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BRIEFS FOR THE PACIFIC ENERGY SUMMIT
May 2015

REGIONAL PERSPECTIVES ON TRENDS IN GLOBAL OIL MARKETS

The average price of oil fell to a six-year low in early 2015 after declining by 50% over the course of just one year. Although prices have continued to fluctuate, the overall trend of cheaper oil has had profound implications for the Asia-Pacific, which consumes well over half of the world's oil. The region is also home to four of the five top oil-producing countries, and oil exports continue to play a key role in many economies.

For some countries, lower oil prices have been embraced as an opportunity to enact much-needed policy reforms and improve trade balances; for others, lower prices have had profoundly negative economic ramifications. Worldwide, falling oil prices have spurred shifts in policy, consumer behavior, and industry projections, and as the current center of global energy demand, the Asia-Pacific has dramatic effects on worldwide energy security.

In this NBR briefing series, experts from across the Asia-Pacific offer country and regional perspectives on recent trends in global oil markets. These briefs assess the dramatic and varied effects that falling oil prices are having on China, India, Indonesia, Japan, Russia, South Korea, and North America and examine the implications for policy, industry, and the public. Join the discussion by tweeting to us @NBRnews and #PESBeijing.

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THE IMPACT OF LOW OIL PRICES ON CHINA

By Kang Wu

Like many other Asian countries, China has been affected by recent dramatic changes in global oil prices. In the view of FACTS Global Energy (FGE), the shift occurring in the global oil market is structural, and we have entered an era of lower oil price ranges that is likely to last for years.[1] As such, the impact of low oil prices on China will not end anytime soon. This policy brief assesses the impact of low oil prices on China in several areas, ranging from the economy and the environment to energy security and regional cooperation on market instability.

ECONOMIC IMPACT

The implications of sustained low oil prices may be wide-ranging for the Chinese economy. On the positive side, low oil prices have resulted in the following changes:

- Lower imports of oil in dollar amounts will increase China's current account surpluses. Using crude oil as an example, in 2014 China imported a total of 6.2 million barrels per day of crude oil at a cost of $228 billion (at an average oil price of around $101 per barrel). Crude oil accounted for 12% of China's total merchandise imports. For 2015, FGE projects that China is likely to import 6.5 million barrels per day of crude oil. If average Brent crude prices are in the range of $55–$60 per barrel for the year as a whole, total imports will be valued at $130–$142 billion.[2] The share of oil in China's total merchandise imports is thus forecast to decline to 7%.
- Low oil prices are expected to stimulate growth of China's GDP. Estimates vary, but the impact appears to be positive.[3]
- This trend should facilitate efforts by the Chinese government to reform the country's tax and fiscal systems.

1 Ferediun Fesharaki, "The Oil Market and Oil Prices: The Elusive Hope for Equilibrium," FACTS Global Energy (FGE), Chairman's Corner, no. 80, March 2015.

2 Fesharaki, "The Oil Market and Oil Prices."

3 J. Ma, "Impact of Lower Oil Prices on the Economy," *Caixin*, January 19, 2015, http://opinion.caixin.com/2015-01-19/100775826.html.

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A negative implication, however, is that low oil prices have enhanced the fear of deflation. If deflation indeed occurs, the consequences could be grave, considering that China has surplus capacities in many energy-related industrial sectors.[4] Meanwhile, investment in domestic energy supplies, particularly oil and gas production, is likely to be negatively affected by low prices, leading to lower contributions from these sectors to China's GDP growth.

IMPACT ON ENVIRONMENTAL AND ENERGY SECURITY

Low oil prices impose a challenge for the Chinese government to achieve some of its environmental policies and targets. The impact may vary from fuel to fuel.

Natural gas. Following the collapse of oil prices, the Chinese government has been slow in adjusting natural gas prices. During 2014, gas demand growth was already negatively affected due to the increase of government-regulated prices. With lower prices in place for oil, natural gas demand may be further affected. For instance, natural gas competes mainly with diesel and liquefied petroleum gas (LPG), among major oil products. Now that diesel has become cheaper, promoting liquified natural gas (LNG) cars and other gas vehicles has become increasingly difficult. When oil prices were high, LPG could not compete with natural gas for residential use in most places, but now the former's competitiveness has inched up.

Coal. The bulk of coal consumption—power generation—will not be affected immediately because China has few oil-fired plants. Instead, coal-based chemicals have been affected the most. Coal-to-liquid projects have been hit because of lower prices for gasoline and diesel, though the pressure has been alleviated somewhat due to the fall of coal prices. Coal-to-gas projects will be affected too, followed by other coal-based chemicals.

Renewable energy and biofuels. Renewable energy generally competes with coal, so the immediate impact of lower oil prices is minimal. In the long run, however, it is generally challenging to promote the use of renewable energy if oil prices stay low. Development of China's biofuels had already been slow because of poor economies of scale. Biofuels now face new challenges with low oil prices.

As far as energy security is concerned, low oil prices present a few challenges to the Chinese government. On the one hand, domestic oil production has been hit hard by low prices. On the other hand, oil imports will be stimulated because it is cheaper to import oil, and lower prices—though muted somewhat by the hike of consumption taxes on gasoline and diesel—have increased demand. As a result, net oil imports will rise and may jeopardize the government's effort to mitigate dependence on imported energy, particularly oil.

One major advantage of low oil prices in terms of energy security, however, is the opportunity for China to fill up its strategic petroleum reserves (SPR). Indeed, the construction speed of phase-2 SPR sites in China, which had been slow for a couple of years, has accelerated since the second half of 2014.

POLICY IMPLICATIONS

Low oil prices provide a rare opportunity for the government to reform its tax and fiscal systems and the oil price regime. The government has already done so by raising consumption taxes on gasoline and diesel three times since November 2014—on November 28 and December 13, 2014, as well as on January 12, 2015.[5]

Low oil prices have also resulted in lower imported LNG prices, not only for China but also for all other Asian buyers as well. Taking this opportunity, the Chinese government completed the final step of its three-step plan for reforming natural gas prices for nonresident use by merging the two price tiers into one.[6] The new regime has been in effect since April 1, 2015.

[4] R. Li, ed., *Studies of Major Issues for Petroleum and Petrochemical Sectors—Dealing with Surplus Capacities* (Beijing: Gold Wall Press, 2014).

