Renewables in National Energy and Climate Plans of Visegrad countries

Challenging the low ambition

Visegrad+ for Renewable Energy

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Version 1

RENEWABLES NETWORKING PLATFORM

Supported by

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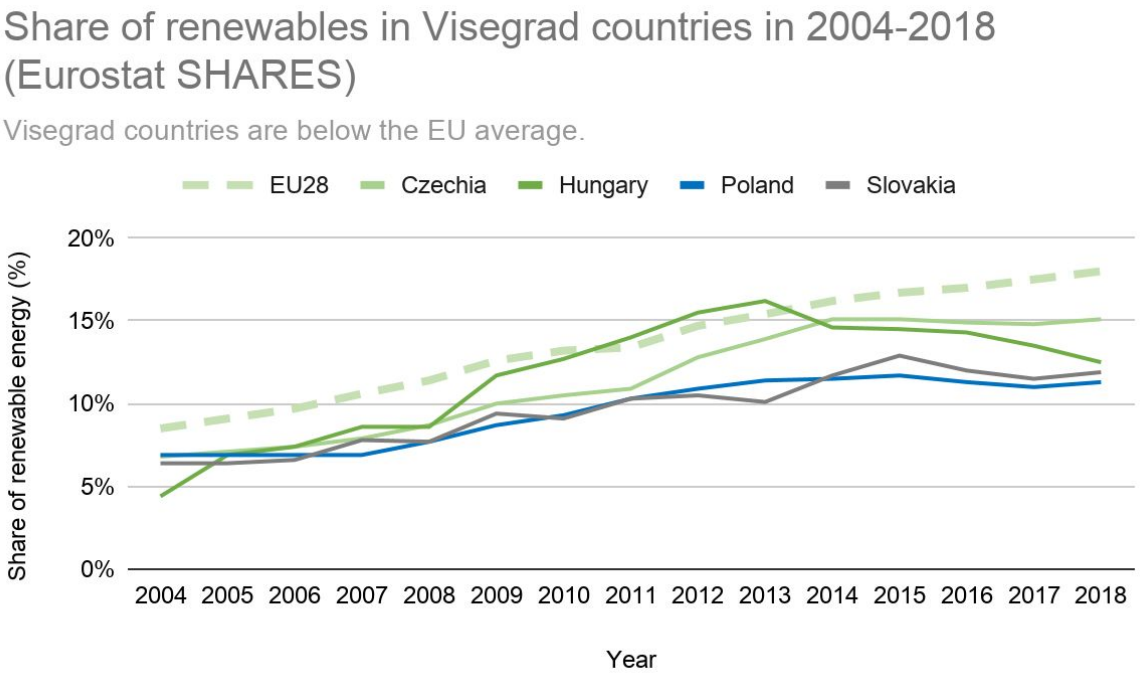
Content

Summary

This document covers the ambition of the Visegrad countries and Austria in increasing the share of renewables in the next decade. It is a product of an informal cooperation within the **Visegrad+ for Renewable Energy** platform founded in May 2019 and supported by the European Renewable Energies Federation. Renewable energy associations from Czechia, Hungary, Poland, Slovakia and Austria analysed the final National Energy and Climate Plans (NECPs) and evaluated the gaps between the plans and the renewable energy potential. These plans will guide renewable energy development in EU members states until 2030.

Do the homework but nothing more

The share of renewables in Visegrad countries in recent years is stagnating. The countries will hopefully do their homework, but if they meet the targets in the original Renewable Energy Directive (RED), it will be by the skin of their teeth. Visegrad countries certainly haven't been overachievers when it comes to increasing the share of renewable energy. Lower than average targets and determination not to aim for more than necessary seems to be the status quo.



This minimalism undermines the renewable energy transition and narrows opportunities for local industries, municipalities and citizens. Visegrad countries often perceive renewables as a measure of last resort and many focus on the nuclear path

towards decarbonization which might explain the lower emphasis on renewable electricity in the governmental plans of Czechia, Hungary or Slovakia.

