



July 2019 – Volume 11, Number 24

- **Introducing this EVL issue and some CEVI whereabouts**
- **Celebrating the success of the 7th CEVI conference in Ankara**
- **Mehmet Ogutcu clarifies the EU gas market regulations**
- **Call for Papers for Special Issue of CEREM, edited by Mehmet Baha Karan and Kazim Atici**

ISSN: 2211-8691

<http://www.centerforenergyandvalue.org/publications.html>



CEVI/ Energy and Value Issues Board

Board members

Özgür Arslan-Ayaydin, University of Illinois, Chicago, USA

André Dorsman, VU University Amsterdam, The Netherlands

Mehmet Baha Karan, Hacettepe University, Ankara, Turkey

Wietze Lise, AF-Mercados EMI, Ankara, Turkey

John Simpson, J. Simpson & Associates, Perth, Australia

James Thewissen, University of Leuven, Antwerp, Belgium

Wim Westerman, University of Groningen, The Netherlands

Advisory board member

Ephraim Clark, Middlesex University Business School, London, England

Editorial Policy

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.



About this issue and some CEVI whereabouts

Wim Westerman
Editor EVL

University of Gronigen, The Netherlands
e-mail: w.westerman@rug.nl

While many of us are still celebrating the success of the 7th CEVI conference in Ankara (see also the contribution by André Dorsman below), we also think of those established CEVI members who for several reasons could not make it to join us this time, including members from Australia, the USA and Turkey. We value the continued contributions of all who support CEVI in looking ahead into a lively future. I especially like to mention the input of our young board members Wietze Lise and James Thewissen with great respect here, which is not meant to say that the older board members are down and out!

Speaking of great respect, I should also mention the contribution of Mehmet Ogucu in this EVL issue. Understanding EU gas market developments is already something, but understanding regulatory developments (including financial ones) and their implications for the markets is yet a whole other thing. The author helps us in finding a track in a myriad of details. The author also looks ahead towards the EU 2020 and 2030 targets and an eventual “Energy Union”. Whereas we are in Europe already under way, there are still many blocks on the road. Speaking from a Dutch perspective it might be much welcome though, given that our gas exploration induced earthquakes enforce us to become a net gas importer.

Again speaking of respect, I would also like to bring up the huge effort done on the 7th CEVI book. The authors did their best to meet the book series standards, with their texts going over at times multiple revision rounds. André Dorsman, James Thewissen and Özgür Ayadin-Arslan have guided the whole process. Publication is foreseen in early 2020. Meanwhile, the preparations for the 8th book have started. Kazim Atici, André Dorsman, Mehmet Baha Karan and Aydin Ulucan are the editors. The book will have an operations and financial planning flavour with a practice outlook. Both new and regular CEVI book authors are welcome. So you will hear about it.

My last word of respect goes to ISINI. Whereas we have just celebrated our 7th conference, ISINI is already going up for its 14th issue. The venue is in Wroclaw (Poland) and the conference will be held on August 25-27, 2020. CEVI plans to organize sessions at this conference and you are also welcome to organise your own session (contact: johan.vanophem@wur.nl). As it turns out, ISINI and CEVI align very well (see also the Call for Papers for the CEREM journal special included in this issue). So we assume that the high number of our members will be attracted to join a conference with a broader perspective than ours, but with the same longing for new ideas and even a search for out of line perspectives. This is probably also what holidays are about. I wish you a good holiday season!



What a success! Looking back at the Ankara conference

André Dorsman
President of CEVI

VU University Amsterdam, The Netherlands
e-mail: a.b.dorsman@vu.nl

Unfortunately, the 7th CEVI conference could not be held in Miami (USA), such as originally planned. I am however very grateful that Mehmet Baha Karan and his team from Hacettepe University picked up the challenge and were able to organise the conference, together with Ostim Technical University. With about 70 participants on the practitioners day, and more than 30 papers on the academic day, it was one of the largest CEVI conferences ever. That is already a tremendous success, but there is more.