[5] China Continued to Raise Consumption Taxes on Refined Products with the Third Hike in Seven Weeks," *People Net*, January 12, 2015, http://finance.people.com.cn/n/2015/0112/c1004-26370789.html.

[6] K. Wu and W. Huang, "Final Phase of China's Three-Step Natural Gas Price Reform: What's Next?" FGE, China Energy Series (Gas), no. 85, March 27, 2015.

PROSPECTS FOR REGIONAL COOPERATION ON OIL MARKET STABILITY

Although oil prices are currently well below $100 per barrel, we have entered a stage with high price volatility. The market plays a key role in determining prices, and oil supply may swing as prices rise and fall. For Asia, regional cooperation to ensure market stability needs to deal with this new challenge of low but volatile oil prices.

For developing countries in Asia, low oil prices provide golden opportunities for governments to reform their price regimes for oil and gas.[7] Much like China, a number of Asian economies, such as India, Indonesia, Thailand, and to a lesser extent Malaysia, have all been in the process of seizing such opportunities. Given that the situation in each country is often different, governments can share their experiences to promote regional cooperation.

Many Asian nations are major oil- and gas-importing countries, and the reduction in oil and gas prices has significantly lowered their energy import bills. Under these circumstances, it is important for developed economies in Asia such as Japan, South Korea, and Taiwan, which benefit from reduced import payments, to consider helping energy-producing countries such as Indonesia, Malaysia, Brunei, Vietnam, Papua New Guinea, and Australia to overcome some of the difficulties related to the reduced revenue for upstream energy production. As such, cooperation between energy-importing economies and energy-producing countries is key to ensuring stable supply during times of highly volatile oil prices.

[7] Ferediun Fesharaki, "Lower Oil Prices: Will Oil Demand Rebound?" FGE, Chairman's Corner, no. 76, February 2015.

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INDIA'S PERSPECTIVE ON OIL MARKET VOLATILITY

By Manish Vaid

Crude oil prices in India followed a similar trajectory to leading global crude oil benchmarks, which in early 2015 fell to their lowest levels since April 2009. According to the Ministry of Petroleum and Natural Gas, the Indian Basket price of crude oil declined sharply from $110.42 a barrel in mid-June 2014 to $43.36 a barrel on January 14, 2015.[1]

This slump in global crude oil prices offered the Indian government an opportunity to be steadfast in its economic reforms by addressing both current account and fiscal deficits. While the price decline allowed the government to fill up its strategic petroleum reserves (SPR) and deregulate its downstream sector to reduce subsidy burdens, lower prices also stalled upstream investments needed for augmenting domestic production of hydrocarbons. This brief assesses the impact on India of recent oil price volatility and draws policy implications.

ECONOMIC IMPACT

The recent drop in crude oil prices could not have come at a better time for India. In May 2014, Indian citizens gave the newly elected Modi government the mandate to press forward on badly needed reforms to revive the economy and improve energy security. The biggest benefit of fallen crude prices for India, as one of the world's largest oil importers, has been foreign exchange savings to the tune of $3 billion per month, even as the country continues to import 3.2 million barrels of oil a day.[2] Low oil prices have also helped reduce inflation to levels below 6%, as targeted by the Reserve Bank of India, which could bring India's current account deficit to 1% of GDP, while reducing the fiscal deficit through fuel subsidies.[3]

1 Ministry of Petroleum and Natural Gas (India), Press Information Bureau.

2 Charles Ebinger and Vikram Mehta, "Time to Act on U.S.-India Energy Cooperation," in "The Second Modi-Obama Summit: Building the India-U.S. Partnership," Brookings Institution, Report, January 2015, 47–49.

3 Sudheer Pal Singh, "Lower Oil Prices to Keep Inflation under 6%, CAD at 1%," *Business Standard*, March 17, 2015.

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Given these trends, the current government has received a rare opportunity to kick-start its subsidy reform process by deregulating the diesel price, which for the first time since January 2009 was cut by 3.37 Indian rupees a litre.[4] India's public sector oil marketing companies have been some of the biggest beneficiaries of reforms. They have witnessed a sharp fall in under-recoveries of 50% during 2014–15, as well as lower working capital and interest costs.

IMPACT ON ENVIRONMENTAL AND ENERGY SECURITY

Although the fall in the crude price has brought a new hope for the economic development of oil-consuming countries, it is worth considering the environmental implications of this trend for India. The proliferation of SUVs and other privately owned vehicles, which run on fuels like diesel and petrol, could significantly increase emissions. On the other hand, changing technologies and tightening environmental constraints will lead to low oil-intensive growth, significantly reducing energy-intensity levels. A case in point is India's planned increase in solar energy capacity by fivefold to 100 gigawatts by 2020.[5] These efforts are part of a deliberate attempt by the Indian government to provide a cleaner atmosphere and healthier environment.

POLICY IMPLICATIONS

Low global crude oil prices limit incentives for the upstream sector, particularly at the places where most of India's prospectivity lies—in tough regions of deep and ultra-deep waters. Consequently, India has delayed the tenth round of its National Exploration Licensing Policy planning, which has a unique feature of uniform licensing policy, wherein the government had planned to facilitate production of all forms of hydrocarbons.

Therefore, while India waits for a more opportune time to make upstream projects viable, it should speed up crude procurement for its SPR. To this end, the country recently purchased two million barrels of Iraqi crude for its first SPR in Andhra Pradesh. In the downstream sector, the government should extend its deregulation process to both liquefied petroleum gas and kerosene to optimize the benefit of subsidy cuts.

PROSPECTS FOR REGIONAL COOPERATION ON OIL MARKET STABILITY

Given the high dependence on imported petroleum, the South Asian Association for Regional Cooperation (SAARC) may consider setting up a regional or subregional refinery to meet member states' demand for petroleum products. Being a net exporter of petroleum products, India could take the lead in supporting such initiatives.

Further, because Iran is the most proximate oil- and gas-exporting nation to India, the U.S.-Iran nuclear deal, if finalized, could be useful in helping India meet its energy security goals. In addition to revisiting the Iran-Pakistan-India natural gas pipeline, India should secure long-term oil and gas contracts with Iran. India could then further process this crude from its surplus capacity refineries for export to South Asian markets, thereby meeting the demand for petroleum products from nations across the region.

