Position of SAPI on National Energy and Climate Plan of Slovakia

The NECP was submitted to the public in Slovakia only after it was sent to the European Commission, which was criticized by many associations, employers' associations, companies and experts.

We believe the plan was not prepared with enough time and with due diligence. Moreover, its goals and trajectories are inadequate nor ambitious enough; basic calculations are not based on the currently valid data and they do not even include Slovakia's real potential to develop RES technologies.

Key comments on the NECP draft:

- NECP should follow more realistic scenario of gross final energy consumption trajectory.
- We recommend increasing of PV power plants installed capacity target for 2030 to 1.200 MWp, compared to NECP draft at 750 MWp.
- V4 climate policy and plans should be more under supervision of EK and reflect more ambitious targets for protecting common climate.

The plan foresees a 12% reduction of greenhouse gas emissions by 2030 (compared to 2005). However, such a measure is not in line with the Paris Agreement. A sufficient measure would be a reduction by 55% compared to 2005 and by 45% compared to 2010. Moreover, since 2014, Slovakia's total emissions have not declined at all. The positive effect of increasing the share of biofuels in motor fuels is questionable. In addition, emissions in civil aviation continue to grow.

Carbon dioxide (CO2) emissions from the combustion of fossil fuels rose in Slovakia in 2018 by 2.4 percent compared to the previous year, although they fell significantly, by 2.5 percent, across the European Union.

Slovakia belongs to a group of eight-member states of the Union, in which emissions rose, with the sixth worst rank. Most Slovak neighbors were doing better, as emissions in Austria fell by 1.1%, in Hungary by 0.8% and in the Czech Republic by 0.1%.

We also find necessary to draw attention to the erroneous starting point of the NECP regarding nuclear energy. Although it is considered to be a low emission source, it cannot, in any way, be regarded as emission-free; what the World Nuclear Association states. Such labeling of the nuclear energy is already quite common.

The big problem is that the NECP proposal is no longer based on current data. The whole analysis works with an outdated share of RES in final energy consumption. That is why we consider the planned increase from 14% of final electricity consumption to 18% by 2030 as an unrealistic plan. Moreover, the NECP proposal itself notes that up to 88.8% of the current energy mix is dependent on primary raw material imports: 100% nuclear fuel, 98% natural gas, 99% crude oil and 68% coal. For this reason, we cannot talk about safe and reliable, as well as low-carbon energy, since Slovak Republic is fully dependent on imports of these raw materials from third countries, what is neither strategic nor safe.

By 2020, renewable energy sources are supposed to cover up to 14% of gross final energy consumption in Slovakia. Official European statistics show the opposite direction for the second consecutive year. In 2017, these resources dropped to 11.5%, with a year-on-year

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decrease mainly in the electricity sector, but also in transport and heat and cold production. The cause of this development should be sought in domestic policies and so-called. "Stop status" when regional distribution companies have been preventing the connection of new sources with installed capacity above 10 kW since the end of 2013. However, the second reason is a significant increase in domestic energy consumption, which is related to economic growth. In 2017, Slovak final consumption increased by up to 7% year on year, the highest among all EU countries. At that time, electricity consumption exceeded a record level of 31 TWh. Given the annual growth in gross final energy consumption and almost no increase in new renewable energy sources since 2014, it is not realistic that Slovakia would achieve the targets it has committed to by 2020. Even these goals, which we were supposed to reach by 2020, have been reduced in comparison with other EU countries, and not only Slovakia is failing to meet them.

It is generally stated that the market is fundamentally distorted because of supporting RES. However, the European Commission's report on energy prices says that state aid in Slovakia has just risen to fossil fuels between 2008 and 2016. The same EC report also says that Slovakia is already among the countries with the highest fees (distribution and other relevant tariffs, fees and charges) for electricity (up to 40% of the total price). Therefore, it is necessary to introduce a reform of pricing, stop fossil fuel support and promote competitive renewable sources. The report also says that the increasing share of RES reduces impact of volatile fossil fuel prices on the markets. If the security of electricity supply is important for Slovakia and it is not necessary to increase the final electricity prices, it is necessary to abandon fossil fuels, what will have a positive impact on the stability of the electricity price. However, the growth in electricity end prices is the only effective way of reducing energy consumption and thus reducing CO2 emissions.

Comments on values presented in the table attached below:

Due to the high technical and economic potential of using solar energy to generate electricity in photovoltaic power plants, distributed generation in particular - to cover consumer consumption (so-called prosumer), we believe that the proposed trajectory is very ambitious. In case the distribution companies or transmission system operator (SEPS) do not block connecting of such sources to the systems, the potential of the installed capacity increase of at least 60 MWp per year, including the increase in performance through auctions. The plan expects 750 MWp of cumulative installed capacity in 2030, but our proposal supported by expert data targets for minimum of 1.200 MWp of installed capacity from PV.

