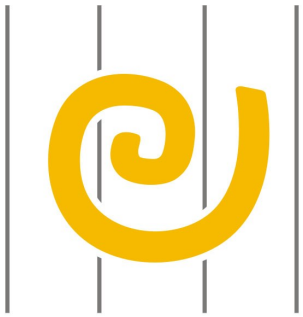

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Naftogas Ukrainiy: Its Future Prospects and Dilemmas

—Anna Bartkiv

On the 3rd of March 2014 Arseniy Yatsenyuk announced that Naftogas Ukrainy shall be privatized. In his eyes it is a burden for the Ukrainian economy and by privatizing it Ukraine will no longer accumulate astonishing debts to Gazprom, amounting to almost $3.3 billion as it was in the beginning of this year. He called Naftogas a "burden for the budget and non-transparent monster". He proposed to sell Naftogas and its "daughter" companies, such as Chernomorneftegaz, through clear auctions, as it will help fight corruption in Ukraine.

Experts have been questioning the reasons behind such a statement; does Yatsenyuk really care for the future of his motherland or is this a repetition of old scenarios played out in Ukraine, such as the notorious privatization of Kryvorizhstal, in which Rinat Akhmetov, the richest man in Ukraine, and Viktor Pinchuk, the son-in-law of ex-president Kuchma? (According to a 2004 article in the Telegraph, the two Ukrainian businessmen paid $800 million for the state-owned property despite the submission of bids almost twice that sum) Whenever anything is changed in the political realm one has to ask himself: in whose interests is this change? This especially concerns Former Soviet Union countries where political cliques are the true determinant of political paths and almost no deal can be finalized without a bribe.

But let us first examine the very nature of Naftogas, its prospects and the future dilemmas that makes it such a hot topic. The National Joint Stock Company Naftogas of Ukraine is the leading enterprise in Ukraine's fuel and energy complex. According to the Kyiv Post, Naftogas comprises Ukraine's largest oil and gas extraction activity and it holds a monopoly on the transit and storage of natural gas in underground storage facilities. It produces one eighth of the country's gross domestic product and provides one tenth of the state budget revenues. Consequently, these characteristics make it an extremely valuable asset for the state and its people.

If Naftogas were privately owned right now, it would have no real competitors and therefore the government would need to understand how to prevent it from taking advantage of its dominant position.

Pros and Cons of Naftogas Privatization

From a purely economical point of view there are number of advantages and disadvantages of privatization presented in this paper. The advantages include improved efficiency, which would highly benefit Ukraine's economy, considering that energy inefficiency is the main reason behind its dependence on Russia. Also, the lack of political interference that would come from privatization would be great in theory since the political situation is so unstable and depending on who is in power, state-owned companies serve only those who are in charge. Additionally, increased competition would raise its efficiency, especially if new companies were to form. Finally, from the sale of Naftogas the government could raise revenue, which Ukraine needs in light of the current economic situation and multiple debts.

There are, however, certain limitations to the benefits of privatization. The problem with natural monopolies, like Naftogas, is that if they are left unregulated, they will produce much less and charge a price much higher than what is socially optimal (where marginal benefit equals marginal cost). For instance, if Naftogas were privately owned right now, it would have no

real competitors and therefore the government would need to understand how to prevent it from taking advantage of its dominant position. Importantly, the prices, which are heavily subsidized (87 cents from each dollar) for the households, are rising anyway as the import price goes up, some predict up to $500 per mcm - twofold after Gazprom's discount is lifted. If the subsidy is not eliminated, then the government would continue paying, draining the budget. Another disadvantage is that the government would lose potential dividends.

Now, if we turn to the political side of the debate, the picture differs. It is no secret that in Ukraine's case, politics will be heavily involved in the decision making, therefore one needs to consider local dynamics carefully.

The current government is trying to demonstrate that it lives according to European laws and operates within the Third Energy Package, hence the explanation why now it is now considering the privatization of Naftogas - it might please the European authorities.

Pandering to the EU and Other Political Factors

There is a reason behind Yatsenyuk's statement about the privatization of Naftogas. First of all, Yatsenyuk claims subsidies are bad in the long run because they make the economy weak and crippled by constant financial support. European states, especially the Baltics, the logic goes, suffered in the beginning from the transition away from cheap gas prices but are now some of the strongest states and since Ukraine wants to be a European state it should act like one. Plus, the IMF advised the current government to raise the price for customers by 50% in exchange for a loan. However, experts claim that the reason why Europe has such high prices is very different. High prices are conscious policy in Europe designed to stimulate the development of renewables. Ukraine with its current economy is incapable of focusing on developing renewables.

The second part of the question of the whole privatization matter is who would buy Naftogas? Konstantin Simlonov, the general director of national energy security in Russia, claimed Gazprom doesn't need Naftogas and of course now nobody would sell it to Russia taking the current situation into account. The current government is trying to demonstrate that it lives according to European laws and operates within the Third Energy Package, hence the explanation why now it is now considering the privatization of Naftogas - it might please the European authorities. Another reason is that it is in the finest Ukrainian traditions to reject whatever has been done before by the previous government; this may simply be a PR move before the upcoming presidential elections in May 2014. Yatsenyuk is trying to portray himself as a forward looking young leader who will revitalize Ukraine's economy and carry out lustration, that is, getting rid of previous corrupt politicians.

Time to Settle Old Scores?

Yatsenyuk's plan to privatize Naftogas has faced more criticism than support from the experts for several reasons. The current scenario resembles vendetta rather than lustration. Take, for example, the arrest of Evgeniy Bakulin, the former head of Naftogas. He was accused by the new minister of Internal Affairs, Arsen Avakov, on his Facebook page, of stealing up to $4 billion by way of corrupt schemes involving the transport of Russia's gas. Ukrainian political expert, Aleksey Blyminov, claims Bakulin's arrest is related to Firtash's arrest in Vienna on the 13th of March. He believes the arrest is a direct consequence of Firtash's arrest. This is due to the fact that Bakulin

was an important player in the corruption scheme of Firtash- Sergey Levochkin, a Ukrainian politician – and Yuri Boiko, the former Energy Minister. Additionally, as Yulia Timoshenko is out of prison, she is finishing her personal lustration of Rosukraenergo, that she started in 2009, through the hands of her people- Aleksander Turchinov, who is the Rada's current speaker. Probably, next in line is the former minister Yuri Boiko, says Blyminov. The real question is whether the current government with the new Energy minister Yuri Prodan is interested in total liquidation of old corruption schemes, or if this is really about re-monopolizing old sources of shadow income, as we saw take place after the Orange Revolution ten years ago.

The real question is whether the current government with the new Energy minister Yuri Prodan is interested in total liquidation of old corruption schemes, or if this is really about re-monopolizing old sources of shadow income, as we saw take place after the Orange Revolution ten years ago.

It is worth reminding that Boiko, when he was a deputy prime minister, claimed that Naftogas needed to be privatized and that the main reason for this was its lack of transparency. Therefore, the logic was similar, but the governments are different. During Yanukovich's presidency, the consultancy group Ernst & Young advised privatization as a means to fight corruption. When Boiko was Energy Minister, the opposition was against it, because there was a fear that Gazprom would have bought shares of Naftogas in a 50-50 joint venture, which would have given Russia easy access to the EU market. Control over the gas transportation system of Ukraine by Gazprom could have brought risks to the access to the system for future unconventional gas, particularly if Ukraine were to withdraw from the EU's Energy Charter Treaty – and thus Third Energy Package. Such developments could have forced international companies such as Chevron to leave or led to the reformatting of PSAs with the inclusion of Gazprom - or its affiliated companies - in the PSAs, according to shalegas.in.ua.

Issues Involving Price Levels and Legal Procedures

Andrey Pinchuk, a member of the Party of Regions – Yanukovich's old party, claims that privatization of Naftogas could harm Ukraine's economy. His reason is that Naftogas is subsidizing the prices for gas and oil for end consumers, and if Naftogas were to become a purely commercial organization, a lot of Ukrainian citizens would find themselves in a difficult situation in which the prices would be even higher than before the discount that Russia's Gazprom is about to lift. Or, the government would end up paying the difference as before and therefore continuing to drain its budget. Thus, according to him, Naftogas has to remain state-owned due to its social role. He also claimed that the eagerness of the current government to make changes now in such unstable time could bring a lot of unresolved questions later. Therefore, before selling Naftogas, the state needs to make sure it will be able to control its social agenda (low prices) and assure that the auction is really clean as a whistle as Yatsenyuk claims it will be.

Yatsenyuk is eager to proceed with privatization ASAP, but Pinchuk says there is a specific law that states that bids must be organized exactly in a month, no shorter. In general, the legality of such a procedure is questioned. "Structures like Naftogaz are not privatized in accordance with the regular procedures. They can be turned into joint-stock societies which can place a small portion of their shares on exchang-

es. However, it's a totally different thing. I don't think privatization in which a package of shares is sold at auction is possible," said Ukraine's State Property Fund Director Oleksandr Riabchenko in late 2012. The law hasn't been changed yet and therefore his claim remains legitimate.