The renewable energy targets set in the NECPs of Visegrad countries are considerably lower than the EU-wide target of 32% share of renewables in energy consumption by 2030. **Polish NECP indicates 21-23% renewables by 2030, Czechia 22%, Hungary 21% and Slovakia 19.2%.** Austria on the other hand seeks 46-50% renewable energy regardless of the sector and 100% of renewable electricity. All Visegrad countries fail in meeting the recommendations of the European Commission to the draft NECPs from June 2019 to increase their renewable energy targets.

Share of renewables. Targets for 2020 (RED) and 2030 (final NECPs)

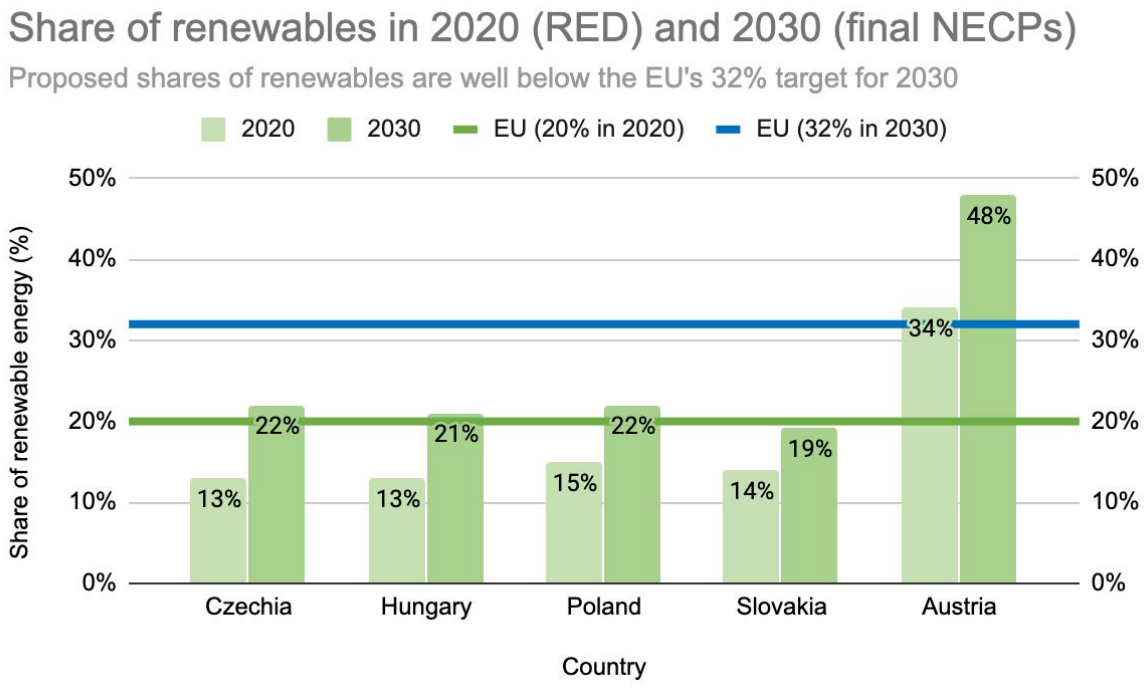
Country	2020	2030
Czechia	13%	22%
Hungary	13%	21%
Poland*	15%	22%
Slovakia	14%	19.2%
Austria*	34%	48%
EU-28	20%	32%

* Poland provided a range of 21-23% and Austria a range of 46-50%.

Share of renewables in 2030 as recommended by the European Commission in June 2019 and final NECPs

Country	2030 (EC)	2030 (NECP)
Czechia	23%	22%
Hungary	23%	21%
Poland*	25%	22%
Slovakia	24%	19.2%
Austria*	46%	48%

* Poland provided a range of 21-23% and Austria a range of 46-50%.



