

Conference *report*

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WELCOME



Alexander Duleba, CEEC Director, from the Slovak Foreign Policy Association, welcomed the participants of the 14th conference. Owing to the Covid-19 pandemic, the conference was held online, with only the speakers attending in person. The aim of the conference was to contribute to the discussion on

the draft Recovery and Resilience Plan of the Slovak Republic focusing on energy and a climate policy, but also environmental protection. Alexander Duleba said that since we can agree on the weaknesses of these policies, the priorities should be discussed.

The head of the Representation of the European Commission in Slovakia, **Ladislav Miko**, pointed out that climate and environmental challenges are the main problem, but they are also **an opportunity for economic recovery through modernisation and investing in new green technologies**. The European Green Deal, approved before the pandemic, is a complex and ambitious plan for achieving climate neutrality by 2050. But it requires greater speed and efficiency in climate policy implementation. The green economy will require new investments, but comprehensive reforms must come first. Next Generation EU is a new economic recovery instrument, at least 37% of which should be invested in support of green measures, such as improving energy efficiency or prioritising clean technologies and renewable energy sources (RES).

PANEL I – RECOVERY PLAN: PRIORITIES OF THE GOVERNMENT OF THE SLOVAK REPUBLIC

Chair of the panel: Peter Kremský *Speakers:* Eduard Heger, Veronika Remišová, Ján Budaj, Andrej Doležal, Karol Galek *Commentary:* Norbert Kurilla

Eduard Heger, Deputy Prime Minister and Minister of Finance of the Slovak Republic, opened the first panel with a clear message: 'Slovakia has slept soundly so far and needs to wake up now. There is a Recovery Plan and a financial injection waiting for us. If Europe wants to keep up with the world and be competitive, we must invest in its recovery.' He pointed out that the main pillars of recovery were green issues and digitisation, and where more than 50% of the €750 billion should be invested. The government based its Recovery Plan on three documents: the government's programme statement, the European Commission's recommendations for Slovakia and the National Reform Program. The Minister of Finance also presented eight main reform areas: **the green economy, the labour market, education, science and research, healthcare, financial stability, public administration and digitisation**.

Slovakia has been slow to access funds from the European Union for many years now, and the amount to be made available will be several times greater than ever before. Eduard Heger therefore promised to prepare a detailed investment plan to facilitate the implementation of the reforms. His primary concern is to finance the reforms using the billions from the Recovery Plan, and partly from EU funds.



Veronika Remišová, Deputy Prime Minister and Minister of Investment, Regional Development and Informatisation of the Slovak Republic, compared the current situation to 1998, when she said that Slovakia was at a crossroads and extensive reforms were inevitable: 'This government has a plan. Now is the time. We must decide whether to continue in the old way or to catch up with the most developed countries in the world.' She pointed out that the current situation is truly unique. At the European level, decisions are currently being taken on the unprecedented Recovery Plan and the Multiannual Financial Framework, which sets out the EU's financial priorities for 2021–2027.



The Deputy Prime Minister named three main areas requiring attention and reform. First, there is the historical legacy of **environmental problems and the partially built sewerage system**, both of which directly affect quality of life in Slovakia. The second important area needing structural reform is healthcare, education and regional self-government. She emphasised that **the modernisation of Slovakia cannot take place without the launch of the green economy and digitisation**. 'We should not start the green reforms simply because the EC tells us to, but out of the conviction that it is the only way to achieve a sustainable environment and development,' stated Veronika Remišová.

According to the Minister of the Environment of the Slovak Republic, **Ján Budaj**, the European Union is returning to its roots and the European Coal and Steel Community, with its emphasis on climate policy and energy. In addition to the necessary structural reforms, and investments in nature conservation and environmental solutions, there is a major problem: rampant corruption. He pointed out the possible consequences of climate change, specifically periods of drought, extreme weather fluctuations and migration flows. **He thinks water is an underappreciated part of Slovakia's wealth that deserves more attention and protection**: 'At least 5–10% should be nonintervention zones, otherwise the whole of the north of Slovakia will dry up. Investing in national parks means investing in the best water retention equipment. No dam can replace that.'