All in all, low oil prices offer India more positives than negatives. India should move to quickly capitalize on this trend in order to not only satisfy its own energy needs but also quench the energy thirst of other South Asian countries.

4 "Diesel Deregulated, Prices Slashed by Rs 3.37 per Litre," PTI, October 18, 2014.

5 Smiti Mittal, "India Eyes 100 GW Solar Power Capacity by 2022," Clean Technica, November 23, 2014.

Photo credit: "Mumbai Night Lights: Vikhroli-Kanjurmarg East" by Ashwin John

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LOW OIL PRICES: IMPACTS FOR INDONESIA

By Satya Widya Yudha

The average crude oil price has fallen due to the increase of the United States' daily production of crude oil and the decision of OPEC to maintain its production while European and Chinese economies are slowing down. The general decline in oil prices has a positive impact for many states, but whether a country is a net oil importer or exporter is an important factor to determine whether it benefits or suffers losses from the oil price decline. In this case, Indonesia, which imported 106 million kiloliters of crude oil and 179 million kiloliters of fuel in 2014, is overall benefiting from the decrease in oil prices, despite declines in estimated nontax revenue from oil and gas.[1]

ECONOMIC IMPACT

Decreased oil prices will result in lost potential revenue of almost 253 trillion Indonesian rupiahs, or $20.24 billion, in the 2015 state income projection. However, the lowered state projection for oil and gas production of 8% also accounted for this loss. In addition, the low price of crude oil will cause a decrease in Indonesia's export commodity prices. This trend will suppress revenue from Indonesian exports, as about 60% of Indonesian exports are in the form of commodities.[2]

However, the decrease of oil prices will encourage the improvement of Indonesia's current account deficit. A Ministry of Trade press release on March 17 stated that "the export total for the month of February 2015 reached USD 12.3 billion while imports reached USD 11.6 billion. Therefore, a USD 738.3 million was achieved."[3] The current account for oil and gas itself is in a surplus condition caused by the 18.7% decrease (month to month) of oil and gas imports, as oil and gas exports only decreased 8.8% (month to month).[4]

1 Slide presentation by the acting director general of oil and gas of the Indonesia Ministry of Energy and Mineral Resources at the House of Representatives of the Republic of Indonesia on January 20, 2015.

2 "Perkembangan ekspor non gigas" [Growth of Non Oil and Gas Export Commodity], Ministry of Trade (Indonesia), http://www.kemendag.go.id/id/economic-profile/indonesia-export-import/growth-of-non-oil-and-gas-export-commodity.

3 "Amid the Weakening of the Rupiah, the Trade Balance Remains a Surplus," Ministry of Trade (Indonesia), Press Release, March 17, 2015, http://www.kemendag.go.id/en/news/2015/03/17/di-tengah-pelemahan-nilai-rupiah-neraca-perdagangan-masih-surplus.

4 "NPI Februari surplus USD0,74miliar" [Indonesia's Current Account February Surplus USD 74 billion], Ministry of Finance (Indonesia), March 17, 2015, http://www.kemenkeu.go.id/en/node/45135.

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The fall in world oil prices encouraged the Indonesian government to recalculate the amount of subsidized fuel prices. In its new policy, the government revoked the fuel subsidy for premium fuel and provided a subsidy fixed at 1,000 rupiahs per liter for diesel fuel. This policy is considered a win-win option for the government and the public. With the reduction in fuel subsidies, the government can maximize its spending on productive sectors. On the other hand, the public can enjoy lower fuel prices, which move in accordance with the market price. In the future, the government will set a new fuel price each month based on the results of calculations from various factors, including exchange rate and oil prices in the previous month. Thus, this policy will comply with the Indonesian constitution's mandate that the state set the fuel price.

With the revocation of the premium fuel subsidy, the reduction in diesel fuel subsidy, and the fall of oil prices, the projection of government spending on fuel subsidies in 2015 is down to a mere 88 trillion rupiahs ($7 billion) from a 2014 level of 276 trillion rupiahs ($22.08 billion). With savings of 188 trillion rupiahs ($15 billion), the most important consideration now is how the government allocates the savings from fuel subsidies (consumption expenditure) to a productive expenditure (a pro-growth, pro-jobs, and pro-poor) government budget. With sizeable fiscal room, infrastructure development needs to be realized soon, particularly in the energy sector via the construction of refineries and gas pipelines to ensure energy security and even distribution of gas within the country.

IMPACT ON ENVIRONMENTAL AND ENERGY SECURITY

Even amid falling oil prices, Indonesia has to reduce its dependence on imported fuels by diversifying its energy supply and developing a non-carbon-based fuel portfolio that can improve Indonesia's energy security. While renewable energy development is vitally important, it will take decades for Indonesia to scale up to meet the challenge. Thus, optimizing the potential benefits of natural gas can provide a near-term, affordable, and cleaner bridge fuel until clean alternatives such as nuclear, hydroelectric, solar, and wind power become larger-scale.

PROSPECTS FOR REGIONAL COOPERATION ON OIL MARKET STABILITY

From a regional perspective, Southeast Asia has huge gas reserves but they are unevenly distributed. The Trans-ASEAN Gas Pipeline (TAGP) project, which envisages the creation of a transnational pipeline network linking almost 80% of the region's total gas reserves and utilization centers, was planned to solve this problem. However, this project still remains dormant. Significant challenges in realizing the TAGP are to reconcile the differences in pricing and market structures and to harmonize regulations in each country. For example, in Indonesia, because the constitution mandates that the government set the price of gas, prices cannot follow market rates.

There are new prospects for enhanced cooperation particularly on biodiesel as Indonesia's government recently promulgated regulations to raise the mandatory mix of biodiesel in diesel fuel from 10% to 15%. With six of the top ten palm oil–producing countries in Southeast Asia, this opens the possibility of regional collaboration to increase biodiesel production, though imported biodiesel will continue to be in demand to fullfill domestic market needs.

CONCLUSION

As a net importer of oil, Indonesia benefits from falling oil prices. This development provides an opportunity for the country to revise costly policies, such as the fuel subsidy system, and has provided a net benefit to the

current account balance despite falling revenues from domestic oil production. Domestic laws, such as the constitutional requirement that the government set fuel prices, limit the scope for future ASEAN-wide cooperation on oil and gas. However, Indonesia's efforts to diversify energy sources, such as through increased biodiesel consumption, open the door to new avenues of cooperation. Though falling oil prices present a challenge to these initiatives, the economic viability of developing new and renewable energy should be ensured by providing attractive incentives. Continued efforts on diversifying energy resources are critical to Indonesia's energy and environmental security goals, and renewable energy and natural gas have important roles to play.