The **Czech Republic's** NECP settled on a 22% share of renewables on energy consumption in 2030, failing to aim for at least 23%. Such a low ambition of the Czech NECP is due to a limited focus on the renewable electricity sector which the NECP underestimates. Almost 70% of renewable energy in 2030 is expected to be consumed in the heating & cooling sector, leaving little room for renewable electricity. The plan puts a very large emphasis on solid biomass combustion in district heating despite the uncertain supply of sustainable biomass in the next decade due to bark beetle, drought and other stresses damaging the nation's forests. The Czech Renewable Energy Chamber (RES Chamber) advocates for the Czech Republic to aim for 24.4% of renewables by 2030 which corresponds to the Medium, not High, renewables development scenario prepared by the Czech RES Chamber experts. The plan also needs to re-evaluate the level of ambition in district heating from solid biomass.

The **Hungarian** NECP's forecast of 15% increase in primary energy consumption between 2017 and 2030 seems detached from the reality of climate change and declining population. This unlikely assumption of growing primary energy consumption makes it more difficult to achieve a higher ratio of renewables. This can explain the unambitious 21% renewable energy target by 2030. As for the electricity production, the NECP proposes a one-sided expansion of solar and artificial discouragement of wind energy. The capacity of PV systems should increase from 1,170 MW in 2020 to 6,454 MW in 2030. Wind energy on the other hand is projected to stagnate despite its technical potential and competitiveness. In the heating sector, the significant dominance of biomass utilisation - namely more than 90% ratio within the renewable energy sources - is expected to remain during the whole decade.

Slovakia's ambition to achieve 19.2% of renewables in final energy consumption by 2030 is based on flawed assumptions regarding the trajectory of final energy consumption and the economic potential of some renewable technologies. Realistic adjustments of this denominator together with more ambitious yet achievable goals in wind and solar electricity, battery and hydrogen-based electrical mobility can lead to an overall share of 25.6% of renewables by 2030. To put this plan into operation the Slovak Association of Photovoltaic and Renewable Energy Industry (SAPI) proposes that the country's policy makers revise the NECP and take into account the following: more realistic scenarios of the final energy consumption development; cost effectiveness of individual energy sources based on levelized cost of energy or value for money; focus on smart grid development; the development of energy storage systems; and more ambitious targets in the share of renewables.

Poland can go through the energy transition faster and cheaper than stated in the National Energy and Climate Plan. Industry, which is responsible for one third of the country's annual energy consumption, can be the key decarbonisation driver. Polish industry is growing more and more aware of the advantages that renewable energy brings. Onshore wind is currently the cheapest new energy generation source in Poland and PV costs are also decreasing and becoming more and more attractive. With the yearly electricity consumption of 60 TWh, the industry in Poland is becoming concerned with the increasing energy prices which poses a huge risk to their business competitiveness.

Visegrad at a crossroads

Visegrad countries are **still lacking ambition to bet on renewables but they are no longer a unified block opposing renewable energy and progressive climate policies**. Views of the governments on renewable energy are changing.

Many **renewable technologies are experiencing a huge interest among companies and households** even in the absence of more ambitious government policies. The implementation of the revised Renewable Energy Directive from 2018 is an opportunity to support the energy transition of Visegrad countries for the benefit of the climate, economies and citizens even despite low targets. There will be new public support schemes; legislation will catch up to facilitate and not obstruct self-consumers or renewable energy communities; and European and national funding will continue financing the energy transition.

However, many of the renewable success stories in these countries depend on ambitious policies, concrete renewable energy targets and public funding. Successful programs such as the Green Savings Programme in Czechia or the Green for households in Slovakia would not be a reality without concrete energy and climate policies and also appropriate funding facilitated by these clear goals. The photovoltaics growth to 1.5 GW in the last two years in Poland wouldn't be possible without favorable regulatory framework.