Andrej Doležal, Minister of Transport and Construction of the Slovak Republic, would prefer to focus on **upgrading the railway** infrastructure and investing up to two billion euros in it: 'We must reform rail transport effectively. It is synonymous with the green economy.' Rail is a much greener alternative to road transport, as the latter accounts for up to 70% of all transport emissions. Nevertheless, he also presented an extensive road repairs plan, as roads are used by millions of people every day, and many of them are in disrepair. In terms of construction, the Minister has set himself the goal of ensuring **public and residential buildings undergo extensive renovation**. Improving the energy efficiency of buildings promises to bring financial savings and improved quality of life. The reform plan will complement the changes to the building legislation by introducing digital spatial planning.

Karol Galek, State Secretary of the Ministry of Economy of the SlovakRepublic, focused on energy in his speech. He suggested the funds should be used in three areas. The first is **energy efficiency** – not just in the buildings sector, but in updating infrastructure. He also thinks **renewable energy sources** (RES) are important. In his opinion, Slovakia needs to increase its RES share whilst improving the integration of RES in the transmission system. In this context, he drew attention to the European Commission's Winter Package, which Slovakia will have to implement by autumn 2021. Last but not least, he mentioned **decarbonisation**, namely **thermal power plants**. He sees potential in converting power plants for use with other fuels and in the sensible investment of European funds in transforming mining areas.

Norbert Kurilla, Advisor to the President of the Slovak Republic on the Environment, Energy, Climate Change and the Business Environment and former state secretary of the Ministry of the Environment, welcomed the plans and priorities presented by the five government officials: 'I think that the reform plan is set correctly. Building renovations, the integration of renewable energy sources and the promotion of energy efficiency and clean mobility are areas that have long-term deficits, and the European Commission has noted that as well,' said Norbert Kurilla. He sees the large-scale renovation of buildings as a good opportunity from an energy perspective, but also as a tool for stimulating the labour market. Every €100 million invested in this area is estimated to create up to 3,500 new jobs.

PANEL II – PRESENTATION OF THE WORLD ENERGY OUTLOOK SPECIAL REPORT: SUSTAINABLE RECOVERY



Chair of the panel: Ingrid Brocková *Keynote speech:* László Varró *Commentary:* Martin Jirušek

Ingrid Brocková, State Secretary of the Ministry of Foreign and European Affairs of the Slovak Republic, emphasised that even though we are faced with economic and health challenges, we have a chance to modernise our society and at the same time embark on a path of sustainability. Therefore, we should be optimistic about a sustainable future and clean energy. She referred to a statement by Fatih Birol, Executive Director of the International Energy Agency, who said the pathway to clean energy was becoming clearer: solar and wind energy prices are falling, extremely low interest rates are paving the way to investments in clean technologies, there are clear political intentions to combat climate change and air pollution, and energy company portfolios are being diversified into different technologies.

László Varró, Chief Economist at the International Energy Agency, presented a special edition of World Energy Outlook – the impact of the coronavirus on global energy demand. Antiepidemic measures have reduced travel and social contacts, which has led above all to a decline in oil demand. Electricity demand fell in industry and production, but rose in households. However, the pandemic restrictions have not solved the longterm sustainability challenges. To achieve the sustainable development scenario, policies have to be introduced in energy efficiency, renewable energy sources and the transition away from fossil fuels.

Although the coronavirus led to the introduction of travel restrictions, people in large cities are prioritising cars over public transport, and sales of electric cars have risen in 2020, despite the economic recession. New investments in the oil industry have failed to meet expectations, and this declining trend may result in oil consumption declining by almost 9 million barrels per day by 2025. A longer-term trend is the decline in new investments in the electricity sector.

Financial incentives in the energy sector have a positive impact on the economy as a whole. The aim of the post Covid-19 recovery and long-term sustainability plan is to kick-start the economy, create new jobs and create sustainable energy. **Investments should be directed at improving energy efficiency, use of renewable sources and developing energy infrastructure**. Although 'green' jobs have yet to be clearly defined, the International Energy Agency estimates that the green economic recovery could create around 9 million of them.