Photo credit: "KURAU/PERTAMINA 59 (IMO: 9004932), Benoa Harbour, Denpasar, Bali, August 19 2012: OIL PRODUCTS TANKER, 4731 tons, built 1992. Registered in Jakarta, Indonesia" by Andrew Thomas

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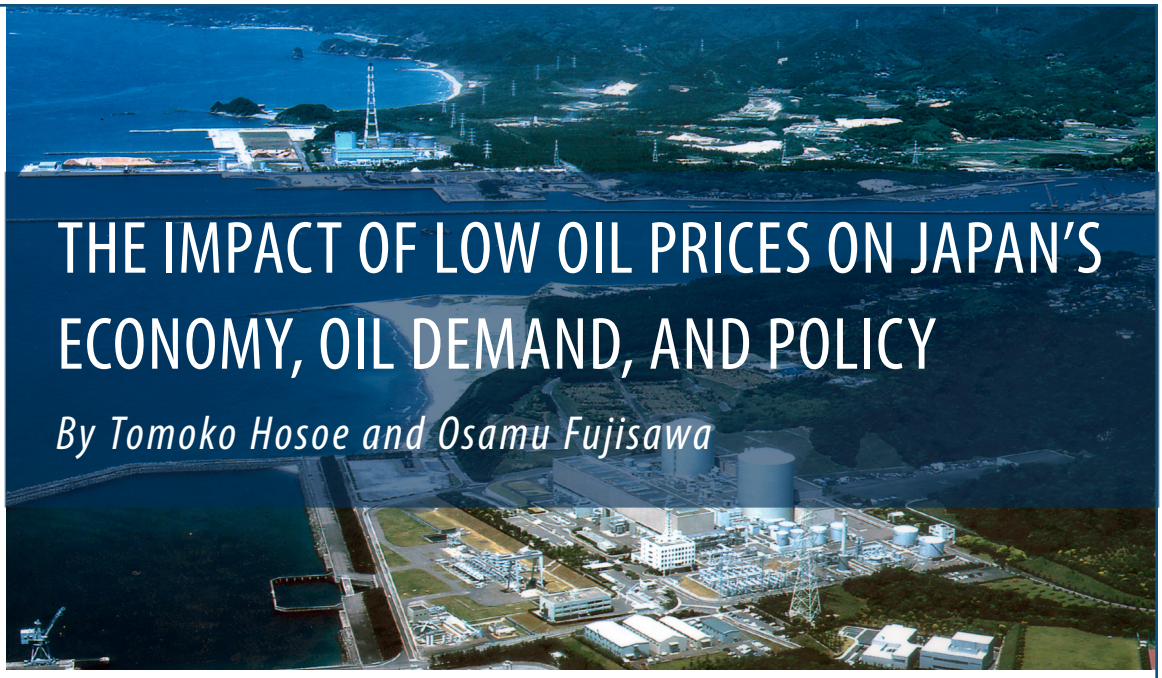

THE IMPACT OF LOW OIL PRICES ON JAPAN'S ECONOMY, OIL DEMAND, AND POLICY

By Tomoko Hosoe and Osamu Fujisawa

The recent lower oil prices will have limited impact on Japan's oil demand and energy policy direction. Oil demand will maintain its downward trend, due to demographic factors as well as improving fuel efficiency. Even before the Fukushima incident, the government already had developed a firm plan to reduce the country's dependence on oil. In fact, the volatility of oil prices does not bode well for Japan's energy security. The country's long-term energy policy will continue to focus on nuclear energy and encourage the increasing use of nuclear energy as well as renewables to mitigate climate change and move away from oil. The government also wants to reduce Japan's dependence on liquefied natural gas (LNG), which accounts for nearly 50% of the total power-generation mix despite the fact that LNG is not defined as a base-load fuel.

THE ECONOMIC IMPACT OF LOWER OIL PRICES

Recent lower oil prices, together with the depreciation of the Japanese yen, are expected to help increase Japan's GDP growth by a range of 0.8%–1.0% annually. In fiscal year (FY) 2014, GDP growth was negative (-0.5%) mainly because of the adverse impact on consumer spending of the consumption tax increase from 5% to 8% (implemented in April 2014). However, the Japanese Cabinet Office forecasts GDP growth to be 1.5% in FY2015.[1] It also forecasts that the trade deficit will halve in 2015, primarily because of low oil and LNG prices, although this trend will be partly offset by a weak yen.

The key factor for sustainable economic recovery, however, is stimulating consumer spending, which accounts for 60% of GDP. To achieve this goal, an increase in individual income is necessary. Although large corporations have mostly announced that they will increase salaries and wages this year, this policy has not yet been adopted by small- and medium-sized companies, which employ almost 70% of the total workforce.

1 For details about Japan's GDP, see the Cabinet Office website, http://www.cao.go.jp/index.html.

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THE EFFECTS OF LOWER OIL PRICES ON OIL DEMAND

Lower oil prices, meanwhile, have not yet stimulated Japanese oil demand. Despite pump prices plunging by 25% for the July 2014–January 2015 period, gasoline sales have not increased. FACTS Global Energy (FGE) forecasts gasoline demand to improve only slightly this year, after having declined by a sharp 3% in 2014.[2] Believing that their income will not increase anytime soon, consumers remain cautious about spending and continue to drive less.

In the long term, Japan's oil demand will maintain its downward trend, even if macroeconomic issues improve, due to demographic factors (in particular, Japan's aging and shrinking population) as well as improving fuel efficiency. Furthermore, post-Fukushima power saving and energy conservation have become a habit for consumers.

JAPAN'S ENERGY POLICIES

In terms of Japan's energy policy, the government wants to reintroduce nuclear power with appropriate safety assurances for the long term. Despite the Fukushima crisis, nuclear power still offers an attractive source of base-load power generation in terms of reducing carbon emissions and fuel imports. Furthermore, both employment and local infrastructure relating to the nuclear power industry play an important role in Japan's economic activities.

