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Workshop Series is a program hosted by European University in which leading energy professionals are invited to present on a specific aspect of their work. These professionals include energy think-tank experts, policy makers, representatives from major energy companies, and ranking members of international organizations. *Workshop Review* is a subsection of *ENERPO Journal* where students relay the content of these presentations and provide commentary.



The topic of each article is chosen at the discretion of the author and its content does not necessarily reflect the views of European University at St. Petersburg.

Table Of Contents

Reassessing Development in Iraq: Investing in its Citizenry.....	4
— <i>Michael G. Seyer</i>	
Iranian Nuclear Program: A Constructivist Perspective.....	10
— <i>Lewis Dorman</i>	

Workshop Review

Dr. Andrey Konoplyanik—'An Interview with Gazprom Export Advisor'.....	13
— <i>Nicholas Watt and Lauren Bardin</i>	
Dr. Anatole Boute—'Reform of the Russian Electricity Market'.....	22
— <i>Ornela Figurinaité and Michael G. Seyer</i>	
Dr. Vladimir Drebensov—'BP Vice President on BP's Activity in Russia'.....	27
— <i>Colin Chilcoat</i>	



Reassessing Development in Iraq: Investing in its Citizenry

—Michael G. Seyer

When the last convoy of American troops exited Iraq on 18 December 2011, left behind was a government designed to be a power-sharing agreement among Shia, Sunni, and Kurdish representatives. This, it was posited, would provide a sufficient framework for cooperation and the basis for universal, countrywide development and political enfranchisement. However, soon after the last U.S. troops crossed the Iraqi border to Kuwait, there were already reports that cast doubt on the durability and effectiveness of the Iraqi government in its new arrangement. A year and a half later, the daily news coming out of Iraq presents a portrait of a country on the brink of civil war. It appears that attempts, however genuine, to advance the well-being of the country have somehow been derailed. Therefore, the question remains: Why, despite committed efforts to foster development and cooperation, is the conflict in Iraq not truly over?

Political and Economic Enfranchisement

A partial answer to this question may reside in the manner in which Iraq's financial and natural resources have been used, their ownership, and their distribution to the population. It is well understood that Iraq is heavily endowed with oil and gas and that these resources are widely considered to form the foundation upon which much of Iraq's economy and broader development can be built. However, when discussing the future of Iraq, commodities such as oil and gas and the investment opportunities into their production should not be the substance of the initial dialogue concerning healthy and sustained development. Rather, discussions concerning oil production in the country will be fruitful only after more immediate and vital issues regarding the well-being of the country have

been addressed.

...before any judgments concerning Iraq's positive development are made, policy guaranteeing the access of the citizenry to political and economic enfranchisement is necessary.

A brief snapshot of Iraq's recent history shows a country that has suffered from thirty years of armed conflict, repression under an authoritarian regime, and crippling international sanctions. Currently, despite efforts over the past decade to establish a democratic state, Prime Minister Nouri al-Maliki's government has repeatedly failed to provide for the fair distribution of resource revenues and has not made genuine efforts to address extreme levels of corruption and the lack of universal political freedoms within the country. Instead, the focus of al-Maliki's government is the smothering of violence without addressing its root causes. Despite the conflict's characterization as a sectarian clash, today's violence in Iraq does not exist due to primordial, irreconcilable disagreements between different religious and ethnic groups. Rather, the underrepresentation of these groups in the political arena and their economic marginalization stand as more concrete explanations for the continued violence. As the political system seems to be consolidating in a manner distinctly in favor of the political allies of al-Maliki and threatens the rights, interests, and well-being of significant percentages of the citizenry, it is not surprising that the population has expressed its grievances violently. Therefore, before any judgments concerning Iraq's positive development are made, policy guaranteeing the access of the citizenry to political and economic enfranchisement is necessary. Genuine government investment into the well-being of its citizenry, equal protection under the law, and equal ac-



cess to resources would best serve to heal the divisions that currently exist within society.

Challenges to Development

As identified by the most recent National Development Plan of Iraq (2010-2014), the challenges facing the country are as follows: increasing unemployment, 23% of the population living below the poverty line, severe lack of housing, damaged critical infrastructure, and limited access to water, electricity, and sanitation services. Furthermore, the level of development in rural and peripheral areas is much lower than in the federal center. Populations living outside of the metropolitan sphere of Baghdad experience even higher levels of poverty, lack of services, illiteracy, and school dropout rates. These factors further depress economic productivity and the well-being of the population in these areas.

Another roadblock to development is violence. During the month of May 2013, 1045 people were killed, a figure even higher than April's 712, which had marked the highest casualty rate in nearly five years. However, this tragedy runs deeper than the count of those who have lost their lives. Violence is, by nature, a reaction to broader conditions and, fundamentally, the effect of causes that have largely gone unaddressed. The consolidation of power by al-Maliki's government, the unequal distribution of resources, the marginalization of political opposition, and the uneven application of the laws of the state all exist as rational pretexts for conflict. Thus, so long as it remains the policy of government simply to quell the violence, casting violence itself as the object of strategic discourse and not its root causes, Iraq will continue to suffer from violent conflict.

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bearing resources currently marketable in the country – oil and gas.

The Resource Factor

In a state that is just now defining itself, its legal and political structures, and the manner by which resources are to be distributed to the citizenry, violence is possible if these processes are deemed unfair and thus threatening to one's well-being. In Iraq, amidst a growing movement by the central government to entrench itself in positions of power, the population is in conflict over the revenue and related benefits from the few rent-bearing resources currently marketable in the country – oil and gas. This brings us to discussion of the remaining challenge: oil dependence. Oil is the resource upon which the federal budget is almost completely dependent and this resource accounts for half of the country's GDP in an economy which is driven heavily by government and service employment. Ultimately, Iraq's dependence upon one industry that feeds into the state budget places its economy at risk of shocks, precipitated by any fall in the price of oil or by a decline in investment into this sector. Leaning upon oil, Iraq's economy is subjected to this volatility of price and investment and its economy is thus at risk of developing in an irregular, unbalanced manner.

Revenue from oil production is the one ace that exists in the card deck of Iraqi domestic politics. Currently, this ace is in the hands of Prime Minister Nouri al-Maliki and the government he has constructed around himself and his allies. With seemingly little intention on fairly distributing the revenues and benefits from this resource to all members of the population, thus marginalizing both Kurdish and Sunni citizens, it is little wonder that the dialogue among these groups has not been peaceful. As observed from experiences of development throughout the previous century, a state facing violent opposition has



before it several options in regards to the manner in which this ace of resource rent is played.

One option, in the face of opposition and violence, is for the government to adopt a bunker mentality and militarize the state, whether through an active martial presence or through the establishment of a police force designed expressly for the protection of the state apparatus. Authoritarianism is often further entrenched, especially if there exists an easily controlled revenue flow from a unitary source, by client relationships among members of the elite. Power structures between factions that otherwise would be in competition can be established based upon the tight control of the flow of resource rent from the center to the elites within such opposition groups. In the case of Iraq, it is evident that, as a country seeking to develop, the silencing or co-option of opposition through violence or corrupt policies does not favor constructive, universal improvement in economic, political, or social conditions.

Oil and gas revenues can potentially be used to bring parties together, into cooperative relationships based upon the equal distribution of benefits and services flowing from this source. However, the success of such a scenario would require an Iraqi government committed to the genuine development of its country and its people. Elections may be the means by which such a government might be established.

Citizens as Vital Actors

In this year's April elections, Prime Minister Nouri al-Maliki's party, State of Law Alliance, lost over 30% of its total seats nationwide, illustrating a clear wane in support of the party's policies pursued, which have been characterized by increasing authoritarianism. Furthermore, one article written by Mark LeVine in May, a professor of Middle Eastern history who reported directly from Iraq, pointed to signs that Iraqi opposition groups were starting to

achieve for themselves a degree of greater political expression in civil society and within the court systems. According to the author, "Iraqis are becoming increasingly adept at defending and advancing their rights" and the Parliament, though still an immature body, has been able to offer some counterbalance, however faint, to the power of al-Maliki." Hopefully these trends will be expressed even more strongly in 2014 when Iraq holds federal elections and the transition to a new parliament and government transpires.

It is here that a constructive discussion about hydrocarbons, investments, and the distribution of resource rent can begin. When the citizens of Iraq succeed in forming a government that engages in open dialogue with all interest groups and employs revenues from oil and gas in a responsible and just manner, the potential for development and improvement of the human condition is distinct. According to the International Energy Agency's, *Iraq Energy Outlook 2012*, Iraq is in possession of 143 billion barrels of oil and 3.4 trillion cubic meters of natural gas, ranking 5th and 13th respectively in terms of hydrocarbon reserves worldwide. Furthermore, some predictions, which take into consideration the possibility of vast undiscovered resource reserves, place these figures even higher. These adjusted figures should provide further incentives for actors within the field of hydrocarbon production and development to invest in Iraq.