The true motives of Yatsenyuk are questionable and worth examining. We don't know who will want to buy this inefficient "monster" and whether privatization will really happen, or if this is just an empty threat, among many.

Vitally, Naftogas has shares in a couple of "daughter" companies. For example, Ukrgasdobycha (a Ukrainian gas extraction company) formally was under Naftogas, but it was claimed that its previous head (who was replaced this month) was Firtash's man. In Ukranfta, Naftogas has 50% shares (48% are owned by "Privat Bank") and in this case, commercial interests are the priority for its management. Ukrnafta has already received the right to sell part of its extracted gas not by regulated, but by commercial prices. Logically this might happen to other companies such Ukrgasdobycha. Currently, Naftogas and its daughter companies operate under the conditions of low internal prices that are not profitable, but if this were to change to realization of commercial prices, the stakes would be much higher. Importantly, Ukraine's situation is one of almost total cronyism and corruption and such machinations will be implemented without people's interests.

And finally, regional gas distribution companies "облгазы" that were privatized mostly by Firtash a year and a half ago were of little interest - old infrastructure requiring billions of investment with low regulated prices. If the prices became commercial, then these "oblgasi" would be much more valuable. Subsidies covering extra profit for the future owners of Naftogas in the event of its privatization would most likely be needed from the state. If not, a lot of people would be unable to pay their gas bills without substantial sacrifices. Luckily for the people, Yatsenyuk claimed the Ukrainian government will continue paying the subsidies, with two thirds of the population receiving them despite the 50% increase in prices after May 1.

To conclude, if Naftogas is privatized it will serve foremost political interests of the current government rather than those of ordinary citizens. The true motives of Yatsenyuk are questionable and worth examining. We don't know who will want to buy this inefficient "monster" and whether this will really happen, or if this is just an empty threat, among many.

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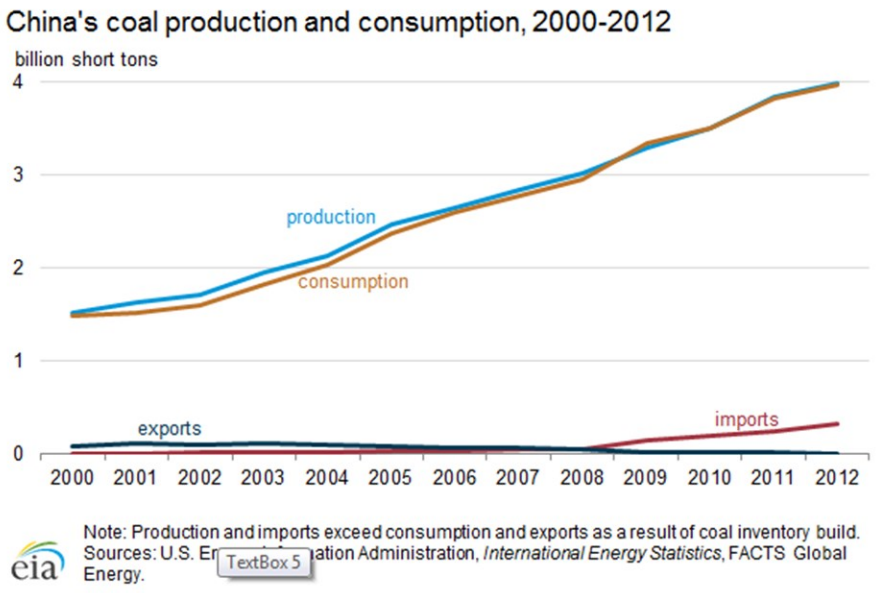
Unconventional Wisdom: Is China Preparing for a Shale-Gas Revolution?

—Ryan McKinley

As China is the world's number one energy consumer, what happens in its energy sector has large and widespread implications around the globe. Until fairly recently, the Chinese have been content with producing domestic sources of coal to power their industries. But as concern for the environment grows and hydraulic fracturing technologies improve, developing China's unconventional natural gas reserves may become more enticing for Beijing. This paper seeks to outline some of China's current challenges in, and reasons for, exploiting these assets. In short, it explores the potential for a North American style "shale-gas revolution" in the world's largest energy market. As I will argue, it's more likely than you might think.



China's Coal Profile. *US Energy Information Agency.*

China is the single largest consumer of coal, and its consumption accounts for almost half of total global consumption.

China's Coal Problem

As the tendrils of coal produced smog choke the residents in most of China's largest cities, calls for pollution reduction have garnered the attention of the Chinese Politburo. The industrial behemoth, with 69% of its primary consumption relying on coal, has historically sought to secure its energy resources by relying on domestically produced coal, while eschewing imports of potentially more expensive and foreign-produced natural gas. On paper, producing its own power using domestic coal makes sense for China as it has the third-largest reserves in the world, behind only the United States and Russia according to the Energy Information Administration (EIA). What is most noteworthy, however, is that China is the single largest consumer of coal, and its consumption accounts for almost half of total global consumption. The environmental cost of this is most tangible to those living in highly industrialized cities. In fact, only 3 out of 74 of China's biggest cities met minimum air quality standards last year. On March 5th 2014, Reuters reported that Chinese Premier Li Keqiang declared pollution in China "nature's red-light warning against inefficient and blind development". Unfortunately, details of how China would go about improving pollution levels were scant. While Li Keqiang did not state it outright, Beijing is likely considering lowering its consumption of coal in order to decrease CO2 emissions and improve air quality. In the U.S. for example, CO2 emissions hit a 19-year low in 2012 due to an increase in the use of natural gas by 10% and a decrease of coal consumption by

13%. However, it is not just for environmental reasons that China may want to shift away from coal.

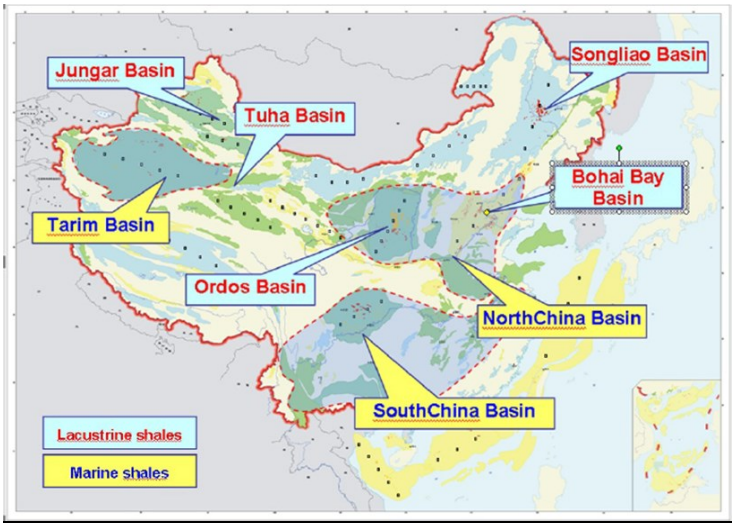
China has roughly 144.4 trillion cubic meters of shale gas—larger than total U.S. reserves by 50%. Of these 144.4 trillion, China is thought to have somewhere around 36.1 trillion cubic meters of technically recoverable deposits.

Coal's biggest advantage in China, apart from being cheap, is that it could be produced domestically, thereby reducing dependence on foreign supplies – a central theme underpinning China's energy security strategy. But as consumption has risen, domestic production has not been able to keep pace and China became a net-importer of coal for the first time in 2009. This means that not only has coal become less secure, but it becomes exponentially less beneficial as its effects on the environment and human health become more apparent. Could domestic production of shale gas be the answer to China's environmental and energy security concerns? For starters, it is necessary to examine the amount of shale gas that is potentially available to the Chinese.

Assessing Shale Gas Reserves in China

Gas currently represents around 4% of China's primary energy consumption. However, domestic gas production has begun to grow considerably, and Beijing has recently started importing piped gas from Turkmenistan and Myanmar, as well as liquefied natural gas (LNG) from various exporters. The shift towards utilizing natural gas to keep its economy moving forward seems almost inevitable, and many believe that shale gas will play a crucial role in this transition. Some estimate that China has roughly 144.4 trillion cubic meters of shale gas—larger than total U.S. reserves by 50%. Of these 144.4 trillion, China is thought to have somewhere around 36.1 trillion cubic meters of technically recoverable deposits, a sizeable amount in its own right.