Based on the numbers from 2017, in reality more electricity was produced from hydropower than what is stated as the basic assumption of the Ministry of Economy (MoE) in 2020.

Pumping power stations produce nowadays 423 GWh of electricity per year. NECP draft indicates 300 GWh in 2020 and no production in 2030.

In the case of wind energy, the production of the already existing 3 MW installed capacity is not included in the first years scenario since 2020; while production is about 6 GWh of electricity per year. At the same time, it is crucial for the economic utilization of the wind energy technical potential that the utilization factor is min. 2.25 GWh/MW, otherwise these investments will not be realized. However, for an unknown reason, the Ministry of Economy expects a lower factor. At the same time, the trajectory of the planned increase in installed

capacity needs to be adjusted in a view of the fact that there is currently no single wind farm project under construction with respective permits (e.g. connection agreement). It is therefore not realistic to assume that after a possible auction for 2020 (as it will not be able to do so in 2019) by 2022, private investors will be able to build 150 MW of wind capacity. We therefore assume a significantly more moderate increase in capacity.

In case of the use of biomass for the production of electricity in biogas plants, it is necessary to take into an account the fact that after the guaranteed feed-in price by 2025, 2026 and 2027 only an estimated 20% of facilities will remain in operation because the production will not be profitable. In these years, therefore, contrary to the assumptions of the MoE SR, we expect a decrease in installed capacity and thus also respective production. At the same time, please note that the capacity factor of a biogas plant currently does not reach the expected level of 7.8 GWh/MW, but, given the real experience with the operation of biogas stations, it is more relevant to assume a factor of 7.

- The share of nuclear production in gross final electricity consumption of Slovakia is about 50%,
- Fossil fuels represents app. 18%,
- Hydroelectric power plants app. 16%, and
- RES roughly 8%, of which PV almost 2%.

SAPI Recommendations for Policies and Measures for RES Implementation:

- A more realistic scenario for the development of energy consumption.
- Cost-effectiveness of construction by comparison of LCoE: PV and wind turbines are already the cheapest source of electricity today if we compare the total life cycle cost (LCoE) compared to fossil and other sources.
- Intelligent system management: With the smart grid management technical measures as well as the change in tariff structure, it is possible to unblock significant capacity to connect new energy sources to distribution systems.
- Development of storage systems.
- Ambitious objectives: As the Prime Minister of the Slovak Republic Peter Pellegrini suggested at the European Council summit, they are important to comply with the Paris Climate Agreement commitments. Slovakia, as a country heavily dependent on the import of all energy carriers, may have the ambition to at least significantly increase the share of RES in energy consumption while maintaining economic efficiency (comparing the cost of building resources and the savings of energy carriers during the planned lifetime of resources).
- Based on our analysis, we recommend a more ambitious trajectory with the aim of increasing the total combined installed capacity of RES power plants to 3.804 MW, which is equivalent to an estimated production of 9.662 GWh in 2030 (compared to the proposal of the MoE SR at the level of 3.259 MW, or 8.822 GWh).

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Estimation of total contribution (installed capacity, gross amount of electricity produced) of respective renewable energy technologies for electricity generation in the period of 2020 – 2030 in Slovakia:

	2020 NECP		2020 SAPI		2030 NECP		2030 SAPI	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:	1,626	4,464	2,539	4,676	1,755	4,822	1,755	5,212
<1 MW	*35*	*102*	*35*	*102*	*45*	*131*	*45*	*131*
1 MW – 10 MW	*60*	*168*	*60*	*168*	*100*	*280*	*100*	*280*
>10 MW	*1531*	*4195*	*2444*	*4406*	*1610*	*4411*	*1610*	*4801*
of which pumping:	*916*	*300*	*1017*	*423*	*0*	*0*	*1017*	*423*
Geothermal	0	0	0	0	4	30	4	30
Solar:	600	600	600	654	750	750	1200	1194
photovoltaic	*600*	*600*	*600*	*654*	*750*	*750*	*1200*	*1194*
CSP	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Tide / wave	0	0	0	0	0	0	0	0
Wind	20	40	3	6	350	560	503	1131.75
on-shore	*20*	*40*	*3*	*6*	*350*	*560*	*503*	*1131.75*
off-shore	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Biomass:	290	1848	290	1760	400	2660	342	2094
solid	*180*	*990*	*180*	*990*	*200*	*1100*	*200*	*1100*
biogas	*110*	*858*	*110*	*770*	*200*	*1560*	*142*	*994*
bioliquids	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
SUM	2,536	6,952	3,432	7,096	3,259	8,822	3,804	9,662
of which CHP	290	1848	290	1848	400	2660	400	2660

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