



February 2016 – Volume 8, Number 16

- **Call for Papers: 12th ISINI Conference, Groningen, 24-26 August 2016 (with CEVI session)**
- **Petr Polák discusses the energy economics politics of Russia and Europe**
- **Teus van Eck sees Volkswagen case look-alikes in the energy sector**
- **André Dorsman and Mehmet Baha Karan plea for new power market**

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The Energy and Value Letter brings together academics and practitioners worldwide to discuss timely valuation issues in the energy sector. It publishes news from the Centre for Energy and Value Issues (CEVI), its linked organizations and others (including calls for papers), columns on topical issues, practitioners' papers: short articles from institutions, firms, consultants, etcetera, as well as peer-reviewed academic papers: short articles on theoretical, qualitative or modeling issues, empirical results and the like. Specific topics will refer to energy economics and finance in a broad sense. The journal welcomes unsolicited contributions. Please e-mail to w.westerman@rug.nl (Wim Westerman), a copy of a news item, column or a completed paper. Include the affiliation, address, phone, and e-mail of each author with your contribution. A column or news item should not have more than 600 words and a paper should not exceed 5,000 words, albeit that occasionally larger pieces can be accepted.



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This edition of the Energy and Value Letter has three articles, just as the former one. However, this edition differs much in that three opinion articles (call them columns) are published this time. They may be viewed as being somewhat provoking and therefore we look forward to receive your candid comments. Also, a Call for Papers is included. That is the main reason why this February 2016 issue is already published in January, thereby also allowing us to wish you all the best for the new year.

The Call for Papers in this EVL issue invites you to send in a paper to the 12th ISINI Conference, to be held in Groningen (The Netherlands) from 24-26 August 2016. CEVI will organize one or two special sessions at this conference. We have been promised that the conference fee will not exceed 200 euros and that the functions will deliver good value for money. Not just therefore, we encourage you to send in a paper to the organizing committee or to w.westerman@rug.nl, before April 1, 2016.

The first article is by Petr Polák, from the Universiti Brunei Darussalam. Petr is an expert in energy politics and while currently living in the far-away South-East Asia, he is perhaps one of the best persons suited to give an opinion on the Europe-Russia energy relationship. From the European perspective, Petr is worried about long-term benefits. For further reading please download recent articles of Petr Polák published in Foreign Affairs: <https://www.foreignaffairs.com/authors/petr-polak>.

Teus van Eck is a specialist in electricity, heat and environment issues. Teus wrote an article for the EVL before. This time, he witnesses a parallel between the recent Volkswagen emissions “cheat” software crisis and laboratory versus reality performances in the energy sector. Whereas Teus refers to examples from a Dutch origin, things may be not very much different in other countries across the globe. Nevertheless, his article ends with a practical advices and offers a positive outlook.

André Dorsman and Mehmet Baha Karan see a trend from centralised to decentralised power markets, with both the production and consumption of power becoming ever more decentralised. This tremendous change is technology driven, but also politics plays a role (at least in Europe). The authors claim that a new market has to be created, which also takes into account the move towards a greater use of renewable energy sources. Research can help to make this new market come true.



*ISINI 12th international conference
August 24 -26, 2016*

Call for papers

The 12th international conference of the International Society for the Intercommunication of New Ideas (ISINI) will take place at the University of Groningen, the Netherlands from 24 until 26 August 2016. You are invited to submit full papers or summaries that are within the scope of ISINI.

The purpose of the Society is: to foster the discovery and dissemination of new ideas, in particular in economics and other social sciences, to test these ideas and to study the application to problems of the real world. The Society aspires to realize its purpose by creating and upholding an environment where economists meet, consult and cooperate with scholars from other disciplines.

The major instrument of ISINI has until now been its conference. So next to the usual economists, we hope to welcome scholars in Groningen who are working in other social sciences (including law, legal science, history and political science), who are cooperating with economists in common research projects or who are doing research in areas where both sides could benefit from an exchange of ideas. To strengthen the conference's function as a platform for contacts, consultation and cooperation between scholars from different disciplines, the twelfth ISINI conference will focus on a specific theme and approach. The thematic focal point is *Markets, Money and Democracy*. By using this approach, we hope to stimulate research that focuses on a cluster of pressing actual social economic problems. The world economy and its constituent political entities see themselves confronted with a host of problems, of which climate change is perhaps the most extensively discussed. But if we want to preserve or build up a decent and well-functioning society, other areas deserve serious discussion as well. We invite scholars to contribute to an exchange of ideas on relevant subjects, such as: "Democracy and the rule of law", "The open society", "Alternative monetary systems", "Ethics and economics", and "The future of employment".

