



Conference
report

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Main *panels*

CEEC

2018 :

WELCOME & PANEL I: ENERGY UNION AND THE MEMBER STATES

Official opening: Juraj Stern, Lívia Vašáková, Vazil Hudák

Keynote speech: Maroš Šefčovič

Chair of the panel: Alexander Duleba

Speakers: Peter Žiga, Marta Nováková, Péter Kaderják,

Tomasz Dąbrowski

WELCOME

Juraj Stern, Chairman of the Board, Slovak Foreign Policy Association, stated that the conference brings together leading stakeholders to find better solutions. **Lívia Vašáková**, Head of the Economic Analysis Section, Representation of the European Commission in the Slovak Republic, underlined that energy is one of the European Commission's ten big priorities: to support the transition to clean, safe affordable energy supplies, including financially. **Vazil Hudák**, Vice-President of the European Investment Bank (EIB), added that the EIB is focused on three priorities: **clean energy, smart grids, and energy efficiency, especially in public buildings**. In order to meet the challenges it is important to engage the private sector as well.

SUMMARY

Energy security remains crucial to the region of Central Europe, in both the gas and electricity sectors.

Decarbonisation is one of the biggest challenges for the region. A fair transition is essential so that coal mining regions can find a new economic future and new solutions.

All the V4 countries agree that nuclear energy has a role to play in decarbonisation.

Electricity storage developments should be a common research interest in the V4 countries.

Alexander Duleba, Director, Research Centre of the Slovak Foreign Policy Association, introduced the panel discussion on What is the current state of affairs regarding the Energy Union?

KEYNOTE SPEECH

Maroš Šefčovič, Vice President of the European Commission for the Energy Union, emphasized the need for the CEE region to understand the problems related to **energy security and the need to modernize**.

The issue of **energy security in the gas sector remains crucial**, and the focus is mainly on diversification of sources and suppliers, multiplying routes for obtaining gas from the Caspian Sea region and Turkmenistan, and gaining **access to global LNG markets**. Poland has a role in that, as it has been renovating and operating the Świnoujście



terminal. The relationship between Russia and Ukraine is also a challenge for the gas markets.

According to **Maroš Šefčovič** the same applies to electricity as a lot of effort has been invested in providing the infrastructure and laying the ground work for the new market design. National Energy and Climate Plans are a good means of coordinating **energy and climate policies that will have an impact on the overall modernization of the economy**, including embracing new technologies in electro mobility. It is expected that by 2030 in Europe there will be 25–35 million low or zero emission electric cars and hydrogen cars. These will require **batteries and the creation of a large new market that meets green standards** with an expected annual value of €250 billion. Batteries have potential regarding energy storage and grid operator balancing, and European companies should capture this market.

A fair transition could present challenges in relation to overhauling economies, developing factories and gaining financial support. **Maroš Šefčovič** emphasized that the search for solutions for the coal mining regions must include the positive message that nobody will be left behind. The European Commission is ready to provide the best expertise available to modernize the region together with local authorities and inhabitants.

We have to look for new ways to ensure the global temperature increase is limited to 1.5 degrees. New strategies for carbon neutral economies should **go beyond energy and climate policies**, and society has to prepare itself for the new challenges.

PANEL DISCUSSION

Peter Žiga, Minister of Economy of the Slovak Republic, underlined that **energy security, the transformation of global energy markets and reducing GHG emissions** are important topics in the region. Climate and energy

synergy are key to achieving **decarbonisation, developing renewables and making energy savings**.

Energy security is the key pillar in energy policy, and security of supply must be the priority. **Building interconnectors is the priority in diversification**, and several projects have been implemented thanks to Projects of Common Interest. Developing the North–South gas corridor and Easting project is of great importance.



It is crucial that **nuclear energy forms an integral part of the low carbon strategy**. V4 countries share similar views and are harmonising their approach to European Commission Unity through the court cases relating to Hinkley point in the United Kingdom and Paks II in Hungary.

Marta Nováková, Minister of Industry and Trade of the Czech Republic, assessed the Energy Union from the Czech point of view, emphasizing that “Clean Energy for all Europeans” is the most relevant package.

Increasing the final target for the percentage of renewable energy in the EU energy mix to 32.5 percent is inadequate given that **the main objective of reducing GHG emissions has not changed and there has yet to be a sufficient evaluation of the impact of such high targets**. Czechia’s concerns relate primarily to the financial aspects.

The proposed **electricity market designs** aim to increase renewable use and facilitate grid connection of renewables, but the **safety of the power grid and power system** and equal access to all sources on the market should also be stressed. Czechia opposes the process for re-evaluating the bidding zone and setting a minimum level for cross-border transmission capacity in electricity trading.

Nuclear energy should play a role in decarbonisation. For the moment the Energy Union should adopt a pragmatic approach to the functioning of the energy market.

Péter Kaderják, Minister of State, Energy and Climate Policy, Ministry of Innovation and Technology of Hungary, said that Hungary is paying particular attention to the electricity package and transmission operators to ensure grid balancing and capacity mechanism rules are included.

There has not been much development in market integration, especially in market coupling in the gas sector.

The main climate and energy policies will tackle **energy efficiency, renewable sources and continued use of nuclear energy**. The greening of transport should play a key role in 2030. Hungary’s policy is to consider 40 percent of the GHG target for 2030 as feasible. More emphasis will be put on energy efficient buildings and the use of photovoltaics, biomass and geothermal energy.

Beyond nuclear cooperation, the car industry and electricity storage developments should also be common research interests in the V4 countries.

The main challenges are reducing greenhouse gas emissions in transport, security of supply in the gas sector and decarbonisation in electricity production.

Tomasz Dąbrowski, Deputy Minister of Energy of Poland, emphasised that early on in the Energy Union, Poland had focused on energy security issues, but now considered **decarbonisation to be one of the biggest challenges facing the country**.

Within the Energy Union there are issues to be solved such as **regulator prices, energy poverty and a capacity mechanism**. It is difficult to find a suitable solution to energy poverty. The existing electricity market lacks a capacity mechanism and we have to build new generation capacities.

Security in the gas sector has been improved by the **building of the LNG terminal and the signing of a long-term contract** with US companies supplying LNG and the construction of new infrastructure with the Baltic states and neighbouring countries. Diversification will be financially challenging.

Transforming the energy sector is key in the transport, digital and coal mining sectors. Poland welcomes the **Coal Regions in Transition Platform** initiative that will enable better transformation in the region.

Maroš Šefčovič answered a question from the audience on guarantee of transit in Ukraine and Slovakia. The EU requires transparent rules first, but proper unbundling of Naftogaz is an important factor as well.



PANEL II: ENERGY POLICY OF THE SLOVAK REPUBLIC – 2018 REVIEW BY THE INTERNATIONAL ENERGY AGENCY

Chair of the panel: Lívia Vašáková

Speakers: Fatih Birol, Peter Žiga, Vojtech Ferencz,
Aad van Bohemen

Commentary: Karl Kraus, Pavol Szalai

SUMMARY

Slovakia's energy system is developing positively in terms of energy security with new interconnections and reverse-flows being developed, and improvements to energy efficiency through building renovations and sustainability.

Slovakia has to make more of an effort to deregulate supply prices and thereby stimulate investment, and to develop more cost effective measures, with electrification to enhance energy security, and invest more in research and development.

PANEL DISCUSSION

Lívia Vašáková, Head of Economic Analysis Section, Representation of the European Commission in the Slovak Republic, introduced the discussion on energy sector and climate developments in Slovakia.

Peter Žiga, Minister of Economy of the Slovak Republic, stated that the report findings will be important in shaping the National Energy and Climate Plan and energy strategies.

Fatih Birol, Executive Director, International Energy Agency, presented Minister Peter Žiga with the Review of the Current State of Slovakia's energy sector and stressed the Slovakia's achievements, especially in energy security.

First, he presented the world energy overview up to 2040. The share of coal and nuclear power in electricity generation in the EU will decline. In the EU wind-based electricity generation will more than triple by 2040 to 1 100 TWh and **wind energy is expected to become the EU's**



leading energy source. The share of LNG in the mix will increase worldwide and will account for almost one third of EU imports by 2040.

