

# Shale Gas Revolution and Energy Security

*14<sup>th</sup> Annual Mitsui USA Symposium*

*April 17, 2013*



This symposium addressed the topic of shale gas, whose newfound availability has become important for Japan following the lack of nuclear energy available after the Great East Japan Earthquake and subsequent tsunami nuclear disaster in Fukushima. Nobuo Tanaka, former executive director of the International Energy Agency (IEA) and global associate for Energy Security and Sustainability of The Institute of Energy Economics in Japan, served as keynote speaker, followed by three discussants: Geoffrey Heal, Professor of Social Enterprise at Columbia Business School (CBS); Travis Bradford, president of the Prometheus Institute for Sustainable Development and associate professor at Columbia University; and Paul J. Scalise, JSPS Research Fellow at the University of Tokyo and fellow at the Institute of Contemporary Asian Studies at Temple University. The symposium took place at CBS, with Hugh Patrick, director of the Center on Japanese Economy and Business at CBS, serving as moderator.

Mr. Tanaka commenced with a brief description of shale gas and its consequences for the geo-political future of the world. Four decades ago, developed countries were the largest consumers of energy, while today, emerging markets account for 50% of energy consumption, with their proportion of the energy market steadily increasing. Therefore, energy security will be an ever-increasing concern for developing countries.



*Nobuo Tanaka*

Mr. Tanaka focused on how shale gas as an unconventional source of energy will be a game-changer in the energy trade industry. By 2020, the United States will be the largest producer of gas, surpassing Russia; it will also be the largest oil producer, surpassing even Saudi Arabia. While all other countries increase their imports of oil and gas, the United States will substantially decrease its oil imports and increase its gas exports. This will improve its trade deficit and create more jobs in the manufacturing and chemical industries. It will also alter the situation in the Middle East, a major geopolitical issue in which the United States plays a vital part. He believes that China and Japan may need to assume more important roles in Middle East peacekeeping.

Mr. Tanaka also emphasized the need for Japan to emulate Europe in building an interconnected electricity market and grid with neighboring countries like Korea. Electricity prices in Japan will only rise in the future, likely peaking at up to three times the price paid in China and twice that paid in the United States. He wondered whether Japan can survive this energy shock; he believes it can, but that its industry will suffer if it does not take proactive action. He also mentioned the latest research on other unconventional sources of energy such as methane hydrates and other new technologies taking place in Japan.

Mr. Tanaka believes that Japan should take steps to prevent an energy shortage by sharing the lessons it has learned from the Fukushima disaster. This is important in order to protect its neighbors and thus ensure its own safety. Japan should consider a new generator model called the Integral Fast Reactor for its nuclear power plants. This new reactor has better safety features, doesn't lend itself to proliferation, and has a waste decay time of only 300 years compared to the current 100,000 years. Mr. Tanaka underlined the importance of continued production of nuclear energy in Japan; without it, Japan risks becoming a second-tier developed nation.



*Left to right: Paul Scalise, Travis Bradford, Geoffrey Heal, Nobuo Tanaka, Hugh Patrick*

Mr. Tanaka thus believes that the big question of the future is whether Asian economies can expand their portfolio of energy sources. He concluded by saying that the future of energy cannot be decided locally.



*Geoffrey Heal*

Professor Heal made the distinction between the United States and Japan in terms of their energy positions in the world. While the former is naturally endowed by large deposits of coal, gas, shale gas, and shale oil, it also has a high potential for tapping solar and wind energy. Japan, on the other hand, has no significant reserves of fossil fuels, nor does it carry a high potential for renewable energy.

Professor Bradford exercised caution over the extent of economic and trade impacts that the discovery of shale gas will have. Shale gas comes with other social costs that need to be taken into account. Water

and air quality issues are not well understood, and they create a “Fukushima” risk on local development. He strongly believes that we need to be careful about the many unknown risks of shale gas and oil due to its novel, untested nature.



*Travis Bradford*

Professor Scalise then explored the NIMBY (Not In My Back Yard) phenomenon which most companies and countries exhibit: the desire to benefit from energy technology without having to bear the brunt of its negative externalities. In the case of nuclear energy, they want to enjoy its large quantity and cheap cost, but remain apprehensive about employing it because of its negative side effects. He believes that the NIMBY factor could lead to energy deficiencies in most parts of the world, including Japan.



*Paul Scalise*

The panel discussion concluded with a question-and-answer session with the audience.

*This event was cosponsored by The Center on Japanese Economy and Business at Columbia Business School and The Mitsui USA Foundation.*