The government of Iraq recognizes that development of the country's economy is bound to the success of its oil and gas sectors.

State of the Hydrocarbon Sector

The government of Iraq recognizes that development of the country's economy is bound to the success of its oil and gas sectors. This realization is reflected in



the fact that the Iraqi state budget of 2013 is formulated with the projection that oil will remain at least \$90 dollars per barrel and, so as to keep this lifeline healthy, the government applied the highest allotment of budgetary funds to the development of the energy sector. According to the U.S. Energy Information Agency's 2012 publication regarding the oil industry in Iraq, current production for the previous year was listed as 3 billion barrels. Development plans for this sector, as set by the Iraqi government and Ministry of Oil, has established 9.5 billion barrels as the target level of production by 2017. However, if oil production in Iraq is truly to triple within the period of 4 years, the following challenges require address and should be the target of the budgetary funds that have been allocated for the development of the energy sector.

Perhaps most critically, the infrastructural requirements to support such a high level of production, or even to increase production, simply do not exist or are in acute disrepair. Currently, in accordance with their level of repair, Iraq's refining and export facilities are already operating at nearly full capacity. Any significant increase in future production requires an equal investment into refining capacity and into export routes. Pipelines, both the internal Strategic Pipeline and those designed for export, which are not of adequate throughput volume, require repair and expansion. Expansion of this system, whether through the reopening of old routes such as the IPSA to Saudi Arabia, or through the construction of new lines such as that proposed to transport oil to the Jordanian port of Aqaba, is required so as to circumvent the bottlenecks that currently restrict Iraqi export capabilities. The port of Basra, in the south, stands as Iraq's most important export facility with a capacity of 1.6 million barrels per day. Additional plans for this facility include the addition of 3.2 million barrels in daily capacity. However, this ambitious goal stands only to highlight the vital need for investments into this sector.

Oil export capacity is further hampered by the domestic economy's nearly complete dependence on this resource. Natural gas, which currently is mostly flared, could be utilized in the future to achieve a more balanced energy mix. Instead of being flared, gas could be reinjected to increase pressure and production levels in oil fields. Finally, budgetary funds allocated for the development of the oil and gas sector need also to take into account the country's severe lack of electricity capacity. Because a large share of Iraq's already low electricity output is consumed by the energy industry, improvement and expansion of the electricity sector is vital to the success of wider development plans for the country.

Investing in the Future

Fortunately, based upon the results of bidding rounds over the past several years granting production and exploration rights to international companies, it is clear that there exists explicit interest on the part of such enterprises to become involved in and to invest heavily into the energy sector in Iraq. However, if the government of Iraq genuinely seeks to open up the market space to allow for the activity of international companies in both the upstream and downstream industrial space, the legal framework regulating the oil and gas sectors should be reformulated.

...cooperative, multi-party discussions between all parties in Iraq, will do much to ease the tension between factions fighting for their share of resource revenues.

The most recent World Bank report ranked Iraq as 165th out of 185 total countries in regards to the ease of doing business within the country. This figure can be improved through the adoption of legal frameworks addressing the following three subjects: the resolution of creditor claims, the authority of the government to sign development and production



agreements, and federal sharing agreements. As illustrated by the conflict that has arisen over the central government's recent allocation to the Kurdistan regional government of only a fraction of the funds which were requested to compensate regional oil-production costs, it is especially this absence of a clear and legally grounded rent-sharing agreement that is concerning moving forward. Such a framework, once established in a manner reflective of cooperative, multi-party discussions between all parties in Iraq, will do much to ease the tension between factions fighting for their share of resource revenues.

the idea of "Iraq [as] a regional economic power," cannot be taken seriously without a sincere commitment to the future of those who live there.

However, regardless of whether or not these legal frameworks are put in place and the necessary, wide-scale, expansions are made in terms of Iraq's critical infrastructure, it is natural that energy companies and other enterprises will invest strictly into the hydrocarbon sector. Because foreign investments into the country will be heavily concentrated in the energy sector, balanced economic development across multiple sectors will be unlikely. This means a shift in budgetary application to other services, sectors, and issues will have to take place so as to achieve genuine economic diversity and strength of development. In 2012, the budget surplus of the Iraqi government was 4.5% of GDP, amounting to nearly 6 billion dollars. Thus, due to rent from the natural resource sector, there is already a marked potential for the government to invest in human development, which in turn has the potential to place the country on a path towards sustained, even economic development, founded

upon the well-being of the population as a whole.

As expressed by the National Development Plan, the vision of the Iraqi government is the nurturing of a "competitive and diversified economy" led by the private sector, and supported by a government which would "ensure a fair distribution of national income so as to allow the more vulnerable groups...to carry out their roles effectively in achieving socio-economic progress." A more perfect expression of benevolent intent need not be formulated. And the resources, human and financial, which are required for the realization of the goals as set forth by this plan, are available. However, if the headlines coming out of Iraq are to be changed, the idea of "Iraq [as] a regional economic power," cannot be taken seriously without a sincere commitment to the future of those who live there. Socio-economic progress is not assisted by helicopters and check-points. The foundation upon which a healthy Iraq can be built is the well-being of the Iraqi people: their health, their education, their ideas, their civil rights, and their collective desire for peace and prosperity. Revenue from hydrocarbons has the potential to help and the presence of oil and gas is not a curse. It cannot by virtue of its existence be considered a miracle, either. Resource rent will be used at the volition of those in power. Thus understood, it is hoped that there will soon be an Iraqi government that will recognize that a strong Iraq is dependent upon the devotion of its population, Shia, Sunni, and Kurd, to a common future. Ultimately, if the government fairly distributes the resource revenue so as to advance the well-being of the Iraqi citizenry as a whole, there is every reason to believe that Iraq can leave behind its recent history of violence and irregular development and truly achieve the goals it has set for itself in its National Development Plan. ♦

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Iranian Nuclear Program: A Constructivist Perspective

—*Lewis Dorman*

The Yucca Mountain nuclear waste repository could be filled with the amount of ink that has been spilled in writing about the Islamic Republic of Iran's highly controversial program to master the nuclear fuel cycle and develop atomic energy. According to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons, every nation maintains the right to develop nuclear energy for peaceful purposes, so why is this subject considered so controversial? The answer revolves around the word "peaceful," and whether or not Iran's atomic ambitions are those of a civilian or martial aspect, or both. From a geopolitical perspective, given Iran's location in the Middle East and her animosity toward Israel and the United States of America, the possibility of Iran developing nuclear weapons is indeed contentious and represents an existential dilemma in international relations, which will be examined from a constructivist perspective in this article.

Ironically, Iran's nuclear program was launched in the 1950s with the help of the U.S. and President Eisenhower's Atoms for Peace initiative. Until the Iranian Revolution, Iran, with the cooperation of France and Germany, steadily worked to construct nuclear reactors with the idea that atomic energy would provide Iran electricity and free up more Iranian gas and oil for lucrative export. After the revolution, Iran's nuclear program was shelved until the resolution of the Iran-Iraq War. Upon conclusion of this war, Iran reached an agreement with Russia, and her state corporation Rosatom's subsidiary Atomstroyexport to develop a VVER-1,000/446 pressurized water reactor in Bushehr, with an installed capacity of 1,000 MWe and maximum capacity of 2,000 MWe. The Bushehr Nuclear Power Plant was launched in November 2011, and

was brought to full capacity in August 2012. Despite Iran's declared peaceful intentions in her pursuit of an independent nuclear program, many other Western countries, their allies, and institutions, especially the U.S., Israel and the International Atomic Energy Agency (I.A.E.A.), have questioned these pacific aspirations, mainly due to Iran's continuation of pursuing high level uranium enrichment, which could lead to the possibility of constructing an atomic weapon. A cat and mouse game between Iran and her doubters continues to this day, and has led to embargoes and sanctions being placed upon Iran. The looming question remains: Will Iran and her antagonists reach a compromise before or after the country becomes capable of enriching uranium to the point where she can create a nuclear weapon (if that is even Iran's goal)?

Iran has constructed two roles for herself: one of the oppressed (Iran's self-conception) - a nation that simply wants to achieve nuclear power peacefully...and the other of the instigator (the perspective of the West) - a nation that challenges Western political control and will not relent to its pressures.

There are three main suppositions of constructivism: human nature is positive (in opposition to realism); international relations are a social creation; and international relations are merely a game of social practice and interaction. To the constructivist, hypotheses such as anarchy in the international sphere or class struggle, are merely constructions conceived by political scientists, and that the behaviors of states only



follow these patterns. Thus, the actions of states are constructed by their dogmatic perspectives, not by actual international relations, and it is ideal to *construct* contemporary international relations theory, which is more adaptive and flexible to illuminate the Iranian nuclear problem.