Slovakia's successes have been in energy security and energy efficiency, especially in building renovations and the use of renewables in bioenergy and biofuels. Price structures require improving. The review noted that Slovakia had significantly increased its oil and gas security by increasing cross-border capacities, enabling reverse flow with Ukraine and building new interconnectors. With 1 GW of new nuclear planned, the Slovak Republic's electricity supply will have a higher low carbon base.

Slovakia's weakness lies in its regulatory frameworks. Slovakia should introduce strong targets for 2030 by going beyond energy security and developing a transparent plan for eliminating administratively determined end-user prices for electricity and natural gas, modernising district heating to encourage investments and improve flexibility and energy efficiency across all sectors.

Vojtech Ferencz, State Secretary, Ministry of Economy of the Slovak Republic, commented on the review, stating that Slovakia's progress is visible and that the transition to a low carbon economy in the energy sector is a priority. The National Energy and Climate Plan will incorporate the report's recommendations.

Karl Kraus, Chairman of the Board, VSE Holding; CEO, Innogy South East Europe, commented on the report, confirming that Slovakia had made progress in developing its energy landscape. Security of supply has been improved through modernisation of power generation plants,



structural investments in grids, and new interconnectors for gas and oil pipelines.

But Slovakia will continue to be dependent on gas and oil imports and the solution could be switching to electricity. Renewables should play a significant role in this. GHG emissions have been reduced and the efficiency of nuclear power plants will improve, but **Slovakia is strongly reliant on nuclear energy**. Once the new nuclear units in Mochovce is in operation the share of nuclear in the electricity mix will increase from 60 percent to 75-80 percent. High dependency on nuclear increases security of supply, but raises cluster risks.

System stability has been improved through investments in the grid infrastructure. Slovakia is a leading country in energy efficiency in home renovations. But data gathering and monitoring would improve the situation even more. **The regulations limit the use of smart meters** owing to inflexible price components and supplier inability to introduce dynamic pricing.

The new support scheme in the renewable sector for involving all relevant stakeholders in designing new solutions has been viewed positively. **Clear target-oriented incentive schemes** could help Slovakia meet energy efficiency targets.

Pavol Szalai, Editor, Energy and Environment, EURACTIV Slovakia, considered the report's view of wind and solar energy to be quite pessimistic. The government has been making efforts, but these are not enough to put more of the renewables into the grids.

The report contains ambitious calls for an end to coal subsidies once the new reactors in Mochovce start operating.

It also contains calls for **more electro-mobility** in Slovakia. The country is a leading car producer, but has no battery production. A higher tax on diesel and greater support for electro-mobility infrastructure would be good choices.

Slovakia is a leading nuclear power, with nuclear accounting for the second biggest share of the electricity mix, nonetheless, the report underlines the need for a **comprehensive nuclear fuel plan**. Slovakia does not have long-term storage and this issue should be tackled in the National Energy and Climate Plan.

Slovakia could be a leader in electro-mobility and energy transition and could invest more in research and development. But it lacks the clear political leadership to achieve these aims.

Vojtech Ferencz answered questions from the audience on price deregulation, storage solutions for nuclear power, the renewables research strategy and use of fossil fuel based energy in district heating. He stated there had been discussions on regulation, and that JAVYS had developed a nuclear waste plan that could be an example to other V4 countries. Heating is undergoing change and the plan is to decrease CO2 emissions. Where research and development is concerned further collaboration with Ministry of Education is required. **Fatih Birol** added that renewables are only part of the solution.



PANEL III: REGIONAL INFRASTRUCTURE AND SECURITY OF NATURAL GAS SUPPLY IN CENTRAL EUROPE



Chair of the panel: Ján Klepáč

Speakers: Sławomir Sieradzki, Erik Kolstø, Kamen Manev, Peter Pčola, Tomáš Matula, Karel Hirman

SUMMARY

Since the 2009 gas crises several new interconnections have been built between countries, but the question of energy security remains crucial. Ongoing projects are interconnections in the Baltic Sea (Baltic Pipe Project), the extension of the Świnoujście LNG terminal, Eastring and the Balkan Gas Hub, which will benefit the gas market and diversification and security of supply.

Despite its domestic gas sources Ukraine is facing a period of uncertainty because of questions over the future of gas transit.

The transmission business is strictly regulated by the national framework and network codes. For example, Regulation CAM NC requires virtual interconnection points, but these are difficult to implement in practice.

PANEL DISCUSSION

Ján Klepáč, Executive Director, Slovak Gas and Oil Association, framed the discussion within the 2009 gas crises when Russian supplies via Ukraine were interrupted and 30 percent of Europe's gas imports were cut off for 12 days. Since then new interconnections have been built and reverse flows enabled. In March 2017 the European Commission allocated €263 million to infrastructure projects in Central and Eastern Europe, mainly relating to the gas industry.

Sławomir Sieradzki, Director of the Gas Market Development Division, GAZ-SYSTEM S.A., presented an overview of the Polish gas system and developments in diversification. He pointed out that **diversification also brings a higher demand for gas**. Since the 2009 crises several projects have been implemented: reverse flow was

enabled on the Yamal pipeline and the Polish–Lithuanian and Polish–Slovak interconnectors have been constructed. The Polish–Czech interconnector is still being discussed.

The biggest ongoing projects are the interconnections in the Baltic Sea and the extension of the **Świnoujście LNG terminal that is already at full booked capacity**. Its capacity should expand from 5 billion cubic meters to 7.5 billion cubic meters and a third tank will be built. **The Baltic pipeline project will create a supply corridor from Norway via Denmark to Poland**. It is a strategic gas infrastructure project that will ensure security of supply and improve competition in the Baltic Sea and Central and Eastern Europe.

Erik Kolstø, Head of Commercial Operations, NET4GAS, shared his experiences of implementing virtual interconnection points (VIP). He reminded the audience that the **transmission business is strictly regulated by national framework and network codes**. The most notable of these is the capacity allocation mechanism which is used by the European Commission to ensure market liquidity and competitive gas markets.

There is an obligation to create virtual interconnections, where two or more points connect the same two adjacent entry-exit systems. There is a problem regarding **interpretations of the available capacity** that the transmission system operators have to provide.

As a result of the legal uncertainty, TSOs have responded differently to implementation: the Netherlands has postponed implementation until 2020, while in Germany existing capacity remains on the original IPs and new capacity is available on the VIP.



In Czechia customers have two options: to change to a new virtual point contract or keep their old contract. There are already two virtual interconnection points, Brandov–GASPOOL and Waidhaus–NCG, which will be launched in 2019.

Kamen Manev, Deputy Executive Director, Bulgartransgaz, focused on the Balkan Gas Hub project. It involves the **construction of a gas distribution centre in Bulgaria, in Varna region**. The gas will come from various sources and enter the country at different entry points. The hub will make it possible for gas trading to be organised around a single virtual trading point.

According to the feasibility study the project will rely on new pipelines on the Bulgarian–Turkish and Bulgarian–Serbian borders, the construction of a gas measuring station, Strandja, and compressor stations, Nova Provadia and Rasovo.

The Balkan Gas Hub will **benefit Europe in terms of its gas market and diversification, but will also be good for the region's security of supply**.

Peter Pčola, Director for Commercial and Regulatory Affairs, Eustream, a.s., gave a presentation on gas infrastructure developments in Slovakia and reminded the audience that **security of supply remains a key issue**. The 2009 crises, when no gas flowed through the Brotherhood pipeline created losses estimated at €0.5 billion for the Slovak economy. In response to the crises several new interconnections were built and reverse flows enabled. Slovakia has also invested in entry and exit points.

Increased reverse flow capacity was installed at Lanžhot and in Austria in 2009, reverse flow was enabled on the Ukraine border in 2014 and capacity was trebled and is now 40.6 bcm per year. An interconnector with Hungary was built in 2015.