In conclusion, László Varró reiterated what we learnt during the 2009 economic crisis: it is better to adapt legislation than to create completely new laws, take into account existing technologies, avoid large projects with complicated permit procedures, consider the available workforce and its capabilities and to think about the social consequences of our decisions.

Martin Jirušek from the Faculty of Social Studies at Masaryk University in Brno, talked about the Central and Eastern Europe perspective on the green renewal, especially the Czech view. He emphasised that the current crisis could mark the beginning of new policies and reforms, such as the acceleration of the downturn in the coal industry, with the European Union clearly being the political leader in these processes. Central Europe has an energy intense economy, which was revived after the fall of the communist regime thanks to the availability of cheap labour.

The Czech Republic is less optimistic about the energy transition, and reluctant to embark on green reforms. Besides the energy transition, automation is the region's biggest challenge. Both processes directly affect the automotive industry, which accounts for 10% of Czech GDP. Preserving nuclear energy is a priority for the Czech Republic. So far, economic recovery has not been aimed at supporting green policies, but rather at helping vulnerable customers or industries. **However, tax breaks or bonuses for investing in green technologies are currently being considered**. The Czech Republic, and Central Europe as a whole, lag behind in energy efficient buildings, especially in the public sector, have rising transport emissions and solar energy development is stagnating.

László Varró added that Central European countries should be more optimistic about the energy transition, as in the past the region has repeatedly showed its ability to make big changes. One of the region's advantages is that advanced electricity infrastructure and better energy efficiency would bring many economic opportunities. Martin Jirušek concluded that the region needs strong political leaders who will set clear green renewal goals.

PANEL III - MODERNISATION OF ELECTRICITY GRIDS

Chair of the panel: Andrej Juris Speakers: Ján Karaba, Martin Sliva, Tomáš Šipoš, Karol Kósa

Increasing the RES share and the energy transition generally present challenges for the transmission and distribution network administrators who must be flexible and able to ensure different amounts of electricity can be absorbed from many sources at different times. The answer is not to embark on the extensive reconstruction of transmission networks, but to focus on smart solutions, cross-border cooperation and easier access to the electricity market. The panel of experts on electricity distribution and production was chaired by Andrej Juris, Chairman of the Regulatory Office for Network Industries.

Ján Karaba, Director of the Slovak Association of Photovoltaic Industry and RES, described the use of renewable energy sources (RES) in Slovakia and the tools required for their further development: 'RES is currently one of the cheapest energy sources, namely photovoltaics and wind, but, of course, they must be deployed in specific areas.' In his opinion, alternatives to fossil fuels are becoming more and more attractive, and government co-financing is increasingly available. He thinks ACON (Again Connected Networks) and Danube InGrid will prove beneficial, since they will encourage the integration of transmission networks and help connect RES through smart grids, which will ensure security of electricity supply while maintaining affordable prices.

The expected increase in wind, hydro and solar energy as a proportion of the electricity produced is also set out in the National Energy and Climate Plan. Ján Karaba stressed that the **adaptation of the transmission system to enable the integration of RES** is also **economically acceptable**, because for instance there are new energy storage options that will reduce network demand whilst raising efficiency and security of electricity supply.



Ernst & Young senior consultant **Martin Sliva** provided more information on the necessary path to low-carbon electricity generation and decentralisation of transmission networks. By 2030, he expects the share of RES to be higher than that required by the European Union. He considers



decarbonisation, the reduced costs associated with reduction as a result of production decentralisation, efficiencies in electricity consumption brought about by digitalisation and growth in consumption owing to the increase in number of electric cars to be key energy trends. The solution is more intensive use of smart grids, as they reduce costs but do not place greater demand on transmission networks and make life easier for customers and electricity producers.

Martin Sliva sees great potential in financial resources from the EuropeanUnion.Ernst&Young,incollaborationwiththeEuropean Climate Foundation, have identified up to 1,000 European level energy and decarbonisation projects worth €200 billion that are in the advanced preparedness phase. Every million euros invested in this area could create up to 15 jobs. He recommends that Slovakia should make two legislative changes: **apply market conditions in relation to RES and adopt a new law on waste**.