There are three major basins which are believed to be the most favorable in terms of reservoir qualities: the Sichuan Basin in south-central China, the Tarim Basin in north-west China, and the Ordos Basin in north-central China (including Inner Mongolia). Furthermore, there are roughly seven additional basins scattered throughout the country with sizeable quantities, but less favorable reservoir qualities. It is important to note here that although the estimates for these fields are staggering, shale gas developments are still in their early stages. Very limited drilling has been carried out in these locations and highly detailed information on shale formations is either limited or not available. Most estimates have been done based on analogous major shale gas formations in the U.S. Regardless of whether the numbers are higher or lower than initial estimates, the potential for large-scale development of shale gas certainly exists. But this does not answer the question of whether or not China will pursue these reserves or simply opt for less technologically intensive alternatives. To com-



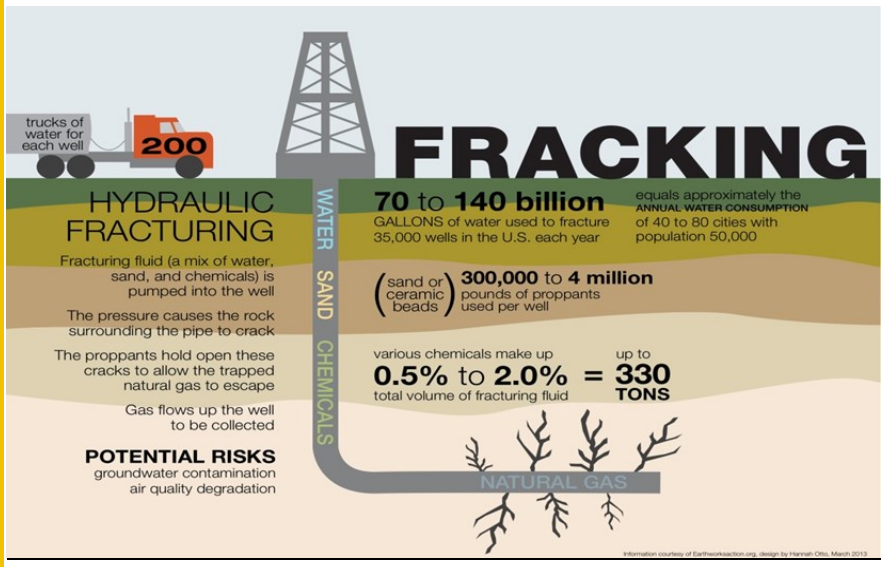
Shale Gas Distribution Map in China. *Oxford Institute of Energy Studies—CNPC's Presentation at the 9th Sino-US Oil and Gas Industry Forum.*

pare this to the study of physics, how willing and able is China to take this potential energy and convert it into kinetic energy?

There is still a big need for foreign expertise in China, and fracking is generally undertaken by small-medium sized companies (SMCs) in the U.S. Indeed, China is a challenging place for foreign companies, and this may restrict their development of shale gas assets.

The Challenges in Developing China's Shale Gas

The gas deposits mentioned earlier are located from 2,438 to 6,400 meters (8,000 to 21,000 feet) below the earth's surface. The process of exploiting these resources is known as "hydraulic fracturing" or simply "fracking". In short, this is done by injecting fluid that is typically mixed with water and sand/or chemicals into rock formations, fracturing the rocks and forcing them to open. These fractured rocks allow oil and gas to flow out of the formation into the wellbore (the hole created) from where it can be extracted. With this in mind, what are some of the obstacles standing in the way of a Chinese shale gas boom?



Fracking Process. *Earthworksaction.org, design by Hannah Otto, March 2013.*

The process of fracking presents three major hurdles for Chinese energy companies. First, the amount of water required to carry out this process is enormous, and it will be difficult to supply the amounts needed as the country already faces severe water shortages. Second, the process requires the available infrastructure, most notably pipelines, in order to transport these resources to the market. Compounding this problem is the fact that the process of fracking generally requires a high degree of mobility. Wells that are being fracked generally have short lifespans. This means that the operation has to be picked up and moved to a new location fairly regularly. Thus, transportation issues become a serious problem. Last, and arguably most critical, is the lack of fracking technology in China. It is for this reason that some experts such as Fan Gao, a Bioinformatician at MIT, caution against optimistic assumptions for China's shale gas boom. According to him, there is still a big need for foreign expertise in China, and fracking is generally undertaken by small-medium sized companies (SMCs) in the U.S. Indeed, China is a challenging place for foreign companies, and this may restrict their development of shale gas assets. According to him "the scale of risks and uncertainties involved are unfavorable for small or medium size independents seeking quick turnover and returns". Additionally, unlike their major IOC counterparts, these SMCS may be uncomfortable working with major Chinese national oil companies (NOCs) and may find the new business climate and regulations daunting.

In 2009, Chinese authorities announced plans to ramp up shale gas production with a target production of 20-40 billion cubic meters per annum by 2020.

While these companies generally specialize in extracting shale gas, they face substantial barriers and are generally viewed unfavorably by Chinese NOCs for a few reasons: the aforementioned lack of full-scale appraisal of shale resources in China; the lack of selection of prospective blocks by these companies; and the unproven ability of existing techniques to extract gas from the geologically challenging shale basins. It is worth emphasizing that the competition between these SMCs has largely driven the technological innovation needed to ignite the shale gas boom in North America. Without these companies, fracking in a country dominated by national oil companies (NOCs) would likely prove to be a slow and arduous endeavor, as the technology to exploit shale gas in China's difficult terrain would be slow to develop. This competition would also be hampered by the regulated domestic gas prices - greatly decreasing profit margins - and by the fact that distribution networks are owned by NOCs.

Overcoming the Obstacles

But the indicators for China's shale gas boom are of course not all negative; the challenges presented by lack of infrastructure, water shortages, and technological capacity can be remedied. Recent developments in fracking technology have rendered the use of water in the process obsolete; as it can be replaced with carbon dioxide. But, according to Kevin Bullis from MIT Technology Review, "if this process is going to be used on a large scale, it will require a major investment in infrastructure for getting carbon dioxide to fracking sites". This sort of large scale infrastructure, which the Chinese are accustomed to building, can be developed to get the gas to markets, and the missing competition amongst SMCs in the country could be replaced by partnerships with IOCs and Chinese NOCs.

Overall, the Chinese government views shale gas development rather favorably. In 2009, Chinese authorities announced plans to ramp up shale gas production with a target production of 20-40 billion cubic meters per annum by 2020. Fulfilling this goal would see shale gas production account for about 10-15% of China's total gas production, though this number is probably optimistic. Fan Gao notes that "operators seem to be much more cautious than policy makers" about how much shale gas can be produced. Companies in the industry simply do not share the ambitious production numbers put out by the government, mostly due to the lack of exploration that has been completed.

Shell, in conjunction with PetroChina, has already invested $1 billion a year to tap into China's vast basins of shale gas.

IOC Involvement and Chinese Government Initiatives

In spite of this, large IOCs with extensive experience operating abroad are lining up for the chance to develop China's shale gas. Shell, in conjunction with PetroChina, has already invested $1 billion a year to tap into China's vast basins of shale gas. Chevron has formed a joint venture with China National Petroleum Corporation (CNPC) and has begun exploring the Sichuan basin. ConocoPhillips has also formed a joint venture with Sinopec and will be competing for reserves with Chevron in the same basin. Perhaps the competition between these "teams" will help quicken the development and spur a shale gas revolution after all. In addition, China has begun auctioning off areas in these basins and in 2012 awarded 19

shale gas blocks to 16 different companies. Naturally this has kicked up the number of competitors looking to turn some profit, and encouraged a third round of bidding in late 2013. Although, as expected, these companies are finding production and exploration challenging given the deep drilling depths and tough operating conditions, such as mountainous regions and densely populated areas. However, it should also be noted that the risks taken by these companies may well be worth it. Beijing now has 2,000 vehicles powered by natural gas and is seeking to increase this number substantially. Furthermore, according to the Beijing Environmental Protection Bureau, a total of 7,000 natural gas powered public buses will be put into service by the end of 2015. While this number isn't exactly overwhelming, the emphasis being placed on the emerging role of natural gas in the Chinese economy by the government is noteworthy. In other words, Beijing is at least acknowledging its intention to increase natural gas consumption. For this reason, the potential profit in the Chinese market seems simply too big to ignore for both IOCs and NOCs.

Table 5: Foreign Players and their Shale Gas Activities in China

Date	International Companies	NOCs	Activity	Area (km2)	Location/Basin	Status
Oct 2007	Newfield	CNPC	shale gas joint study	N/A	Weiyuan Block, Sichuan	completed in 2008
Nov 2009	Shell	CNPC	shale gas joint assessment	3,000	Fushun-Yuangchuan Block, Sichuan	ongoing
Jan 2010	BP	Sinopec	shale gas joint assessment	N/A	Kaili Block, Guizhou; Huangqiao Block, Jiangsu	ongoing
May 2009	Statoil	CNPC	shale gas joint study	2,000	Sichuan	negotiation
3Q 2010	ConocoPhillips	CNPC	shale gas	2,000	Sichuan	pending
4Q 2010	Chevron	Sinopec	shale gas exploration	N/A	Longli County, Guizhou	ongoing
2010	Shell	CNPC	tight/shalegas exploration	N/A	Jinqiu Block, Sichuan	ongoing
July 2011	ExxonMobil	Sinopec	shale gas joint study	3,644	Wuzhishan-Meigu Block, Sichuan	ongoing
July 2011	ENI	Sinopec	MOU covering shale gas	N/A	N/A	N/A

Source: CNPC/Press Report

Foreign Companies Involved in Chinese Shale. *Oxford Institute for Energy Studies—CNPC/Press Report*

If Beijing can manage to lift some of the barriers and reduce the risks for foreign companies seeking to develop their shale gas reserves, we may well have a shale gas revolution that dwarfs the one going on in North America.