There are several ongoing projects. The first is a compressor station to increase the entry point at Lanžhot on the Slovak side of the border, the second is to build an interconnector with Poland which will enable LNG imports. There are also two planned projects: HUSKAT and the Eastring pipeline.

Tomáš Matula, Head of System Planning and Strategic Projects, Eustream, a.s., focused on a **feasibility study for Eastring project**. Eastring could **improve security of supply** in Central and South-Eastern Europe as a whole and **diversify sources** in Europe. The project will **improve market integration** via a connection to liquid gas hubs. The feasibility study indicated that prices are expected to fall



and competition to increase. Eastring will supply **gas from potential new sources** in Turkmenistan, Azerbaijan, Iran and Israel and LNG from Greece and Turkey.

Six possible routes were analysed and the most feasible route for Eastring is from Velké Zlievece to Malkoclak. The bidirectional pipeline will have a capacity of 20 bcm per year, and could be expanded to up to 40 bcm per year. Project capital expenditures are estimated at €2.6 billion.

Karel Hirman, Energy Sector Specialist, Strategic Advisory Group for Support of Ukrainian Reforms, Cabinet of Ministers of Ukraine, **shared a personal view of energy and the gas market in Ukraine**. Energy sector reforms were started after the EU–Ukraine Association Agreement had been signed, through the introduction of a gas market law and electricity market law, the creation of an independent regulatory office and a package of laws for district heating and energy efficiency of buildings.

It could be said that there are two different gas markets: an open industry market, and a closed household market with one supplier, Naftogaz. The price difference between the industry and household price is approximately 30 percent.

Unbundling is under discussion but progress has not been made. Naftogaz has to implement ownership unbundling, but it will be very difficult because of the Stockholm arbitration court case with Gazprom.

There are question marks regarding the conditions for transit in Ukraine, and uncertainties over Nord Stream 2, Turkish Stream 2 and subsequent gas market reforms. **Ukraine has large domestic sources** and could cover its domestic gas consumption and become an attractive exporter to neighbouring countries.

Erik Kolstø answered a question from the audience on Russian dependency and research in greener gas alternatives. The problem was the lack of alternatives. The high dependency on Russian gas is price related, but the power of the market has changed. Research is being conducted because there are many TSOs.

Kamen Manev explained that the idea behind the Balkan Hub is to increase gas trading and that South Stream is no longer an issue. **Peter Pčola** explained that HUSKAT and Eastring are separate projects.



PANEL IV: PRESENTATION OF THE WORLD ENERGY OUTLOOK 2018

Chair of the panel: Ingrid Brocková

Speaker: Aad van Bohemen

Commentary: Ari Kahan

SUMMARY

The rapid growth in electricity use brings opportunities, but **market designs need to be more flexible**.

The increase in global energy demand means **more effort has to be invested in achieving energy efficiency**.

Increased electrification will not necessarily lead to large reductions in CO₂ emissions.



PANEL DISCUSSION

Ingrid Brocková, Ambassador and Permanent Representative of the Slovak republic at OECD, introduced a presentation by the International Energy Agency (IEA) on its World Energy Outlook 2018 report setting out general developments and suggesting policy scenarios.

Aad van Bohemen, Head of Energy Policy and Security Division, International Energy Agency, stressed that the link between energy and geopolitics is strengthening and talked of the **vulnerability of the oil market**, the **rapidly rising demand for natural gas**, **developments in solar energy technology** and **CO₂ emissions reaching a historic high in 2018**. Meanwhile the global population that is without electricity fell below 1 billion for the first time and the demand for electricity raises questions as to how power

systems of the future will operate.

By 2040 energy consumption outside Europe is expected to have grown massively, led by China at almost 4000 Mtoe, followed by the US at more than 2000 Mtoe, India at almost 2000 Mtoe and Africa at over 1000 Mtoe. The increase in global energy demand will mean **more effort has to be invested in achieving energy efficiency**.

Robust oil demand will require exceptional **growth in US shale production**. China is expected to dominate the gas trade. Over 50 percent of the **gas trade will be in LNG**, which will improve energy security. The total invested in energy supply by 2040 is expected to be \$42.3 trillion, with more than 70 percent coming from **state-directed entities** or receiving a full or partial revenue guarantee.

A higher share of variable renewables and rapid growth in electricity demand means **more flexibility** is required along with well-developed market designs with investments in power plants, grids and energy storage. Nuclear power generation will go in two directions: declining substantially in the EU, US and Japan; and growing in China, Russia and India.

According to the New Policies Scenario for 2040 increased electricity demand will not necessarily lead to a large reduction in CO₂ emissions. Developing economies are becoming the main source of CO₂ emissions. The Sustainable Development Scenario could lead to a lower global temperature, improve access to electricity and clean air and see CO₂ emissions decrease to 18 Gt. It calls for a combination of policies to support **carbon capture, utilisation, and storage, as well as innovations in efficiency and technology**.

Ari Kahan, from the Office of Integrated and International Energy Analysis, the US Department of Energy–Energy Information Administration, outlined developments from the perspective of current laws and regulations. By 2040 **it is expected that world energy consumption will have led to increases in the use of petroleum, gas and renewables, a slight increase in nuclear energy use and a decrease in the use of coal**.

Asia is expected to have the largest increase in energy use by 2040, its energy consumption will be four times higher than in 2000. India's per capita income is expected to rise without a corresponding significant increase in energy consumption. Its energy intensive production will not reach China's historic production level until after 2035.

Aad van Bohemen answered questions from the audience, saying that US shale gas production has been growing massively over the last couple of years, but it is uncertain if the US will be able to double production.

PANEL V: ENERGY MARKET: CONSUMERS, TECHNOLOGY AND REGULATORY FRAMEWORK



Chair of the panel: Ágnes Töröcsik
Speakers: Vratislav Košťál, Thomas Jan Hejcman, Jakub Fijałkowski, Marián Nicz

SUMMARY

There is no longer a consensus that good market outcomes can be achieved through regulation alone, but regulatory measures and subsidies apply to the energy markets. Regulation should exist where the market is unable to resolve the problem or to protect vulnerable consumers.

The European Commission packages make adjustments to the market so as to meet current challenges. New legislation should reflect the economic and social situation of energy consumers.

PANEL DISCUSSION

Ágnes Töröcsik, Program Director, Regional Centre for Energy Policy Research (REKK), asked if the new electricity directive would enable the creation of a true market.

Thomas Jan Hejcman, Managing Director and Member of the Board, VSE Holding, emphasised that market **liberalisation is perceived positively**. There is no longer a consensus that good market outcomes can be achieved through regulation alone. Regulation should exist where the market cannot resolve the problem, such as preventing monopolies or protecting vulnerable costomers. A lot of the technology is already available, such as smart meters, but we have not been able to implement them properly.

It is difficult to make changes within the system, because regulatory bodies cannot state that they are useless and open up the floor to competition. Moreover, from a political perspective there is resistance to opening up the market. We should not work only within the areas we can regulate, but focus more on areas where we can achieve better results as well.

Vratislav Košťál, Chairman of the Board, Energy Regulatory Office of the Czech Republic, shared his personal view on the energy market. He emphasised that **energy consumers face complicated market choices**: should they opt for an independent supply, be connected to the distribution network or bear operational responsibility?

The wording of the expected approval on the Winter Package could even mean the end of an entrepreneurial feature of the market and lead to excessive regulation in Czechia: non-regulated net-metering, administrative permission required for personal consumption, but not for market use, no clear definitions of market participants or local energy communities.

We are facing the prospect of a new market with **autarkical decentralised self-production**, which could lead to a fall in electricity demand through distribution systems or agents substituting suppliers. The Winter Package supports non-market entities instead of market mechanisms. **The package methods erect new obstacles and generate new costs.**

Jakub Fijałkowski, Policy Officer, DG ENER, European Commission, reminded listeners that we are all the EU and that policies are determined by member states as well. **The European Commission does believe in consumer choice**



and markets, even if they are not always reasonable and the packages are designed to make adjustments to the market to meet the current challenges.