Constructivism states that there is no overarching law that dictates a state's actions, but rather that these actions are natural extensions of the roles they have constructed for themselves and each other by past actions within their mutual history. Iran has constructed two roles for herself: one of the oppressed (Iran's self-conception) - a nation that simply wants to achieve nuclear power peacefully (which so many other nations have already achieved); and the other of the instigator (the perspective of the West) - a nation that challenges Western political control and will not relent to its pressures. A nation's capability to generate electricity from nuclear power is prestigious, as it can improve a developing nation's economy, such as Iran's. On the other hand, Iran flouts international law by continuing to enrich uranium to potentially nuclear weapons-grade levels, as well as skirting the I.A.E.A.'s inspections of her atomic industry. Iran considers her uranium enrichment program as well as her IR-40 heavy water reactor in Arak to be the peaceful use of her right to develop civilian atomic energy. If those actions are not looked upon favorably by the West, then they further legitimize one goal of Iranian politics: to engage in combat with those who Iran believes are hostile towards her.

For the Western nations and their allies (the European Union, Israel, the U.S, etc.) two roles have been generated: one of the patron (the West's self-conception) - someone who seeks to help Iran accomplish her peaceful goals according to international law, and the other of the hanging judge (Iran's perspective) - someone who seeks to harshly punish Iran for her behavior, which is in violation of international law. While China and Russia attempt

to act as patrons most of the time, occasionally they must agree with the hanging judges in order to appease the West.

Most of the popular political and media in the U.S. presents a monochromatic portrayal of international relations to their target audience, which consequently discourages a broader understanding of international relations by the public at large. Other regions in the world produce similarly biased news, but towards their desired ends. Constructivism welcomes all viewpoints and takes into account their inherent subjectivity, and furthermore, states that the aggregation of these diverse viewpoints is the best representation of the truth. As an antidote to the simplistic exploitation of the news, constructivism can encourage the average news-reading citizen as well as the policy maker to take a more active role in conceptualizing international relations, especially concerning Iran's nuclear power development program. Constructivism is non-dogmatic, and is able to depict reality in a more multifaceted and nuanced approach, with minimized distortion, since all representations by their nature distort reality. Due to the inherent subjectivity of political issues in not only the modern world, but historically as well, it is useful to examine the Iranian nuclear dilemma more by the structures created through societal interaction, than by using determinism or materialism.

Solving the riddle of Iranian nuclear development is worthwhile because there are so many important positions at stake on this issue, economically and politically, as well as religiously and socially. Can this problem be decided with a result that is acceptable to all of the major actors involved in this international drama of intrigue? In an ideal world yes, but most likely no; sooner or later one of the actors will have to flinch in this glorified game of chicken, turn the steering wheel away from mutually determined suicide, and accept negotiations from a position of weakness, although, sometimes there is indeed power in weakness. Weak nations can avoid the



trappings of the powerful, that seek to enforce their global or regional hegemony, and instead can concentrate on developing internally, strengthening their economies, education, and standards of living. A fair solution to this dilemma can be reached only if a fundamental change in philosophy takes place on both sides. Such a change on the policy making level requires a more understanding and collaborative discourse on the civilian level, because for a politician to hold anything other than a hard-line stance in this era of media-driven polarizing rhetoric is political suicide. ♦

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Workshop Review: Andrey Konoplyanik—An Interview with Gazprom Ex- port Adviser

—*Lauren Bardin and Nicholas Watt*

Dr. Andrey Konoplyanik taught one of ENERPO's core classes entitled, "The Evolution of World Energy Markets." During the spring semester in 2013, the only way Dr. Konoplyanik could maintain his duties as advisor to Gazprom Export and as our professor was to take a train from Moscow to St. Petersburg in time for Friday night lectures. He would deliver another lecture to us Saturday morning and return to Moscow that same afternoon to resume his work there.

Dr. Konoplyanik is an energy economist who began his career in the Soviet Union as a researcher at the USSR Academy of Sciences and later as an analyst in Gosplan. In the first two years following the dissolution of the Soviet Union, Dr. Konoplyanik served as Russia's Deputy Minister of Fuel and Energy and continued his work with the government as a non-staff advisor to Russia's deputy prime minister until 2002. Dr. Konoplyanik then became increasingly influential in the Russia-EU dialogue, serving as Deputy Secretary General of the Energy Charter Secretariat in Brussels, Belgium until 2008. Dr. Konoplyanik currently chairs the International Oil and Gas Business department at Gubkin Russian State University in Moscow and also advises the director general of Gazprom Export.

Given Dr. Konoplyanik's experience in the Russian government, in the commercial world, and in academia as an author of over 400 published articles, we, as his students, requested an interview. On Saturday morning March 30, 2013, we sat down with Dr. Konoplyanik to discuss issues facing the Russian energy industry today. Topics ranged from

the relationship between Gazprom and the Russian state, the effects of the US shale gas, Russia's independent gas producers, and the South Stream pipeline.

The following is a transcription of the interview and has been edited for length and clarity.

Lauren: President Putin has acknowledged the US shale gas revolution and has urged Gazprom to respond to its effects and think more strategically. Why has Gazprom continued to think in the short-term?

Dr. Konoplyanik: I think that any company, especially a big company that has its long-term policy in some region has a long-term development strategy. If there are some regional changes, it needs to adapt its policy. Usually the bigger the company, the longer it takes for the company to adapt to these new changes. From my point of view, Gazprom has been establishing its long-term policy in Europe for more than 40 years, since 1968, and the philosophy was based on the development of the long-term contracts with their oil indexation or petroleum products indexation.

It took time to understand that all the political statements of the European Union advocating deviation from fossil fuels were not just political rhetoric but a system of actions.

Now there is a challenge and the challenge is that there is oversupply in the European Union market, their spot prices are going down while long term prices are quite high. Gazprom is losing its competitiveness there and we come to the question: Why is Gazprom not immediately adapting and converting



its projects and contracts to spot. My answer is that the adaptation first of all needs to be clearly understood and that these changes are not temporary. Not only within Gazprom but within the whole gas community in 2009 when these first changes took place, the first impression was that it was just short term changes. It was not clearly understood that these trends, like moving toward a less carbon-based economy, deviating from fossil fuels, improving energy efficiency, and increasing the role of renewables, were long-term. These issues were not taken so seriously by the community because at that time all these programs presented by the European Union were just tested by practice. In 2009 the spot market grew and spot prices went down to almost 50% of contractual prices. It took time to understand that all the political statements of the European Union advocating deviation from fossil fuels were not just political rhetoric but a system of actions.

The second point was that Gazprom needed to assess how long the situation would continue because a long-term policy of deviating from fossil fuels could mean a slowdown in the increase in demand of gas. It was not expected that demand for gas would go down or be stable. At that time, it was Gazprom's understanding that it would take three years for gas demand to decline and the combination of the economic crisis and the new economic policy of the EU would result in two levels of prices: Lower spot prices and higher contractual prices. So initially it was expected that it would take just three years. It was understood that it would be a temporary, not a long-term phenomenon.

Thirdly, when you have long-term contracts you need some time to adapt them because many parties are involved in the negotiations. At that time, the pressure on Gazprom from its clients (like the pressure that was on Statoil, Sonatrach, and other companies that were selling their gas long-term)

was not so strong because the clients' losses were not as big as they are now, with accumulated losses from three to four years of changes and crisis. On the other hand, pressure began to grow as negotiations to adapt the contractual structures took place. It was something like a transition period for understanding that adaptation was a must, and that all these changes in the EU were not short term. Adapting a long-term policy of such a big company like Gazprom takes a long time; the bigger the company, the more time is objectively needed to adapt this.

At first there were some very small changes. They were just trying to adapt formulas by downgrading take-or-pay, deviating from obligatory penalties, or adding a larger role of spot. It took time to make these long-term. Secondly, it took time to make the technical changes. The adaptation has started, but the question remains: Why is Gazprom still in favor of oil indexation despite the fact that it is losing competitiveness? Each producer is trying to receive the maximum price, the upper investment price for its gas. In this case, oil indexation helps Gazprom provide payback investments for its projects. Additionally, they are under pressure from the financial community, which provides debt financing and is interested in shortening the payback period - the shorter the payback period, the lower the cost of capital because it is more predictable that you will pay back this money. So the financial community is also in favor of this.

From my point of view one of the most important factors - maybe *the* most important factor - for keeping oil indexation is the state. The state is the major stakeholder in Gazprom, which means Gazprom may not be the decision-maker itself but more the implementer of decisions made by its major stakeholder. Here I will assume, though I could not prove it in a court, that it is the state forcing Gazprom to stay as long as possible with the high level of price and oil indexation. Partly as a result of



duma election in 2011 and presidential election in 2012, there were a lot of costly social promises made by the state to the population and these promises need to be fulfilled. Immediately after the president was elected in May 2012, there was a series of strong statements made by Mr. Putin saying that all these obligations need to be implemented and all these promises made to the military or the social sphere are very costly. Unfortunately today, my country only has two major sources of revenues with which to do this: Oil and gas. Additionally, competition in the international markets is increasing and markets are narrowing for all other goods. So that means that the relative value of oil and gas increases as sources of export revenues.