We were very happy with the excellent speeches and panels on the first day. Most of the speakers were from Turkey. Professor Murat Yülek from Ostim University placed the energy issues in a broad global manufacturing context. ISINI president professor Joost Platje took with his story early warning systems rather a Central European perspective. Wietze Lise, having a joint Dutch and Turkish background, focussed on local issues. Other contributions were from the regulatory authority and the financial world.

Energy issues play an important role in any country of the world, but Turkey provides an excellent example at the crossroads between developed and developing countries, as well as Europe and Asia. It fulfills a role as a regional hub in many ways and it handles local issues like energy security, energy pricing and energy financing in its own way. The speakers dealt with these types of issues intensively. Together with the interesting discussions, this made the practitioners day interesting not just for locals.

The academic day was packed with sessions, on electricity markets, energy and finance, energy efficiency (two times), energy politics and security, as well as environmental issues. Next to this, the two ISINI sessions that explored new interdisciplinary topics. Scholars from of course Turkey, but also from the Netherlands, Poland, Belgium and Tanzania, shared their insights and comments on other people's papers. The high level of the papers and discussions makes me confident of the follow-up publications.

I should not forget to mention the functions. People need to eat, drink, chat and recreate anyway, but when this is really going fine as it was in Ankara this time, the socialisation that comes about provides the groundwork for new plans on articles, books, conferences and beyond. CEVI is ready for a next step.

Finally, I want to re-emphasize my respect to Mehmet Baha Karan and his whole team, including especially Kazim Atici who tirelessly fixed all kind of loose ends. On behalf of CEVI, thank you very much!



Regulations and the EU Gas Market

Mehmet Ogutcu
President of GRP

Global Resources Partnership (GRP), London, United Kingdom
e-mail: ogutcudunya@yahoo.co.uk

1 CURRENT STATE OF THE EU GAS MARKET

THE LIBERALIZATION OF EUROPEAN GAS MARKETS is one of the main achievements for the last 12 years. Since the first Russia-Ukraine gas crisis in 2006, the European Commission has taken a serious agenda to open up the national gas markets in order to create EU internal gas market. This was forced as well by the hit of the European financial crisis in 2008 – with recession, collapsing demand, massive increases in oil prices, and hence gas prices that were linked to oil prices. The other key objective, supply diversification, still needs improvements. Ironically, Europe is now more dependent on Russian gas than ever¹.

EU gas markets have changed radically and for the better. Today, gas markets are much more liquid. About 60-70% of all gas sold in Europe are now being traded openly on competitive markets. The integration of European gas markets has made steps forward over the last years but the collapse of Dutch production implies that Russia will probably remain the main supplier again for years to come.

About one quarter of all the energy used in the EU is natural gas, and many EU countries import nearly all of their supplies. Some of these countries are also heavily reliant on a single source or a single transport route for the majority of their natural gas, thus a political dispute or infrastructure opt-outs might endanger the supplies. The EU is the biggest importer of natural gas in the world, importing around 70% of the gas it needs, and this share is expected to increase in the coming years. Therefore, diversification of supply sources is a must both for energy security as well as to keep the market competitive.

THE EU'S GAS DEMAND is around 491 billion cubic metres (bcm) and, is projected to remain relatively stable in the coming years. Domestic gas production is expected to decline with no impact on import. At the same time, further policies designed to achieve 2030 energy and climate targets such as Clean Energy for All Europeans package and energy efficiency improvements in heating and industry are likely to drop the overall gas usage across the EU. It increased by 6% in 2017, reaching the highest consumption level since 2010².

¹ EU more dependent on Russian gas than ever, despite bid to diversify, <https://www.euractiv.com/section/energy/news/eu-more-dependent-on-russian-gas-than-ever-despite-bid-to-diversify/>

² EU market Analysis: <https://ec.europa.eu/energy/en/data-analysis/market-analysis>



About 26% of that gas is used in the power generation sector (including in combined heat and power plants) and around 23% in industry. Most of the rest is used in the residential and services sectors (mainly for heat in buildings).

THE EU'S GAS OUTPUT was 128 bcm in 2017, 3% less than one year earlier. Falling Dutch production was partially offset by increases in Denmark, Romania and the U.K. Less than half of the EU's gas needs are currently met by domestic production. The rest is imported.