The question is whether the EU or the member states are overregulating the market. Member states sometimes try to preserve the current system, but it is important to take the first step away from high prices and regulations. Empowering consumers so they can participate more is crucial.

Marián Nicz, Principal State Advisor, Directorate-General for Energy, Ministry of Economy of the Slovak Republic, summarised the situation on the Slovak market. Slovakia's regulatory office regulates electricity and gas prices, especially for vulnerable consumers, but it also provides information.

The new electricity market legislation will help the EU achieve its climate objectives, facilitate penetration of renewables and place the consumer at the centre of the whole process. **The market design package unlocks demand side flexibility.**

Article 5 of the electricity directive is the most sensitive part. Regulated prices are a legitimate means of protecting vulnerable customers and preventing price volatility. In order to achieve good results, compromises have to be made.

The directive introduces new tools to strengthen the customer's position on the market. There are many new concepts and it is crucial that they are defined at the national level. Distribution networks are asking for changes as well. The new legislation should reflect the specific economic and social situation of energy consumers.



Ágnes Törőcsik asked if consumers are ready for new markets. **Jakub Fijałkowski** drew a parallel with the telecommunications industry. If people are able to choose phone operators, then they are able to choose electricity tariffs.

Ágnes Törőcsik asked what was most difficult to implement in the last electricity directive. **Vratislav Košťál** emphasised that the liberalisation process is also about regulation, but only to balance market weaknesses. In Czechia electricity price regulations are not a problem. **Jakub Fijałkowski** said that demand side management for households will be challenging. **Marián Nicz** added that a major challenge would be supply price setting and defining the new framework for distribution system operators. **Thomas Jan Hejzman** understood the need for protection, but he agreed that we need an open system where demand and supply can meet.



PANEL VI: CLIMATE GOALS, DECARBONISATION AND ENERGY SECURITY



Chair of the panel: Artur Runge-Metzger
Speakers: Norbert Kurilla, Sławomir Mazurek, Pavel Zámyslický, Martin Hollý

SUMMARY

Countries have been developing strategies to reduce GHG emissions and to help moderate climate change. The challenging sectors are transport, waste management, agriculture and industry.

The transition, especially in coal mining regions, should be cost effective, socially acceptable and competitive. Decarbonisation should be based on the **value for money principle**.

PANEL DISCUSSION

Artur Runge-Metzger, Director, Climate Strategy, Governance and Emissions from Non-Trading Sectors, DG CLIMA, European Commission, said that the **challenging sectors** in terms of reducing emissions are **buildings, transport and agriculture**. More investment is required in energy efficiency and renewable sources.

Norbert Kurilla, State Secretary, Ministry of Environment of the Slovak Republic, discussed Slovakia's long term strategy on climate goals and decarbonisation. The country has achieved improvements in its GHG emissions since 1990 due to the reconfiguration of industry and air quality legislation. **Transport and industry** are areas that will find achieving further emission decreases quite challenging. They will have to rely on new technologies. The residential sector is most promising in terms of improving energy efficiency. Greening agriculture is another promising sector.

There are three national strategic documents aimed at moderating climate change. The first of these is the 2030 environmental strategy, called Green Slovakia, which sets out three priorities: waste, air quality and protection of forest ecosystems.

The second is the long term low carbon strategy for 2030–2050, to be adopted in 2019 in cooperation with the World Bank. It will set out a long term vision for a Slovak low carbon future, align Slovak policies with the Paris Agreement, set new goals and ensure financing. The focus





will be on energy efficiency, renewables and heating in the residential sector.

The third is the adaptation strategy focusing on various areas such as soil, water management, biodiversity protection, public health, agriculture, forestry, transport and tourism.

Pavel Zámyslický, Director, Energy and Climate Protection Department, Ministry of Environment of the Czech Republic, focused on climate protection policy in Czechia, which is based on a long term low carbon development strategy. The indicative target is for an 80% reduction in GHG emissions against the 1990 base level by 2050. Czechia has successfully decoupled its GDP from energy use and GHG emissions. Non-ETS emissions will be more difficult to reduce, especially in agriculture and waste management.

Climate policy requires **deeper inter-ministerial cooperation and coordination in various sectors**. The future challenges to be solved are the lack of “carbon pricing in non-ETS sectors”, making central heating systems less carbon intensive but competitive, dealing with natural disruption, and working out how to apply the energy efficiency scheme.

Martin Hollý, Member of the Board, Slovak Gas and Oil Association, said that decarbonisation should be based on the **value for money principle**. The renewable goals are only indicative, as each country has a different energy system and economy. Slovakia is reliant on nuclear energy, yet has highly polluted air. Renewable sources are not competitive, as they receive annual support of €500 million. The Slovak gas network is very new and has substantially contributed to reducing CO2 levels, especially in the heating sector.

In a ranking of projects that received subsidies to reduce

CO2 levels, the ones that performed best were projects that aimed to replace coal. Value for money should also apply to renewable sources.

Recommendations for further decarbonisation are to replace coal with gas and biomass and improve energy efficiency. Replacing coal in central heating systems is a relatively quick solution. In the long term there should be more focus on renewables, decarbonised gas and hydrogen.

Sławomir Mazurek, Undersecretary of State, Ministry of Environment of Poland, emphasised that it is crucial to bear competitiveness in mind. Energy efficiency is important in the transformation of the economy. The EU should encourage other economies to help fight climate change. Implementing the EU climate package will be difficult and it is important to consider the individual member states and their potential for achieving long-term decarbonisation. The Modernisation Fund is a useful tool for modernising energy systems effectively.

Future efforts are needed to fulfil the Paris Agreement commitments, with discussions on the means of achieving our targets and considering the impacts on coal regions to **ensure a fair transition**. Social acceptance is crucial to phasing out fossil fuels. It is important to set realistic goals and bear in mind the costs of the transition.

Norbert Kurilla answered a question relating to the IPCC report on how to moderate climate change. He emphasised that we have to decarbonise more quickly, but bearing in mind the economy and a fair transition. Gasification is important in the process. Nováky is a Slovak coal region that is still subsidised, but it is taking part in an EU pilot project to transform the region. **Sławomir Mazurek** added that the Polish case is a success from the perspective of the Kyoto Protocol. Biosystems, and innovative solutions, should help to achieve climate neutrality.



PANEL VII: REGIONAL MARKET COUPLING IN ELECTRICITY

Chair of the panel: Maciej Jakubik

Speakers: Krystian Kowalewski, Andrii Nemyrovskiy, Mário Turčík, Jakub Fijałkowski

SUMMARY

Market coupling is a tool **for fostering and facilitating trade and the electricity market**. The challenges are loop flows, unscheduled flows and the need to increase the effectiveness of cross border connections. Countries and TSOs need to coordinate their activities to achieve good results.

PANEL DISCUSSION

Maciej Jakubik, Executive Director, Central European Energy Partners, introduced the topic by saying that market coupling is a tool for fostering and facilitating trade and the electricity market.

Mário Turčík, Head, Energy Market Development Department, Slovenská elektrizačná prenosová sústava, a.s. (SEPS), described the market coupling between Czechia, Hungary, Romania and Slovakia (4M MC) that was started in 2009. Poland takes part as an observer. During the process many technical solutions had to be found, and **the system was re-designed to make it more flexible**.

4M MC and multi regional coupling (MRC) are compatible. The technical solutions are identical and the procedures are similar. There are several variants for the future market. One example is NTC based coupling of 4M MC and MRC through Germany and Austria. The second option is through Croatia and Slovenia, or NTC based coupling between 4M MC and Serbia. Another variant is to wait for a target solution to create a core capacity calculation region (CCR). In this case capacity calculation and allocation could be adopted in one step.

The following are key to proceeding: establishing joint governance and common decision making, finding common agreement on sharing the costs of development



and implementation and creating a common contractual framework, such as the Single Day Ahead Coupling Day Ahead Operation Agreement.

Jakub Fijałkowski, Policy Officer, DG ENER, European Commission, stressed that the European Commission believes in the market and is actively creating it. The development of 4M MC was a good bottom up approach. It was a relatively quick process, which did not go further. It is a good example of a regional market, but there should be a common approach to the market, such as Core Region.