This is why the adaptation is slow...because of the continuous debate between Gazprom and the state and the necessity to find equilibrium between the short-term (high earnings now but loss of future market niche) and the long-term (lower earnings now to protect future market competitiveness).

So this is why Gazprom is *obliged* to go more short-term. Maybe it's not its will, not its managerial will - I would assume that Gazprom, as a company, definitely has a commercial thinking and thus understands that here is the short-term thinking: You are earning a higher price today but you are losing your market share in the future. The state and its politicians have a shorter period of forward thinking (just within the electoral cycle – it is no longer

four years, but six years) which could explain Gazprom's higher prices. Despite debate about future gas demand in Europe, Gazprom's own forecasts show that there will be an increase in demand in Europe that is not yet contracted, which will provide Gazprom with a market niche. Gazprom needs to be competitive for this niche, so that does mean that if there are alternative lower priced supplies, Gazprom might lose. It would like to be competitive and practical, but if it is forced to stay at a high level of price, it is not so much Gazprom's philosophy but maybe just pressure from major stakeholders to receive today's earnings in order to fulfill social obligations made during electoral campaigns.

From my point of view, this is why the adaptation is slow...because of the continuous debate between Gazprom and the state and the necessity to find equilibrium between the short-term (high earnings now but loss of future market niche) and the long-term (lower earnings now to protect future market competitiveness). It is not because Gazprom is foolish or doesn't understand; the task is much more difficult and contains several players in the debate. The Third Energy Package could make Gazprom lose out because it makes it difficult to guarantee revenues in the future, which is of course making it harder for the debaters to make a decision. That is why this adaptation process is going slower than I would like it to go.

Nicholas: I want to ask you about the economic rationale behind the South Stream pipeline, but before we go there could you illustrate the reactions from Brussels and Kiev to the gas crises of 2006 and 2009, which can be considered as motivating factors behind development of this pipeline?

Dr. Konoplyanik: The unfortunate crises of 2006 and 2009 between Russia and Ukraine has multiple effects for all parties concerned - for EU, for Ukraine, and for Russia - and we need to understand the economic logic behind South Stream within this



triangle of post crisis effects for the three parties concerned.

In the European Union, it resulted in a directive regarding security of supply that I think was approved in 2010, and which established a number of obligations for member states of the EU. Even though there existed some thought in the EU about implementing these obligations before the gas crises, they were the catalyst that pushed the EU toward enacting new policies. Each country now needs to have at least three sources of supply; each country needs to have a number of interconnections that will bring together neighboring countries; each country needs to have opportunities for reverse flows. On top of this, the member countries of the Energy Community Treaty (EU plus 9, the countries of former Yugoslavia mostly) added regulations. In 2010 Ukraine and Moldova joined and therefore needed to implement the treaty rules too. The member states of this treaty, in I believe 2011, decided to implement the rules of not only the second directive but the third gas directive as well. When third energy directive came into effect in 2009, obligations were upgraded, so Moldova and Ukraine are now obliged to have all those requirements I listed. That was the response of the EU. They responded by diversifying their infrastructure in order to reduce dependence on gas from the East and through Ukraine.

The natural response from Ukraine is well known. After the contract between Russia and Ukraine was signed, Ukraine was not happy about the price level. The signing of the contract was done at the moment when the reference period of the previous 9 months which created the timescale to calculate the average value of petroleum product prices during this period which placed the value of P zero in the contractual formula at \$450/mcm. Of course, Ukraine was not happy with this high price and understood that given this high price, relations with Russia, and the two interrup-

tions, they would have to go in a different direction. Now they are developing shale, the offshore, buying from the West through reverse flows that are now obligatory in the Energy Community Treaty. They would like to develop an LNG plant near Odessa, switch from gas to coal for power generation because they have a lot of coal. They would also like to increase their energy efficiency. That was the reaction on Ukrainian side.

Nicholas: And now what about Russia's reaction and how it relates to the development of South Stream? Can the economics of such a large pipeline going to countries that may not have that kind of gas demand be justified?

Dr. Konoplyanik: Regarding South Stream, I would like to divide two aspects. First, the issue of economic justification of South Stream per se, and second, a discussion about quantitative parameters – will it have a 63 bcm capacity or not? I will get to this later.

But back to Russia's reaction to the gas crisis...Russia was overestimating their balance within this triangle. From my point of view, they began to reassess the risks and costs of gas to Europe after the interruptions. From the Russian side, they could also expect another interruption of flow in the future, so the risk became a material fact. Russia had to assess whether or not it was too risky. Should Russia continue living with the risk of interruption of flow where Russia would be the responsible party in the event of a future interruption because in the supply contract it is the obligation of the supplier to bring gas to the delivery point and if there is interruption of the flow because the transit country is taking some flow out of the pipe the customer will bring to court not the transit state but the supplier, and then Russia would have to invite the Ukrainians to court. So the first victim would be Russia; and they began to reassess this. Taking into account these risks, and I do not know how these risks were evalu-



ated, the economic assessment of continued gas flow through Ukraine and development of new pipelines that bypass Ukraine showed additional benefits. First of all, in this new system of evaluation when you are not only measuring the technical costs but also the financial costs that include the risks, economic considerations might be different. Thus continued transit through Ukraine will become more costly after these elements of risk. That definitely changed Russia's economic assessment of technical costs of Nord Stream, South Stream, and continued flow through Ukraine. Secondly, if you have the choices of either going through Ukraine or not, then technically it is something like a lever or a pressure that is diminishing the risk of these interruptions of supplies – like an alternative opportunity to reduce or eliminate this sort of interruption through the main source. I see the reasonability for developing the two pipelines, which is based on the new approach to assessing the economics of the new routes, including the risk of interruption if the gas is going through Ukraine and the zero risk of bypassing Ukraine by instead going through international waters directly to the customers.

Russia has the opportunity to create and use these capacities and make the throughput of Ukraine zero... I think that all the talk of maximum numbers is a negotiation tool and it is not necessarily the final decision that all these pipelines will be built with these maximum capacities.

Why two pipelines? Because they are aimed at two different markets. All the supplies from Ukraine were going to Slovakia and Czech Republic and then

by one line to the White House to Santa Ekaterina toward Northern Europe and another line to Baumgarten toward southern Europe. Now, Nord Stream goes to northern Europe and South Stream to southern Europe, specifically Italy, the traditional market for gas going through Ukraine, Slovakia, and then Austria. In this case I see economic justification for two pipelines because they are going to traditional markets of Russian gas. They are clearly bypasses, with the major aim of bypassing Ukraine and providing alternative routes to feed traditional markets.

Now, let's speak about the quantities. I cannot prove today anything except the 55bcm that is already the factual throughput capacity of Nord Stream. I do not think this is being fully utilized yet, that part of the capacity is taken from existing flows going directly to Germany. I do not know the exact figures. Maybe it is because of the crisis and after the crisis it will use the full capacity. So I would not conclude that the 3rd and 4th lines of Nord Stream will go through. I talk about this in the "if" manner because if we combine all the maximum capacities of Nord and South Stream, we will see that Nord Stream: 55 (today) + 55 (future) = 110bcm. And then if we take the maximum capacity for South Stream is 63bcm. I cannot treat these numbers in such a simple way. When you build a pipeline, you are not laying all four pipes simultaneously; you are building them in sections - first, second, third, fourth. The fact that South Stream has started construction does not mean it will finish with 63bcm. If we summarize these maximum capacities (current and proposed) we have 110bcm + 63bcm = 173 bcm which is already equal to the capacity through Ukraine. If this capacity is realized we will have the technical possibility to have zero throughput capacity through Ukraine, which, from my point of view, would be the worst development. In this case, we would lose the Ukrainian market and will have a domino effect – if we do not put gas through Ukraine then Ukraine will definitely do its best to exclude supplies of Russian



gas. In years to come, they might have the opportunity to receive alternative flows that will compensate for the flows of Russian gas. It would be a lose-lose situation for both countries.

All these statements about future supplies are nothing more than an attempt to find equilibrium in a politically motivated debate. If we take into consideration that Yulia Tymoshenko is in prison and that there exists a very strong rhetoric between Russia and Ukraine, we are trying to find that equilibrium starting from a very negative point. I would say that all the statements showing the most radical situations can be considered in the following manner: if there's no intention to find an equilibrium, Russia has the opportunity to create and use these capacities and make the throughput of Ukraine zero, which could greatly hurt Ukraine because they heavily rely on transit revenues. I think that all the talk of maximum numbers is a negotiation tool and it is not necessarily the final decision that all these pipelines will be built with these maximum capacities. The fact that the construction of the offshore part of South Stream has started tells me that Russia needs to talk with its European colleagues about how it will be built from the Bulgarian shore to the Italian market within the framework of the Third Energy Package. We have proposed a 'Sweet Dream' project, which is very similar to South Stream, to try to find the procedural opportunities and whether the rules of the Third Energy Package will allow the shipper to reserve capacity for 63 [bcm], 53, 33, 23, or 13 – the amount does not matter. If you would like to book the capacity for new supplies within the rules of the Third Energy Package, then there is the issue of ownership unbundling, which would mean that Gazprom is only as a shipper, not the owner of the pipelines. There is also a rule for social investing. This project explores whether all the rules are there so if and when the first line reaches the Bulgarian coast in a year and a half or two years, it will be impossible to claim there are no rules, which would have the negative effect of

prolonging the regulatory development process and further politicization of this issue.