Tomáš Šipoš, Head of Regulatory Affairs at Západoslovenská energetika (ZSE), agreed with the panellists that distribution companies will have to adapt to the new trends in electricity generation. He is in favour of building smart grids, which ZSE is already using to increase the share of RES, for example in the ACON and Danube InGrid projects. However, he did not agree that the Recovery Plan funds should be used for updating the infrastructure, pointing out that the approval processes and local procedures are lengthy and would make it difficult to comply with the requirement to draw down the available European resources quickly. He suggested the focus should be on smart energy technologies. He also thinks fully decentralising electricity distribution is unrealistic, given the difficulty of maintaining security of supply and prices. 'There is no need to increase the capacity of transmission networks, it can be managed through smart grids instead,' said Karol Kósa, Executive Director of the Electricity System Development Section of the Slovak Electricity and Transmission System SEPS. But changes are needed and transmission network flexibility should be improved through digitisation. Although he is optimistic, he estimates the energy transition will take decades rather than years to complete.

LUNCH SESSION - THE NATURE OF THE POST-PANDEMIC ECONOMIC RECOVERY IN THE V4 REGION: HOW GREEN COULD THE RECOVERY BE?

Chair of the panel: Ágnes Törőcsik *Speakers*: Martin Madej, Enikő Kácsor, Krystian Kowalewski

Ágnes Törőcsik, Researcher at the Regional Centre for Energy Policy Research (Rekk), stressed that the most important action in 2020 was the search for the most appropriate solution for economic recovery, in line with ambitious energy and climate policy goals. These are set out in the countries' National Energy and Climate Plans, submitted to the European Commission in January, shortly before the pandemic broke out. The green reforms require several billion euros worth of investments, but countries have seen GDP decline. While this decline is an economic challenge, it also presents new opportunities. The economic recovery should be focused on green investments, renewable energy sources (RES), improving the energy efficiency of buildings, involving local businesses and accelerating the closure of coal mines.

Krystian Kowalewski, Researcher at the Jagielloński Institute, presented Poland's energy policy, which will set long-term trends. The most important measure is the planned decline in coal-based electricity, which has caused a wave of unrest in the coal-mining regions, especially in Silesia. The miners, represented by strong trade unions, are an important group in Poland, and negotiations are currently underway to transform these regions. The deadline for the end of coal mining is set for 2049. However, the government reached an agreement with miners currently working in this sector that they will be able to continue working in mining until they reach retirement age.

The energy transition in Poland mainly affects the electricity infrastructure, where investments are needed for the incorporation of RES and energy storage. Offshore wind farms are being built and the first nuclear reactor is planned to begin operating between 2030 and 2040. Natural gas is an important transitional fuel and Poland is investing in the development of gas infrastructure and the expansion of the LNG terminal in Świnoujście.

Martin Madej, Researcher at the Association for International Affairs, drew attention to the importance of European Union grants and loans for the green renewal, using the example of the Czech Republic, where these form an important economic stimulus. Czechia has the potential to develop both wind and solar energy, but he stressed that administrative support is required in addition to financial support. At the same time, programmes are being prepared to improve energy efficiency in buildings and industry, to modernise public transport and decarbonise the heating industry. The problem is that the political leaders do not feel there is a need for the green recovery and think it conflicts with the measures to revive the economy



after the pandemic. If the Recovery Plan is based on the Czech National Investment Plan, the funds will go, for example, to developing transport infrastructure, but that will not help the Green Recovery. The green renewal is also hampered by the fact that no date has been set for the closure of coal-fired power plants, the lack of personnel and the lengthy permit procedures.

The panel was concluded by Enikő Kácsor, Researcher at the Regional Centre for Energy Policy Research (Rekk), who presented scenarios for the decline of lignite-fired power plants in Bulgaria, Greece and Romania, which may also be useful for the V4 countries. The scenarios show that both electricity networks and the economy as a whole will be affected. Although shutting down the power plants earlier than planned would lead to an increase in electricity prices, it would only be temporary and offset by 2030. Measures relating to energy efficiency and a higher share of RES would help to mitigate price increases. Moreover, lignite power plants already generate economic losses today, so closing them earlier would reduce these. The funds saved from not subsidising lignite power plants could be redirected to support RES use and energy efficiency and protect vulnerable customers.