Despite the government's long-term policy targets for nuclear energy, none of Japan's 48 nuclear reactors is operating today. Consequently, LNG accounts for nearly 50% of the total power-generation mix.[3] The Ministry of Economy, Trade and Industry (METI) considers this to be a serious problem, as it does not define LNG as a base-load fuel, and it has encouraged Japanese utilities to reduce their LNG consumption. METI defines nuclear, coal, and hydro as Japan's long-term sources of base-load generation, LNG as a middle-load fuel, and oil as a peak-load fuel. In its draft target for the power-generation mix in 2030, the government allocated 20%–22% for nuclear energy. The Abe administration's energy policy clearly defines nuclear energy as a base-load capacity.

In many ways, security and conservation are the two key issues surrounding Japan's energy security situation. The government's energy policy emphasizes that the country needs to diversify energy sources for greater supply security, while the core will continue to rely on nuclear energy. It encourages the increasing use of renewables to mitigate climate change and move away from oil. Even before the Fukushima incident, the government already had developed a firm plan to reduce the country's dependence on oil.

In conclusion, FGE Japan does not believe that low oil prices will affect Japan's oil demand and energy policy significantly. Instead, the country's long-term energy policy will continue to focus on nuclear as the source of base-load generation until at least 2030.

[2] For details about Japan's oil demand forecast, see FGE, Oil Databooks, Spring 2015.

[3] See Takayuki Sumita, "Japan's Views on Future LNG Market" (presentation at the LNGA Conference, Singapore, March 3, 2015).

Photo credit: "Sendai nuclear power plant (Sendai, Japan)" from IAEA Imagebank 04780025

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THE EFFECTS OF LOWER OIL PRICES ON RUSSIA

By Ekaterina Grushevenko

ECONOMIC IMPACT

The impact of falling global oil prices on the Russian economy cannot be seen apart from the impact of a worsening geopolitical situation and the introduction of economic sanctions on Russia in 2014. Altogether these factors have led to increasing uncertainty, a rapid economic decline, and a deterioration of the conditions for further economic growth.

According to the estimates by the Russian Ministry of Economic Development, in 2015 annual GDP could contract by 4%–5% if oil prices remain low at around $45–$55 per barrel.[1] In 2016–17, according to the Energy Research Institute of the Russian Academy of Sciences, economic growth will remain negative at around -0.5%–1.5%, even if oil prices recover to $80 per barrel. According to our estimates, the Russian economy could only achieve positive growth if the oil price were to rise above $90 per barrel.[2]

This situation yields high risks for the 2015 national budget, which the government initially set given an oil price of $96 per barrel. According to the head of the Accounts Chamber of the Russian Federation, by the end of 2015 the state budget deficit could reach 17% of budget incomes ($45 billion).[3] In response to this situation, the government plans to make significant cuts to the budget, primarily to salaries in the public sector. This policy could create social tension, given the potential reduction in household income and the rate of employment.

The government had to provide state support to the companies affected by falling oil prices by taking assets out of the National Welfare Fund (NWF), which has created additional risks for the Russian budget. In July 2014 the total allocation of funds to reduce the impact of the economic crisis increased to 60% of the overall reserves within the NWF. Energy companies are among the major recipients of this state aid: as of

1 Ministry of Economic Development (Russia), "Alexey Ulyukaev—Bloomberg TV: Economic Growth of Russia Will Resume in 2016–2017," January 15, 2015, http://economy.gov.ru/wps/wcm/connect/economylib4/en/home/press/news/201501154.

2 "Global and Russian Energy Outlook to 2040," Energy Research Institute of the Russian Academy of Sciences and Analytical Center for the Government of the Russian Federation, 2014, http://www.eriras.ru/files/Global_and_Russian_energy_outlook_up_to_2040.pdf.

3 Andrey Ostroukh, "Russia's Budget Deficit More Than Doubles in a Month," *Wall Street Journal*, March 12, 2015, http://www.wsj.com/articles/russias-budget-deficit-more-than-doubles-in-a-month-1426176589.

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April 2015, the Yamal LNG project run by Novatek has received 150 billion rubles from the NWF. Rosatom, which is implementing its Hanhikivi-1 nuclear power plant project in Finland, received similar state support (5% of NWF reserves).[4] The largest application for state support comes from Rosneft, which requested 1.5 trillion rubles (or 30% of NWF reserves).[5]

POLICY IMPLICATIONS

First of all, low oil prices challenge implementation of large upstream projects, which has changed the attitude of the government toward Russian oil companies. For the first time in many years, the government is seriously considering the possibility of directly subsidizing state companies and strategically important projects out of NWF reserves.

The second most important consequence is linked to the accelerated reorientation of Russian export policy. Low oil prices, coupled with falling demand in the European market and growing competition for European consumers between Russian, Middle Eastern, and African suppliers of oil and petroleum products, make reorienting exports eastward and cooperating with Asian partners on a large scale the main strategic priority for Russia.

Cooperation with Asian partners concerns not just export supplies but also the problem of insufficient investments (given low prices). Russia is planning to partially resolve the latter problem by involving Asian companies in Russian upstream projects. According to Russia's current law on strategic reserves, foreign investors cannot acquire stakes over 10% in companies developing large fields (with reserves over 70 million tonnes of oil). As of March 2014, the government started to consider allowing Chinese companies the opportunity to freely own a 25%–49% stake in production companies and potentially even a controlling stake in companies developing strategic fields.[6] This would be implemented within the framework of economic integration between Russia and China. Such measures would be approved by a special committee and would be aimed at increasing capital investment in the oil industry. However, they require significant adjustments to the existing Russian legislation.

Lower oil prices have also raised the issue of changing the taxation system for oil production. In 2014, Russian president Vladimir Putin did not support a proposed move toward a profit-based tax for oil companies. Despite this, widespread discussion continues on this subject, fueled by low prices, which the supporters of such a move use as a key argument. This new taxation system would be effective for the oil companies but rather risky for the Russian budget. Oil companies are actively lobbying for a move away from the current "tax plus royalty" system and a shift toward a profit-based tax.[7] The main argument used by the supporters of a profit-based tax is the fact that the current system is aimed at taking away super-profits, which no longer exist given the current oil price. Proponents argue that maintaining the current regime could lead to a reduction in investment, which would negatively affect production. Those arguing against the profit-based tax point to large losses in budget revenue and the difficulty of tax administration. For example, the director of the Department for Tax and Customs Policy of the Ministry of Finance, Ilya Trunin, stated that, according to initial estimates, if a profit-based tax were introduced, federal budget losses could reach $44.4 million.[8] No final decision has yet been

4 "New Requests for NWF Funding Have Worse Chance than Old Ones—Dvorkovich (Part 2)," Interfax, April 3, 2015, http://www.interfax.com/newsinf.asp?id=583416.