In 2017, imports were around 360 bcm, 10% more yoy. Switching to more flexible "hybrid" contracts allowed Russia to increase its market share from 42% in 2016 to 43% in 2017. Followed by Norway (34%), LNG imports (12%) and Algeria (11%), it also offers more flexible contractual terms, moving away from long-term oil-indexed contracts to hub prices.

A considerable share of Ukrainian transit was rerouted to Nord Stream in the last quarter of 2017 but Ukraine remained the main supply route of Russian gas coming to the EU, covering 39% of the total, while Nord Stream accounted for 34%.

EU LNG (Liquified Natural Gas) imports increased by 16% yoy in the fourth quarter of 2017, with most of that coming from Qatar, Algeria and Nigeria. Thirteen Member States have imported a total of 55 bcm (gas equivalent) of LNG. Spain is the EU's largest LNG importer with 31% of total EU LNG imports, followed by France (20%), Italy (15%) and the U.K. (12%).

The EU has well-developed LNG import capacities, with about 150 bcm currently spare. At the same time, given their strategic importance for diversification, current capacities are being expanded. New capacities are being developed in the Adriatic Sea, Baltic Sea (Poland) and the Mediterranean Sea (Greece).

In Northern Europe, LNG faces other competitive sources but in the Mediterranean countries, the flow continued to rise in spite of the recovery of Algerian pipeline imports and high Asian prices attracting cargoes. The EU received the first LNG cargo from Russia's new Yamal project, the first delivery of Russian gas from a company other than Gazprom. France became the ninth Member State to import LNG from the United States.

PRICE 2017: There has been a strong correlation between European hub prices and global oil and coal benchmarks. Spot prices at European gas hubs increased by the end of 2017, driven by the increasing seasonal and weather-related demand, relatively low storage levels, rising oil and coal prices, continuous switching from coal to gas, outages in Norway and the U.K. and persistent concerns about French nuclear availability. At the end of 2017, hub prices reached 10% increase yoy. Oil-indexed prices decreased and by the same time became comparable to hub prices in Northwest Europe.



Liquidity on European gas hubs in 2017 decreased with 4% yoy. The traded volumes amounted to 44,500 TWh, around 11-12 times more than the gas consumption in the countries concerned. The main traded volumes were in the Netherlands and the U.K. while the smaller hubs still did not gain an increased market share. After decreasing in the last 2-3 years, retail prices seem to have stabilized. At the same time, the trend of diverging household and industry prices across the EU ended.

The Day Ahead Price across European hubs has remained strong throughout the summer months, largely due to the previous uncharacteristically cold winter where the high demand drained natural gas storage facilities. As summer arrived, the storage facilities needed to be replenished, and this kept prices high.

The determination of wholesale market prices of natural gas within Europe has historically been driven by two factors: European LNG imports and flexible oil-indexed pipeline gas from Russia and Norway above take or pay levels. Whether LNG imports or Russian gas acts as a price setter within Europe is typically dependent on Asian hub prices. The rule of thumb is, as Asian and European hub pricing diverges, LNG cargoes are drawn away from Europe, which leaves Russian and Norwegian pipeline gas as the price setter. Conversely, weakness in Asian hub pricing pushes LNG cargoes into Europe, displacing pipeline gas as the price setter for marginal supplies in Europe.

PROJECTS: Projects of common interest (PCIs) are key infrastructure projects, especially cross-border projects that link the energy systems of EU members. In November 2017, the Commission published its third list of PCIs, contained 173 projects – between them 53 gas and 4 cross-border carbon dioxide networks. PCIs have access to a total of €5.35 billion in funding from the Connecting Europe Facility (CEF), the EU's €30 billion fund for boosting energy, transport, and digital infrastructure between 2014 and 2020. This funding is intended to speed up the projects and attract private investors.

TRADING HUBS: Trading hubs of various sizes have been established across Europe, upon where gas is exchanged freely. The most advanced hubs have good liquidity and act as a benchmark for European gas prices.

