Minutes of Meeting

6th Regional Exchange of Modelling Experts involved in the Development of Integrated National Energy and Climate Plans (NECPs) in the South-Eastern European Contracting Parties of the Energy Community

BUILDING UP MODELLING CAPACITY FOR INTEGRATED ENERGY AND CLIMATE PLANNING

DATE: January 21st, 2021
VENUE: Virtual exchange via MS Teams

AGENDA

09:30 - 09:40 Opening remarks and introduction

09:40 - 10:00 Expert presentation: "Impact of the COVID-19 pandemic on the economy and energy sector in North Macedonia – New GDP projection developed as a part of the Energy Strategy" (Mr. Aleksandar Dedinec/ MANU)

10:00 - 10:20 Expert presentation: "Experiences with GDP projections and impacts from former economic crisis" (Mr. Wolfgang Eichhammer/ Fraunhofer ISI)

10:20 - 10:45 Discussion

10:45 – 10:50 Next steps

PARTICIPANTS[1]

ALB: Alma Saraci/ National Agency for Natural Resources	MNE: Bozidar Pavlovic/ Ministry of Economy	SRB: Jelena Simovic/ Ministry of Mining and Energy	Fraunhofer ISI: Wolfgang Eichhammer
ALB: Andonaq Londo/ Polytechnic University of Tirana	MNE: Zoran Miljanic / University of Montenegro	SRB: Ilija Batas Bjelic/ Institute of Technical Science of SASA	Fraunhofer ISI: Johannes Eckstein
ALB: Orion Zavalani/ Polytechnic University of Tirana	MNE: Neno Jablan/ CGES	SRB: Petar Ilić	Fraunhofer ISI: Fabian Voswinkel

[1] ALB: Albania, BIH: Bosnia and Herzegovina, MNE: Montenegro, MKD: North Macedonia, SRB: Serbia, XKX: Kosovo*, GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, ECS: Energy Community Secretariat, Fraunhofer ISI: Fraunhofer Institute for Systems and Innovation Research, MANU: Macedonian Academy of Science and Arts, SERA: Institute for Sustainable Energy and Resource Availability

BIH: Branka Knežević/ Ministry of Foreign Trade and Economic Relations	MNE: Jasna Sekulovic/ GIZ	SRB: Svetlana Bacanin/ GIZ	Fraunhofer ISI: Matthias Reuter
BIH: Admir Softic/ Ministry of Foreign Trade and Economic Relations	MKD: Aleksandar Dedinec/ MANU	XKX: Adnan Preniqi/ Ministry of Economy and Environment	SERA: Susanne Geissler
BIH: Dubravka Bosnjak/ GIZ	MKD: Natasa Markovska/ MANU	XKX: Arberesha Isufi/ Ministry of Economy and Environment	ECS: Borko Raičević
BIH: Julia Nagel/ GIZ	MKD: Verica Taseska-Gjorgjievska/ MANU	XKX: Biljana Cherepnalkoska	ECS: Irina Lazzerini
BIH: Esad Smajlovic/ GIZ	MKD: Samir Memedov/ GIZ	XKX: Zdravko Stefanovski	ECS: Tibor Schaffhauser
BIH: Goran Krstovic/ GIZ		XKX: Dukagjin Bakija	ECS: Anja Rosenberg
BIH: Milenka Knezevic/ GIZ		XKX: Nexhat Jashari/ GIZ	XKX: Carlo Winterscheid/ GIZ