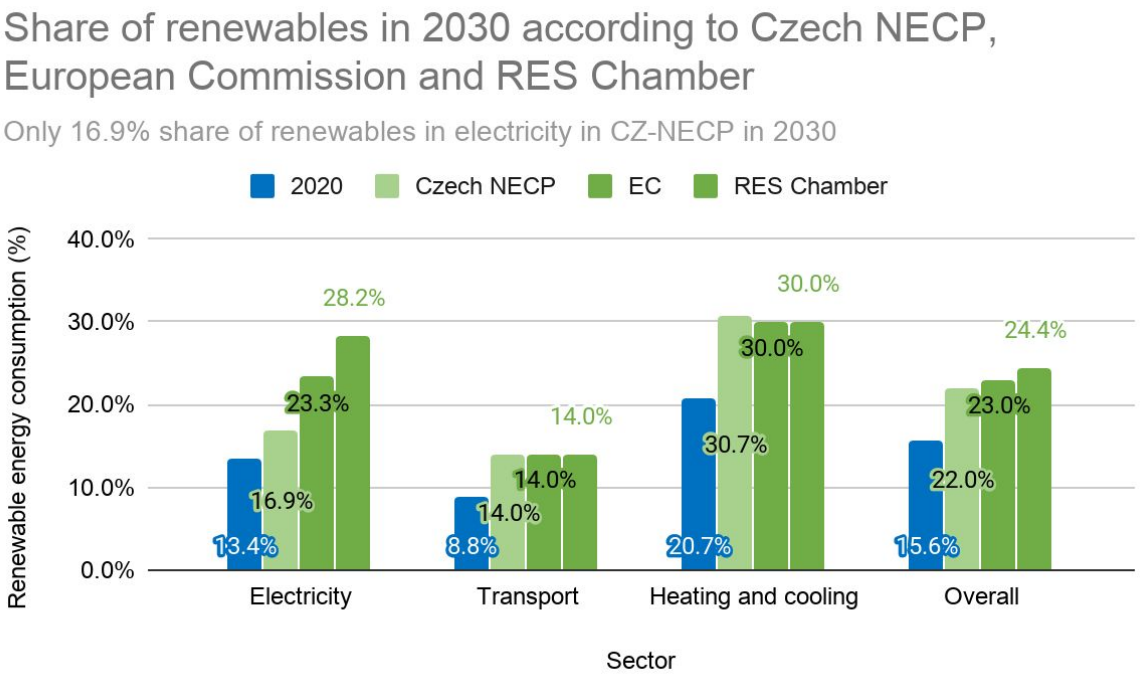
The Visegrad Group was founded in 1991 as a cultural and political alliance of Czechia, Hungary, Poland and Slovakia. Their transition from fossil fuels to renewable energy sources has been slow compared to others in Europe. This often obstructed the leading role of the EU in climate and energy policies worldwide. It has been also a lost opportunity for these economies to innovate, phase out dirty industries and build a new basis for future prosperity.

Austria was once also a "*country where the sun doesn't shine and the wind doesn't blow*", a saying which is familiar to renewable energy experts in many Central European countries. Today, Austria is aiming for 100% renewable electricity by 2030. It is home to the worldwide success of solar thermal energy for hot water. Small-scale biomass district heating systems provide clean heat to numerous municipalities. Wind energy gained trust thanks to cooperatives of owners and operators.

Final NECPs have been submitted, but as the Commission's communication stated in its assessment of draft plans back in June 2019: "*The delivery of these final NECPs will be a start, not an endpoint – continued dialogue, cooperation and reviews of the ambition level will remain critical all the way to 2030 and beyond*." **Making sure that these "final" NECPs are not an endpoint is our everyday work as representatives of the renewable energy sector in our countries.**

Czechia: Missed opportunities in the renewable electricity sector

The Czech NECP settled on a 22% share of renewables in energy consumption in 2030. Although this is an increase from the 20.8% share previously proposed in the draft version, the Commission's suggestion to increase to at least 23% was denied. The **plan is wasting the potential the renewable electricity sector has, which then translates into this low target for renewables overall**. On the other hand, almost 70% of renewable energy in 2030 should be consumed in the heating & cooling sector. **NECP puts a very large emphasis on solid biomass combustion in district heating - dominated by woody biomass - despite the uncertain supply of sustainable biomass in next decade due to the bark beetle infestation and drought. The** Czech Renewable Energy Chamber (RES Chamber) advocates for the Czech Republic to aim for 24.4% of renewables by 2030 which corresponds to the Medium, not High, renewables development scenario prepared by the Czech RES Chamber experts.