It is also important for small markets to join an integrated market. This could apply to Slovakia once the new blocks at Mochovcove NPP have been commissioned. The European Commission would be happy to facilitate discussions on joining 4M MC, with Poland for example.

Krystian Kowalewski, Executive Director of World Energy Council Poland, emphasised that there are no restrictions to the cross border trade of electricity, but the processes are limited for technical reasons. The potential for exchange is determined by the available capacities calculated by the TSOs and the process is now more harmonised. Network codes are being implemented and the next step will be determined by the Clean Energy package. Poland is using multi regional coupling (MRC) on its borders with Sweden and Lithuania.





Market integration is not identical across the EU, but there is a trend towards market base mechanisms for capacity allocation and calculation: flow based method, day ahead market coupling and implicit auctions. The zonal market is often used which leads to the internal market being prioritised over cross-border trade. The biggest challenge in increasing market coupling is **to improve the effectiveness of cross border connections**.

Andrii Nemyrovskiy, Deputy CEO for Market Development and IT, NPC Ukrenergo, shared views of the development of the Ukrainian electricity market. Its single seller market creates several difficulties in relation to market coupling. One of the most important things is to set allocation rules. Ukraine provides explicit auctions and allocates the rights.

Ukraine is a big market that has quite good generation capacity, but it is not well synchronised and it is trying to interconnect with its neighbours and adopt best practices. Interconnecting its power capacity with that of other European countries could provide more than 4GW after synchronisation. Twenty-five percent of its market could be competitive.



Maciej Jakubik asked whether 4M MC could be extended. **Mário Turčík** said that extending it towards Serbia was one alternative, but the main focus is on EU integration. **Jakub Fijałkowski** would like 4M MC to be more active in core projects, such as the common framework already in existence. **Mário Turčík** added that the discussions on becoming part of the MRC had been complex and technical.

Maciej Jakubik asked about the prerequisites for market integration. **Krystian Kowalewski** said that bidding zones were a good option initially, but now there are problems with configuration. The zones are limited by political borders between countries. Implementing a flow-based approach could be part of the solution. It is worth initiating a discussion on whether the bidding zone model is the best market design to develop the electricity market. **Andrii Nemyrovskiy** added that the legal issues were more important than the technical ones. **Jakub Fijałkowski** said that revising the bidding zone is an open ended process. **Mário Turčík** added that in many cases the bidding zones were countries, because these had stronger internal connections. He identified problems with unscheduled flows and adequacy. **Krystian Kowalewski** summed up by saying that the real problem with loop flows was that they went in the other direction.

There was a question from the audience on coupling consumer prices and decarbonisation. **Krystian Kowalewski** pointed out that optimising transit in the grids would be better for consumer prices as well. **Andrii Nemyrovskiy** said that decarbonisation of electricity generation was one of the topics being discussed in relation to Ukraine's energy strategy. According to **Mário Turčík** market coupling should be seen as an opportunity for customers and trade markets. **Jakub Fijałkowski** concluded that decarbonisation should be facilitated by the market.

PANEL VIII: SMART ENERGY AND EFFICIENCY



*Chair of the panel: Artur Bobovnický
Speakers: Sylvain Robert, Doris Österreicher,
Valérie Plainemaison, Stanislav Janiš*

SUMMARY

Energy efficiency is one of the key aspects of smartness. Having **more renewables does not necessarily mean more energy efficiency**, but these concepts have often been linked.

Besides being energy efficient, buildings should be **multifunctional, more adaptive and flexible** and built to reflect the climate conditions.

PANEL DISCUSSION

Artur Bobovnický, Director, Analysis, Programs and International Cooperation, Slovak Innovation and Energy Agency, introduced the topic saying that the increase in the global temperature could only be moderated. **Buildings should be the priority in achieving energy efficiency and a healthy environment.** This can be achieved by renovating public buildings, reducing costs, and connecting up to renewables.

Sylvain Robert, Policy officer, DG ENER, European Commission, presented the EU policy **perspective on smart energy and efficiency**, part of the Clean Energy for All Europeans package. The energy efficiency target for 2030 is to improve efficiency by 32.5%, but this is financially very challenging especially for the household sector.

Smart financing is EU financial assistance that has three pillars: **more effective use of public funds, assistance and aggregation and de-risking.** It is important to encourage the financial sector to support energy efficiency projects.

The transition to smarter buildings is supported through

three instruments. The energy efficiency directive deals with **remotely read meters and heat cost allocators** which enable consumption to be monitored more easily. Eco-design is about **energy labelling.** A building's performance is enhanced by **smartness and energy flexibility.** The smart readiness indicator measures the technological readiness of a building, but is not yet ready for implementation.

Doris Österreicher, Department of Structural Engineering and Life Sciences, University of Natural Resources and Life Sciences, Vienna, talked about **buildings.** Smart buildings should be aimed at securing a comfortable and secure indoor environment **within the given climate conditions and through efficient use of local sources.**

Besides being energy efficient buildings should meet the sufficiency criteria, considering space and resilience. The **life cycle approach**, a relatively new concept, should also be considered. Buildings should be **multifunctional, more adaptive and flexible**, as our requirements change over time. Mobility is another key aspect of energy efficiency.

There should be adequate integration of building services and renewable energy systems which would open up new architectural possibilities.



Valérie Plainemaison, General Secretary, European Federation of Intelligent Energy Efficiency Services (EFIEES) focused on the legal aspects, especially on the Energy Performance of Buildings Directive (EPBD), Energy Efficiency Directive (EED) and Renewable Energy Directive by talking about **how to measure primary energy, how to promote a district approach, and how to calculate the energy performance of a building.**

Importantly the directives allow all **member states to calculate their own national primary energy factor** for electricity.

The energy efficiency of a building should be calculated in relation to local and seasonal factors. Having more renewables does not necessarily improve energy efficiency, but they are often linked.

In the long term member states should **promote renovation strategies** while considering maintenance services. The EPBD proposes that regular heating system inspections should not be necessary if there is an energy efficiency contract or if they are connected to a district heating system. Moreover, **recommendations for greening heating and cooling are not compulsory**, but waste heat could be included.

It would be good to reinstate **the list of high efficiency systems** in the directive, as that would help to define the concepts.

Stanislav Janiš, Chairman of the Board, Slovak Union of Heat Producers, focused on specific practical examples in Slovakia and pointed out that energy performance is based on the actual energy requirements of the building, but political performance is based on **fuel type and heating source**. The energy efficiency approach favours individual heating systems and discriminates against district heating systems so existing infrastructure is not used. **The energy efficiency regulation should be revised.**

Individual heating provides choice, but that is the only advantage. The disadvantage is the need for a backup source, which in Slovakia is fossil fuel. It is challenging in terms of investment and less convenient as the owner is responsible for maintenance. The financial support comes from various schemes which leads to discrepancies. **District heating** is technologically neutral. It is able to store the energy in water, is ecological and affordable.

Further **challenges for the heating sector** are continuing to implement progressive technologies and digitalising the system. **The state should set out its strategies for 2020–2030 together with all the involved parties**, to support the existing infrastructure and connect public buildings to the district heating system, which would reduce costs.

Sylvain Robert explained that the smart readiness label and smartness are similar concepts. In response to a question from the audience he confirmed that smart readiness applies to both existing buildings and new ones. **Stanislav Janiš** explained that information on the cost of individual heating systems contains only a variable component, but the whole investment is paid from other sources. District heating includes both investment and operational costs. **Doris Österreicher** said that smart buildings need not be expensive. **Valérie Plainemaison** added that there is no single solution to solving the problems. **Artur Bobovnický** identified the future challenges, which are historical buildings and greater demand for cooling in summer.



PANEL IX: INVESTMENTS IN ENERGY SECTOR

Chair of the panel: Radoslaw Ossowski-Barbetti

Speakers: Robert Spišák, Mário Paroha, Massimo Merighi, Tomáš Šípoš

SUMMARY

Energy transformation was one of the leitmotifs of the conference. This panel discussed **what is needed to reach the ambitious targets set by the Paris Agreement**. Renewables have to account for more than 30 percent of Europe's energy mix, and energy efficiency has to improve by 30 percent as well. To achieve this, **€270 million needs to be invested** in the energy sector each year from 2020 to 2030.