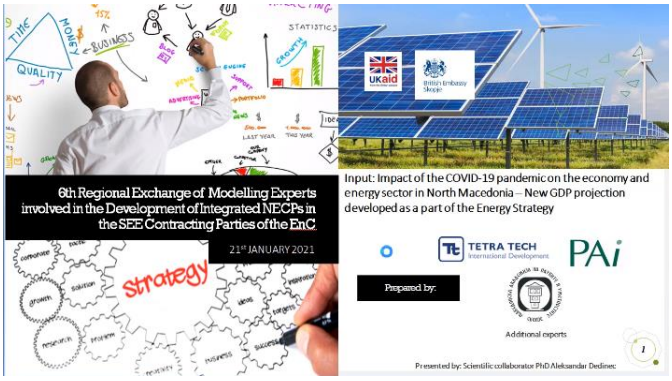
OPENING REMARKS AND INTRODUCTION

The representatives of GIZ and Energy Community Secretariat have welcomed the participants and raised their appreciation for having Serbian representatives joining the event for the first time in the series of five exchanges that have been organized so far.

Having shared the purpose of the exchange, the floor was given to Mr. Aleksandar Dedinec to present the North Macedonian case and get all participants familiar with the GDP re-projection developed as a part of the Energy Strategy based on the impact that Covid-19 pandemic made to the economy and energy sector in North Macedonia.

EXPERT PRESENTATION – North Macedonian Case

Being thankful to the opportunity for presenting the Covid-19 impact to the North Macedonian economy and energy sectors, Aleksandar has provided his presentation focusing on the new GDP projection developed for revision of the National Energy Strategy.



Upon development of the draft NECP, MANU has worked in development of a separate study for industry, national energy action plan, long-term climate strategy, and NDCs. The next stage is preparation of the action plan for implementation of the Energy Strategy.

Before starting the process for development of the Program for implementation of the National Energy Strategy, the country decided to assess the impact made by Covid-19 and appropriately make an update of the energy strategy.

In order to update the strategy, a White Paper has been developed integrating all collected input data, and special analysis on social and gender perspectives have been conducted and integrated in the strategy. Currently experts are running the process of development of the Program for Implementation of the Strategy and Communication Strategy that will support the process of communicating the strategy with all stakeholders.

MANU are using MARKAL model for long-term analysis and modeling of the national energy sector. Eight months period (Jan – Aug) in 2020 has been used to make comparison with the situation in 2018 and 2019. The period of March – May, the lockdown has resulted in decreased electricity consumption in several sectors including industrial with the exception of the household sector. When it comes to the electricity supply, the export of electricity faced a slight decrease while the import was slightly increased; but this is not due to Covid-19 but because of the challenges faced with the lignite power plants and substantive decrease of the water in the hydropower plants.

The electricity price declined to 20EUR per MWh and at some picks achieved a 10EUR per MWh. There is significant decrease in the use of the oil consumption. This is based on the serious challenge that the transport of people and goods is facing during the pandemic, including the lockdown. The natural gas consumption is increased with no impact from Covid-19.

The GDP projections in the country were done based on the several analyses of parameters that have influence on the GDP. The investment has been analyzed showing significant decline in 2020. The international trade (export trade of industrial products, export of raw materials, inflow of direct investment in the economy, and financial flow of citizens working abroad) was carefully analyzed in order to provide high quality of input data for the GDP. Basic economic parameters have been analyzed for the (GDP growth) period of 2010 – 2019 including the period of the first half of the 2020. The unemployment rate increased. The credits have also increased. Trade balance has been reduced. Direct investments reduced etc.

The countries that North Macedonia is having an international trade with have been also analyzed from the perspectives of their GDP growth. Germany, Great Britain, Greece, Serbia, Bulgaria etc. are the countries that North Macedonia is having an international trade of goods. The GDP relevant parameters from different institutions have been also analyzed. The highest projection is coming from the Ministry of Finance (6%) while all other institutions are showing reduced percentages.

The projection considers significantly reduce of impact of the pandemic by the end of the second quarter of 2021. The Government will not use extremely strict restrictions. On the third and fourth quarter of 2021, significant recovery of the national economy is expected to be evident and after 2022 the GDP will perform according to the long-term plan developed.

Based on this a new GDP growth a projection has been made for the energy strategy considering the perspectives that each 10 – 15 years a deeper economic crisis should be expected and that smaller economic downturns can be anticipated in between.