Conclusions

China's addiction to coal is a problem that affects every resident in one way or another, and could even lead to civil instability in the future. The status-quo cannot be maintained if China wants to continue with its unprecedented economic growth, and the most viable substitute is natural gas. As we have seen, coal is too polluting and damaging to public health. Generating electricity via renewables is generally expensive and unreliable, and oil is a poor substitute due to costs and the inability to produce enough domestically to match consumption. It is my opinion that while there might not be a Chinese shale gas boom in the short-term, perhaps in the coming decades it will become feasible. In the short-term, gas imported from foreign exporters will have to make up for any reductions in coal usage. However, if Beijing can manage to lift some of the barriers and reduce the risks for foreign companies seeking to develop their shale gas reserves, we may well have a shale gas revolution that dwarfs the one going on in North America. The reserves are enor-

mous, and the Chinese seem to be enthusiastic about this potential. The government has recently prioritized land approvals, allowed tax-free imports of equipment, and has even begun offering subsidies to explorers. The results have been positive: shale gas output rose 200 million cubic meters in 2013 alone. While this is certainly not near the 117.7 billion cubic meters of conventional gas produced every year, it has made Sinopec optimistic. The company now thinks it can produce 3.2 billion cubic meters of shale gas annually by 2015. In the past, the Chinese have been willing to pay for their energy security by developing the infrastructure of other, supplier nations. Perhaps a shale gas revolution will happen if Beijing is willing to put in the effort and money domestically. The Politburo has historically had little qualm with developing infrastructure in other countries to secure its energy supplies, and given its enthusiasm for shale gas, it only makes sense for them to invest in their domestic infrastructure. If China can successfully enlarge its domestic gas production to the levels of (or greater than) the United States, the effects on global energy would surely be profound. ◆

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Geopolitics and Power Systems' Integration in the Black Sea Region

—Daniel Tappeiner

The geopolitical importance of the Caucasus and Black Sea region for energy transit has implied that substantial resources are being devoted to the region by outside powers. Economic and political environments are being shaped in a way so as to be conducive to promoting the interests of both the target countries and the interests of those parties that provide assistance in the form of financial aid and political support. Transnational projects such as the integration of electricity systems reflect geopolitical developments accordingly, with underlying economics being incorporated into policy programs which are very much in flux, and which reflect changing political dynamics.

Electricity network integration initiatives in the Black Sea region and Georgia over the past two decades are reviewed in this article by including reference to political shifts that have overlaid and shaped them, and by focusing in particular on events during Georgia's transition period.

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Electricity System Interconnection Provides Absolute Gains from Trade

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Production and consumption of electric power have to be continuously balanced. There are only a few possibilities for storage through pump storage, for instance, and load factors of power plants and the efficient use of technologies - varying in their investment and fuel costs - are to be optimized. Economies of scale in generation, specific load curves of daily and seasonal demand and natural monopoly-characteristics of transmission infrastructure are further determinants constituting the systemic nature of electricity.

As demand and production grow and allow for regional markets to form through interconnection, systemic properties become more important. Gains from trade through interconnected networks occur in the form of capacity sharing, which economize on complementary generation structures (hydro/thermal, for instance) or differing load curves (for example, consumption peaks "flat out" if a system stretches over multiple time-zones, reducing requirements for peak generation capacity). The Black Sea region currently encompasses three power system regulatory regimes of standards and operation modes, ENTSO-e (European Network of Transmission System Operators for Electricity) comprising EU-member states and potential candidates of South East Europe, IPS/UPS of the former Soviet Union and now including Russia and the CIS region, and Turkey's, which is in the process of integrating into ENTSO-e.

IPS/UPS and ENTSO-e network management parame-

ters are described to be very similar in terms of frequencies and capacity reserve management. Integration of these two has been described as being technically feasible. However, continued initiatives to promote integration have not progressed over the past two decades.

The EU has launched initiatives such as Black Sea Synergy and the Eastern Partnership. These foreign policy initiatives have over time become increasingly better financed and are intended to draw the EU neighborhood closer to the Union, while spreading EU legislation to the near abroad.

Policy Priorities in the Black Sea Region

As energy has successively become an EU priority, energy security has assumed continuously more prominence on the European Union's agenda both in terms of being a cornerstone of internal market liberalization, as well of foreign energy policy. In parallel to the impressions of the Russia-Ukraine gas disputes of December 2005 and January 2009 and the Russia-Georgia war of August 2008, the EU has launched initiatives such as Black Sea Synergy and the Eastern Partnership. These foreign policy initiatives have over time become increasingly better financed and are intended to draw the EU neighborhood closer to the Union, while spreading EU legislation to the near abroad. In terms of the Black Sea region and energy security, the underlying leitmotif is to secure the Southern Energy Corridor as an alternative supply route for oil and gas from the Caspian region and the Middle East.

Specific projects supported by the European Commission were the Nabucco gas pipeline project and the ultimately successful gas export Trans Adriatic Pipeline project. Both need to traverse Turkey and especially Georgia as the choke point for transit in circumvention of insecure territory and in avoidance of relying on transmission systems passing through Russia, a fact considered to impede security of European energy supply.

The European Union's interests as projected onto the region overlap or follow U.S. strategies, where Caspian energy resources were "re-discovered" in the 1990's and foreign policy became explicitly and most recognizably directed towards the region under the first George W. Bush Administration, taking office in 2001.

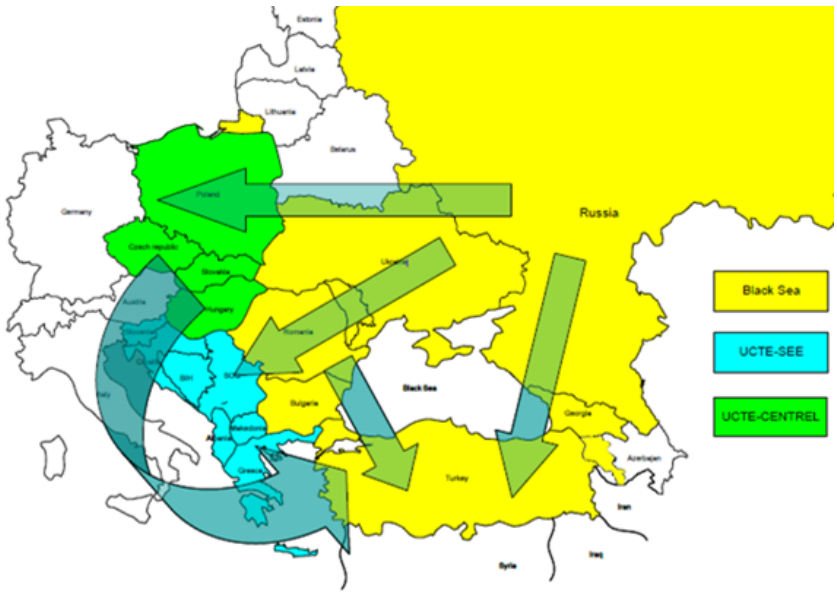
The EU's growing dependence on imported fossil energy and its related desire to diversify sources is mirrored by the Caspian and South Caucasus' states' interest to conserve independence obtained after the collapse of the Soviet Union and to raise export earnings by supplying new markets through routes which are not dominated by competing producer countries.

Turkey for its part has often emphasized that EU membership will be a driving force for joint energy projects in the region, thus expecting political support in return for its crucial role as a transit hub. In this regard, mixed signals from EU members on accession prospects might condition Turkey to assume positions which balance its interests more widely between actors in the region.

Finally, the role of the Russian Federation and its foreign policy towards the region has been described as varying from liberal expansionism, by way of establishing commercial interest positions within the region, to outright energy hegemonism. The Ukrainian gas disputes and the Georgian war of 2008 represent key events shaping the perception and interpretation

of Russia's ambitions and means of achieving them.

It was the common view that integrated grids would benefit all states in the region and it corresponded with declared EU-visions for energy cooperation in the region.



Black Sea region potential power exchange directions. *USAID.*

Early Black Sea Region Power Market Integration Initiatives

Post-1991 cooperation initiatives in the Black Sea region may be described to have crystallized most visibly in the form of the Black Sea Economic Cooperation (BSEC) organization, which was founded in 1992 and today comprises Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Serbia, Montenegro, Turkey and Ukraine. While the importance of the organization has diminished with the integration of countries towards the European Union, it continues to work as a coordination platform with an emphasis on regional projects.

Starting in 1996 the Russian Federation promoted the improvement and establishment of power interconnections between member states with the goal of creating the so called Black Sea Energy Ring. The proposal was taken up by BSEC member states and further discussed within expert groups; data to study the feasibility were shared. It was the common view that integrated grids would benefit all states in the region and it corresponded with declared EU-visions for energy cooperation in the region. Again in 2004 Russia's RAO-UES proposed a project for reconstruction and further extension of the already existing grid infrastructure between Russia, Georgia, Turkey and Azerbaijan. The "South Caucasus Project" called for implementation in synergy with EU-projects in the region.