5 The Russian government is still reviewing this application.

6 Gazprombank, Oil and Gas Weekly, March, 14, 2014, http://www.gazprombank.ru/upload/iblock/868/gpb_og_weekly_20140314.pdf.

7 These taxation regimes are used in Norway and Australia.

8 "Minfin: Poteri byudzheta ot perehoda neftyanki na NFR mogut dostich 2,8 trln rub" [Ministry of Finance: Budget Losses from the Oil Industry in the Transition PBT Can Reach 2.8 Trillion Rubles], *Neft Rossii*, March. 17. 2014.

made, but in any scenario, this implementation would have major consequences for the Russian oil industry.

ENERGY SECURITY IMPACT

Low oil prices are not expected to have any serious impact on the energy security of Russian consumers. A large proportion of investment in refineries was made prior to the oil price decline, and these plants will enable Russia to provide an uninterrupted supply of oil to its domestic market.

However, the issue of ensuring demand security for external supplies prompts serious concerns. Given stagnating demand in the European market, Russia faces a serious issue of organizing construction of large export infrastructure projects in the eastern direction, while there is an increasing lack of investment due to the Russian energy companies and governmental revenue decline. For example, by 2022 Russia plans to extend the Eastern Siberia–Pacific Ocean (ESPO) pipeline capacity from the current level of 50 million tonnes annually to 80 million tonnes annually.[9] To provide financing for these projects, the top management of Rosneft uses long-term contracts to hedge large risks. As of 2015, around 30 million tonnes of oil (60% of the total volume supplied via ESPO) have been contracted to China.

PROSPECTS FOR REGIONAL COOPERATION ON OIL MARKET STABILITY

The Russian government places high hopes on integration within the framework of the Eurasian Economic Union (EEU), which was created on January 1, 2015. Russia, Kazakhstan, Belarus, and Armenia became members, and Kyrgyzstan is expected to join in May 2015. Countries outside Russia's immediate neighborhood have also shown interest in this single economic union, including Vietnam, Iran, India, and Egypt. One of the main goals of the EEU in the oil market is to create by 2025 a single trade zone for the export and import of petroleum products. The agreement envisions a single petroleum price for all members of the EEU and common export routes.

Creating a single market for petroleum products carries with it both positive and negative consequences for Russia. An increase in the export of petroleum products to EEU member countries is one of the positive effects, as it would partially offset declining Russian exports to Europe. However, a potential oversupply of petroleum products could drive down prices. This in turn would negatively affect the profits of oil companies and budget revenues from exports.

The effect of low oil prices on Russia cannot be separated from the sanctions imposed in 2014 and increased competition in oil export markets, particularly in Europe. Together, these developments in the short term will have a negative impact on budget revenues and economic growth. Facing these challenges, the Russian oil industry has undertaken an active reorientation to the East. This reorientation consists not only in increasing export volumes but also in establishing business relations with Asian partners.

9 Transneft, "Eastern Siberia–Pacific Ocean Pipeline System," http://www.en.transneft.ru/about/projects/current/1204.

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BRIEF FOR THE PACIFIC ENERGY SUMMIT May 2015

THE IMPACT OF LOW OIL PRICES ON SOUTH KOREA

By Younkyoo Kim

South Korea is a major oil and LNG importer in Northeast Asia, most of which comes from the Middle East. In the face of the U.S. shale revolution, South Korea has pursued supplier diversification and regional energy trade collaboration. This brief examines the impact of low oil prices on both South Korea's domestic energy policy and regional energy trade dynamics and discusses how low oil prices have become an issue of regional cooperation for oil market stability. The recent plunge in oil prices is likely to reverse energy and other infrastructural projects between South Korea and Russia and prolong South Korea's oil and LNG dependence on the Middle East and the Persian Gulf. This will lead Seoul to strive to diversify oil and LNG supply sources beyond this region to include North America and East Africa.

ECONOMIC IMPACT

As the world's second-largest importer of liquefied natural gas (LNG), South Korea stands to gain from the current low cost of oil. The price of LNG is tied to the price per barrel of oil, and as the cost of oil falls, South Korea is better able to negotiate strong terms for long-term purchasing contracts. This trend can already been seen in deals such as the one between Chevron and SK LNG Trading, which will see an average of 4.15 million tons of LNG (830,000 tons per annum) from the Gorgon project delivered per annum from 2017 to 2021.[1]

Many end users in South Korea are also making deals with importers, which is an interesting shift from the more traditional means of long-term contract buying. This leads to more competitive terms and essentially cuts out the middle supplier—state-owned Korean Gas Corporation (KOGAS), known as the largest purchaser of LNG worldwide. South Korea's LNG demand is forecast to rise 2.6% year on year to 42.14 million tons in 2015 before falling steadily. Demand is expected to decline 0.5% to 41.95 million tons in 2016, 2.9% further to 40.74 million tons in 2017, and another 2.3% to 39.81 million tons in 2018.[2] In

1 Lucie Bell, "Chevron Strikes Deal to Sell Gorgon LNG to South Korean Conglomerate," January 21, 2015, http://www.abc.net.au/news/2015-01-21/chevron-gorgon-deal/6031728.

2 "South Korea's KOGAS to Cut LNG Imports in Response to Weaker Demand," Platts, November 20, 2014, http://www.platts.kr/latest-news/natural-gas/seoul/south-koreas-kogas-to-cut-lng-imports-in-response-27856421.

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2014, KOGAS sold 27.6 million tons of LNG from January to October, down 9.6% year on year (2013–14).[3] Economically this shift could benefit South Korea. Although end users pay a higher price for imports, they receive a net gain because their markup is reduced from the direct transaction. How this will affect KOGAS is still to be seen. Many believe that the company will need to tighten its margins and be more aggressive in contract negotiations to maintain its position as the largest buyer of LNG in the world.