The immediate consequence of the 2008 financial crisis was that energy companies were forced to renegotiate established long-term contracts with gas suppliers. This forced the activity and establishments of the hubs, with the TTF emerging as a liquid gas hub in the Netherlands in 2003 — alongside Britain's established NBP. The Dutch trading hub, combined with Austria's smaller Central European Gas Hub, has placed countries like the Czech Republic, Slovakia and Poland within range of a market price. These hubs also show good forward liquidity, meaning they can be used for hedging.

DEALING WITH DISRUPTION: With more liquid markets, European countries are also better prepared to deal with potential supply disruptions. A new policy was created to deal with supply disruption. For instance, gas pipelines are now obliged to operate at “reverse flow” in case of emergency, allowing neighboring countries to help each other in case of a



supply disruption. Pipeline interconnectors have been built and more are planned to link up markets across Central and Eastern Europe. Many European countries have also built LNG terminals. Energy companies can no longer keep capacity booked months in advance under long-term contracts with LNG tankers and gas pipeline operators. With the so-called “use-it-or-lose-it” rule, transport capacity booked but not used has to be made available to other network users.

By early 2018, there is a general stakeholder consensus that the **EU Internal Gas Market (IGM)** has improved its functioning in recent years. Apart from some Central and South-East European (CSEE) Member States, market liquidity has been improving, competition at the wholesale level is intense, wholesale prices are moderate and converging across the EU. Market pricing is gradually replacing oil product-linked pricing. Given a moderate future gas demand outlook, the level of investment is generally sufficient in the sector.

What the EU couldn't achieve is **diversification of supply**. This has mainly to do with collapsing domestic production in the North Sea as well as complications in getting gas from other regions. Plans to build a Southern Gas Corridor to pipe natural gas from the Caspian region have yet to be realized. Also, production from Norway, the EU's second biggest supplier after Russia, has remained stable and is not expected to increase significantly in the future. This leaves Europe with the only option to increase imports from Russia or take in bigger amounts of LNG, which are currently sold at higher prices than pipeline gas.

2 HOW EU REGULATIONS WORK? WHAT IS THE THIRD LEGISLATIVE PACKAGE FOR AN INTERNAL EU GAS MARKET?

If we go back to 2009 the legislation³ shaping the EU gas environment was named Third Energy package (one can assume that there was previously a Second Package). It concerned gas and electricity but when talking only about gas, it consists of:

- Directive concerning common rules for the internal market in gas (2009/73/EC)
- Regulation on conditions for access to the natural gas transmission networks ((EC) No 715/2009)
- Regulation on the establishment of the Agency for the Cooperation of Energy Regulators ACER ((EC) No 713/2009)

(FYI: Regulations in EU have binding legal force throughout every Member State and enter into force on a set date in all the Member States. Directives lay down certain results that must be achieved but each Member State but it's up to them how to transpose directives into national laws.)

This was the beginning of making the energy market fully effective and started creating a single internal EU gas market. The main triggers were to keep prices as low as possible and increase standards of service and security of supply. The new changes that have been introduced were the following:

³ Market and consumers <https://ec.europa.eu/energy/en/topics/markets-and-consumers>



- Gas suppliers shouldn't be the same as network operators, otherwise known as "unbundling". It was common in the European environment that the national energy monopolies are built as vertical companies but in the world where the competition is that much prized, the rules have to change dramatically
- Make Regulators (Watch dogs) more independent and establishment of the Agency for the Cooperation of Energy Regulators (ACER)
- Cross-border cooperation between transmission system operators and the creation of European Networks for Transmission System Operators
- Make retail markets more transparent to benefit consumers

WHAT IS UNBUNDLING? An energy producer or energy supplier should be separate from the gas pipeline operator to eliminate any conflict of interests, and to prevent network operators from favoring their own energy production and supply companies, or to obstruct access of their competitors to this network.

Transmission system operators (TSOs) are the companies who operate the networks through which gas is transported (big pipelines). As transmission networks are natural monopolies, they must be subject to regulation.

In order to have effective competition, the operators of transmission networks must allow any gas supplier non-discriminatory access to the transmission network to supply customers. This is the third party access (TPA) principle. The access to the networks is regulated by national regulatory authorities. Transmission networks must furthermore apply regulated tariffs so as to avoid any abuse of dominance, and they must comply with specific rules on unbundling.