I can see the economic reasons behind the pipeline but not behind the 63bcm capacity.

All of the regulatory particularities of the EU also create more risk and influence the throughput capacity of the final project. So I see that in this process of negotiation and construction, the question will remain: What will the final capacity be? I am not ready to say today that it will definitely be 63 bcm. Prior to December 7th, it was still a question of whether or not South Stream would be built but now we have passed the point of no return and we are faced with the questions of what the final throughput capacity will be and what the procedures within the EU and Third Energy Package rules will look like. Depending on these procedures and rules, Gazprom may or may not be ready to sign a contract with specific capacities. You can justify any capacity through adequate evaluation of risks because here it is not just pure economics that matters. I can see the economic reasons behind the pipeline but not behind the 63bcm capacity. I will not be willing to discuss who the contractors will be or what are the relations between the pipeline companies with the current political leadership of my country because I do not consider myself a specialist in this issue.

Lauren: You have mentioned that we are moving from a resource based world to a technology based world and this has definitely played a role in the American shale gas revolution. Has this shift meant any direct disadvantage for Gazprom?

Dr. Konoplyanik: I do not think so because this movement from the importance of resources to technology is, from my point of view, a natural shift



that is long-term and global and all companies are reacting to this. That means that we need to take into consideration the competition between these production factors (labor, capital, natural resources). Since today we are definitely moving from a fossil fuel economy that was the reality of the 20th century to an economy where the expansion of non-fossil fuels will take place,

[Gazprom] has been trying to buy stock in new electricity generating companies since the privatization of Russia's electricity sector. It is also trying to increase its presence in the vertical chain, and the next stage after electricity is alternative energies.

Gazprom is trying to place itself as not only a gas producing company, but an energy company with multiple activities. It would like to follow the paths of other international companies that have not monopolized just one area, for example oil companies began in oil but have expanded to alternative energies. It would like to have its presence in all competitive energies so that if there were to be a strong movement from an oil economy to a non-oil economy, it would be on the forefront in these alternative energies as well. I think that Gazprom is definitely slower than others because it has clearly aimed at developing gas. Maybe it will take a longer time for Gazprom but it will also try to think about alternative areas, not just electricity generation, which is the natural transition now. Gazprom is making the move differently than others. It has been trying to buy stock in new electricity generating companies since the privatization of Russia's electricity sector. It is also trying to increase its presence in the vertical chain, and

the next stage after electricity is alternative energies. It would like to use gas in transportation. For example, Gazprom will be presenting a joint project with Volkswagen in Dusseldorf, Germany where they will use compressed gas in cars. This natural shift for all energy companies is occurring because they would like to be stable by not relying on only one energy niche. First Gazprom would like to find out what is possible to do with gas - which most likely means it will move downstream to the petrochemical industry because many of the Eastern Siberian fields contain gas with not only methane but other chemicals like CH₅, CH₆, butane, propane, and others that can be used as feedstock for chemicals. This diversification does not necessarily mean going in the direction of alternative energies like renewables but instead, it may mean development of the more difficult aspects of the gas business. The level of technological complexity in the arctic offshore is higher and technology needs to be more sophisticated. Even to develop traditional energies takes more complex technology now. It is not just a phenomenon of today or of the US shale revolution – it is an example in technology history.

Nicholas: We had Vladimir Milov speak at our university a couple weeks ago and in the answer to a question I asked him about independent gas producers in Russia, he said that the term is a misnomer; there are other companies but they are not necessarily independent. My question is what role do you see Novatek and Rosneft playing in future relations with Gazprom? Will it be more characterized by competition or cooperation?

Dr. Konoplyanik: Generally I think the best form of competition is cooperation, especially when you have capital intensive projects. When you need to develop something and a huge investment needs to be made, it is better not to have competition but cooperation. But I understand that at some points there are the economics that force companies to choose either to compete or to cooperate. Some



companies cannot cooperate with Gazprom because they are losing opportunities so they are trying to find out areas in which they can compete. One of those areas would be the possibility of gas export. Independents will likely not receive the opportunity to become individual exporters of this gas, at least within this electoral cycle, and I am not sure about next electoral cycle - it depends on the new leaders.

...there will still be an export monopoly in pipeline gas and the solution for independents could lie in allowing some export if the companies also take some investment responsibility in developing a better transportation system.

A lot of things depend on the president, for instance, if Vladimir Milov becomes president, I understand one of his first decrees would be to demonopolize Gazprom to provide not only third party access to the existing pipelines (it is already there, though not too many understand it) but to give the opportunity for the independents to export pipeline gas to Europe. I think there will still be an export monopoly in pipeline gas and the solution for independents could lie in allowing some export if the companies also take some investment responsibility in developing a better transportation system. It is now the responsibility of Gazprom to develop this system but I can see a situation in which if independents contribute to the transportation system, they will receive some export rights equal to what they contribute. Here there would be forced cooperation.

If we move to LNG, despite the fact that today there is no opportunity for companies to export gas independently, I think that very soon there will

be liberalization of export of LNG and I think that the independent producers will receive an opportunity to export LNG based on the following economic rationale: The export monopoly was established to exclude competition in Russian gas on the EU market in order to maximize export earnings for the state. With LNG, you are not linked only to the EU market; you can go to the EU market, or the Asian-Pacific, or if the opportunity arises in the US – you can go globally.

Moreover, there is now an overabundance of LNG import capacity in Europe; the utilization rate is around 40%. The major exports will go to Asia Pacific where Gazprom's pipelined gas does not reach. There is more flexibility in LNG supplies and therefore no direct competition between the independent LNG producers and Gazprom pipeline gas. That could mean that Novatek at Yamal LNG, Rosneft at Sakhalin, and Gazprom at Vladivostok LNG all possess markets and niches. I think we are moving today toward liberalization of LNG export in Russia, which will give the opportunity for coexistence and cooperation-forced cooperation between independents and Gazprom in pipeline gas and competition in LNG. It doesn't mean that they will be competing in the existing market but instead in the growing markets. Both will have the opportunity to find their niches.

Nicholas: There have been several calls for Gazprom to restructure and one suggestion has been privatization. Do you think that if Gazprom were to become more privatized, would efficiency be increased?

Dr. Konoplyanik: I prefer not to discuss "if" stories because I do not even see this situation feasible in the current electoral cycle. The issue is not the privatization of Gazprom per se, because Gazprom is considered as a company with different branches. The key asset of Gazprom is the gas transportation system, which was developed as a



single entity and is managed from the center by a single company.

It is not the privatization that is the key issue here, but the fair regulation of all these rules regarding third party access to the domestic transport pipelines.

Today if you are speaking about privatization, it means that you are speaking about privatization in the competitive areas. If the idea is to split Gazprom, this means that there is the company dealing with operation of the gas transportation system and then companies like Gazprom production and others like Rosneft and Novatek that will bring gas to the transportation system, where it will then go to the downstream markets. A number of economically justified arguments say that without privatization of Gazprom, without separation of transportation and production, it is possible to have efficiency if adequate third party access to the transportation system is provided for both the upstream part of the company and the independents. It is not the privatization that is the key issue here, but the fair regulation of all these rules regarding third party access to the domestic transport pipelines. I see the opportunity for the state to provide fair third party access to the pipelines even when Gazprom is not privatized. The reality is that privatization will not take place in the next 6 years, so it is better to focus on these issues. Second point is efficiency. I do not see that efficiency is an issue of Gazprom's privatization or restructuring, it is the issue of decreasing costs, issue of management, and it does not matter whether you are separated or not, it matters that Gazprom today is not your typical commercial company - Gazprom today is a state company that has a lot of other non-commercial obligations, it is

just a donor to the state. I am not trying to protect Gazprom but I do want to say that it is not always the fault of Gazprom because it sometimes needs to implement something non-commercial, for instance Sochi Olympic Games, to finance the development of the football stadium here in St. Petersburg for Zenit. I do not understand why Gazprom is supporting Schalke club in Germany – I do not understand, for instance, why Gazprom is supporting the NTV television channel. I do understand efficiency, which for me means improving managerial efficiency and finding your core business and limiting yourself to that. But if the major stakeholder, which is the state, says you need to invest in television (which is not understandable for me), then what can you do? So it is not so much the guilt of Gazprom per se but of the fact that it is a state company. Usually in countries where there are state companies, these companies serve a dual purpose, acting as a commercial entity and as a donor to budget. So that means that their commercial efficiency is always lower than the efficiency of just commercial companies. This is the reality in which Gazprom needs to act. ♦

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Workshop Review: Anatole Boute—‘Reform of the Russian Energy Sector’

- Ornela Figurinaité and Michael G. Seyer

Anatole Boute is a lecturer of law at the University of Aberdeen and legal adviser to the International Finance Corporation (The World Bank Group). As a contributor to the projects conducted by the Russia Renewable Energy Program, Dr. Boute advises the IFC on the legal aspects surrounding the decarbonisation of energy supply. His work focuses on the potential to employ renewable energy sources for the production of electricity. Offering a lecture to students of the ENERPO program during the spring semester of 2013, Dr. Boute spoke in detail about his work. Structuring his presentation to include discussions of investment needs and required legal reforms within the Russian market structure, Dr. Boute concluded with his estimation that Russia, were it to take the necessary steps and overcome short-term financial obstacles, could become a “Green Giant” in terms of renewable energy utilization.