Little steps to increase the share of renewable electricity

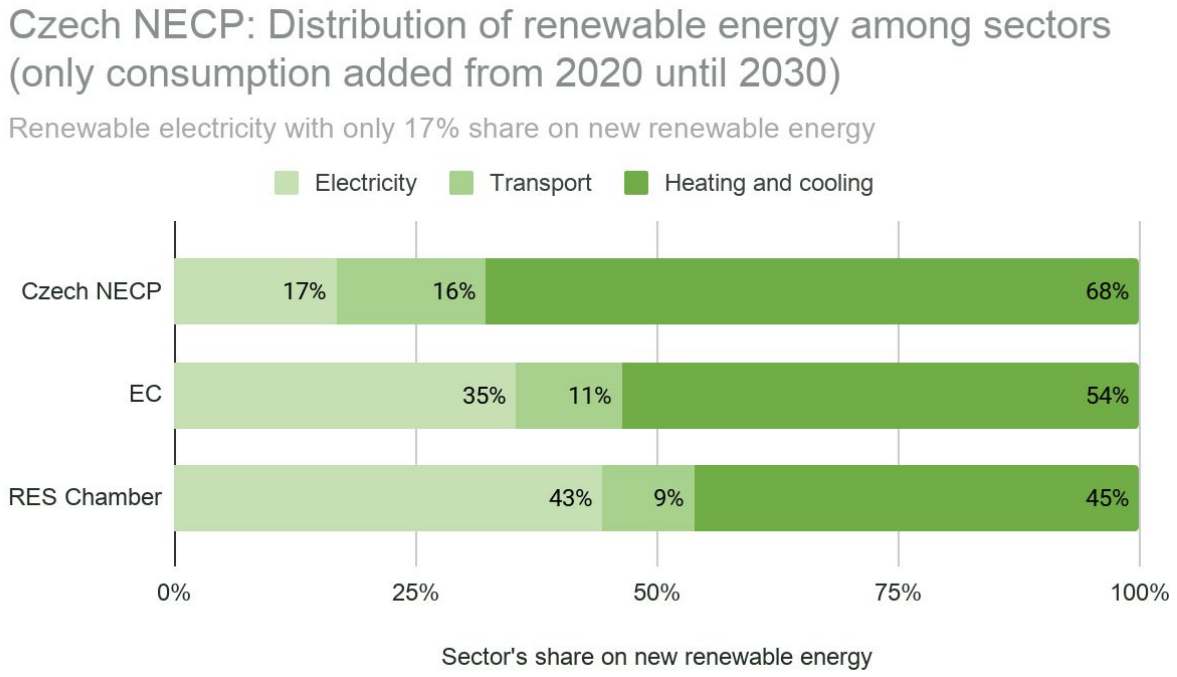
The development of renewable energy sources and the utilisation of the potential available to the Czech Republic should be a strategic objective for our country. These are the most economically efficient energy sources providing public service, reducing greenhouse gas emissions and air pollution, improving public health and creating opportunities for industrial modernisation. They enable the general public and municipalities to participate in the energy system.

The Czech NECP target – to consume 22% of energy from renewable sources in 2030 – does not sufficiently utilise the potential available in the country. **The plan considerably underestimates the development of renewable electricity generation at the expense of unsustainable development in the heating and cooling sector** mainly through biomass combustion in large utilities.

Final renewables share for each sector in the Czech NECP (%)

Sector	2018	2020	2030		
			NECP	EC	RES Chamber
Electricity	13.2%	13.4%	16.9%	23.3%	28.2%
Transport	6.5%	8.8%	14.0%	14.0%	14.0%
Heating and cooling	20.7%	20.7%	30.7%	30.0%	30.0%
Overall	15.2%	15.6%	22.0%	23.0%	24.4%

The proposed values of the plan show that according to the governmental plans 68% of the increase in renewable energy consumption between 2021 and 2030 should occur in the heating and cooling sector and only 17% in the electricity generation sector (compared to 43% proposed by the Czech RES Chamber). The expected share of renewables in electricity consumption shows that between the years 2021 to 2030, there should be an increase of only 3.5 percentage points from the share of 13.4% expected in 2020 to 16.9% expected in 2030. The final NECP slightly increased the ambition from 14.2% of renewable electricity in 2030, included in the draft plan from 2019.