Low prices for oil and LNG allow South Korea to bolster its economy, particularly within the major industries related to oil and gas, such as shipbuilding. Although South Korea is the world's largest shipbuilding nation, with a world market share of 32%, the industry has been suffering due to the economic slowdown and high oil prices since 2008. This situation is changing, however. Foreign investment in maritime vessels is on the rise, and the potential increase in exports from the U.S. shale revolution is yielding a positive outlook for the Korean shipbuilding industry.

On the other hand, GS Caltex has experienced losses since the rise of U.S. shale, largely because U.S. shale is mainly light tight oil and does not require the type of refinement offered by Caltex. Another potential blow for the company is the Keystone XL pipeline. If finished, the pipeline will transport Canadian tar sands production to the Gulf of Mexico to be refined in the United States. Coupled with low oil prices and increased volatility in the market, this project has caused many in the South Korean energy industry to become concerned about future security and begin searching for long-term stability.

Lower oil prices will boost the competitiveness of South Korean exports, but not all industries will benefit. The petrochemical industry and heavy industry, for example, will be less profitable. If oil prices are also being affected by the sluggish growth of the global economy, then the positive impact on the South Korean economy will be limited.

PROSPECTS FOR REGIONAL COOPERATION ON OIL MARKET STABILITY

The recent plunge in oil prices is likely to prolong South Korea's oil and LNG dependence on the Middle East and the Persian Gulf, which will lead Seoul to strive to diversify oil and LNG supply sources beyond this region to include North America and East Africa. With Japan and South Korea as the world's largest importers of LNG, and China rapidly growing in terms of oil product consumption, these countries form a strong buying trifecta that could work together to stabilize the oil market. Seoul has been making strides to achieve this outcome. By opening an oil storage and refinement hub in 2014 in Ulsan, South Korea could function as the storage, refinement, and exchange site for oil in Northeast Asia. The country also boasts three of the ten largest oil refiners in the world, making it an ideal partner for Japan and China in the coming years.

IMPACT ON REGIONAL ENERGY TRADE DYNAMICS

In addition to affecting South Korea's domestic energy policies, the recent oil price collapse has introduced a new dynamic into the East Asian energy equation that forces China, Japan, and South Korea to reconsider their options, policies, and relationships with the United States and other players in the context of a severely diminished Russian presence. East Asia has been the great hope of the Russian government and energy sector. Though Russia has discussed large-scale oil and gas sales to East Asia for over twenty years, the results to date are not much to brag about, even considering the recent gas deal between Russia and China. Gas deals with Japan and South Korea have stagnated, and China is essentially paying for Russian gas at cost.

The only relatively positive area in Russian energy sales to Asia before the gas deal of May 2014 was oil sales to China. However, Russia won

[3] "South Korea's KOGAS to Cut LNG Imports." Platts.

those contracts only at the price of accepting huge Chinese loans of $25–$30 billion as infusions of cash to Rosneft and agreeing to facilitate Sinopec's acquisition of oil and gas assets in Russia. This lopsided energy policy emerges clearly when compared with Russian energy relations with Japan and South Korea. At present, there is no direct oil pipeline from Russia to Japan or South Korea. Thus, China's monopoly on Russian energy investments in the Far East stokes fears of Russia becoming ever more in the thrall of China due to Russia's failure to diversify its customer base.

Long-standing Russian plans for a trans-Korean gas pipeline connected to the East Siberian gas fields have gone nowhere. President Park Geun-hye announced in October 2013 a plan to expand economic cooperation with Eurasian countries for more trade opportunities. Called the Eurasian Initiative, the policy is centered on the idea that exchanges between South Korea and Eurasian nations, especially Russia, will help induce an opening up in reclusive North Korea, thus allaying the long-running military and diplomatic tensions on the Korean Peninsula.

However, the recent oil price collapse will further reverse energy and other infrastructural projects between South Korea and Russia. Low prices have dashed for the time being the high hopes for the realization of long-standing Russian plans for a trans-Korean gas pipeline connected to East Siberian gas fields and the Russian Arctic. Absent Pyongyang's assent, any gas pipeline from Russia to South Korea would have to traverse China, because Beijing already long ago vetoed any alternatives through Mongolia. A pipeline to South Korea through North Korea could bypass China, thereby reducing the latter's leverage on Russia. This pipeline would provide alternative consumers for Russian energy exports and thus allow Russia to better negotiate a higher price with China.

The most important consequence of the recent oil price collapse is the precipitation of this new debate about energy security and energy trade. A new energy security architecture involving China, Japan, and South Korea will be needed, and South Korea is a good candidate for strong involvement in this emerging global and regional energy architecture. Amid shifting dynamics in global energy markets, it is important to move from bilateral to broader regional and global approaches to energy trade. ≈

Photo credit: "The ship "Kerfons" off the coast of Kourou, French Guiana. Photo taken from Royale Island." by Aria Belli via Wikipedia Commons.

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BRIEF FOR THE PACIFIC ENERGY SUMMIT
May 2015

THE IMPACT OF LOW OIL PRICES ON NORTH AMERICA

By Frank A. Verrastro

For nations that both produce and consume large volumes of oil, a significant (and sustained) price drop necessarily presents a mixed bag, carrying both positive and negative implications. Some of these impacts are evident immediately, while others take a bit longer to manifest themselves. Such is the case for countries in North America, which are all substantial oil producers and consumers, importers and exporters.

THE UNITED STATES

In the last several years, the United States has been the largest source of incremental global oil supply growth. Although rig counts and price remain substantially below levels of a year ago, oil and gas production has so far remained remarkably resilient. Largely as a result of investments made in previous years and the refocusing/high grading of drilling efforts to the most productive basins, well productivity has continued to grow even as rig counts have declined. The desire to maintain income streams and contract terms that require leases to be held by production continue to spur ongoing development, albeit at a slower pace. According to statistics published by the U.S. Energy Information Administration (EIA), March production in the United States averaged some 9.32 million barrels per day (mmbd), the highest level in 40 years.

At issue, however, are the questions of how low prices can fall and, more importantly, how long they are likely to remain at depressed levels. The duration of the price trough has severe implications for future investment and output in the second half of 2015 and beyond, given the steep decline rates associated with unconventional production. In recognition of cash flow concerns, drilling budgets have been slashed, expenditures have been curtailed, and the drilling of "research" wells, which had become a common practice to better understand the reservoir dynamics of unconventional basins, has all but been eliminated.