In parallel, USAID (U.S. Agency for International Development) launched a similarly-structured regional initiative in the same year, involving system operators of the Black Sea region, including IPS/UPS. This USAID-supported project, named Black Sea Regional Transmission Planning Project (BSTP), got ultimately more support, crucially by Turkey, which also planned to join ENTSO-e. Even though the Russian side originally sought to combine these two almost identical projects, it was left with the position of just a participant party initially and was ultimately excluded from the implementation phase.

Integration Initiatives Turn Exclusive

In its early stage the USAID-sponsored BSTP-project assembled the transmission system operators (TSO's) of Armenia, Bulgaria, Georgia, Moldova, Romania, Russia, Ukraine and Turkey and beginning in 2004 combined a series of capacity building programs with technical studies on opportunities for increased power exchange in the region. Fundamentally, these

studies, conducted with the goal of lowering production costs and spare capacities, highlighted the possibility for increased East-West flows from Russia and Ukraine and to a lesser extent from Georgia and Azerbaijan towards Turkey and towards ENTSO-e networks. Substantial cost savings were identified, but only as long as flows were unrestricted and capacities dispatched in coordination. With regard to transmission capacities, the Georgia-Turkey link was identified as being too weak, requiring additional transfer capability. Successively, reports modeled the inclusion of substantial renewable generation, first of all from wind in Romania and hydro in the Caucasus.

While work with a regional view continued, in April 2009 the TSO's of Georgia, Azerbaijan and Turkey and the governmental United States Energy Association (USEA) signed a memorandum of understanding to develop a common transmission system model for the three countries, named the Power Bridge Project, as a basis for government planning in furthering regional trade in electricity. As per the memorandum, participation of any third country required the agreement of all three countries. Further working meetings saw the attendance of the World Bank Group's International Finance Corporation.

By 2000, for instance, Georgia was the largest per capita recipient of U.S. foreign assistance (200 USD - 160 times the per capita amount devoted to Russia).

An earlier study, conducted in 2007, which had been financed by the German government-owned development bank Kreditanstalt für Wiederaufbau (KfW), focused on the Georgian and Armenian electricity sectors. The scope of its analysis of feasible transmission extensions had included the prospect of trade with Iran and Russia. The USAID Power Bridge Project included a technical analysis of this KfW study in its later reports. However, although it was recognized that the North Caucasus electricity grid would be impacted by new infrastructure in the south, Russian TSO's remained excluded, because at this stage, political conflict between Georgia and Russia had produced a strongly Western-leaning administration in Tbilisi.

Consequently, in early 2010 KfW, European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD) with the participation of Development Bank of Austria (OeEB) agreed to co-finance an upgrade to the internal transmission grid of Georgia and to construct new HVDC interconnections with Turkey. This infrastructure will allow for the export of new hydro-based generation in Georgia and thermal-based electricity from Azerbaijan after 2013. The political and economic events which led to the shift in focus from a regional perspective to a sub-regional one excluding Russia can be explained by concurrent developments in Georgia.

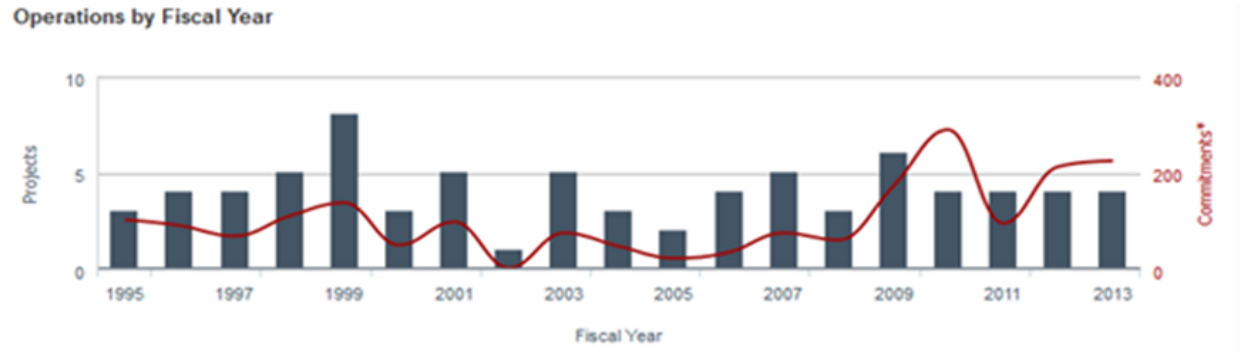
Georgia's Power Sector in Transition

After the collapse of the Soviet Union, Georgia's economy fared worse than most of the countries in transition. By 1995 its GDP had dropped to a level of just 28% of its 1990 GDP and was still below 80% of that value in 2012, worse than both resource-rich and not resource-rich Eastern and Central Asian CIS countries.

The sharp economic contraction occurred despite substantial economic assistance by international financial institutions and bilateral development aid. By 2000, for instance, Georgia was the largest per capita recipient of U.S. foreign assistance (200 USD - 160 times the per capita amount devoted to Russia). Similarly, the energy sector, despite being targeted by foreign aid programs, remained dysfunctional during

the 90's and early 2000's with frequent cut-offs and deficient internal generation covered by imports that could often not be paid for.

The power sector and the economy as a whole were repeatedly afflicted by gas and electricity cut-offs from Russia which occurred in parallel to territorial disputes over South Ossetia, Abkhazia and incidents involving Chechen guerrillas operating in Georgia. Separately, the Nagorno Karabakh conflict between Azerbaijan and Armenia impacted import (and transit) routes between Georgia and Azerbaijan.



Projects and Commitments in Georgia. *World Bank*

Russia's state utility RAO-UES (today Inter RAO) acquired Telasi in the summer of 2003, months before the Rose Revolution, which brought about a political transition from a post-Soviet leadership to an explicitly pro-Western government.

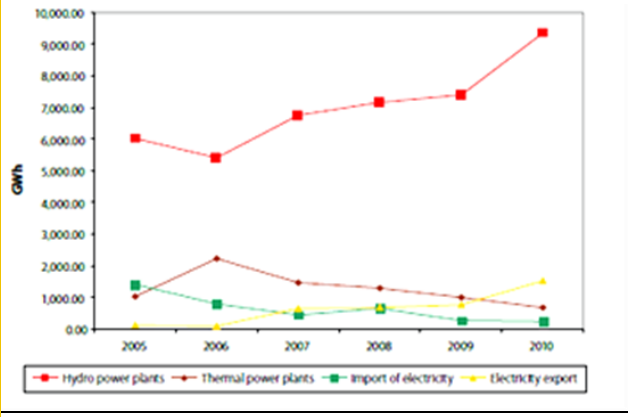
Furthermore, cronyism and criminal networks are described to have shaped the private sector to a large extent, exemplified in the power industry by the privatization of the Tbilisi power utility Telasi. In 1998 the U.S. based independent power company AES acquired Telasi together with a number of thermal and hydro generation assets. Successively, AES was unable to improve electricity distribution, could not collect payments and became involved in court cases. Reports of illegal electricity re-export schemes involving AES and the killing of personnel preceded AES leaving the country and divesting its assets. Russia's state utility RAO-UES (today Inter RAO) acquired Telasi in the summer of 2003, months before the Rose Revolution, which brought about a political transition from a post-Soviet leadership to an explicitly pro-Western government. Remarkably, the newly Russian-owned Georgian power company was commercially successful in raising payment rates and improving the technical distribution system as political relations between Russia and Georgia continuously deteriorated. This deterioration was characterized by energy supply cuts, acts of sabotage on electricity and gas imports from Russia, and Gazprom pressing for gas price increases from subsidized levels towards Western market prices.

In spite of the clear shift in the geopolitical orientation of the new government, after the Rose Revolution the administration continued to privatize gas and electricity sector interests, including to Russian controlled entities.

Conflicts Strengthen Western Orientation of Georgia

The year 2006 marks a relevant shift in Georgia-Russia relations and the beginnings of a pronounced energy policy of the Georgian government. Early in

2006 explosions at two gas pipelines connecting Georgia and Russia openly illustrated the country's dependence and vulnerability. This was especially a challenge for the Saakashvili government, which had made reliable power supply a prominent topic of public discourse. The ensuing 2006 resolution on the "Main direction of State Policy in the Power Sector" and the "Renewable Energy 2008" program of the Georgian government represents a legislative starting point that established policies of import diversification and development of indigenous renewable energy sources, represented mainly by the vast untapped hydropower potential. This hydropower development strategy was carried out in line with a general economic policy focusing on radical liberalization.



Georgian electricity generation by source. *Energy Charter, 2012.*

Electricity generation from hydro power markedly increased from 2006 onward, thereby replacing thermal generation and making Georgia a net power exporter for the first time in 2010.