There are three basic different unbundling models and each Member State decides which model works best:

- **Ownership Unbundling (OU):** All integrated energy companies sell off their gas grids. In this case, no supply and production company is allowed to hold a majority share in a transmission system operator, nor exercise voting rights or appoint board members. Supply and production companies are free to decide to whom and to what price they sell their networks. A number of large integrated companies in the EU have already proceeded in this way. For instance RWE and E.ON sold transmission assets in Germany, while Endesa divested transmission and distribution assets in Spain;
- **The Independent System Operator (ISO):** The supply company can still own the physical network, but it has to leave the entire operation, maintenance and investment to an independent company;
- **Independent Transmission Operator (ITO):** The supply company can own and operate the network. The management of the network must be done by a subsidiary of the parent company, which can make all financial, technical and other decisions independently from the parent company. A supervisory body is in charge of preserving the financial interest of the parent company without being involved in the day-to-day business.



Some exemptions of the regulated regime are possibly applied to transmission systems but only for new gas infrastructure and under the conditions listed in the Third Energy Package. (For example, if the level of risk is so high that the investment would not take place, unless an exemption is granted and it enhances the level of competition.)

INDEPENDENT REGULATORS: A competitive internal energy market cannot exist without independent regulators who ensure the application of the rules. Under the Third Package there were a number of specific changes:

- Regulators must be independent from both government and industry interests and . They must be their own legal entity with their own budget and with sufficient resources to carry out their operations provided by the national governments
- Regulators can issue binding decisions to companies and impose penalties
- Gas network operators and energy suppliers have to provide accurate data to regulators
- Regulators from different EU countries must cooperate with each other to promote competition, the opening-up of the market, and an efficient and secure energy network system

AGENCY FOR THE COOPERATION OF ENERGY REGULATORS (ACER) was established to make sure all national regulatory authorities work on cross-border issues. There was no such body before ACER was formed and it was difficult to cope with the regulations at the EU level. It was decided to create an independent body with special expertise on technical issues. ACER is independent from the Commission, national governments and energy companies.

What does ACER do?

- Establishes guidelines for cross-border gas pipeline operations
- Reviews the implementation of EU-wide network development plans
- Decide on cross-border issues if national regulators cannot agree or if they ask it to intervene or specifically on:
 - allocating the scarce capacity of gas pipelines among interested market participants ("capacity allocation")
 - sharing the profits from selling the capacity and charges on cable and pipeline users
- Monitors the functioning of the internal market including retail prices, network access for electricity produced from renewables, and consumer rights
- ACER may exempt new cross border gas pipelines from some of the rules of the internal energy market. This is in case of increase the profitability of a new interconnector by covering certain risks which fend off its investors, however, this is subject to approval by the European Commission as well

BETTER CROSS-BORDER COLLABORATION AND INVESTMENT: Basically this is cooperation and development of common commercial and technical codes and security standards by the gas grid operators. For that reason they need a new European Network for Transmission System Operators on Gas (ENSOG) in order to bring together EU gas grid.



What does ENSOG do?

- Develops standards and draft network codes to help harmonization of the flow of gas across different transmission systems. Network codes can be made legally binding by a separate Commission decision
- Coordinates the planning of new network investments and monitor the development of new transmission capabilities. This includes publishing a Europe-wide 10 year investment plan to help identify investment gaps every two years

TRANSPARENCY OF RETAIL MARKETS: The Third Package includes rules to benefit European energy consumers and protect their rights. They include the right to choose or change suppliers without extra charges, to receive information on energy consumption, and to quickly and cheaply resolve disputes.

3 IMPACT OF THE FINANCIAL REGULATIONS IN THE GAS INDUSTRY

Since natural gas became a commodity and began trade at exchanges, the need for regulations became vital. Some directives⁴ directly shaping the financial market in EU were also directly implemented in the gas market regulations.

MIFID: Market for Financial Instruments Directive (MiFID) was introduced Nov 2007. The purpose was to provide a regulation for all EU members to create a single market for investment services and activities and to protect investors in financial instruments, such as shares, bonds or derivatives. It governed provision of investment services in financial instruments by banks and investment firms operation of traditional stock exchanges and alternative trading venues. As MiFID was launched before the 2008 financial crisis, changes had to be made to the legislation specifically on further protection for investors and the development of new trading platforms and activities. MiFID was in force until January 2nd, 2018 and was then replaced by MiFID II.