Electricity Sector’s Soviet Roots

During the introduction of his presentation, Dr. Boute suggests that, to understand the investment needs of the Russian electricity sector, one needs first to understand the history of its development. Currently, Russia is the fourth largest electricity market in the world and the largest market in terms of geography, facts that make it a key strategic sector for Russia. Its importance further stems from its strong ideological roots. The Soviets regarded electricity as a keystone for the prosperity of people; V. Lenin at the 8th All-Russia Convention of the Soviets, State Commission for the Electrification of Russia (GOELRO) in 1920, said that

“Communism was equal to the Soviet power plus the electrification of the whole country” and the writings of C. Marx state that electricity is a way of spreading power to the people, stimulating the centralization of production, and helping spread wealth to the people.

Dr. Boute argues that even after the Soviet period, the importance of the electricity sector has not diminished. Russia takes particular care when pricing electricity and restricts the increase in costs as much as possible. Such efforts are also due mainly to ideological reasons - allowing prices to increase may create social unrest and the government may face criticism. Apart from ideological justifications, maintaining electricity tariffs below those of a free market economy creates a competitive advantage in many energy intensive industries, where electricity and heat are the main inputs. Consequently, the speaker argues, this creates a trade-off between sustaining low prices and stimulating investment. Providing investors with sufficient revenues to finance their capital-intensive projects is crucial for the development of the Russian electricity sector from its current state of stagnation.

Expanding the discussion, Dr. Boute outlines the plan of the State Commission for Electrification of Russia written in the 1920s when Russia was one of the pioneers of electrification process. Construction of large coal-fired power plants formed the basis of the plan – gas power plant technology had not been developed yet. In this document there was reference to waste, as well as to renewable energy. The main principle was to join the power plants in different parts of the country using an immense high voltage transmission network and in particular, to connect those regions which were rich in fossil fuels to those where most of consumption took place – industry rich regions. The idea was to exploit the significant day and seasonal variation in energy usage throughout Russia to optimize the efficiency of an integrated system. This document also stressed the



use of regional resources and low quality fuel to power the plants, while higher quality fuels were intended for other purposes. Tracing the development of Russia's electricity system to the present, the sector today is the result of the GOELRO plan and continues to be developed largely based upon the same principles.

High energy intensity was caused by the too slow decommissioning of old power plants and replacing them with new ones

Negligence and Lack of Funding

Following his discussion concerning the formation of the electrification program in Russia, Dr. Boute offers his evaluation of the problems the electricity sector was facing by the end of 1970s and continued to face throughout the 1980s and 1990s. During this later period, Russia saw a decline in investment which marked the beginning of the aging process of the entire electricity system. A monopolistic system prevailed because the investments otherwise would not have been financially viable. As a result, most of the power plants currently operating in Russia were built during the Soviet times, and have seen few upgrades, which in turn has resulted in inefficiencies. The Russian government began encouraging the use of coal in electricity production instead of gas which, although a cleaner fossil fuel, is intended mostly for export. The 1980s saw an attempt to modernize the industry, but failed due to the collapse of the Soviet Union and the poor condition of the state budget.

In 1990, Russia had a total installed capacity of approximately 213 GW and electricity production of 1073 TWh, which is significant when measured against current world standards. However, electricity consumption declined by 25% in the 1990s due to the collapse of the industrial sector following the dissolution of the Soviet Union. Yet, as

argued by Boute, this was a blessing because before the collapse the Russian electricity sector had been under a huge strain. High energy intensity was caused by the too slow decommissioning of old power plants and replacing them with new ones, and by a lack of modernized infrastructure and technology due to the lack of adequate financial resources. However, from about 1998 until 2008 the Russian economy grew substantially and pushed electricity consumption to 1000 TWh - almost the same levels as pre-Soviet Union collapse, which again resulted in the loss of reserve margins. Hence the electricity system was exposed to the risks of blackouts, such as the one in 2005 in Moscow and accidents such as the collapse of the power plant Sayano-Shushenskaya in 2009. Furthermore, the pressure exerted on the system varies a lot depending on the region of Russia. Some regions are characterized by high demand, intense supply deficit, and limited network capacity to import power from other regions and therefore are at a higher risk of accident and outages. Moreover, some regions in southern Russia are entirely isolated from the centralized system and cases such as that of the Krasnodar region may pose serious concerns moving forward, especially in regards to the electricity supply for the Olympic Games in Sochi.

By 2008, Russia had installed capacity of about 224 GW. The current fuel mix for the production of electricity in Russia is approximately 68% thermal power (70% gas, 28% coal and of this 55% CHP), 21% hydro and 10% nuclear energy. The Russian electricity industry uses a very high percentage of Combined Heat and Power (CHP), which is an efficient way of producing electricity and heat because it captures heat from production and, through utilization of this output, avoids excessive waste. Dr. Boute concludes that Soviet electricity engineering was very advanced, but highlights that nothing since then has been done to build upon this practice. Therefore, these old installations are now operating inefficiently in terms of energy utilization. Within the



energy mix, there is also a large share of hydro, 21%, which is considered to be a renewable energy. It is necessary to distinguish between large and small hydro power plants. This distinction is drawn at about 25 MW; up until 25 MW, power plants are operating with small turbines and are considered to be purely renewable.

Forecasts for Russian Electricity Sector

Dr. Boute examines official government forecasts of Russia's electricity sector for 2030; the government's policies and objectives are outlined in the *2030 Energy Strategy* as well as *The General Scheme for Allocation of Electricity Production and Installation*. These documents can be considered the new GOELRO and provide a strategic plan for the Russian electricity sector until 2030. The plan is to further develop hydro and coal-fired power plants in Siberia and to develop the network infrastructure to the European side of Russia in order to transport the electricity produced from hydro and coal to the parts of Russia where electricity consumption is higher. The document puts forward plans for coal and hydro power plants to be built in Siberia, gas plants in Ural regions, and nuclear power plants in the north. Important long-term price forecasts are outlined in the *Concept of Long-term Social and Economic Development Plan of Russian Federation until 2020*. The same document provides a target for renewable energy in Russia as 4.5% by 2020, which in Dr. Boute's opinion, is very modest compared to Russia's potential and to the European Union's target of 20%.

With the exception of the target for renewable energy, the goals of the forecast are, in Dr. Boute's estimation, very ambitious. The government's goal to have 324 GW installed capacity in 2030 means that Russia will have to build 220 GW in the next 20 years, which is the same as the total capacity in Russia today. Energy efficiency will be improved by about 40% by 2020. The fuel mix will move from gas to coal at least until 2020, in order to be able

to supply enough gas to Europe, which is an issue until development of large gas fields on the Yamal Peninsula. Also in the 2030 forecast, it is planned to again increase the share of gas because of the relative importance of the domestic consumers to the Russian gas industry. The electricity sector is the biggest consumer of gas in Russia and therefore the success of both the electricity as well as gas sectors vis-à-vis one another is critical for mutual positive development. Of course these projects are very ambitious, but they are not binding. At the end of the day it is the private investor who is going to make the decision regarding whether or not to build this new capacity or to invest in renewable energy. The question is therefore, to what extent is Russia creating a regulatory environment that will attract these private investors?

...Europe has a moral responsibility in looking at what is happening with Russia's electricity system.

Investment in Russian Electricity in the Best Interest of Many

Continuing the discussion, Dr. Boute next considers the importance of the development of the Russian electricity system for EU-Russian energy relations. The issue of developing coal to free up gas for export, mainly to the European Union, means that the additional emissions of CO₂ generated in coal-fired power plants in Russia could be considered part of the carbon cost of Europe's energy security. Hence Europe has a moral responsibility in looking at what is happening with Russia's electricity system. Updating or replacing obsolete equipment today represents huge energy saving possibilities and of course is also important for Europe, because if these energy savings are generated, it could be exported to Europe. This, however, requires large capital investments. Russian authorities suggest 355-554 billion USD of investment needs, which is a huge market



potential for investors. The modernization of the Russian electricity sector is important for Russian consumers because it is necessary to secure reliable electricity supply. If the practice of relying upon Soviet equipment is continued, consumers will ultimately have to pay for the energy inefficiency in the long run.