Industrial index growth was also analyzed in order to come up with appropriate projection of the expected final energy consumption. The analysis confirmed the fact that the increase of industrial growth stimulates the GDP growth. For each sub-sector of the industry a specific analysis has been made which is different from the approach taken during the preparation of the national strategy where the same growth rate has been used for all industrial sub-sectors.

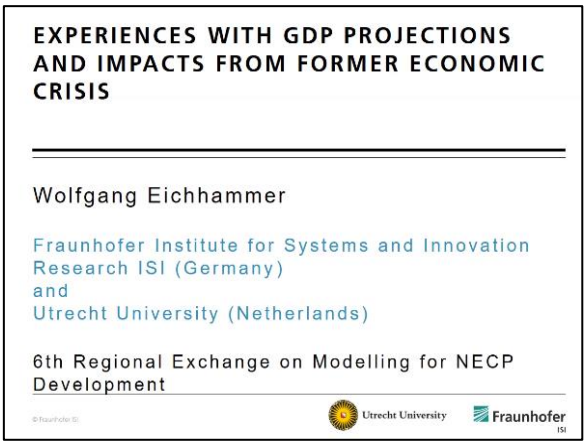
The electricity consumption is increasing while in the installed capacities during the year 2020 shows no changes. However, there is slight increase in the gas systems.

The conclusion is that the Covid-19 has no significant impact to overall electricity consumption. There is an influence on the oil consumption in the country. Some of the investments are postponed for 2 years.

EXPERT PRESENTATION - Experiences with GDP projections

Mr. Eichhammer took the floor for presentation of the reliable experience in GDP projections and impacts from former economic crises.

Originally the plan was to provide insides to the impact of Codid-19 on European Union level where Odyssee indicators[2] and short-term projection methodology were used to analyze the 2020. However, the report is going to be available in the forthcoming months so the findings cannot be presented now but the report is going to be shared with this forum once it is published.



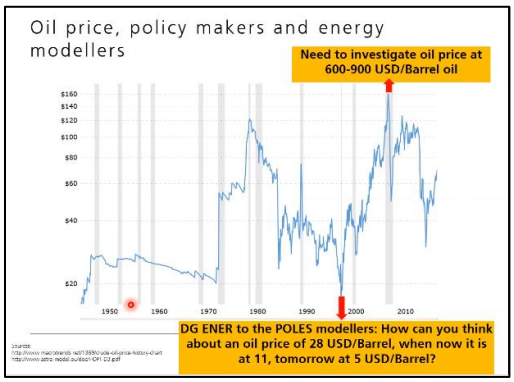
In that sense, Mr. Wolfgang Eichhammer used the floor to provide some general insides into GDP projections related to energy and if there were some differences between the projection and the reality.

The presentation has been focused on: (i) the belief in endless growth; (ii) miss-guidance by present day frame conditions; (iii) the lack in understanding structural change; (iv) underestimate innovation and the impact of dedicated policy; and (v) the eternal policy gap.

[2] https://www.indicators.odyssee-mure.eu/

Analyzing the projections in different countries including Germany and USA made back in 1950's and 60s' there is very visible the model of endless growth that faced significant failure in practice.

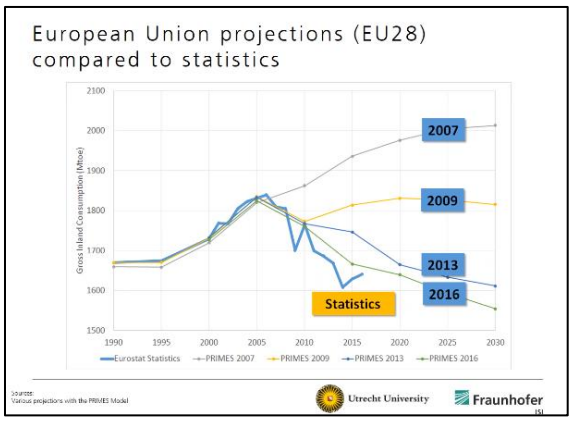
Making a link with the North Macedonian case that has been presented by Aleksandar, we are facing quite regular situation where some lead institutions in the country (such as the Ministry of Finance in North Macedonia, in this case) are having very optimistic view on the country's development that further makes challenges in the projections of other sectors.