The second focal point is *Transdisciplinarity*. Ongoing specialization and fragmentation in research thwart scientific cooperation within economic science and even more so within economics and other disciplines. Transdisciplinarity refers to research that bridges the conventional dividing lines. We are looking forward to receiving research papers of this type. Contributions on how to structure and organize academic education in multi- or interdisciplinary studies or settings, are also welcome. Discussions on the challenges and bottlenecks, successes and failures in such domains as management science, environmental sciences, regional science, sciences of the state (*Staatswissenschaften*) may open new vistas. Papers and proposals that meet one of the above mentioned criteria or even better two will get priority in the selection among submitted contributions. However, the selection committee will also accept high-quality papers that do not fully meet one of the two specific criteria. Participants will present their accepted papers and have them discussed in group sessions or (perhaps) plenary sessions.

Proposals for full sessions with presentation of papers or well prepared panel discussions are also of interest to us. In specific, the Amsterdam based Center for Energy and Value Issues (CEVI, <http://www.centerforenergyandvalue.org/>) will organize a special session on “New Ideas on Energy and Value”. Selected papers from the session may be published in the CEVI book series with Springer Verlag, or the Energy and Value Letter (EVL). More information on this session can be acquired via Wim Westerman (w.westerman@rug.nl).

Submission deadline

Please submit your paper, abstract or proposal before April 1, 2016 to: ISINI2016@outlook.com. State: name, affiliation, e-mail and postal address. Notification of acceptance and payment will be sent no later than 15 May 2016.

Venue

The conference will take place in the old city of Groningen. Groningen can easily be reached by car or train. There is a direct fast train that takes you from Amsterdam Schiphol Airport to Groningen in about 2.10 hours. The train runs frequently.

In due time, more information will be available on: www.isini.info.

12th ISINI Conference Organizing Committee: Andries Nentjes, Johan van Ophem, Ymkje van 't Riet-Meijer, Hans Visser and Roel Zuidema



Can Europe stand firm against Russia's energy giant?

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The European Union (EU) is currently the largest importer of energy in the world. In 2014, energy imports, valued at approximately €400 billion, accounted for 53% of the EU's total energy consumption. About 30% of this imported energy came from Russia, primarily from the country's state-controlled gas monolith, Gazprom.

Seeking to squeeze more foreign currency from its gas exports, the Kremlin wants to increase Gazprom's exports to the EU. In particular, it wants to double the capacity of the undersea Nord Stream pipeline, which runs under the Baltic Sea from Vyborg (Russia), directly to Greifswald (Germany).

In June 2015, Gazprom signed a memorandum of understanding with four energy companies, E.ON, BASF, Shell and OMV, to expand the Nord Stream gas pipeline. Nord Stream 2 (NS2) will deliver 55 billion cubic meters of Russian gas annually, almost doubling Nord Stream's current total capacity¹. The project will be implemented by a joint project company, New European Pipeline AG (NEP), of which Gazprom holds 51%, E.ON, Shell, OMV and BASF / Wintershall hold 10% each, and French ENGIE 9%².

The project faces strong opposition from several EU countries. Slovakia, for example, has raised objections to the project³, and so has Ukraine. Russia could mitigate this opposition if it proceeds with another gas pipeline called Turkish Stream, which would extend across the Black Sea to southern Europe, bypassing Ukraine and Slovakia and limiting their strategic importance. EU leaders in Brussels may also raise objections to NS2 as they pursue alternative sources of energy for the EU in an effort to reduce or eliminate Russia's influence on critical energy supplies. One way or another, the German government's position on NS2 will be critical. If Berlin pushes the project despite opposition from other countries and Brussels, tensions between Germany and the rest of Europe, and especially the Visegrad countries – Hungary, the Czech Republic, Poland and Slovakia – will continue to grow.

If opposition from Brussels and several EU countries doesn't scupper the NS2 project, Gazprom's deteriorating financial condition might do the job for them. According to the rating agency Fitch, Gazprom may not have the financial strength to pay for the NS2 project. As majority shareholder in NEP, Gazprom will shoulder more than half the construction cost of the pipeline. But the energy giant's financial and economic health has declined steadily in recent years in the face of collapsing gas prices and a number of other factors⁴.