MIFID II is reinforcing the rules on securities markets by ensuring that organized trading takes place on regulated platforms. It also sets rules on algorithmic and high frequency trading; works on transparency and oversight of financial markets including derivatives and commodity markets; and focuses more attention on investor protection and business rules as well as conditions for competition in the trading and clearing of financial instruments.

⁴ Financial Directives https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/securities-markets/investment-services-and-regulated-markets-markets-financial-instruments-directive-mifid_en



One of the most significant features of MiFID II looks at how asset managers pay for research that is used to make investment decisions. Prior asset managers would receive research from the financial intermediaries and the cost of the research would be absorbed within trading transaction commissions paid by the clients. With MiFID II, asset managers are either forced to absorb these research costs internally or otherwise disclose the research costs to their investors. Irrespective of the prevailing decisions, asset managers will now either have to pay financial intermediaries directly or approach independent consulting companies for research. They will likely have to validate the cost of the research with their clients.

MiFIR, Markets for Financial Instruments Regulation (EU) No 600/2014 is also applicable as of January 3rd, 2018 and sets out requirements on:

- Disclosure of data on trading activity to the public
- Disclosure of transaction data to regulators and supervisors
- Mandatory trading of derivatives on organized venues
- Removal of barriers between trading venues and providers of clearing services
- Specific supervisory actions regarding financial instruments and positions in derivatives

European Market Infrastructure Regulation (EMIR): Derivatives play an important role in the economy, but they also bring certain risks. These risks were highlighted during the 2008 financial crisis, when significant weaknesses in the OTC derivatives markets became evident.

- A derivative is a financial contract linked to the fluctuation in the price of an asset.
- An over-the-counter (OTC) derivative is one which is privately negotiated and not traded on an exchange.
- OTC derivatives account for almost 95% of the derivatives markets. They have a significant impact on the real economy, from mortgages to food prices.
- Central clearing counterparties (CCPs) interpose themselves between counterparties to a derivative contract, becoming the buyer to every seller and the seller to every buyer.
- Before the financial crisis, derivatives traded outside regulated markets were usually not cleared through CCPs. Trade repositories (TRs) are central data centres which collect and maintain the records of derivatives.

EMIR is in force as of 2012, aiming to:

- Increase transparency in the OTC derivatives markets by requiring detailed information on each derivative contract which has to be reported to trade repositories and to supervisory authorities; trade repositories have to publish aggregate positions by class of derivatives, for both OTC and listed derivatives and the responsibility of trade repositories and for granting; and withdrawing accreditation lays with the European Securities and Markets Authority (ESMA)
- Mitigate credit risk by requiring that all standardized OTC derivatives contracts must be centrally cleared through CCPs or risk mitigation techniques must be applied



- Reduce operational risk by requiring market participants to monitor and mitigate the operational risks associated with trade in derivatives such as fraud and human error (for example, using electronic means to promptly confirm the terms of OTC derivatives contracts)

4 GOING FORWARD: A SINGLE EU ENERGY MARKET AND ENERGY UNION

What happens in the future will entirely depend on how the market-integrated process will be completed and the relations with the additional gas suppliers. There are different ideas and proposals about the concept of an integrated market. The one that is at present the most comprehensive is the ACER model: from gas trading zones via regional market mergers to a fully integrated EU gas market. The voluntary market merger process, however, is proceeding very slowly and there is no target end date. The progress of voluntary market mergers is politically complex, slow and expensive.⁵

The European gas market is not yet a fully integrated single market. While Northern Europe created a single price zone, there are still wholesale price differences in the EU market, especially in Eastern Europe. The reasons could be numerous and between them are cross border tariffs (potentially full cost for gas transportation plus auction premium at the interconnection point), lack of interconnectors, physical and contractual congestion, differences in local market structure and exposure to upstream suppliers.