When discussing the miss-guidance by present day frame conditions, it is good to illustrate the projections with the oil price. In 1998 there was a strong economic crisis in Asia when model for oil projection supposed to be made. At that time the oil price was 11 US$/Barrel and modelers have projected 28 US$/Barrel oil due to the data that have served the global market predictions.

This example shows how the present conditions largely influence the process of making our projections.

Something that has been identified as a significant challenge is the lack in understanding structural change. This can be illustrated with the projections made by European Union.

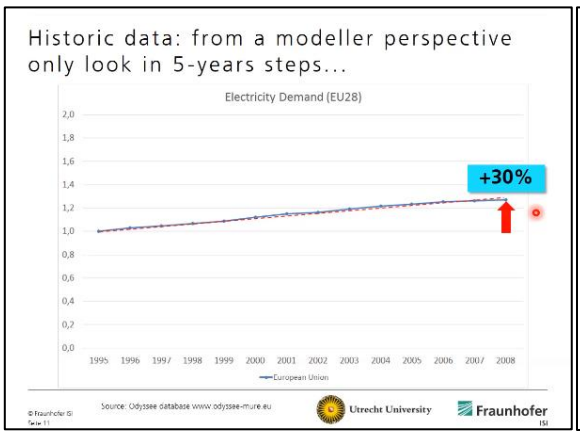


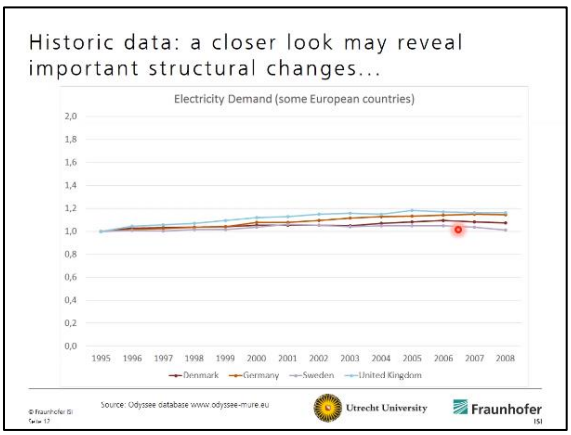
The Primes model has been used in 2007 to present the expected economic growth of the EU. Since this projection failed at the very first year, additional projection was done in 2009 and further in 2013 and 2016.

If we compare the projections with the real statistical growth (blue line), the reality is very different then the projections made by the EU modelers.

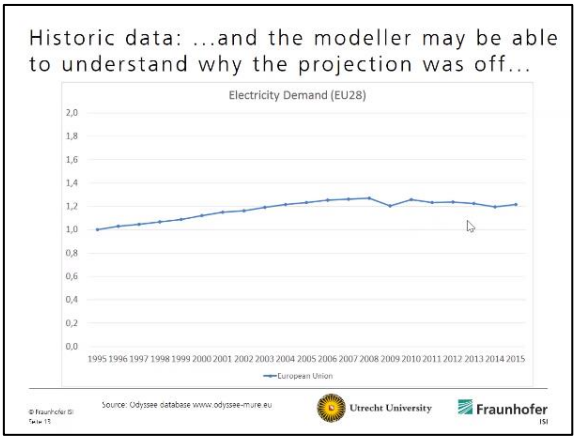
This could be avoided if we could have a more detailed analysis of the historic data that showed that already in 2005 there was a negative trend/s that influence the projection curve.