PANEL IV - THE FUTURE OF GAS AND GAS INFRASTRUCTURE

Chair of the panel: Ján Klepáč *Speakers*: Catharina Sikow-Magny, Martin Bartošovič, Milan Sedláček, Marek Paál

Slovakia has the second most dense gas infrastructure in the EU and natural gas is a primary energy source. In the short term, gas could become a substitute for high-emission solid fuels, which are another source of air pollution. The next step will be to combine methane and hydrogen, obtained by electrolysis using excess energy from renewable energy sources. In this context, Ján Klepáč from the Slovak Gas and Oil Association noted that one of Slovakia's advantages is that it has an efficient transmission network and large gas storage tanks.

The fourth panel, on gas and gas infrastructure, was opened by **Catharina Sikow-Magny**, Director of the Internal Energy Market Section at the European Commission. She thinks a 55% reduction in emissions by 2030 is realistic given the falling price of renewable energy sources (RES). She pointed to the growing demand for biogas and synthetic methane, which she sees as a suitable substitution for achieving carbon neutrality by 2050. She expects the **existing gas infrastructure will be used to distribute new, greener alternatives**. Catharina Sikow-Magny also reminded participants that there will be enough funding in the Just Transition Fund to transform the former coal regions.

Martin Bartošovič, General Director of Nafta, described the emission targets as too ambitious, saying that although we already have the necessary technologies, they are either too expensive or the transmission networks have not yet been adapted for use with them. He focused on hydrogen and methane. He noted that 'There was coal gas when the gas industry began and it contained 55% hydrogen, so the proposal that this mixture should be used is not new.' Since 2014, Nafta has been filling storage tanks with a mixture of methane and hydrogen which can be used to produce electricity or as fuel for vehicles. However, he pointed out that as yet not all the transmission networks can be used to transport this kind of gas. While methane is obtained from standard deposits, excess energy from RES can be used in electrolysis to produce hydrogen in a suitable form (H2). Martin Bartošovič suggested that **Europe should have standardized technical parameters**, since the gas market is highly interconnected and bilateral agreements with neighbouring countries are not sufficient.

Milan Sedláček, Head of the European Affairs and Strategy Section at Eustream, presented the views of gas carriers on decarbonisation. He stressed that the gas infrastructure was increasingly interconnected, improving energy security in Slovakia, which has the second largest natural gas network in the EU: 'In Central and Eastern Europe natural gas is irreplaceable in the short and medium term. In the long run, it will be necessary to use other gases, but we must take methane emissions into account.' Therefore, Milan Sedláček currently sees natural gas as an ideal substitute for solid fuel heating. Although it is a fossil fuel, it is much cleaner and the supply network is well-developed so it is energy-safe and affordable. Like Martin Bartošovič, he thinks the transition to hydrogen and methane will be the next step, considering the existing technological possibilities for minimising methane leaks.

Marek Paál, Head of the Distribution Services Section of the Slovak Gas Industry (SPP), stated that gas combustion produces lower emissions and minimal particulates compared to wood or coal. Comparing Slovak data from 1990 and the present day, Marek Paál pointed out that energy sector emissions have decreased, while transport emissions have increased. 'Slovakia ranks 9th among carbon dioxide emission producers in the EU. Once we stop using coal, we will be 7th. **However, the problem is that the Slovak economy is energy intensive**, almost double the EU average.' He thinks the solution lies in **improving energy efficiency and using decarbonised gases such as biomethane or hydrogen**. In the future, he can imagine them being used in transport as well, as there are 133 biogas plants which could, with government support, be converted to biomethane.