Following his conclusion that the modernization and decarbonization of the Russian energy mix is in the interest of both the Russian Federation and the European Union, Dr. Boute offers a brief glimpse into the deficiencies of the Soviet organization of the electricity market and the effects such shortcomings have on the ongoing modernization process. Throughout the Soviet period, the electricity sector was structured as a vertically integrated monopoly financed by the state budget and not bound to the principles of supply and demand. Perhaps the most damaging Soviet practice was the utilization of tariff structures and cross-subsidies, which, while designed to offset the costs of production and transmission and ultimately lower the end-cost for consumers, did not offset the costs for further investment into infrastructure and other modernization projects. According to Dr. Boute, this lack of investment into critical infrastructure and technology, which was a deficiency of the system throughout much of its history, was an inadequacy with consequences that continue to be detrimental to current modernization projects.

Russia's Policy on Renewables

As a result, current efforts to liberalize the electricity market are oriented towards the attraction of private investments, both domestic and international, so as to modernize infrastructure, secure supply, and improve the efficiency of electricity production and transmission. To facilitate such a transition towards a competitive market, the Federal Electricity Law and the Wholesale Market Rules were established in 2003. The basic provisions outlined by this law were the following: free

interaction between the market parties, economically justifiable prices, stability of investment conditions, security and reliability of supply, energy efficiency, non-discrimination, and transparency. Responsible for the implementation and regulation of this new framework are the Russian Ministry of Energy and Industry, the System Operator of the electricity sector, and the Federal Anti-Monopoly Service. Ultimately, such reforms have been implemented due to high-level interest on the part of the Russian government and industry to gradually transition not only towards a market based upon liberal principles but also to attract investments for the development of renewable resources as significant ingredients in the Russian energy mix.

...until the market allows for the introduction of RES into the overall energy mix of Russia at a cost comparable to the costs of traditional fuels, tariffs and premiums will be required to protect both consumers and industry from high end-user costs.

As expressed in both the *2030 Energy Strategy* and the *2020 Concept of Long-term Social and Economic Development*, the Russian government and industry leaders have confirmed their dedication to the Renewable Energy Standard (RES). Under this provision, electrical supply companies are tasked with the production of a certain percentage of their output through the harnessing of renewable energy resources. In the case of the Russian development strategy, this target percentage is currently held at 4.5% for the year 2020. Ultimately, these efforts to modernize energy infrastructure, increase supply in isolated and deficit regions, and address concerns regarding the disposal of agricultural



waste. However, at this premature state in which renewable energy is more costly than traditional resources, heavy investments are required to, in the words of Dr. Boute, “level the playing field” to facilitate an increase in the level of renewable utilization.

In response to the challenges associated with attempts to include energy from non-renewable sources into the overall energy mix, such as price increases, and concerns regarding consumer access and trade arrangements, the Russian Federation has established a legal framework to encourage investments into an RES framework. In 2007, the Federal Electricity Law added a regulated premium to the wholesale electricity price and further amendments were made in 2011 that established long-term regulated capacity tariffs. These tariff structures and price premiums, designed to lower the cost of electricity for end-users, reflect serious concern on the part of the Russian government to risk the increase in costs associated with renewable resources. This concern is twofold. First, a low electricity price can be considered as a social right and Russian citizens appraise their government based on their efforts to keep costs low. Second, the competitiveness of Russian industries, as major consumers of electricity, is dependent upon low energy prices so as to allow energy-intensive enterprises to continue operating profitably. Therefore, until the market allows for the introduction of RES in to the overall energy mix of Russia at a cost comparable to the costs of traditional fuels, tariffs and premiums will be required to protect both consumers and industry from high end-user costs.

Concluding his presentation, Dr. Anatole Boute reasserts that such high costs can only be reduced if investments are made into the modernization of infrastructure and technologies are employed to harness renewable electricity sources. Russia, Dr. Boute illustrates, is rich in renewable resource po-

tential. Taking the discussion further, Boute argues that it is in the interest of both the Russian Federation and the European Union to make dedicated investments into this sector. As Russia is the main energy supplier of the EU, its members should be motivated to assist in the modernization of the Russian energy sector so as to benefit from less expensive, increased, cleaner, and safer supplies. The benefit for Russia in this estimation is clear. As an economy based heavily on energy export, decreasing the costs for production and transmission and harnessing a wider spectrum of its resource base can only strengthen its economic development. Through investment and a common regulatory framework between Russia and the EU, Dr. Boute says that such positive developments in the Russian energy sector remain a genuine possibility. ♦

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Workshop Review: Vladimir Drebentsov— BP Vice President on BP’s Activity in Russia

—Colin Chilcoat

On April 19th, the European University at St. Petersburg had the pleasure of welcoming Dr. Vladimir Drebentsov as part of the “ENERPO Workshop,” a series of lectures and presentations, in which representatives of major oil companies, government officials, and academics are invited to speak before MA students on a topic of their choosing. Dr. Drebentsov’s presentation was entitled, “The Strategy of BP in Russia amid Evolving World Gas Markets.”

Dr. Drebentsov is a graduate of Moscow State University (Economics) and holds a PhD in Economics from the Institute of US and Canada of the Russian Academy of Sciences (ISCAN), where he served as a Senior Research Fellow for 11 years. Upon leaving ISCAN, Dr. Drebentsov began a 12-year career with the World Bank as Senior Economist. Dr. Drebentsov joined BP in 2006, where he assumed responsibility over economic and energy research and policy advice concerning countries of the former Soviet Union. In 2010, he was appointed to the role of Vice-President for External Affairs of BP Russia.

His talk was divided into two portions. The first, a summary of the most recent BP Statistical Review of World Energy and Outlook to 2030 (link provided below), the second, a question and answer session with the audience.

Summary of BP’s Outlook to 2030

A vast majority of increased energy consumption will come from non-OECD countries, as both their population and GDP growth will outpace OECD countries through 2030. China and India will be leading this group as the two countries are ex-

pected to be the leaders in global liquids growth. Not only will non-OECD countries lead consumption, but these emerging economies will also dominate energy production. Production growth in natural gas, nuclear, and renewables are all expected to outpace oil for the next two decades as the global energy mix becomes as balanced as it has ever been. Huge demand spikes are not altogether worrisome, however. Dr. Drebentsov believes that perhaps the most important development on global energy markets is the growth in energy efficiency. Decreases in energy intensity towards 2030 coupled with a more balanced energy mix will alleviate concerns surrounding oil and gas depletion.

Not only will non-OECD countries lead consumption, but these emerging economies will also dominate energy production.

Regarding a global unconventional revolution, Dr. Drebentsov and BP believe that the US will continue its strong growth, while other players (China, Europe & Eurasia) will experience only minor growth as we move towards 2030. Nonetheless, BP expects tight oil, oil sands, and biofuels to account for 100 percent of the global liquids supply growth to the end of this decade. A side effect of such growth will be a reduced call upon OPEC and an increased need for OPEC to maintain discipline regarding spare capacities. Uncertainties abound, but BP forecasts additions of approximately 6 million barrels per day of tight oil and 70 billion cubic feet per day of shale gas to the global supply by 2030. Dr. Drebentsov acknowledges that geopolitical relationships worldwide will experience many changes as a result of such developments, but leaves that discussion for another time.

Dr. Drebentsov concludes the first part of his presentation by stating that we are lucky to live today, in



a world in which in gas and oil markets are more competitive than ever. This marks a significant break from the past and will continue to allow for the diversification of global energy markets.

The following is a transcription of the question and answer session immediately after Mr. Drebentsov's presentation. The transcription is a mixture of direct quotes and paraphrasing to improve clarity.

Question: Recently, the CEO of BP, Bob Dudley, listed four priority regions for BP: Azerbaijan, Angola, the Gulf of Mexico, and the North Sea. Production in Azerbaijan has been slightly declining; the North Sea is depleting; there have been a lot of obstacles in the Gulf of Mexico of course; but at the same time Russia has not even been mentioned as a priority region. I was wondering how BP's strategy can be justified taking these developments into consideration?

Dr. Drebentsov: You have to distinguish between a company's status as an operator and as a shareholder. BP is an operator in these four regions that you mentioned.

You are keenly aware of our problems in the Gulf, but we are confident that, with time, we will be able to proceed with some of our major projects of deepwater drilling.

In Russia, we used to be a shareholder of TNK-BP. Now, we are a minority shareholder of Rosneft, not an operator. So, BP, as a company, has not been producing any oil or gas in Russia, unlike in Azerbaijan, where we are an operator, or in Angola or the Gulf. This will likely be the situation for the years to come. I would have to mention many

of the peculiarities of the Russian regulatory system to explain why we are not an operator here in this country. We do not expect to become a major operator of either gas or oil fields in Russia. It does not mean Russia is not a priority country for us; it is just not a priority for producing oil and gas on our own.