The analysis of the electricity demand could be taken as a good example of need for detailed analysis:



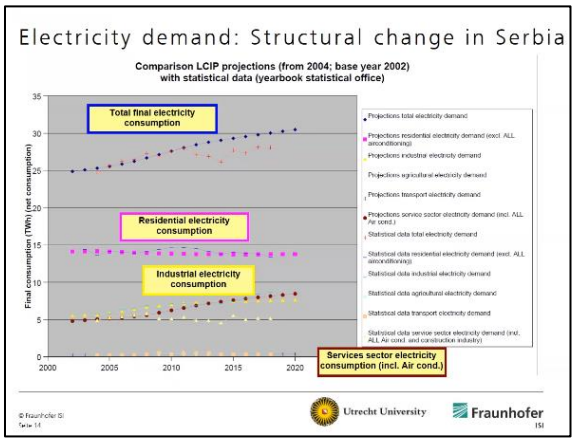


The first figure provides information on the total electricity demand of the EU member states where the growing curve is quite stabile and predicts continuation of the "positive" (growing) trend. However, analyzing the demand of the 5 very influential members of the EU, a change could be evident in 2005 and even becoming very obvious in 2007 when the projection was made. The figure shows that their peaks in electricity demand has been already achieved and the trend of decrease has been initiated.



At the end, the statistics confirmed the failure of the "ever growing projection" approach used by the EU modelers.

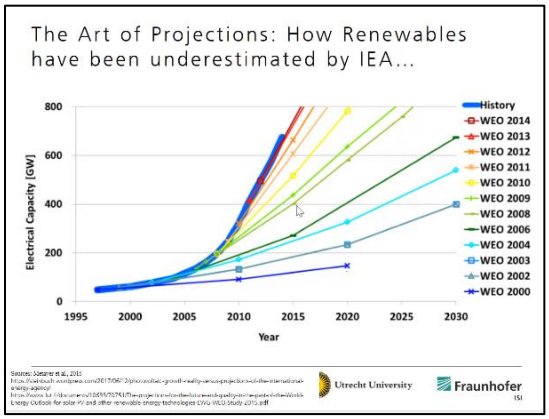
Serbian case of modeling (electricity demand) was also presented to demonstrate the challenges that could appear when input data are considering endless growth.



The projection for 2020 was made in 2004 with the data from 2002. The Serbian supply body (IPS) advocated a 9% economic growth per year till 2020. Based on the analysis of the local and regional parameters, the modelers came up with 4% economic growth that has been used for modeling the electricity demand.

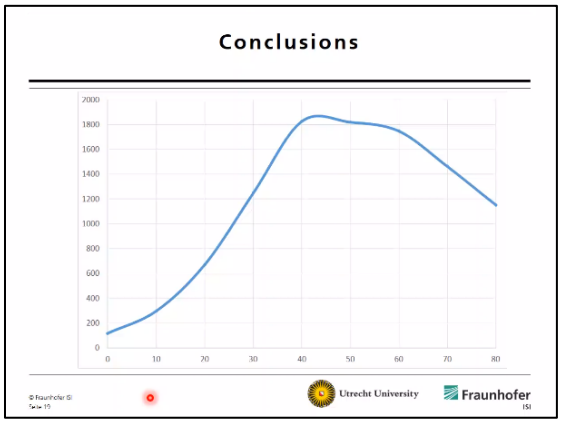
The figure shows that the projection on the residential electricity consumption have been very close to the real statistics. The same applies to the industrial electricity consumption.

This case serves as a good example how overestimation of economic growth could have faced complete failure due to the fact that it would have influenced the plan for large investments (such as large hydropower plants, rapid gas installation etc.) that in reality would not be needed.



Something that has been also identified as an area of miss-estimation is the projection of growth of the renewables.