¹ <http://www.wintershall.com/en/press-news/detail/news/basf-and-gazprom-sign-memorandum-of-understanding-to-expand-nord-stream-pipeline.html>

² <http://tass.ru/en/economy/818821>

³ <http://neurope.eu/article/slovakia-wants-eu-to-block-russias-nord-stream-2/>

⁴ <https://www.foreignaffairs.com/articles/western-europe/2015-09-09/europes-low-energy>

To carry out the project, Gazprom will have to attract financing from international markets, with only tenuous prospects of success because of sanctions imposed on Russia over its invasion of Ukraine. "Western sanctions significantly impede international financing of Russian corporations," said Fitch. Although Europe depends on Russia for 30% of its gas supplies, Russia depends even more heavily on Europe, deriving more than 50% of its revenues for gas exports from European importers. As a result, modification or outright cancellation of long-term contracts with European purchasers would have devastating consequences.

For the time being, Russia remains the primary supplier of natural gas to the EU, and natural gas continues to play an important role in relations between the EU and the Russian Federation. The EU's fundamental energy-related challenge is to restrict its dependence on Russia and try to geographically diversify energy sources. To this end, Europe must better align its gas pipeline network and invest more heavily in the capacity of port terminals to accommodate imports of alternative fuels like liquid natural gas.

To achieve its objectives, Europe must speak with a single, unified voice to denounce onerous long-term contracts imposed by Russia on EU gas importers and to gain a stronger bargaining position. As part of its diversification strategy, Europe must also invest in an Iran-Europe pipeline to bring gas to Europe from Central Asia and Iran.

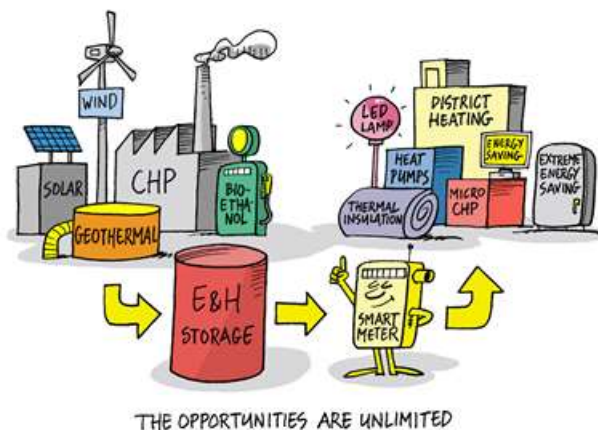
Russia currently faces threats on multiple fronts to its role as Europe's dominant supplier of natural gas. If the EU can exploit Russia's vulnerabilities to its advantage while putting in place the contracts and infrastructure to import gas from alternative sources, it can increase its own energy security on more competitive terms. To this end, European countries must be willing to set aside their individual interests for the sake of their collective long-term benefit. It remains to be seen if they have the will or the commitment to do it.



Big differences between laboratory and reality performances, also in the energy sector

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Not only with cars, but also in the energy sector, energy performances are more and more important, since energy savings and sustainability are determining the behaviour of governments, suppliers and consumers. This is a positive development, but let us realise that it gives a high pressure on suppliers to show maximal energy performances for their products. Therefore, they present in most cases laboratory results under optimal conditions. The average practical lifetime results are in many cases of poor quality. It goes too far to claim cheating, as in cheat software case of Volkswagen. Usually the problem is caused by the way of presentation and the (lack of) quality in construction and operations.



Let us turn to have a look at one example, among others that will follow later in this article. New Dutch buildings need a construction permit along requirements for energy and sustainability performances in line with the E(nergy)P(erformance)C(oefficient) system. Suppliers for equipment, installations and materials are of course extremely interested in a maximum qualification of their products.

In the EPC system, the main items are high efficient gas boilers, heat pumps, micro cogeneration, isolating materials, heat recovery, etcetera. The suppliers have to show their performances according dictated rules and conditions. They do this in practice always under optimal laboratory conditions. The actual lifetime results are often lower, because the results are depending on the total integration in the rest of the building. There is also often lack of quality control of the design, the construction, the operational aspects, the maintenance and the instruction and support of the end users.

Examples are bad or no optimizing of the installations, no control and operations based on air quality, wrong use of thermostats, no guarantees and no control for/on insulation materials and pane, etcetera. In the design shown energy efficiencies for heating with boilers, heat pumps, district heating and the like are often based on ideal circumstances with only low temperature heating. In practice, the share of hot water for bathes and showers becomes higher and higher with a lower total energy efficiency. The effect becomes even more pronounced when the water stream and the water temperature in the heating installation are not further optimised.

