chair

Young-Seok Moon

Vice President, Korea Energy Economics Institute(KEEI)

Curriculum Vitae

2017 ~ Present	Vice President, KEEI
2015 ~ Present	Managing Director of Energy Policy Division, KEEI
1992 ~ 2015	Director, Energy Policy Division, Department of Energy Industry Studies, and etc., KEEI

Academic Credential

1990 Ph.D., Economics, State University of New York

1988 M.A., Economics, State University of New York

1984 M.S., Economics, Yonsei University

1982 B.A., Economics, Yonsei University

Daejin Kim

Professor, Ulsan National Institute of Science and Technology

Curriculum Vitae

2014 ~ Present Professor, School of Management Engineering, UNIST

Academic Credential

2014 Ph.D., Finance, Vanderbilt University

2005 M.S., Statistics, Stanford University

1999 Bachelor, Business Administration, Korea University

Main Research Fields

- Market Microstructure: Liquidity, High-Frequency Trading, Market Fragmentation
- Derivatives: Market Structures, Derivatives and Short-sale.
- Mutual Funds/Hedge Funds/ETPs: Liquidity Effects on Funds, Funds Contagion, Networks.
- Corporate Governance and M&A: Role of Institutional Investors.

Session I

Speaker

Younghoon Kang

Senior Research Fellow, Ulsan Development Institute

Curriculum Vitae

2016 ~ Present	Senior Research Fellow, Ulsan Development Institute
2012 ~ 2015	Director, Economic Society Division, Ulsan Development Institute
2007 ~ 2011	Director, Economy & Industry Division and Research Planning Division, Ulsan Development Institute

Academic Credential

2002	Ph.D., International Economics, Pusan National University
1995	MBA, Europe Institute, University of Saarland
1991	Master, Economics, Pusan National University
1989	Bachelor, International Trade, Pusan National University

Current Status and Future Tasks of Oil Hub Project in Ulsan

The Ulsan Port Development Project, which started in 2009 as an oil hub project for Northeast Asia, explains the progress of the project, outlines representative cases among them, and suggests the Special Law on Oil Hub in Northeast Asian as an alternative to addressing the remaining issues.

Jae-Kyung Kim

Research Fellow, Oil Policy Research Division,
Korea Energy Economics Institute(KEEI)

Curriculum Vitae

2013 Research Fellow, Oil Policy Research Division, KEEI

Academic Credential

2013 Ph.D.,Economics, Seoul National University

2006 M.S., Urban Planning, Seoul National University

2003 M.A., Economics, Seoul National University

2001 B.A., Economics, Seoul National University

Publication

- "A Study on the Impact of lifting the U.S. Crude Oil Ban upon the Korean Oil Industry", *KEEI Research Report,* 2016
- "A New Possibility of Exporting LNG.NGLs via Canada's West Coast Ports", *KEEI Research Report,* 2015
- "An Outlook for the Possibility of Korean Imports of U.S. Lease Condensates", *Energy Focus,* 2015
- "Lifting the U.S. crude oil export ban", *Journal of International Trade & Commerce,* 2015

Strategies for the Active Promotion of Importing of U.S. Crude Oil in Korea

On December 18, 2015, the US Senate and the US House of Representatives passed a provision as part of the Consolidated Appropriations Act 2016 to lift the US crude oil export ban. Later that same day, the provision was signed into effect by US President Barack Obama. In effect, the provision lifted the embargo on US crude oil that had been in place since 1975 and allowed for the supply of US crude oil to the international oil market without institutional constraints beginning in 2016. The domestic oil industry of Korea, which, in effect, imports almost 100% of its crude oil from other countries, is constantly on high alert for any changes in US oil industry trends, which can substantially affect the international oil market. Many in the Korean oil industry have also been keenly interested in the possibility of importing U.S. crude oil to Korea. This study presents the policy proposals for the active promotion of introducing US crude oil in Korea.

Session Ⅱ

Speaker

Hiroaki Norita

Analyst, JX Nippon Research Institute, Ltd.

Curriculum Vitae

2011 ~ Present	Analyst, JX Nippon Research Institute,Ltd.
2006 ~ 2011	Senior Coordinator, The Institute of Energy Economics
2000 ~ 2006	Chief Researcher, Information Center for Petroleum Exploration and Production

Academic Credential

1984 B.A., Economics, Keio University

Long Term Oil Market Outlook and Opportunities of Northeast Asia

We are in the period of low oil price.
If we consider longer term, then there are a few things that may lead to a profit of north east Asia.
Firstly, the Price of WTI is lower than Brent for 7 years. And export ban of USA disappeared in late 2015. So it is good for us to import WTI related oil.
Secondly, there is one other marker oil that price is lower than WTI, that is WCS (Western Canadian Select). The main reason for lower price is, surge in quantity and the lack of P/L to transport outside Canada.
Lastly, the new P/L from oilsand region to Pacific coast will start 2 years later.
If you agree that we are in low-cost-oil era, then investing upstream project will be a good decision. Among them, Canadian oilsand may be one of the best choice, because of big reserves, and low decline rate, and the profitability may go up with the new P/L.
I'd like to introduce you the pros and cons of oilsand business, through my experience.
I think the discount between WTI and WCS will still remain after the P/L commencement, so importing oilsand may also a very good choice for northeast Asian oil refinery.