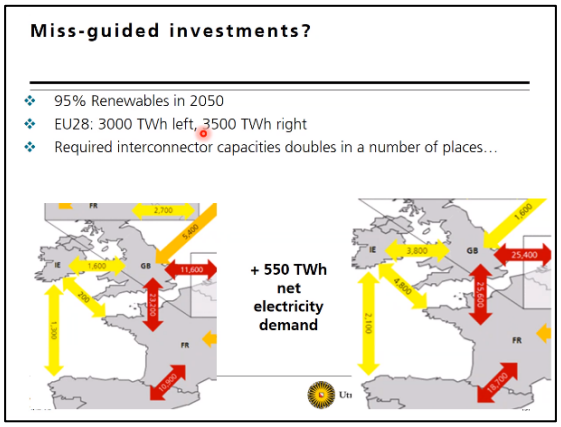
This figure shows the largely underestimated entry of new energy technologies and underestimation of the innovations in the energy sector.



To conclude, when it comes to energy demand, we are often facing a curve without limitation that at the end it doesn't work in practice.

The modelers are facing such no-limitations curve and that is always recognized as a challenge. The impact of structural changes and policies must be integrated in order to have appropriate projection.

The modelers have to be aware of the fact that the energy sector has an extremely high impact to the country's economy and in that sense the projections have to be as much close to reality as possible. Based on the projections further large-scale investments are made and failure in this area could significantly influence the project economics.

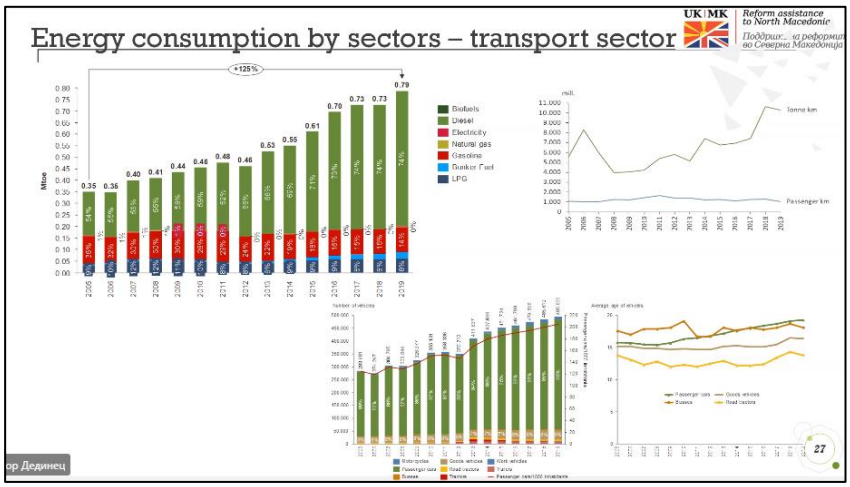


Just to illustrate the miss-guided investment, this figure shows the EU's projection for 2050 where 95% increase of renewables were planned with either the projected demand of 3000TWh (left side) or 3500TWh (right side). The latter would lead to doubling of required interconnector capacities and related investments.

DISCUSSION

The floor was opened for discussion and Aleksandar used this opportunity to confirm the guidance provided by the Wolfgang and also explain that this is the reason why MANU used the 10 years historic data and applied in-depth analysis for several sub-chapters in order to identify the possible points of change and accordingly make appropriate calibration of the model.

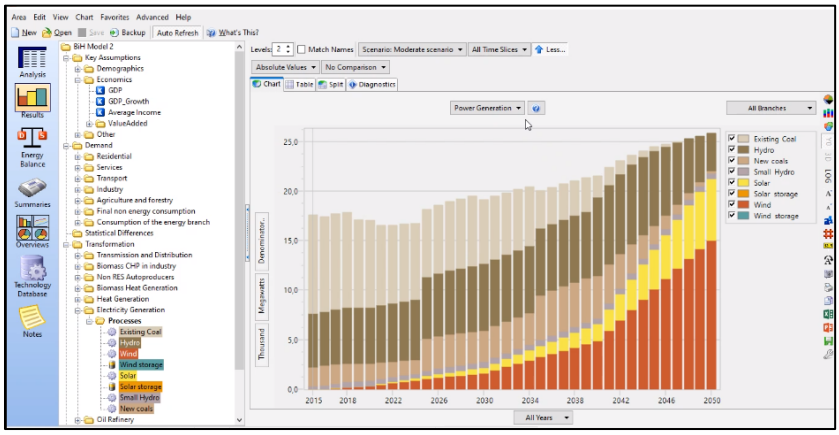
Those analysis confirmed Wolfgang's estimation on residential and industrial consumption of energy but also showed a totally different statistical curve when it comes to the transport sector.