Also, existing buildings have energy labels nowadays. The intention of that system is perfect: it gives insight in the energy performance capacity ranking of buildings. The reality is that end users expect that a high label always gives low and sustainable energy consumption. Unfortunately, the practice is in many cases quite different. The energy label is based on a number of carried measures without controlling the quality. As an example, for pane the question is “do you have single or double pane?” In reality, there is an enormous quality difference between pane from the 80’s and the newer options. Beside this example, many problems in new buildings are also relevant for existing buildings.

Both the EPC as well as the energy label system don’t value the electricity consumption in the buildings. Especially in new houses, this consumption is often in volume and in costs higher than the heat consumption. The electricity consumption is deemed to be the responsibility of the end user while most people have no idea or no interest on how to reduce their consumption. Also the energy performance of electric equipment is often lower than mentioned on the equipment label. Examples are fit-in refrigerators and upright freezers without sufficient ventilation, inexpert use of equipment and the technical condition. For all this reasons, electric consumption in new houses can be surprisingly high.

The sustainability among others of cars and heat pumps cannot be viewed in isolation, because it is strongly dependent of the green quality of the consumed electricity. With 100% green electricity it is perfect, but as long as coal fired power stations are in operation for this electricity consumption, the sustainability results are poor.

The most modern coal fired power stations are presented with an electric efficiency of around 47% and the most modern gas fired power stations with an electric efficiency of around 60%. These are the guarantee values in a new condition and with a capacity of 95%. With the fast growing share of not adjustable green electricity (wind, sun), traditional power stations will operate more and more in low capacity and/or in start/stop operations. In combination with aging and maintenance philosophies, the average efficiencies will become lower and lower. Besides, a separate discussion is “why do we hardly use the waste heat of the traditional power stations?”

We can go on and on, but let us wrap up. The message is clear. Look at life cycle analyses for products and installations, the total natural gas chain, heat grids, etcetera. Don’t trust “paper” performances blindly. Be aware of the true operational performances and quality assurance from the design, construction and operation phase including technical, financial and sustainability guarantees. Keep in mind the total system and have an integrated approach. Keep in mind all possible practise situations in the total life cycle. Take care of an objective, transparent reference framework to compare different possible alternative options. It helps!



From centralised to decentralised power markets

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The power market faces substantial changes. Large power companies like E.ON and RWE are planning to break up in two independent companies, namely in a company that produces electricity with renewables and in a company that produces electricity with fossil fuel. The German government is hesitating to give permission for such a split up because the second company may face high losses caused by large depreciations on fossil fuel plants.

The move from fossil fuel to renewables also means a switch from centralised to decentralised power generation. The next step is that decentralised produced electricity can also be consumed decentralized. The access to a grid is no longer a necessity. Instead of one (national) grid, a set of decentralized markets will develop. It will be the role of traders to avoid (large) price differences between the decentralized markets. In other words the role of the transmission system operator (TSO) will change or even disappear.

The switch from central to decentral markets is also important for areas where national grids are facing problems with the security of delivery. In Europe we have mostly a central grid with several side lines. When there is a problem on the grid it is mostly possible to deliver electricity to the demanders by using alternative lines. However, this is not always the case. For example, Italy has the mountain chain the Apennines. The grid exists of two main lines at both sides of the mountain chain. In the Netherlands, we have the same problems in the province of Zeeland, with its islands and peninsulas. Decentralised markets can in that case be an advantage.

This is not a stand-alone development. The growing political tension in Europe makes the wish of energy independency stronger. Many Central-European and East-European countries are dependent on Russia for their energy supply. Poland is against the energy switch (“Energiewende”) in Germany because her coal position makes Poland less dependent of Russia. Lithuania, Latvia and Estonia have an unwished common grid with Russia and also Turkey prefers a switch from a central gas network (with gas suppliers from abroad: Russia and Iran) to decentralized local (renewables) supply.

All of this will influence the power market. The new decentralized (power) market can be compared with the option market of the eighties in the last century. The market is new and not standardized. Such a market asks special traders which vision and capital. The option market switched from floor

trade to screen trade. In the first years of the option exchange, during the floor trade, knowledge about the market activities was gathered from the option market in Chicago and also by learning and doing.

We expect a same development for the power markets, which cannot remain as they currently are. The new decentralized markets need "market makers" who act as arbitrageurs between the new decentralized markets. A new market has to be created with market makers, floor traders and so on.

Knowing the increasing interest for the climate, studying the effects of the shift from central (fossil fuel based) to decentral (renewables based) energy markets is important. Creating new decentralised markets means a new role for market makers to arbitrage between those markets. European countries try to develop a coherent energy network with more emphasis on renewables. The shift from central to decentralised markets fits with this development and further research to this market movement is important to improve the quality of the energy policy of the several European countries.