The expectations are that after 2020 and 2030, when some LTCs expire, we may experience a change in the capacity market from long to short term. Also, we may experience a change in price segmentation of the IGM with greater location spreads, which will reflect short-term transmission tariffs and physical flow direction.

The Network Code on Capacity Allocation Mechanisms (CAM NC) in its present form is unable to effectively address the risk of market foreclosure by long-term capacity bookings and is expected to be improved.

Future capital expenditures⁶ in EU28 for gas transmission, LNG, underground gas storages, power to gas grid interconnection is estimated to be 24 billion euros by the year 2020, and 62.7 billion euros by the year 2030. 40 - 75 % of capital expenditures could qualify as PCI (Projects of Common Interest) and to be financially supported by EU funds. This project comes either from the local TSOs' ten-year network development plans (TYNP) or from ENT-SOG development of pan-European TYNP.

⁵ Study on Quo vadis gas market regulatory framework <https://ec.europa.eu/energy/en/studies/study-quo-vadis-gas-market-regulatory-framework>

⁶ Investment needs in trans-European energy infrastructure up to 2030 and beyond <https://publications.europa.eu/en/publication-detail/-/publication/431bc842-437c-11e8-a9f4-01aa75ed71a1>



WHAT'S NEXT? What's next is eventually an "Energy Union". This is a strategy with focus on energy security, creating a fully integrated internal energy market; improving energy efficiency; and decarbonizing the economy by using more renewable energy, and supporting research, innovation and competitiveness. The progress is constantly measured⁷ by measurements of greenhouse gas emissions, energy consumption, renewable energy shares, energy intensities, import dependencies, prices, annual switching rates, research investments, and patents. They provide a consistent way of tracking the outcomes of energy and climate policies and demonstrate how the EU is working towards its energy and climate objectives.

The working areas within the EU to ensure an Energy Union are:

- The Energy Security Strategy presents short and long-term measures to shore up the EU's security of energy supply
- EU funding and other support for building an interconnected energy grid across Europe
- The "Clean Energy for All Europeans" package: putting energy efficiency first, achieving global leadership in renewable energies, and providing a fair deal for consumers
- Safety across the EU's energy sectors with strict rules on issues such as the disposal of nuclear waste and the operation of offshore oil and gas platforms

As part of its long-term energy strategy, the EU has set targets for 2020 and 2030. These cover emissions reduction, improved energy efficiency, and an increased share of renewables in the EU's energy mix. It has also created an Energy Roadmap for 2050, in order to achieve its goal of reducing greenhouse gas emissions by 80-95%, when compared to 1990 levels by 2050. This is what the EU declares. Progress achievement is only a matter of time and is dependent on many efforts by all countries, national governments and the respective 512.6 million population of the European Union.

5 REFERENCES

- 1) EU more dependent on Russian gas than ever, despite bid to diversify: <https://www.euractiv.com/section/energy/news/eu-more-dependent-on-russian-gas-than-ever-despite-bid-to-diversify/>
- 2) EU market Analysis: <https://ec.europa.eu/energy/en/data-analysis/market-analysis>
- 3) Market and consumers: <https://ec.europa.eu/energy/en/topics/markets-and-consumers>
- 4) Financial Directives: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-markets/securities-markets/investment-services-and-regulated-markets-markets-financial-instruments-directive-mifid_en

⁷ Energy Union indicators <https://ec.europa.eu/energy/en/data-analysis/energy-union-indicators>



- 5) Study on Quo vadis gas market regulatory framework: <https://ec.europa.eu/energy/en/studies/study-quo-vadis-gas-market-regulatory-framework>
- 6) Investment needs in trans-European energy infrastructure up to 2030 and beyond: <https://ec.europa.eu/energy/en/studies/study-quo-vadis-gas-market-regulatory-framework>
- 7) Investment needs in trans-European energy infrastructure up to 2030 and beyond: <https://publications.europa.eu/en/publication-detail/-/publication/431bc842-437c-11e8-a9f4-01aa75ed71a1>
- 8) Energy Union indicators: <https://ec.europa.eu/energy/en/data-analysis/energy-union-indicators>