In fall of 2007 Georgia and Turkey signed a memorandum of understanding on interconnection of power sectors of the countries. This was followed up by further agreements as well as the USAID-sponsored Power Bridge Project mentioned above.

At the same time, financial assistance towards Georgia, having already been substantial throughout the transition period, reached a new level after the Georgian-Russian war over South Ossetia in August 2008 and following the Russia-Ukraine gas dispute of January 2009. A donor conference chaired by the European Commission and the World Bank following the war mobilized 3,44 billion Euros, mostly from OECD countries and international financial institutions such as EIB, EBRD, World Bank, IFC and Asian Development Bank. Funds allocated to Georgia - among others - increased as the EU launched the Eastern Partnership initiative in 2009 and as it stepped up efforts to support the Southern Corridor as a consequence of the Ukraine-Russia gas dispute of January 2009.

Programs funded under Eastern Partnership instruments focus to a great extent on institution-building and power-market related reforms designed to draw Georgia closer to the EU regulatory sphere. For example, programs are targeted at Georgian regulators to adopt EU standards in market regulation (unbundling of vertically integrated undertakings, tariff methodologies, etc.). Additionally, investments in generation and transmission infrastructure are carried out to a considerable extent by grants and loans from international financial institutions.

Overall, despite the multiplicity of donors, their initiatives seem very much coherent and complementary to each other in terms of developing a functioning export-oriented hydropower based electricity sector. Electricity generation from hydro power markedly increased from 2006 onward, thereby replacing thermal generation and making Georgia a net power exporter for the first time in 2010.

Outlook

On 11th December 2013 the power connection between Turkey and Georgia under the Power Bridge Project was inaugurated with first electricity exports from Georgia via this new link expected to com-

mence in the spring of 2014. Prior to the commissioning of the new inter-link, the legislators had ratified an agreement between Turkey and Georgia on the principles under which trade in electricity is to occur. Importantly, the transmission capacity will grant priority access to new power generation from renewable sources and will thus serve as the export revenue conduit for hydro projects developed in Georgia.

One could imagine that if Armenia is able to escape its isolated position by re-establishing economic ties with some of its neighbors, it might well become part of a more interlinked power market, as could be the case for Iran.

Foreign investments in Georgia's hydro sector have been impressive over the previous years, with specific private investments originating from India (Tata Power), Korea (KEPCO), Norway, the EU and Turkey, among others, testifying to the fact that the donor-advised policies were able to make the country an attractive destination for FDI. Hydro projects - either planned or already under construction - will produce substantial excess generation for export during the summer months, though current links will have to be extended in the near future to be able to accommodate all capacity additions.

During winter months, when hydro generation is low, transmission lines between Georgia and Turkey will be free for transfers from other regions. Currently, Georgia imports winter deficit power mainly from Russia, as it is the lowest cost source. It remains to be seen whether the Power Bridge Project, which was designed without involvement of Russian system operators, will lead to a severing of links between the North and South Caucasus (if Georgia joins ENTSO-e, as planned, this will be more likely), or whether commercial interests will promote more trade involving Russia as well, realizing what was originally envisioned by RAO UES as the South Caucasus Project.

Overall, developments will continue to reflect political events in the region. For instance, one could imagine that if Armenia is able to escape its isolated position by re-establishing economic ties with some of its neighbors, it might well become part of a more interlinked power market, as could be the case for Iran. In such an event, earlier regional studies could be "taken out of the drawer" again.◆

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Oil and Unrest in Venezuela after the Death of Hugo Chavez

—Katherine Bennett

Despite holding the largest oil reserves in the world and the promise of oil wealth, Venezuela faces consumer good shortages, power outages, private property confiscations, an estimated +50% inflation rate and one of the highest murder rates in the world. Given these conditions, Venezuela in early 2014 was a powder keg waiting to erupt.

In early February 2014, protests broke out in western Venezuela. Students took to the streets in response to poor security measures in a court case concerning the assault of a female student. These demonstrations turned violent. Students were arrested, prompting protests demanding the release of the arrested protesters. Tensions increased and, during what began as a peaceful march in Caracas, three people were shot and killed. This second wave of protests, which started as a cry to free the imprisoned students, expanded to include a number of social grievances. This expansion included the aforementioned issues of high inflation, high murder rates, lack of consumer goods, insufficient police efforts, as well as an increased desire for more media transparency. Some called for the resignation of President Nicolas Maduro. While the Venezuelan protests may be business as usual to outsiders, the death toll continues to climb - currently at 36 confirmed deaths as of this writing. The protests are the largest seen in over 10 years.

The delicate political-economic model in Venezuela cannot exist without oil revenues, accounting for roughly two thirds of the government's annual take, according to Bloomberg News. According to OPEC statistics, Venezuelan oil accounts for 95% of the country's export earnings. The World Bank estimates that Venezuelan oil and gas rents are 30.5% of its GDP. Clearly, oil is an essential part of the Venezuelan economy; it is necessary to examine the effect of oil on the current economic trajectory as well as its impact on civil protests.

> "I call petroleum the devil's excrement. It brings trouble...Look at this *locura*—waste, corruption, consumption, our public services falling apart. And debt, debt we shall have for years."
>
> - *Juan Pablo Perez Alfonso (1903-1979),* former Venezuelan energy minister responsible for the creation of OPEC

Energy Profile of Venezuela

Venezuela holds 297.6 billion barrels of oil, or 17.6% of the world's total reserves, according to BP Review of Energy, 2013. Of these reserves, 220.0 billion barrels are located in the Orinoco Belt. Significant projects are underway to take advantage of the central Venezuelan oil rich belt. Orinoco Belt needs an estimated $236 billion through 2018 for development. The International Energy Agency reports that though Venezuela may exaggerate its daily oil production, they are within the top ten oil producers and exporters in the world.

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In 2011, according to the Energy Information Agency, the US accounted for 40% of Venezuelan oil exports, the Caribbean 31%, China 10%, other Asian nations 9%, Europe and other 10%. The exports to the US peaked in 1997 at 1.8 million bpd, the same year Ven-

ezuelan production peaked, before Hugo Chavez came to power and took control of the national oil company, Petróleos de Venezuela, S.A. (PDVSA). Since 1997, U.S. imports of Venezuelan oil have decreased; recently this decrease can be attributed to the US shale revolution. In 2013, the US imported about 750,000 bpd, the lowest since 1985. At its peak, Venezuela produced 3.7 million bpd in 1997 and today Venezuela produces approximately 2.5 million bpd per day. Given these oil trends, how does Venezuela manage the oil it does produce and what is the link between oil and the recent protests?

Due to the low gasoline prices, demand is uninhibited. The domestic refineries cannot keep pace with the demand so they are forced to import 80,000 bpd of refined oil products.

Venezuela's Oil Puzzle

The first piece of the Venezuelan oil puzzle is the role of cheap gasoline. The inexpensive gasoline in present day Venezuela is a continuation of former President Hugo Chavez's tactic to pacify the population and reward the oil rich nation's citizens. Before Hugo Chavez seized power in 1997, the conditions inside Venezuela were changing, largely due to the global oil market, with the weaknesses of Venezuela's formerly democratic regime exposed during the oil shocks of the 1970s. Without oil revenues, social services could not be provided to the Venezuelan people and the government could not support its citizens. This era saw the beginning of the rise of Chavez. Riots in the capital of Caracas in 1989 broke out because the government attempted to raise the price of gasoline. Known as Caracazo or "big smash in Caracas," the riots resulted in 200 civilian deaths, with some reports claiming the death count to have been well over 2,000.

Such a precedent serves to warn current President Maduro not to raise gasoline prices. Today, gasoline prices are 5 cents per gallon, and less than a penny per gallon on the black market. In perspective, filling the tank of an SUV costs less than the price of a candy bar. According to Rafael Ramirez, PDVSA President and Minister of Energy and Petroleum, the break-even price of gasoline in Venezuela should be $1.62/gallon to achieve a balanced budget. Cheap gasoline prices as a means to pacify the people have not prevented protests. Around 800,000 barrels per day of gasoline and diesel fuel are consumed domestically. The people demand cheap gasoline and it has not prevented the protests, illustrating that Maduro has since lost whatever political capital had been gained from instituting artificially low gasoline prices.

Due to the low gasoline prices, demand is uninhibited. The domestic refineries cannot keep pace with the demand so they are forced to import 80,000 bpd of refined oil products. That Venezuela, the nation with the largest oil reserves in the world, has to import oil products, points to massive inefficiency. From the daily production of 2.5 million bpd, 800,000 bpd are not earning any real or political profits, which, if this were the only program, would leave Venezuela with only 1.7 million bpd left over.

In a gesture similar to the cheap gasoline policy, Chavez attempted to woo his neighbors in his Petro-Caribe program. Venezuela supplies heavily subsidized oil to Haiti, Nicaragua and Cuba, with about half of these supplies going to the latter, in total 200,000 bpd. Also, Citigo, the refinery branch of PDVSA in the US supplies about $400 million of heating oil to Americans in poverty. Over 4 million barrels over 9 years, or about 200,000 bpd are supplied as part of this strategy.