PANEL V - INNOVATIONS IN TRANSPORT

Chair of the panel: Ondrej Matej *Speakers:* Jacek Mizak, Peter Badík, Peter Mozolák, Peter Hegeduš

The speakers agreed that infrastructure support is key to developing alternative propulsion transport. Ondrej Matej, director of the Institute for Transport and Economy, introduced the discussion by stating that transport produces up to 25% of total emissions. The environmental convention says that we should reduce emissions by 50% by 2030 and by as much as 90% by 2050. That represents a major challenge, which is why the discussion focused on the energy sources that could replace fossil fuels in transport.

Jacek Mizak, Expert at The Electric Vehicles Promotion Foundation, provided insights into the task of reducing transport emissions in Poland. The original ambitious goal was one million electric cars by 2025 but this was reduced to 600,000 after attracting criticism. To achieve this new goal will necessitate building **a charging infrastructure network**. He also talked about IZERA's plans to produce electric cars, which would involve building a green factory in Silesia by 2023 and producing 50,000 electric cars a year.

The Polish Recovery and Resilience Plan is not yet publicly available, but 20 priorities have been published for discussion, including **energy efficiency**, **renewable energy sources and sustainable transport**. Jacek Mizak was critical of the focus on cycle paths and pedestrians in the transport section and felt that low-emission transport should have been addressed.

Peter Badík, Managing Director of GreenWay, explained the company was one of the founders of ChargeUp Europe. He emphasised that **the green industry is a huge opportunity for Europe, and therefore for Slovakia as well**. It is an opportunity not only for politicians, but also for entrepreneurs, who should use the green renewal as a means of achieving growth and innovation. By 2030, electric cars will account for 30% of all registered vehicles, which will fundamentally transform the automotive industry as well as other business spheres. Transport emissions are rising mainly due to the increase in passenger transport so electromobility is the best means of achieving the climate goals for this sector. In addition to the environmental benefits, there are industry opportunities and up to a million jobs could be created, for example in developing the charging infrastructure.

Peter Badík pointed out that developing the charging infrastructure should be considered when renovating buildings. Electromobility brings great network flexibility and higher use of renewable energy sources (RES). Other things that should be considered in the Recovery Plan are investing in changing distribution networks, supporting charging infrastructure, introducing a scrapping scheme and renewing the public electric vehicle fleet.

Peter Mozolák, Executive Director of SPP CNG, stated that natural gas is a suitable transit fuel for achieving the overall reduction in transport emissions. The CNG model copies the traditional vehicle fuel supply model, which is an advantage as



users simply fill their vehicle as they would a petrol or diesel one. Gas stations can also serve several hundred customers a day and there is no time limit, as there is with charging. **However, the CNG infrastructure is not harmonised across Europe**. Peter Mozolák pointed out that if we exchanged the natural gas molecule for a renewable one, we would get a classic internal combustion engine that produces almost no emissions. Yet, car manufacturers are set up to produce classic internal combustion engines, and that ties up a lot of the workforce. In addition, CNG and LNG fuels are suitable for use in cargo and shipping. In Slovakia, the CNG infrastructure is not sufficiently developed, but CNG vehicles are already affordable. He concluded by saying that when developing transport (and other things), we should seek **value for money** and invest sensibly.

Peter Hegeduš, President of the Slovak National Hydrogen Association, said that hydrogen in transport could be the fuel of the future because it is a universal energy carrier. It could play a key role in decarbonising transport, and in the whole economy. Hydrogen has the disadvantage of being least widespread and least available. It could play a major role in the difficult-todecarbonise segments: freight, shipping, aviation and rail.

The aim is to produce green hydrogen from renewable energy or low carbon hydrogen from nuclear energy. Peter Hegeduš emphasised that decarbonising transport would also contribute to the country's energy self-sufficiency. In developing hydrogen transport, the infrastructure has to be built first, followed by the development of education, research and innovation.

When asked what the most suitable fuel of the future was, **Peter Mozolák** stated that it should be cost-effective and fair. **Jacek Mizak** added that life-cycle analysis is important in this sector and different types of fuels should be compared. In electromobility, the country's energy mix is key. **Peter Badík** noted that views on transport are fundamentally changing and quality is very important. The winning fuel should be a technology that enables us to live in a clean environment. **Peter Hegeduš** concluded that long-term sustainability is key and the market will decide what type wins. The speakers also agreed that it was crucial to promote cycling and public transport in cities.