6 ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators
bcm	billion cubic metres; 1 bcm of natural gas is equal to 35.5 trillion British Thermal Units (or 35,500,000 mmbtu) is equal to 35.3 billion cubic feet (bcf)
CAM NC	Network Code on Capacity Allocation Mechanisms
CCPs	Central clearing counterparties
CEF	Connecting Europe Facility
EC	European Commission
EMIR	European market infrastructure regulation
ENSO	European Network for Transmission System Operators on Gas
ESMA	European Securities and Markets Authority
EU	European Union
IGM	internal gas market
ISO	Independent System Operator
ITO	Independent Transmission Operator
LNG	Liquefied Natural Gas
LTC	Long Term Contract
MIFID	Market for Financial Instruments Directive
MiFIR	Markets for Financial Instruments Regulation
OTC	Over-the-counter
OU	Ownership Unbundling
PCIs	Projects of common interest
TPA	third party access
TRs	Trade repositories
TSOs	Transmission system operators
TYNP	Ten-year network development plans



Call for Papers for Special Issue: Contemporary Issues of Behavioral Research in Business, Economics and Finance

Guest-Editors:

Prof. Dr. Mehmet Baha Karan, Hacettepe University, Dept. of Business Administration, Ankara, Turkey: mbkaran@hacettepe.edu.tr

Assoc. Prof. Dr. Kazim Baris Atici, Hacettepe University, Dept. of Business Administration, Ankara, Turkey: kba@hacettepe.edu.tr

Behavioral research has been making significant contributions in different areas of business and economics research increasingly after 1990s. Obviously, measuring, modelling, interpreting the human behavior and adapting the results in business decision making are all challenging tasks. However, both the academia and the business world has made and continue making tremendous progress with improving research methodologies and the help of continuously advancing technological capabilities. Nowadays, it is possible to observe the introduction of new areas in business and economics research with "behavioral" emphasis. This special issue aims to contribute to such research attempts with papers focusing on behavioral aspects of economics, finance, accounting, operations management and operations research. We are open for submissions of empirical or theoretical research using either quantitative or qualitative methods that aims to explore modelling or explaining of human behavior in the business environment.

Topics of the special issue include (but are not limited to):

- Behavioral Economics
- Behavioral Finance
- Behavioral Accounting
- Behavioral Operations Management
- Behavioral Operations Research
- Decision Analysis
- Group Decision Making
- Social Network Analysis
- Market Anomalies and Market Efficiency
- Heuristics and Biases
- System Dynamics
- Data Mining
- Simulation Modelling
- Content Analysis
- Sentiment Analysis



Further questions and abstract submission

Please send your abstract (maximum 1000 words) to:

Prof. Dr. Mehmet Baha Karan, Hacettepe University, Dept. of Business Administration, Ankara, Turkey:
mbkaran@hacettepe.edu.tr

and / or

Assoc. Prof. Dr. Kazim Baris Atici, Hacettepe University, Dept. of Business Administration, Ankara, Turkey:
kba@hacettepe.edu.tr

The abstracts should have the following structure:

Aim: The author(s) should shortly explain the reason or motivation for taking up the research problem (why is the topic important?), and what is the objective or aim of the research. The aim should be clearly formulated, and be specific enough to be achieved within the range of the paper.

Design / Research methods: The authors should clearly explain the way in which the aim or objective is achieved. The main research methods as well as the approach to the research should be provided that enable effective dealing with the paper's aim.

Conclusions / findings: What are the main results of the research? The authors should refer to the analysis, discussion or results of the paper in order to show the main findings.

Originality / value of the article: Within the context of the current state of the art in science, what is new or what is the scientific value added of the paper? For whom would the paper be of interest?

Implications of the research (if applicable): How and to what extent can the results of the research be applied to practice? What are the consequences of application of the findings of the research to practice?

Limitations of the research (if applicable): Does the research imply directions or suggestions for future research? What are the limitations of the research methods used? What are the limitations of the implications of the research findings?

Keywords: provide 5 keywords in alphabetical order

JEL codes: provide the JEL codes applicable for your paper

Important dates:

1 October 2019: Submission of Abstract

15 October 2019: Notification of status invitation to submit full paper

15 December 2019: Deadline for submission of full paper

June 2020: Publication