PANEL DISCUSSION

The first question, from **Radoslaw Ossowski-Barbetti**, Head of Bratislava Office, European Investment Bank, led to a discussion on the barriers to investing in the energy sectors. **Tomáš Šípoš**, Head of Regulatory Affairs at Západoslovenská distribučná, a.s., a big distribution company, pointed out that the Winter Package introduces new elements in the market (such as energy storage), and that these will change the way customers behave and how the grid will be updated. But distributors are 100 percent regulated, and the **regulator makes harsh judgements on what they invest in** and whether it is needed.

Massimo Merighi, Senior Sector Engineer in Energy Department European Investment Bank, noted that as the technology is new, it is often difficult to develop projects well. Therefore, promoters need support to create bankable projects (EIB provides technical advisory services).

Robert Spišák, Chairman of the Board of ENVIEN Group, thinks there is no lack of money on the market and that the banks are able to finance the needed investments, but what is lacking is stability in all renewables. **Investments in energy have relatively long life cycles**; it takes years to get them going and even more for them to become profitable – **policy changes may get in the way**. Politicians may promote renewables today but it is not clear that will not change before the projects starts making money. The risk is too high.

Mário Paroha, Head of Research at GreenWay Infrastructure, s.r.o., said that the technologies for electromobility are available and demand is high, but this is not met with the appropriate commitment from vehicle producers to produce electric vehicles. **Market demand for EVs seems to be higher than what producers are willing to produce**, making investment in the sector problematic.

The second question the panel addressed was how the current policies and legislation affects the business side. **Robert Spišák does not think there are sufficient policies for the transition in the energy sector**. We lack strategy, a full set of ideas, measures and a regulatory framework. **Tomáš Šípoš believes the problem lies with the companies themselves**,



which are just reacting to the laws and regulations, not trying to influence them. **Mário Paroha** provided a positive example from **Poland, where the government has committed to having 1 million EVs by 2025, and is backing that with €1.2 billion** to be invested over 10 years, mainly in e-mobility services, but also to support battery production, and buyer incentives. **Robert Spišák** disagreed with this approach stating that promoting electromobility would mean a decrease in state revenue from fuel taxes, and therefore the state would look for other sources of revenue from people who had bought EVs. According to **Massimo Merighi** while we want to have a stable regulatory framework, the reality is that the world is changing extremely quickly. **Often it is not the best technology that wins out in long term, frequently because the regulatory framework is wrong**. Policy has to reflect the fact that the world is changing and that innovation is a way of achieving stability.

The third question the panel addressed was the role of research and development in business. For **Mário Paroha, the most important question was how to manage energy flows** – the good thing about electromobility is that it automatically integrates the element of batteries inside EVs that will completely change the energy ecosystem. They are working on a way to use this to store more green energy. **Robert Spišák believes the problem with research and development is the in-built uncertainty**. Sometimes to get to a new technology, you need to try something that doesn't work. That is useful information, but does not bring in any money. That's where the role of international financial institutions such as the EIB should lie. **Massimo Merighi** said that happens with smart grids for example. Huge amounts have been invested in them, but despite having access to them consumers have not changed their behaviour. **Sometimes innovation just falls flat on the social component**. **Tomáš Šípoš** countered that smart meters are not smart grids. From the consumer's point of view, the most important thing is having electricity when they need it. **The smart grid is about how to manage the power flows in the grid in a smart way, while getting electricity to customers when they need it**. You therefore need to know how people behave on the grid, get feedback from the customers and make the investments needed to make the lives of customers easier.

RESEARCH PRESENTATION – BEYOND GAS BEYOND 2020: ENERGY SECURITY IN THE V4 REGION IN 2020–2030



SUMMARY

One of the main arguments for the project is that V4 countries are not beyond gas as **gas will have an increasing role**. It will be an important part of the energy mix in these countries.

The main **challenge in the electricity sector is the EU's decarbonisation policy**. Electricity systems should be further integrated.

PRESENTATION

Ágnes Törőcsik, Program Director, Regional Centre for Energy Policy Research (REKK), presented a research project on the gas and electricity sectors in the V4 countries. The research was conducted by four research institutes between June and October 2018. The data were obtained through semi-structured interviews with the main stakeholders and discussed during the workshop.

The gas sector research was conducted from the **energy security** perspective, as dependency on a single gas source (Russia) has been critical for the V4 region. Several improvements have been made to decrease dependency, such as building new cross border interconnections, enabling reverse flows, developing storage capacities and the LNG terminal in Poland.

After 2020 several challenges will have to be faced due to three main factors: **uncertainties about the future of major gas infrastructure projects** (such as Nord Stream 2), **higher gas demand** and **delayed regional infrastructure projects** (cross-border interconnectors and LNG terminals). The various V4 countries differ in prioritising the building of new gas interconnectors.

One of the recommendations for the future energy strategy is to invest more in **renewables, as they are domestic energy source**. The ten year forecast for electricity production in Czechia is based on a higher proportion of photovoltaics and less coal use. In Hungary nuclear energy will almost double once Paks II is completed, expected to be before 2030. Poland is also considering the option of investing in nuclear energy. In Slovakia the share of nuclear will be almost identical to now. The proportion of renewables will increase and will have to coexist alongside the increasing nuclear capacity. **Electricity systems should be further integrated**, for example by building new interconnectors.

Ágnes Törőcsik answered questions from the audience on energy security. It is important for the region to keep transit through Ukraine, use the Polish LNG terminal and import Asian gas. Where electricity is concerned, the Slovenia–Hungary transmission interconnector will improve system adequacy.

Evening *sessions*

CEEC

2018 :

ES I: INTEGRATED NATIONAL ENERGY AND CLIMATE PLANS

Chair of the panel: Leonardo Zannier

Speakers: Tomáš Smejkal, Waldemar Łagoda, Juraj Rokfalusy

SUMMARY

Integrated National Energy and Climate Plans (NECP) should **cover the five dimensions of the Energy Union** and the first drafts should be finished by the end of 2018.

The drafting process is complicated by a lack of time and difficulties entailed in the various ministries working together. But collaboration **could improve research and innovation**.

In order to meet their goals the member states see potential in **further improving energy efficiency and the share of renewables used**, but it is important to bear in mind realistic goals and the financial possibilities.



PANEL DISCUSSION

Leonardo Zannier, Policy Officer, Energy Policy Coordination, DG ENER, European Commission, presented the Integrated National Energy and Climate Plans (NECP) as the idea to ask **member states to identify and define the long term objectives** for ensuring that the EU's 2030 energy and climate targets and five Energy Union dimensions are met: decarbonisation, energy efficiency, energy security, internal market and research and development. **Regional cooperation is an important element within the process**.

Tomáš Smejkal, Director for Strategy, Strategy and International Cooperation in Energy, Ministry of Industry and Trade of the Czech Republic, identified the **deadline for the first NECP draft as the main challenge**. He pointed out that the plans should **extend across many areas and portfolios**, such as infrastructure and research. This requires good coordination not only between the two main ministries involved (the economy and environment ministries), but with others such as transport or agriculture.

Juraj Rokfalusy, Principal State Adviser, Ministry of Economy of the Slovak Republic, explained that Slovakia began its preparations for the NECP draft **during the negotiations**

and has been collecting data from other ministries. The plan will be based on strategic documents that have already been approved: the sustainable development strategy for climate and the Low Carbon Strategy. He agreed that **the process places great demands on the ministries and energy sector**.

Waldemar Łagoda, Deputy Director, Electricity and Heating Industry Department, Ministry of Energy of Poland, agreed that the **time frame and complexity of the drafting process** are the two main challenges. One of the main domestic challenges to achieving the targets is Poland's energy mix. The drafting process has involved regional cooperation, as the **V4 countries have worked together** to coordinate their plans.