PANEL VI - GREEN RENOVATION OF BUILDINGS AND HOUSING STOCK



Chair of the panel: Artur Bobovnický *Keynote speech*: Katarína Bruncková *Speakers*: Zuzana Sternová, Peter Robl, Jerguš Vopálenský

Slovakia has a high proportion of private and public buildings that are energy-inefficient. However, the state is investing relativelylarge amounts of money into renovating buildings, and plans to combine this more with European sources of funding. The current legislation on energy efficiency requirements for buildings is sufficient, but strict compliance with standards is not properly enforced. Another problem is energy poverty and the use of solid fuel for heating, which causes air pollution, health problems and produces higher emissions. The complete renovation of buildings would require construction companies to adopt new technological approaches and raise employees' skill base. This panel was chaired by Artur Bobovnický, Director of the Innovation and International Cooperation Section of the Slovak Innovation and Energy Agency.

Katarína Bruncková, State Secretary of the Ministry of Transport and Construction of the Slovak Republic, opened the panel by giving a detailed presentation. Although Slovakia is a leader in building renovations, the government has set itself the goal of obtaining as much funding as possible from the Renovation wave for home insulation. The Secretary of State pointed out that the government's programme statement included several points aimed at climate protection, such as the construction of low energy buildings and use of intelligent technologies, and completely renovating and transforming existing buildings.

Katarína Bruncková thinks the elimination of system failures, the provision of insulation, and reduction in the energy intensity of residential buildings should be financed out of the State Housing Development Fund. Non-residential buildings should be funded out of grants from the Environmental Fund of the Ministry of Environment and European sources. 'The legislative mechanism and pace are appropriate, but there is still room for improvement and I believe that the financial ambitions that we have outlined in the Recovery Plan will become a reality. We would like to get €150 million to spend on insulating flats,' said the Secretary of State. In addition, she plans to create an instrument aimed at **restoring historic buildings** that will satisfy both energy professionals and conservationists. Zuzana Sternová, Director of the Building Testing and Research Institute, said that although building renovations save energy, improve building safety and prolong their service, life must come first. She emphasised that energy efficiency is also affected by the way the building is managed and the climatic conditions. Before buildings are renovated, **the building's technical state must be assessed, the project documentation prepared and owners should be made more energy aware.** Construction companies should be reorganised so they can carry out all aspects of renovations and raise workers' skills, as they should be able to use innovations, such as prefabrication. This could facilitate and speed up the renovation of buildings.

Peter Robl, Chairman of the Board of the Buildings for the Future platform, pointed out the need for a long-term renovation strategy. Although Slovakia is relatively well off compared to other member states, up to 75% of Slovak buildings are energy inefficient, which is why the European Commission recommends doubling the current pace. Especially since 80% of existing buildings will still be in use in 2050, which is when the EU wants to be carbon neutral. 'Climate change, aging populations and urbanisation indicate that we will need more buildings with better thermal properties.' The fact that a tenth of new buildings do not meet current energy performance standards is unacceptable. He sees great potential in the million plus houses in Slovakia. Most are over 40 years old and their energy consumption could be significantly reduced. In public buildings, though, the pace of renovation should be accelerated and greater use should be made of European financial resources.



Jerguš Vopálenský, Head of the Network Business Development at SPP – distribúcia, emphasised that buildings with solid fuel furnaces have a large impact on air pollution, health and emissions. 'Roughly 350 thousand homes are heated with solid fuel and 120 thousand of these have boilers that are more than 30 years old and little thermal insulation,' said Jerguš Vopálenský, adding that most of the pollution generated by heating homes relates to the poorer section of the population. Therefore, he thinks state aid should be targeted primarily at this section. The solution is to introduce mass state support for replacing old boilers, or for installing heat pumps, which are less affordable. In terms of the legislation, clear energy efficiency requirements would need to be set, but the choice of technology would be up to the builders.



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