Finally, the Chinese 'Loans for Oil' deals with Venezuela further decrease the amount of available profitable oil by approximately 300,000 bpd. According to Bloomberg, the Chinese have loaned $40 billion to Venezuela since 2008, and are being paid back in oil rather than Venezuelan bolivars - further winnowing down Venezuela's available supply that could secure higher profits elsewhere.

How Does Unprofitable Oil Relate to the Recent Unrest?

Considering domestic oil consumption for gasoline of 800,000 bpd, PetroCaribe's 200,000 bpd, Citigo donations of 200,000 bpd and exports to China of 300,000 bpd, and you have a sum of 1.5 million bpd that is not profitable. Of its approximate daily production of 2.5 million bpd, Venezuela is left with only 1 million bpd to sell on the oil market. A decrease in the amount of marketable oil is not in itself a reason to incite protest. However, since oil is such a significant part of the budget of Venezuela, a decline in marketable oil results in the inability to provide basic goods and services, which does provoke protests.

The combined factors of decreased production, decreased exports to the US, high domestic and regional subsidies, and 'Loans for Oil' deals with China all result in less marketable oil and less revenues for accommodating the citizens.

Of the marketable 1 million barrels of oil, UN Statistics estimate they generate $58 billion. This $58 billion accounts for 95% of all foreign revenue of the Venezuelan state. The country cannot support the 30 million people of Venezuela on this budget and cover other expenses. Imports alone were $77 billion in 2012. Venezuela also has debt to consider before it can even think of investing in new oil developments or other aspects of their economy.

The protests are in response to poor living conditions caused in part by the inability of the Venezuelan government to subsidize goods and services for its people. Whatever stability the government was previously able to maintain through oil revenues was curbed when it lost marketable oil volumes. The combined factors of decreased production, decreased exports to the US, high domestic and regional subsidies, and 'Loans for Oil' deals with China all result in less marketable oil and less revenues for accommodating the citizens. More than a mere connection, oil is the backbone of the Venezuelan economy. When oil profits are disrupted, the economy is disrupted and thus the stability of the people is disrupted, which in this case, has led to protests.

According to Forbes writer Christopher Helman, one possible trajectory for Venezuela's immediate future will be lack of foreign investment.

Conclusion

Due to the current unrest, investors are hesitant to bring their business to Venezuela, opting rather to invest in more stable and profitable locations or simply follow the Chinese model of 'Loans for Oil', which further prevents hard currency from entering the budget. According to Forbes writer Christopher Helman, one possible trajectory for Venezuela's immediate future will be lack of foreign investment. In this case the government would run out of currency to pay debts and import goods, trading partners would not ship, the subsidies would have to stop and the investors would be reluctant to return. Whether

or not Maduro is ousted, Venezuela will have to earn back investor confidence and change its oil policies to prevent being trapped into providing cheap gasoline and unprofitable oil deals.

Oil is an integral part of every economic and political issue in present day Venezuela, and this current unrest is no different. The delicate political economic model in Venezuela cannot exist without a certain level of oil revenues. Unless Venezuela wants to continue down the current path of economic collapse, the government needs to secure additional incomes of hard currency. If this regime or a new regime would choose to continue to use oil to support its economy, the amount of marketable oil available must increase. One option - increasing domestic production for export - requires foreign investment, which would be possible but challenging given the unstable political climate. Another option would be to address the issues that the current oil production faces. This option includes raising domestic gasoline prices, discontinuing PetroCaribe, addressing refinery issues and allowing Chinese loans to improve the economic debt and inflation issues they were intended to cure. None of these solutions will be easy for Venezuela, but if and when the country can address its oil issues, it will be better apt to mend the problems that produced the unrest. ◆

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EUROPEAN UNIVERSITY AT ST. PETERSBURG

How the Ukrainian Crisis Impacts Russia's Energy Companies

—Koen van Delft

The Ukrainian Revolution has thus far seen the ousting of President Yanukovych and the rise of new parties fighting to gain control of Ukraine. Since then, the residents of Crimea have seen the arrival of unmarked Russian military troops supposedly protecting the Russian inhabitants of the region. The most recent development has led to a referendum in which the people of Crimea voted to join Russia; 95% of the votes casted show that the Crimean people are in favor of joining Russia. Some people in Crimea and Russia see this as a positive development since it increases Russian influence in the region. Crimea is home to a large Russian naval base in Sevastopol, it is an important energy hub/route to Europe and it has significant oil and gas reserves in the Black Sea. In addition to the fact that there are ethnic Russians living in Crimea, these characteristics increase the attractiveness of the region to Russia.

"From the Russian point of view, if the EU would implement economic sanctions, the annual loss in Russian revenues would be in the order of $70 billion or three percent of GDP due to the average sale price of $350 per thousand cubic meters for Russian gas".

On March 17th 2014, the United States announced that sanctions would be put in place against a number of high-ranking Russian and Ukrainian officials. According to NBC and the Guardian, the result of these sanctions is that their foreign bank accounts will be frozen and their visas will be banned. On March 18th, the European Union and Japan have announced that they will join the sanctions placed on Russia. Japan's reaction has been slightly more moderate compared to the US and the EU, Japan will pause investment talks, "space exploration and military cooperation according to statement by Japanese Foreign Minister Fumio."

Russian – EU Exports and Imports

So far the imposed sanctions have only targeted Russian and Ukrainian officials and their foreign assets. The EU and US could impose economic sanctions such as import/export restrictions/bans, higher import tariffs and taxes, as well as quotas. According to Danny Vinik of New Republic, this would lead to increased prices for Russian products entering the European Union and the United States. The consequences would influence several parties including the sanctioning parties. The US engages in relatively little trade with Russia. In 2013 the US traded only $40 billion worth of goods according to the US Bureau of Census. The European Union depends on Russia for energy supplies, international trade and foreign direct investment opportunities. According to the European Union official statistics the total import from Russia amounted to €228,2 billion and total export to Russia totaled €151,2 billion. Since the European Union has a significantly larger trade balance with Russia than the US, economic sanctions would affect the EU more than the US. The EU imports from Russia are dominated by raw materials, in particular, oil and gas. Since the European Union is dependent on Russian energy, it is unlikely that the EU will enforce economic sanctions since it would lead to energy shortages in the EU. Georg Zachmann from Bruegel.org pointed out the possible effect on Russia of such sanctions. "From the Russian point of view, if the EU would implement economic sanctions, the annual loss in Russian revenues would be in the order of $70 billion or three percent of GDP due to the average sale price of $350

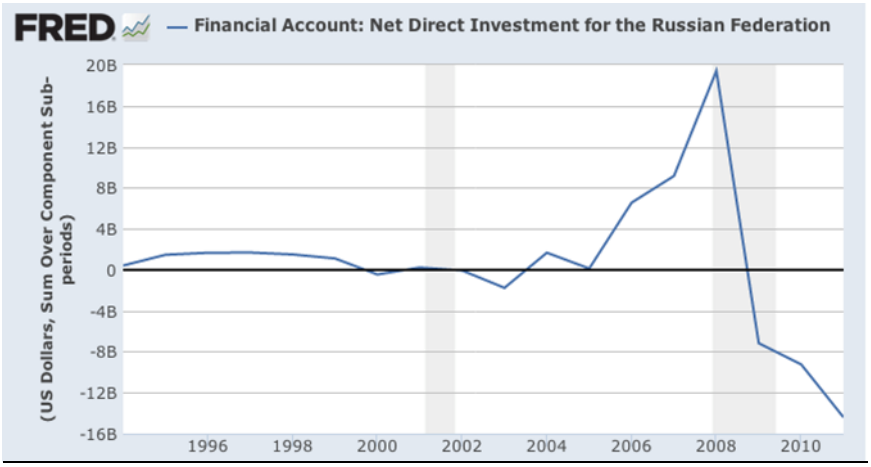
per thousand cubic meters for Russian gas".

The partnership [between ExxonMobil and Rosneft] involves transferring the technically advanced skills from ExxonMobil to develop the difficult Russian Far East fields. This process requires international trade to transport machinery and parts from the Western facilities and/or factories to Russia.

Data from the European Commission estimated that up to 75% of Foreign Direct Investment stocks in Russia come from European Member States. Since the level of economic interconnection is not limited to international trade, Western (including EU and US) companies that have partnerships and investments in Russia's energy sector might face difficulties continuing their operations if economic sanctions are put in place. According to RBS, the Austrian Bank Raiffeisen lost nearly 8% per share due to its €18 billion loans outstanding to Russia and Ukraine. Similarly, the investments made by foreign car companies in Russia accumulated more than $6 billion since 2011 (Ernst and Young). The example of the Raiffeisen Bank shows how investments of Western companies in Russia are seen as riskier now that sanctions are imposed on Russian and Ukrainian officials. It seems likely that investments would be seen as even riskier if economic sanctions were forced upon Russia. Such sanctions would make it more difficult for these companies to manage their operations and send their non-Russian employees to these locations. Additionally, they could not export machinery and funds to these Russian locations, which would further complicate and delay business. These economic sanctions would therefore not only hurt the Russian economy, it would also create significant losses for these foreign companies that have invested in Russia.