Leonardo Zannier asked how the NECP could help achieve greater competitiveness and decarbonisation. According to **Tomáš Smejkal** all elements of the plans should tie in with competitiveness. **Juraj Rokfalusy** added that **cross-sectoral development could improve research and innovation** and the energy mix. **Waldemar Łagoda** emphasized that it is important to distinguish between competitiveness among member states and with the rest of the world. Poland relies heavily on coal and has been decarbonising since the beginning of the century.

Leonardo Zannier introduced the topic of regional cooperation. **Tomáš Smejkal** thought it should be possible for documents to be jointly drafted in the future. But as yet there are only national targets. The **V4 countries already work well together, especially in energy security, infrastructure, the energy market and generation adequacy**. **Juraj Rokfalusy** agreed that the V4 countries have an effective platform for discussion and cooperation. **Waldemar Łagoda** added that **Poland has been working together with other Baltic countries, in the gas and electricity grid sectors**.

Leonardo Zannier expressed curiosity about member state targets for 2030. **Tomáš Smejkal** said that achieving the ambitions for renewables is difficult in the heating and transport sectors. Czechia will try to contribute more through photovoltaics. According to **Juraj Rokfalusy** Slovakia will attain a 25 percent share of renewables in electricity production. It is important to focus on electro mobility and biofuels. **Waldemar Łagoda** said that Poland had made good achievements in wind energy and that there is good potential in energy efficiency, especially in the heating sector.

Juraj Rokfalusy answered a question raised by the audience about best practices for involving the public. Energy companies and industry in particular are involved in drafting the NECP, but the draft will be available on the ministry website. **Tomáš Smejkal** added that he hoped that further drafting of the NECP would be more open to the public. **Waldemar Łagoda** said that Poland follows a different pattern, as any legislative proposals have to be consulted.

ES II: TRANSFORMATION OF COAL INTENSIVE REGIONS

Chair of the panel: Aleksandra Tomczak

Speakers: Martina Lamačková, Krzysztof Tylla,
Dionysios Giannakopoulos

SUMMARY

In the 1990s coal constituted 30 percent of the European energy mix, today it is 20 percent. The transition is already happening and the pace is picking up. From 2013 to 2016 coal-based production of electrical energy dropped by 20 percent in the EU. There are several reasons for this, including political ones. Many countries are scheduling the phase-out of coal.

Over 240,000 jobs in the EU are at direct risk, and even more indirectly. Therefore, the European Commission has established the Coal Regions in Transition initiative. In 2012 it began working with 12 regions, and today there are three pilot projects in three regions: Silesia (Poland), Western Macedonia (Greece), and Trenčín (Slovakia).

PANEL DISCUSSION

Martina Lamačková, Head, Regional Development Strategy and Project Implementation, Trenčín Self-Governing Region of the Slovak Republic, presented progress on the pilot project in the EU's smallest coal region. There is only one coal mine and one coal power plant in Nováky, surviving only because of state subsidies. There are other industries (the chemical industry, spas), which increase the chances of a successful transition.

The main challenge in the region is not unemployment, but population loss. Nonetheless, over 11,000 jobs are directly or indirectly connected to the coal mine and power plant. **The possible loss of these jobs could lead to a further population decrease.** The owner of the power plant, Slovenské elektrárne, a.s., is trying to diversify its income by starting operations in the mechanical and food industries. **The plant also supplies heat to the municipalities** and the region's industrial parks.

The transformation involves a **bottom-up approach, and the creation of an Action Plan for the region's transformation.** This is based on municipal meetings, open to experts and citizens. Its main pillars are: **employment, energy** and changing **heat generation, infrastructure, environment, education** and investments. **The general objective of the Action Plan is economic diversification.**

As **Krzysztof Tylla**, Senior Specialist, International and Regional Cooperation in Environment Unit, Government of the Silesian Voivodeship, Poland, pointed out the words Silesia and coal mining are almost synonymous. Silesia has been dependent on coal "since forever", but the number of mines is dropping (from 70 to 30 currently). The problem in this region is that **it has a large number of households (1.3 million) but only a third are connected to a centralized heating system.** **The majority burn coal** which creates air pollution.



To fight this problem, they are using a "stick and carrot policy". The "stick" being the **anti-smoke resolution. Theoretically it is now illegal to use low quality coal in Silesia.** Katowice and two further cities use drones to collect smoke samples and perform over 2,000 inspections per year. **There is however a legal issue as some cities do not have municipal police and so cannot perform these checks.** The "carrot" is an environmental grant known as **"Smoke Stop" for replacing household heat sources.** There is also a **10 year national program, "Clean Air,"** with a budget of **€31 billion**, providing support to 3 million households.

In practice though there is **no coal replacement programme, just one for replacing old heating units with new, coal-based 5th generation heating units.** Nor is there any attempt to work with industry and power plants owners, since this is not within the Silesian authorities' competencies.

Dionysios Giannakopoulos, Member of the Coal Platform Team of Western Macedonia, Greece, presented the issue from the Greek point of view. Western Macedonia has most of Greece's lignite deposits, four lignite power plants representing 40 percent of thermal units and 20 percent of the total net capacity of the interconnected system in Greece. Approximately 100,000 citizens use district heating systems powered by lignite power plants. **The region's input to the Greek energy mix has been reduced from almost 50 percent (2009) to less than 30 percent (2016).**

It is estimated that, if there is no regional support, **by 2050 unemployment in Western Macedonia will have risen to above 40 percent**, while in Kozani and Florina it will exceed 52 percent and 38 percent, respectively. According to the proposed National Strategy for Adaptation Measures to Climate Change (2015), the local negative impact could potentially be four times that in other Greek regions, mainly owing to the reduction in lignite mining.

The main objective for creating the Action Plan for transition was to **develop a dialogue. An inclusive, bottom-up process with a strong feeling of ownership was initiated, and teams were created to replicate the process further.**

The three main axes for the transformation set out in the Action Plan are **business, environment**, and the **skills** needed to build new capacity. **So far two financial tools have been introduced** at the regional and national levels.

ES III: SOCIAL ACCEPTABILITY OF THE ENERGETIC TRANSITION UP TO 2050 – ENABLE.EU FOR ENERGY UNION



Chair of the panel: Mykhailo Gonchar
Speakers: Stefano Proietti, Emilie Magdalinski, Todor Galev, Mária Csutora

SUMMARY

The Energy Union framework strategy is designed to ensure a **cost-efficient energy transition** to secure, sustainable and affordable energy. But energy policy is an area where major changes can be difficult to undertake.

It is important to **understand consumer behaviour** when developing future policy strategies and to **involve people in the energy transition**. Citizens should have more information and be more knowledgeable so they can alter their consumer behaviour and contribute to energy efficiency.

PANEL DISCUSSION

The discussion was introduced by **Mykhailo Gonchar**, President of the Centre for Global Studies–Strategy XXI who briefly described the ENABLE.EU project as bringing together various surveys conducted by a multinational team of experts. The project is under the auspices of Horizon 2020 which also provides the funding.

Stefano Proietti, a project coordinator from Istituto di Studi per L'Integrazione dei Sistemi ISSINOVA, began by saying that the goal of the project was to explain people's energy behaviour. Data were collected from citizens, enterprises, governments and energy companies in 11 European countries. The survey emphasised three key areas of consumption: **heating and cooling, transport and use of electricity**.

ENABLE.EU's aim is to **provide policy recommendations for improving the social acceptability of the energy transition**. The general public often find technological and environmental projects too abstract and complex to understand, making them difficult to apply in practice. People should fully participate in the process and shape the transition to clean energy. A **bottom-up approach** should be applied.

Todor Galev, from the Centre for the Study of Democracy,

presented part of a project examining **governance barriers to the social acceptability of energy transition technologies and policies**. He explained that the objectives of the Energy Union are generally supported by the public, but that governments are rarely willing to change their policies and to make uncomfortable adjustments.

There are large differences between countries in their ability to sustain the costs of the required energy reforms and investments. These barriers can be found in the **legal and regulatory systems of member states** as well as in the **socio-cultural realm and among the general public, mainly in terms of the accessibility of the policy and innovation implementation process**.