The energy consumption in transport sector is rapidly increasing and this is considered as a challenge due to the uncontrolled number of imported cars. Having doubled number of cars for the last 12 years is showing the impact of this sector.

Ms. Arberesha Isufi was interested in which parameters in the projection have been changed in the updated version of the national energy strategy. The number of vehicles, ton per kilometers (almost doubled within last 15 years) and passenger kilometers are the indicators that are part of the parameters that have been changed. Comparing the data from 2017 and 2019, there is a rapid increase of the ton per km. In addition, we have increased number of years (age) of average vehicle – the average age of the vehicles is more than 19 years. By this, it is obvious that the energy consumption in transport sector is increased. The previous strategy considers increased penetration of new cars in the system, but the reality is saying that this is not feasible, so the revision considers penetration of new cars in the system to start raising after the year 2025.

Wolfgang has reflected the year 2035 in North Macedonian scenario where some serious economic crisis is anticipated, and this is something that brings some real ground to the projection. When it comes to the transport sector, this is a matter of discussion. There could be changes ahead such as technical trends e.g. entry of electric cars , but also policies that stipulate reduced size of the cars and emissions. The trend of opening discussions if there is a real need for having cars that weight 2t and more is also something that is becoming regular. So, social pressure could also be considered a trend that will result in changes in that subject.



Mr. Esad Smajlovic took the floor to present the Bosnian initial projection for electricity production up to 2050 where the existing powerplants are about to be phased out up to 2050, hence enabling environment for having only solar and wind being reliable for energy production. Massive electrification is also expected by using the new installed capacities of the heat pumps and helping to bring down wood consumption.

Such scenarios require an extreme investment and should rely on the strong economic growth of the country. In that sense, the question to North Macedonian modelers is if they came up with establishment of direct link between those investments in different sectors (industry, transport, residential sector and public sector) and the investment in electricity consumption so to come up with an optimum scenario in this field. Aleksandar explained that in order to reduce the electricity consumption, there are more then 40 policies and measures proposed (some of them for reduction of electricity consumption and some for reduction of other fuel consumption) that contribute to reduction of greenhouse gas emission. The goal is to reduce around 51% of the GHG emissions in 2030 compare to 1990 or 82% in the net GHG emission reduction compare to the 1990. Electrification of the residential sector, biomass consumption in the households' sector, replacement of resistive heaters with heat pumps are taking into account. Electrification and gasification are also strongly analyzed and taken into consideration in the industrial sector accompanied with replacement of the lignite with gas and electricity. Electrification of the transport sector is also integrated in the projection, with 15-17% renewable share in the transport sector up to 2030.

Mr. Ilija Bjelic asked Aleksandar on how he and his team has presented the model and the initial NECP to the decision makers hence influencing the development processes of the country. Aleksandar explained that 5 years ago when the ex-national energy strategy was developed the situation was different. The process of development of the current national strategy is completely different, having decision makers actively contributing along the overall process of preparation. The recommendations (policies and measures) covered by the strategy are also incorporated in the Governmental political program for 2025, hence having Government not only having agreement with the strategy but also being committed for its implementation.

Having no further questions and comments, the meeting was closed by inviting all participants to provide their topics of interest that should be covered with the next set of regional exchange meetings that are going to be organized by GIZ and Energy Community.

Minutes: Samir Memedov

GIZ ORF ETC Country Coordinator for North Macedonia.