You mentioned that gas production in Azerbaijan is declining and actually we expect gas production there to grow. Shah-Deniz 2 is a major project for us and is expected to be the primary source of gas for the Southern Corridor. You are keenly aware of our problems in the Gulf, but we are confident that, with time, we will be able to proceed with some of our major projects of deepwater drilling.

Question: You mentioned Shah-Deniz 2 being the major supplier for the Southern Corridor. Can you elaborate a little more on how that gas will get from Shah-Deniz 2 to Europe?

Dr. Drebentsov: No. That's commercially sensitive, and come June we will have to make a decision on an exact route. At the moment, there are several options we can pursue: Trans-Adriatic, Western-Nabucco, but I cannot pre-judge the decision we will make in June.

Question: Jumping on to what you previously said about regulatory peculiarities in Russia – Would you say that this is the primary limiting factor for a foreign company's involvement and general investment in the Russian energy sector? Or is there something else?

Dr. Drebentsov: The regulatory regime in Russia is why foreign investment in oil and gas is much lower relative to what it could have been. Just to give you one figure: 20 percent of the investment to develop tight oil and shale gas in the US came from foreign companies. In Russia, it is not so because there is a long list of strategic industries, which limit participation of foreign companies in oil and gas. There is a



sub-soil law, which brings more complications and there are various other limits. As you know, on the Arctic Shelf only public companies are allowed to operate. A foreign company, like ExxonMobil has already done, has to become a minority stakeholder in a joint venture.

In Russia, we've learned how to work with a private partner in TNK-BP and now we will have to learn how to work with a state-run partner in Rosneft.

There are regulatory difficulties in China. For instance, China is pretty keen on allowing foreign companies to help them develop shale gas, but in order to do so they had to change the whole classification and design a special category for shale gas. When you look at the Chinese legislation it is pretty similar to Russia's, and even worse. In China, foreign participation in oil and gas is just banned. They have introduced this shale gas category, which has effectively been classified as a new resource and takes it out from under the auspices of the drastic limitation of foreign participation.

Different countries have different regimes and the regime in Russia is a fairly restrictive one. We expect this to be changing because if Russia wants to develop tight oil it will need foreign expertise and foreign technology, perhaps not money. Access, first of all, and then taxation. Taxation is a detrimental factor for any company, Russian or foreign, which tries to produce oil in Russia. The price of the Urals blend, which is Russia's primary export blend, behaves similarly to Brent and WTI. If you look at the price, which any company who produces oil in Russia sees, it has been around \$20 for the last ten years. The rest goes to the government in the form of taxes, some 70 percent is in

the form of taxes. Production of oil in Russia keeps growing, but it keeps growing only because the current breakeven price is around \$15-16 per barrel. If we get \$20 we make profit. If we have to tackle tight oil, which is much more expensive, or any offshore, this doesn't work. I'm fairly certain the government realizes this and if they want to develop in these new provinces they will have to change access rules and taxation obligations. I'm currently working with a government tax group where we have suggested major changes to the way the Russian oil and gas sector is regulated.

Question: I have another question about BP's cooperation with Rosneft. Just a few days ago the Russian Ministry of Economic Development proposed to sell 19 percent of the shares of Rosneft. I'm wondering how BP receives that announcement. Do they prefer to cooperate with Rosneft as a private company or as a state-owned company?

Dr. Drebentsov: We've noted this announcement, but as you've read this is just a proposal from the Ministry of Economic Development. The chances of this proposal being cleared, I don't know, I would put at less than 50 percent. Even if this goes through, the government will still have more than 50 percent of the shares and it will still be a state-owned company.

Question: Would BP welcome further privatization in the future?

Dr. Drebentsov: We can see Rosneft eventually becoming a private company, but we do not expect this to happen in the near future. We've been doing business with national oil companies all over the world so we are experienced with state-run companies. In Russia, we've learned how to work with a private partner in TNK-BP and now we will have to learn how to work with a state-run partner in Rosneft. Additionally, we will only have 20 percent of the share and not 50 percent as with TNK-BP.



Question: Has the European Commission's approval of the Third Energy package restricted the flow Gazprom can put through Nord Stream. Is it limited now?

Dr. Drebentsov: To answer the question – no, the European Commission has not limited flow via Nord Stream. There are two extensions of this pipeline: OPAL and NEL. Unlike Nord Stream, which originates in Russia and travels through international waters in the Baltic, OPAL and NEL are located in the territory of the European Union and of course the Third Energy Package applies to them. What happened is that Nord Stream owners had to apply for the clearance of shipments of gas via these two extensions according to the new procedure. That's a pretty tough dialogue. I sit on the Russia-EU Gas Advisory Council and I see this debate from both sides. I think that there is no chance that the Third Energy Package will be abolished so Russia will just have to learn how to live in Europe according to these new rules. And they have; Russian companies have already started to learn how to operate on the liberal market in Europe. In fact, Gazprom sells 7-8 percent of its gas to Europe at spot prices. They sell at both oil-indexed and spot prices. For me, that's an indication that they are learning how to operate in this market. Another thing is that Gazprom has already announced that it is interested in extending Nord Stream to the UK. I cannot imagine Gazprom coming to UK and asking for oil-indexed prices. They have acknowledged that with time they will have to export at spot prices and I think this is the way a majority of Russian gas exports will go. I think we will also see the liberalization of the export monopoly held by Gazprom. The President of Russia has issued an order to *think* about the liberalization of LNG exports from Russia. For me, this is the first step towards increasing liberalization of all gas exports. I don't see a problem of Russia's gas remaining competitive on international markets.

Question: Do you think there is a possibility of Gazprom being restructured anytime soon?

Dr. Drebentsov: Before joining BP, I spent 13 years at the World Bank and was part of the team that designed this plan to breakdown Gazprom as a condition of one of the World Bank loans to Russia, which never materialized. I don't see Gazprom being broken down soon, but if we look at the oil sector, that's exactly the state of affairs. There's Transneft, and a more or less diversified production sector. I don't see why the same model would not work in the gas sector. We can already see the rise of independents. Last year, independent producers contributed I think around 27 percent to Russian gas production, which is a lot considering that in the past Gazprom used to produce 100 percent. Pressure will also come from the domestic gas price. At the moment, the domestic gas price in Russia is higher than that in the United States and consumers are starting to feel that and they're starting to complain. It is still lower than in Europe, but over the last ten years gas prices in Russia have grown by a factor of eight. There are certainly problems of profitability for Gazprom, but I do see ways to cut costs. If one looks at staff costs – growth in staff costs between the third quarter of last year and the third quarter of 2011 was 26 percent and that was in a company whose production was declining.

The reason why we have been divesting so many assets is because we had to accumulate \$40 billion for our accident in the Gulf.

Question: I have a question about how BP acts in the paper market. I'm not too familiar with how oil companies act on that side, but I know airline companies hedge for or against the price of oil so I just want to know more about what BP tends to do in these situations?



Dr. Drebentsov: We are hedging some of our production. There are countries that do that. Mexico hedges all of its oil production. We don't hedge all of our production, but our traders do operate on the paper oil markets. We are more on the physical side; we are not financial investors; we still care about production levels. That's our core business. We do not subscribe to the view that the fundamentals do not define the oil price. This is a popular view and people often say forget about the fundamentals, the financial investors determine the price. We think this is completely wrong.

Question: Over the last few years BP has been selling loads of assets in renewables. What kind of consequences will this have for BP in the future? They are turning their focus back to oil and gas and what kind of risks does this pose?

Dr. Drebentsov: The reason why we have been divesting so many assets is because we had to accumulate \$40 billion for our accident in the Gulf. Even if we set this aside, we are likely to see price changes on the oil and gas side that we are not used to and it makes sense to become more focused on the core business. We are still a green company with a focus on renewables, but we have decided to dedicate more focus to areas where we are more experienced. Gas and oil will be the main business for the company at the moment. We are the 4th largest producers worldwide and we will continue to focus on this.

Question: Could you please elaborate a bit on gas pricing reforms in China. Secondly, what is your opinion on China's ability to match gas imports with its own shale gas production?

Dr. Drebentsov: Starting with the price reforms – it has just started. At the moment, companies that import Turkmen gas to China run losses. We do think the reform will go on, but it will take some time. We think that when the gas price in

China becomes more liberal and more or less market-based, that will be the moment of truth for all these forecasts for unlimited gas growth in China. We think that China will be able to produce 60 bcm of shale gas, but it will have to import about 180 bcm by 2030. 100 bcm will be LNG and 80 bcm via pipeline.

The room for Russian pipeline gas is not so big. In economic terms, Russia will need a pipeline deal of at least 30 bcma to justify construction of such a pipeline. China is not prepared to buy expensive gas and Russia is not prepared to sell gas cheaply. That has been the theme of the debates between these two countries for the last 15 years.♦

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BP Energy Outlook to 2030:

www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/pdf/

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[ergy_Outlook_2030_Presentation_slides_2013.pdf](#)

Video of Mr. Drebentsov's presentation:

http://www.youtube.com/watch?v=7CLQIW24_iU



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