Hanwei Ng

Asia Products Editor, Argus Media(Singapore)

Curriculum Vitae

2010 ~ Present Asia Products Editor, Argus Media(Singapore)
2008 ~ 2010 Market Editor, ICIS(Singapore)
2007 ~ 2008 Market Reporter, Platts(Singapore)

Academic Credential

2006 Bachelor, Communication Studies, Nanyang Technology University
B.A., Economics, Nanyang Technology University

Evolution of Oil Benchmarks and Its Impact on Pricing Hubs

The major oil benchmarks used to price spot and term cargoes in the Asia oil markets have remained largely unchanged for the past 30 years. This is poised to change in the coming decade as governments tighten environmental regulations, industries move towards usage of cleaner fuels and refineries improve their secondary processing capabilities. In market sectors hardest hit by these changes, existing oil benchmarks will have to evolve or new ones will have to be created. In either case, the transformation will necessitate changes in trading patterns, trading strategies and trading requirements. This presentation looks at specific case studies in the transportation sector to examine these changes and in doing so, illustrate their impact on the wider oil market.

Session III

Speaker

Betty Simkins

Professor, Oklahoma State University

Curriculum Vitae

2014 ~ Present Chair, Williams Companies, Oklahoma State University

1996 ~ Present Simkins Consulting

Academic Credential

1997 Ph.D., Finance, Case Western Reserve University

1983 MBA, Finance, Oklahoma State University

1980 B.S., Chemical Engineering, University of Arkansas

Publication

- "OTC vs. Exchange Traded Derivatives and Their Impact on Hedging Effectiveness and Corporate Capital Requirements" (with Ivilina Popova), *Journal of Applied Corporate Finance*, 2015
- "Economic Value of OTC Derivatives used by Nonfinancial Firms: Panel Session from the 2014 Applied Finance Conference" (with Audrey Costabile Blater, Charles Cerria, Eric Hughson, and Robert Selvaggio), *Journal of Applied Finance*, 2014

Benefits of Energy Risk Management by Nonfinancial Firms: Evidence from Academic Research

This presentation will summarize what we can learn from academic research to date on energy risk management. In particular, I will discuss how the research to date provides evidence to the following questions. Is energy commodity risk reflected in share price behavior and does risk management reduce this risk? Is there a relationship between energy risk management and the value of the firm? What other factors are important to energy risk management by nonfinancial firms? Issues related to data will be mentioned as related to this topic.

Jonathan Batten

Professor, Monash University

Curriculum Vitae

2013 ~ Present	Professor, Finance, Monash Business School, Monash University
2017	Senior Research Fellow, Institute for Advanced Study, Central European University
2006 ~ 2013	Adjunct Professor, Finance, Hong Kong University of Science & Technology

Academic Credential

1997 Ph.D., Financial Economics, University of Sydney

1987 MBA, International Business, New South Wales Institute

1982 Bachelor, Data Processing, Northern Rivers College of Advanced Education

Publication

- "Can Stock Market Investors Hedge Energy Risk? Evidence from Asia" (with Harald Kinateder, Peter G. Szilagyi and Niklas F. Wagner), *Energy Economics*, 2017
- "Sovereign Risk and the Impact of Crisis: Evidence from Latin America" (with Batten, Gerry Gannon and Kannan Thuraisamy), *Journal of Banking & Finance*, 2017

Managing COP21 using a Stock and Oil Market Integration Index

COP21 implementation should lead to a decline in the future demand for fossil fuels. We construct a monthly integration index and then demonstrate that oil investors can offset adverse oil price risk by holding various global stock portfolios during the November 1994 to May 2017 period. The portfolios are formed from eight different combinations of developed and emerging stock markets. We show that measuring the degree of stock-oil market integration for these portfolios is critical to managing the time-varying degrees of integration that exist between oil and stock markets. Importantly, under normal market conditions, when markets are segmented, there is the opportunity for oil investors to diversify the additional energy price risk, caused by COP21, through the purchase of stocks. Even over the full sample period, we document risk adjusted positive benefits to investors from holding diversified oil-stock portfolios for the global stock market regions, except for the Far East.

Session III

Speaker

Hilary Till

Research Council, J.P. Morgan Center for Commodities, University of Colorado

Curriculum Vitae

2016 ~ Present	Research Council, J.P. Morgan Center for Commodities, University of Colorado
2006 ~ Present	Research Associate, EDHEC-Risk Institute, Nice
1998 ~ Present	Principal, Premia Capital Management, LLC(Chicago)

Academic Credential

1987 M.Sc., Statistics, University of London

1986 B.A., Statistics, University of Chicago

Publication

- "Swing Oil Production and the Role of Credit", *Global Commodities Applied Research Digest,* 2016
- "Timing Indicators for Structural Positions in Crude Oil Futures Contracts," *Global Commodities Applied Research Digest,* 2016

Inferring Energy Fundamentals through Price-Relationship Data

Even when fundamental data on energy markets are sparse or opaque, large-scale supply-and-demand shifts leave footprints in futures-price relationships, from which one can potentially infer an energy market's fundamentals. In the presence of active futures markets, an observer need not be a member of a cartel or a large corporation to gain insights into an energy market. In particular, one can rely on the transparency of oil futures markets to infer what the concurrent and future expectations are regarding the oil supply-and-demand balance is, even in the absence of key (timely) fundamental data from non-OECD countries. That said, fundamental structural changes occur constantly in the energy markets. Therefore, we will also cover how the interpretation of a price relationship will sometimes be conditional on a particular state-of-the-world.

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