In March 2015, the U.S. economy added 126,000 jobs—the lowest monthly increase since December 2013 and substantially below economists' expectations.[1] So far this year, employment in mining, the category

[1] Bureau of Labor Statistics, U.S. Department of Labor, "The Employment Situation—March 2015," March 27, 2015.

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covering the oil and gas sector, is off some 30,000 jobs. In contrast, the sector added over 40,000 jobs in 2014, mostly in service-related positions, which are typically the easiest and first for companies to cut when prices, income, and profits decline.[2] According to the U.S. Bureau of Labor Statistics, since December 2014, oil and gas firms have announced 91,000 energy-related job cuts, and state and regional impacts are uneven.[3]

The prospects for reversal anytime soon are not bright. Absent a major supply disruption or political upheaval—an eventuality that is not out of the question given insurgency in Yemen, distress in Nigeria and Venezuela, and continued instability in Iraq, Syria, and Libya—or a resurgent rise in economic growth and oil demand, the second half of 2015 looks equally bleak for producers. Add to that the likelihood of incremental new supplies coming online from Iraq and Iran, as well as quick-cycle U.S wells, and you have the makings for a persistent price slump while we work off the current surplus.

On the demand side of the ledger, the EIA now forecasts stronger economic growth in 2015–16 than that experienced in 2013–14, in no small part due to reductions in energy costs. Average household expenditures are projected to fall by some 17% in 2015.[4] Lower global oil prices also mean reduced prices paid for imports. (The United States still imports approximately 7 mmbd of crude and an additional 2 mmbd of refined products.) Estimates suggest that lower oil prices will translate into energy and fuel cost savings of $750–$1,000 for the average American household, although so far these savings have not translated into increased consumer spending elsewhere.

CANADA

The assessment for Canada is similarly mixed. In testimony before the House of Commons Finance Committee in February, Rhys Mendes, an economist at the Central Bank of Canada, told members that the "rapid fall in oil prices will have both positive and negative effects on different sectors of the Canadian economy." He noted that even though real GDP grew by 2.4% in the fourth quarter of 2014, the real incomes of Canadians contracted because the value of an important Canadian export (oil) had also declined. Mendes's testimony also emphasized the regional impacts and relationship of energy-related supply chains, noting that "30% of all goods supporting the Alberta oil sands come from other provinces."[5]

MEXICO

For Mexico, a significant but smaller producer and consumer, the impact of low oil prices is more complex. In the midst of widespread economic and energy reform, the precipitous downturn in prices was both inopportune from a timing perspective and also unwelcome in terms of prospective revenue streams. On the positive side, imports of lower-priced oil and gas from the United States into the Mexican economy can also be beneficial. On a macro level, Canada and Mexico both benefit from U.S. economic growth. The bigger energy-related issue for all three countries is the duration of the price trough and the manner in which prices rise on the back end.

ENERGY AND ENVIRONMENTAL SECURITY OUTLOOKS

From an environmental and energy security perspective, the discussion of low oil prices is more nuanced. Depending on demand elasticity, lower oil (and gas) prices should in theory stimulate additional oil demand, while at the

2 Sarah Portlock, "Economists React to March Jobs Report," *Wall Street Journal*, April 3, 2015.

3 Paul Davidson, "Cheap Oil Prices Chop Jobs by Thousands," *USA Today*, March 31, 2015.

4 U.S. Energy Information Administration, "Effects of Low Oil Prices" (presentation at the Center for Strategic and International Studies, Washington, D.C., February 26, 2015).

5 Gordon Isfeld, "Low Oil to Have 'Both Positive and Negative Effects' on Canadian Economy, Ottawa Told," *Financial Post*, March 12, 2015.

same time reducing the economic attractiveness of higher-priced but less polluting forms of energy, like nuclear and renewables. This is not a good outcome from an environmental perspective. Additionally, lower gasoline prices tend to make the purchase of hybrid, gas-powered, or electric vehicles less attractive. While public policy choices—e.g., mandates, tax incentives, and HOV-lane accessibility—can be used to partially offset this economic advantage, the opportunity to displace or replace liquid petroleum fuels in transportation is likely to be delayed. Further, with low oil prices the economics of expensive liquefied natural gas (LNG) projects also come into question.

On a foreign policy, national security, and energy security basis, lower oil prices tend to reward low-cost producers, the bulk of which remain the conventional oil producers in the Middle East. Lower U.S. and Canadian production volumes reduce the proportion of output from secure nations, increase reliance on suppliers located in less stable areas, and increase the likelihood of future disruptions and underinvestment, thus leading to price increases going forward.

Some foreign policy enthusiasts have opined that increasing U.S. oil production would substantially enhance the United States' leverage in dealing with allies as well as competitors and adversaries. Proponents of this view argue that U.S. supplies could replace those of the Middle East or Russia. I tend to view that perspective more as attractive political rhetoric than substantive fact. For while the United States is now the world's largest oil and gas producer, it is still a significant oil importer, and is likely to remain so for the foreseeable future. Security comes in many forms, not the least of which include having a robust global market, strategic stocks from which to draw prompt barrels in times of significant shortfalls, and policies that support balancing prudent and timely development of indigenous (fossil and renewable) energy resources with environmental stewardship, economic improvement, strong trade ties, and a future-oriented outlook (as the energy landscape continues to change).

Policies aimed at supporting those objectives would include the elimination of consumer subsidies, the promotion of R&D and the adoption of more resilient and sustainable energy forms, the timely approval and construction of needed delivery infrastructure, the dissemination of continued best practices, elimination of barriers to exports, assistance to foreign governments in designing and realizing free-market regulations, and prompt recognition of the desirability of putting meaningful prices on carbon and water, just for starters.

The rise in unconventional oil and gas has expanded the opportunity pool of future supply, added more nations to the mix of prospective and potential producers, and already altered global energy flows. This will likely extend the life of fossil fuels, and for a time lower prices to the benefit of consumers everywhere. As with all depletable resources, however, underinvestment now is likely to bring unpleasant consequences in the future. We are still in the very early stages of this development, and multiple outcomes—not all desirable—have yet to be identified. Historical energy supply-demand relationships between nations will inevitably continue to shift, intraregional trade may expand at the expense of longer-haul trade, and geopolitical alliances may be altered as a consequence. ~

This series of briefs was edited by Laura Schwartz.

Photo credit: "The sun sets behind a pump jack near Midland, TX" from the National Institute for Occupational Safety and Health (NIOSH)

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