Russian Western Cooperation: ExxonMobil and Rosneft Partnership

The US based company ExxonMobil and Russian Rosneft have been cooperating for a number of years. Last year on June 21st, new agreements were signed by Mr. Sechin, the Rosneft president and Mr. Tillerson, the CEO of ExxonMobil, to explore the Arctic region and develop a LNG plant in the Russian Far East. Reuters reported that the partners seek to transfer the know-how gained in North America to western Siberia. According to Exxon's Russian chief, the companies have a unique partnership "They have the world's biggest reserves and we have the largest market capitalization". This cooperation could experience serious difficulty if economic sanctions were to be put in place since it requires technology sharing, economic cooperation and cooperation between employees of the two companies. Sanctions that have been put in place in the past against Iran included bans on supply of heavy weaponry, nuclear technology, arms exports, and freezing of assets. The EU addi-



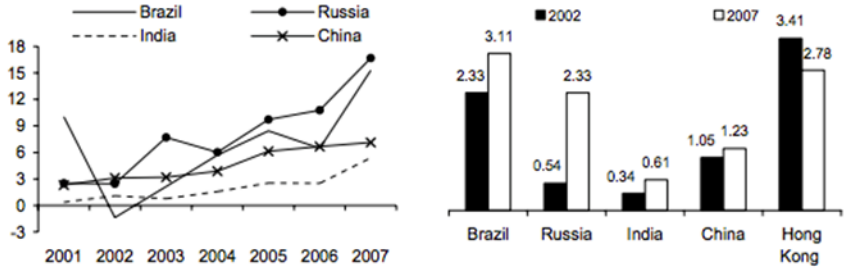
Graph 1: Net direct investment for the Russian Federation. *Federal Reserve Economic Data (FRED)*

tionally imposed restrictions on trade of equipment. At this point in time, the question can be asked whether we will see a repetition of the 1970s actions taken by the US to limit Moscow's source of hard currency revenues by imposing US and EU sanctions to control Russian oil and gas exports. In the 70s the European Allies of the US were not at all content with these sanctions and preferred the trade revenues that resulted from cooperation with the Russian government.

According to RIA Novosti, the upper house of Russia's parliament is mulling measures allowing property and assets of European and US companies to be confiscated in the event of sanctions being adopted against Russia over its military intervention in Ukraine.

According to Andy Rowell of Oil Change International, if we see a repetition of such economic sanctions, it could make it impossible for ExxonMobil to continue its project with Rosneft; however, this would also create a serious burden for Exxon. The partnership involves transferring the technically advanced skills from ExxonMobil to develop the difficult Russian Far East fields. This process requires international trade to transport machinery and parts from the Western facilities and/or factories to Russia. Also, they use non-Russian employees to take on tasks that cannot be performed by Russians. Economic sanctions against Western companies cooperating with Russian companies could jeopardize partnerships between Russian and Western companies such as ExxonMobil and Rosneft. Trade restrictions could severely limit the technology transfer from the US to Russia. According to Deaux and Dicker of The Street online publication, not only would this create a significant financial burden for the Russian companies, but it would also negatively affect the US companies operating in Russia.

EU outward FDI flows to the BRICs (EUR billion) – left
Share of the BRICs in the EU's extra-EU FDI stocks (in %) – right



Remark: EU is EU27 for 2004-2007 and EU25 for 2001-2003. China excludes Hong Kong.
Source: Eurostat.

EU money flow to Russia. *Eurostat.*

If such sanctions are put in place and result in cancellation or suspension of cooperation between Russian and Western companies, the Russian government might see an opportunity to increase its control over Western assets in Russia. According to RIA Novosti, the upper house of Russia's parliament is mulling measures allowing property and assets of European and US companies to be confiscated in the event of sanctions being adopted against Russia over its military intervention in Ukraine. However, it is highly questionable whether Russia would be able to continue the technologically advanced projects in Sakhalin, for instance, where Western companies have been specifically introduced to take on these difficult tasks. If they take out these foreign companies, it is likely that Rosneft will not be able to continue the project in the same manner as it is now. Therefore the chances are small that the Russian government will nationalize or try to increase its share in projects such as between ExxonMobil and Rosneft.

How the Russian Budget Fits In

Additionally Russia needs European countries to purchase its oil and gas output. The Russian government financial balance depends to a large extent on revenues from oil and gas sales to Europe. Since Europe has not been able to completely diversify its energy supplies away from Russia and the US has not approved its LNG and/or shale gas exports to Europe, Europe will continue to depend on Russian energy supplies in the short term. Therefore, it seems very likely that Europe will not support US led economic sanctions against Russia as it did similarly in the '80s.

The decrease of the ruble would be beneficial for state revenues, causing them to increase by 1% of GDP for every 10% decrease of the ruble against the dollar. The downside of the ruble value decrease would be that inflation would also rise to approximately 7% per year.

Europe and Russia will lose significant economic growth if economic sanctions are installed, according to Dutch Planning Bureau (CPB) a 10% increase in oil price due to the Crimea developments can result in a lower economic growth of 0,25% instead of 0,75% in the Netherlands alone. Since many European countries are in comparable economic situations, it can be expected that they will not be too excited to reduce economic growth only to punish Russia.

As explained earlier, Russia is unlikely to seize European or Western energy assets and projects since the country needs the knowledge and experience that is brought in by these companies. These assets remain a point of leverage for Russia vis a vis Europe and Western companies and countries in general. Graph 1 displays how Russian FDI abroad was significantly negative in the period from 2008 to 2010; non-Russian companies and countries on average invest more in Russia than Russian companies do in non-Russian regions. According to data from 2007 (graph 2), Russia's FDI has always been smaller than non-Russian FDI into Russia. EU Direct Investment into Russia (2007) was 16% whereas Russia's FDI to the EU was only 2,3% in that same year. This results in a situation in which Russia can seize more assets and investments from non-Russians in Russia than the EU or the US can.

Another important issue for Russia is its credit rating, both S&P and Fitch ratings agencies downgraded their long-term outlooks on Russia's debt from stable to negative. In addition to this downgrading, the Russian Finance Ministry said on March 21, 2014 that it may be forced to cancel plans to borrow abroad this year. This is due to the fact that the cost of borrowing can rise. According to Neil Shearing, chief emerging market economist at Capital Economics, the decrease of the ruble would be beneficial for state revenues, causing them to increase by 1% of GDP for every 10% decrease of the ruble against the dollar. The downside of the ruble value decrease would be that inflation would also rise to approximately 7% per year.

Crimea – New Russian Energy Frontier?

Apart from the sanctions and the outcomes and consequences that these sanctions might have in political and economical terms for Russia, there are positive aspects for the Russian economy and companies. Since the Crimean region has significant oil and gas reserves, Russia is able to increase its domestic reserves by allowing Crimea to become a part of the Russian Federation. The reserves in Crimea are estimated to possibly have an annual production from the Skifska and Foroska fields of 3-4 billion cubic meters and 2-3 billion cubic meters, reported the Kyiv

Post. These reserves in Ukrainian hands would reduce Gazprom's and thereby Russia's influence over Ukraine, as Ukraine could potentially develop some of these fields. If these reserves were to fall into Russian hands, its influence over Ukraine would increase due to higher dependency of Ukraine on Russian gas imports since it domestic reserves would be significantly reduced. Production Sharing Agreements between Ukraine and possible partners have not been signed for the Skifska and Foroska fields, and until now there has been no exploration of these fields (Macadam). According to Crimean officials, Crimea may sell the Ukrainian energy firm Chornomornaftogaz to a Russian company "like Gazprom" once the regional authorities take control of it. "After nationalization of the company we would openly take a decision - if a large investor, like Gazprom or others emerges - to carry out (privatization)," Rustam Temirgaliev, Crimea's first deputy prime minister, stated.

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Conclusion

The sanctions imposed by the US, EU and Japan have so far been limited to the freezing of Russian assets located abroad and bans have been put on visas of Russian Officials travelling to regions supporting the sanctions. Currently, the sanctions do not include economic measures against Russia, therefore it does not yet affect the cooperation between Western and Russian companies directly. Based on the dependency of European countries on Russian energy supplies, it seems unlikely that European countries will support significant economic sanctions. This would create a situation in which Russia is likely to counteract and freeze Western assets and projects in Russia. The fact is that the Western countries and companies have far more FDI in Russia compared to Russian FDI in Western countries. That means that if both regions nationalize or freeze assets, Russia comes out winning in terms of seized assets.

Due to the economic assets and interests of the EU in Russia, it is unlikely that Europe will press for economic sanctions, however the US might see legitimate reasons to create sanctions. This would hurt all parties and companies involved in trade, and at this point in time world economies are recovering from the previous economic crisis and need all the economic growth possible. Sanctions would seriously hurt the US, EU and Russian economies. Therefore it seems more logical that the EU will press for political sanctions instead of economic measures against Russia.◆

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