There is a need to harmonise national policies across sectors, and governments need to pay more attention to areas other than electricity generation. **Diversification of renewables is fundamental and crucial to the energy transition**. Governments often keep energy prices artificially low, and consequently there is no need for households to decrease consumption.

Mária Csutora, member of the Regional Centre for Energy policy Research, presented a study on **obtaining a better understanding of the factors influencing household energy choices regarding heating and cooling**. Data from 5,006 households from five countries were collected. The survey shed light on **cultural differences in heating habits** and attitudes towards different policy options. One of the most important insights relates to **comfort temperatures** and this may be a significant explanatory factor for varying heating-related energy requirements. Households which have manually controlled temperatures tend to have higher indoor temperatures.

Consumers are often locked into an unsustainable lifestyle through circumstance even though they have no wish to act unsustainably and may feel uncomfortable about doing so. In most countries citizens lack meaningful information about their energy consumption levels, complain about their energy bills being too complicated and feel they receive feedback about actual energy consumption too infrequently. People need **practical information that can be compared with that relating to their neighbours' or family members' situations**.

Emilie Magdalinski, from the Notre Europe–Jacques Delors Institute sought to **identify the drivers of individual and collective energy choices in Europe**. She pointed out that social science has an essential role to play when energy regulations are being drafted and legislated on.

The main question is how we can convince people about the positive aspects of the energy transition. The **“not in my backyard (NIMBY)”** phenomenon exists in slightly different forms in all the countries surveyed, and basically means that **people tend to support low carbon energy policies but are against developments in their local area**. People's attitudes also change when they are personally affected.

ES IV: RESEARCH AND INNOVATION IN ENERGY

Chair of the panel: Efstathios Peteves

Speakers: Tomasz Gałka, Petr Ocelík, Tomáš Hanus, Attila Imre

SUMMARY

Research and development in Central and Eastern Europe focuses on various areas. These are linked to fossil fuels, such as **clean coal combustion technology**, and to the electricity sector, such as **smart grid communications** and **intelligent network measurements**.

The emphasis is on renewable sources, and exploring the potential for **geothermal power plants**.

PANEL DISCUSSION

Tomasz Gałka, director of the Institute of Power Engineering, a research institute, said that since the 1980s, their research has concentrated on **low emission combustion**, and therefore on heat-flow, thermal conversion of biomass and waste and co-firing. Another interesting area is research on **fuel cell technology**, which includes the study of solid fuels, high-temperature electrolysis, carbon sequestration and management systems, ceramic membranes for separation and solutions involving power-to-gas and power-to-liquid conversion.

Regarding the financing, the institute finds it easier to obtain resources for projects of a lower technology readiness level (TRL), a method of estimating technology maturity. Tomasz Gałka was asked about which projects are implemented and awarded funding. He stated that there is a preference for projects based on a wide range of theoretical knowledge, but efforts are made to give to interesting ideas a chance as well.

Petr Ocelík, assistant professor at the Faculty of Social Studies, Masaryk University in Brno, emphasised that the **coal phase-out in Czechia is contested**. He pointed to the tendency encouraged by the EU that electricity should be provided exclusively from renewable sources. By 2030, Czechia should theoretically have no coal-based electricity production, but **in reality this is questionable**.

There is an advocacy coalition which shares mutual beliefs and suspects the industry coalition of supporting the coal phase-out. It is the dominant coalition and has direct access to decision making. The minor coalition is the environmental coalition which has a minor impact but has its own expert knowledge which informs its decision making.

Technocratic governance helps build bridges and allows ideological differences to be overcome.

Tomáš Hanus, Institute of Power and Applied Electrical Engineering, Faculty of Electrical Engineering and Information Technology, Slovak University of Technology in Bratislava, said that the primary focus of their research is **electricity generation, distribution, transmission and**

usage of electricity, designing car headlights, low voltage equipment, semiconductor technologies and measuring electro-physical processes and its priorities are renewables. The institute is also concerned with **new cable designs, research on uncertain conditions in power systems and new methodologies for intelligent networks measurement**.



The research projects lack funding despite being supported from various national and international funding schemes. The National Centre for Research and Application of Renewable Energy sources was established in order to improve the quality and technological potential of the university and a smart system group working on **virtual power plants, advanced electrical networks and smart grid communication**.

Attila Imre, member of the Department of Energy Engineering, Faculty of Mechanical Engineering at the Budapest University of Technology and Economics described the **energy industry and research and development** in Hungary. The government strongly supports nuclear energy, but **hydropower and hydroelectric power are less popular**.

In 2017, the Centre for University-Industry Cooperation (FIEK) was established and is renowned for its research in energy and for its collaboration with companies such as Nokia or Siemens. It has **increased the energy efficiency of hybrid motors**. It developed a smart power laboratory for the distribution of energy and has the potential to provide energy to smaller communities such as villages.

There are only limited fossil fuel deposits in Hungary, but its highly volcanic areas mean high pressure steam can be obtained directly. The advantage of **geothermal power plants** is that they have a permanent energy source. There is no need for other fuels and there are zero CO₂ emissions. Research and development is focused on developing a liquid suitable for multiple geothermal sources.

CONCLUDING SESSION



*Video message: Dominique Ristori
Speakers: Tudor Constantinescu, Alexander Duleba*

Dominique Ristori, Director-General, DG ENER, European Commission, stressed that the energy transition is on its way and we are moving towards a low-carbon economy. National Energy and Climate Plans will allow for meaningful cooperation. Better interconnected markets are key to fostering a common market, and Projects of Common Interest in the electricity and gas sectors are key to achieving this. We must be sure that no region is left behind, as energy poverty is very important to the whole process of energy transition.

Tudor Constantinescu, Principal Adviser, DG ENER, European Commission, said that to tackle the complexity of the energy system there should be smarter and more innovative solutions that require system flexibility and best use of the technologies. Flexibility is key to ensuring renewables are better integrated within the energy system. Solidarity is crucial during the transition process and we have to pay attention to vulnerable regions and consumers.

The Structural Funds and EU Cohesion Policy are crucial in supporting the objectives. €30 billion has already been allocated to the low-carbon economy and the Energy Union generally. This support is crucial to the energy transition including sustainability. Cohesion policy will focus on two elements: innovations and smartness and the low carbon economy. There is a need to attract private investment in the energy transition process. Cross-border support for renewables would also help.

An integral approach is needed for the future. The challenges are transposing the new market design electricity directive, creating a better market design for gas networks, developing National Energy and Climate Plans and strengthening regional cooperation in all areas.

Alexander Duleba, Director, Research Centre of the Slovak Foreign Policy Association, concluded by making five observations on regional energy developments. There is consensus that energy security is a key issue for Central and Eastern European countries and from this perspective is seen as project for the Energy Union.

Secondly, there is consensus that climate change presents a challenge and that we have to agree on how to achieve climate goals. In our region nuclear energy is part of the solution. Minister Peter Žiga's announcement that the government would stop subsidising the coal mining region in 2023 is a key moment for Slovakia.

There are many unanswered questions about the regulatory framework, and the discussion of the National Plans indicated that we still do not know precisely what the plans and future market will look like.

Fourthly, there is no integration approach to the gas market, as there is to the electricity market.

The final remark was that the 2018 conference agenda had featured new topics that are important for the future, such as research and innovation, and decarbonisation.





The purpose of the series of annual Central European Energy Conferences is to evaluate and discuss topical issues both of energy policy and energy security in Central Europe in the context of the developing EU energy policy. The ambition of the CEEC conference is twofold: first, to bring together leading stakeholders from the energy sector in the region of Central Europe, and second, to contribute to finding better solutions for the energy policy of the EU and the countries of Central Europe. The first annual CEEC conference was held in November 2007. The 10th and 11th CEEC conferences were conjoined with the SET Plan conference held within the official program of the Slovak and Estonian Presidencies of the EU Council, in the second half of 2016 and 2017 respectively.

Further information is available at <http://www.ceec.sk> .



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