Such a proposal is unacceptable for the association which proposed increasing the overall objective of final energy consumption from renewable energy sources in 2030 from 22% to at least 24.4%, mainly through an increase in the renewable electricity sector. **For 2030, the NECP proposes 16.9% of electricity consumed from renewable energy sources. The Czech RES Chamber advocates for 28.2%, almost a double value, that corresponds to the Chamber's Medium Development Scenario**.

On the contrary, **for the heating and cooling sector, the Czech Renewable Energy Chamber proposes a reduction in projected values for biomass heat consumption** in large heating plants and power plants. The concern here is in the sustainable sourcing of straw, wood chips and other woody biomass. The overall target for renewable heat is similar as in the NECP, but more heat should be produced from other renewable sources such as heat pumps, solar energy and geothermal.

The unnecessarily low target of 22% of renewables in 2030:

- undermines the EU's common efforts to consume at least 32% of energy from renewables in 2030;
- restricts the opportunities for renewable energy self-producers, energy communities, and entrepreneurs;
- leads to the utilization of only a limited part of the potential of individual renewable energy sources.

Recommendations

It has been shown that the target of 22% share of renewables on gross final energy consumption in 2030 proposed by the government does not correspond to the efforts that the Czech Republic should make to achieve the common EU target of 32%. Therefore, according to the European Commission recommendation from June 2019, the Czech Republic should increase the target for 2030 to at least 23%.

Even if Czech RES Chamber sees the 23% share as an acceptable compromise, it is **still a missed opportunity** in our eyes when compared with the 24.4% target which corresponds to the Medium, not High, Renewables Development Scenario by 2030 as calculated by the Chamber.

With respect to the European Commission's recommendation and taking into account the potential of individual types of renewable energy sources, we propose the following two major modifications:

- **Increase the total share of renewables in gross electricity consumption from 14.2% (stagnation) to at least 23.3% (from 38,268 to 62,805 TJ)**. With regards to analysis stated above, it should be noted that the utilisation of the renewable source potential according to the medium scenario of their development in electricity generation could reach at least **28.23%** (76,081 TJ).
- **Reduce the overall target of biomass consumption outside households in 2030 from 36,723.2 TJ of thermal energy to a maximum of 31,000 TJ because**

the proposed value exceeds the amount of biomass being available in a sustainable way. The Czech Renewable Energy Chamber' proposal maintains the overall volume of renewable energy in the heat sector as foreseen by plan. Less biomass heat consumption is compensated by other renewable energy sources (heat pumps, geothermal and solar energy).

The increase in the share within the electricity sector is also based on the fact that the power generation capacity will decrease in the next decade mainly in the electricity generation sector due to the **closure of coal-fired power stations**. Renewable power plants are the only real substitute for the loss of production capacities. **A new nuclear power plant cannot be envisaged for the next decade** even if the construction of new units has been decided in the current schedule. Start of a new unit's operation and the electricity production cannot be expected before 2038–2040.

When adjusting the target values for 2030 in individual sectors, **we recommend to focus primarily on the electricity generation sector and not on the heating sector, where there is a risk that the Czech Republic will not be able to fulfil its potential in line with principles of sustainable biomass sourcing**.

Calculation of public support costs

Public support costs for individual renewable technologies (annual average for 2021 to 2030 in million Czech crowns per year)

Renewable energy source	Investment	Operating	Total
PV	2,700	0	2,700
PV accumulation	2,200	0	2,200
Solar thermal collectors	1,100	0	1,100
Biomass-households	400	0	400
Heat pumps	1,200	0	1,200
Storage-heat	400	0	400
Geothermal	300	100	400
Biogas	0	1,000	1000
Wind	967	900	1,867
Hydro	0	150	150
Biomass-district heating	0	400	400
Total	9,267	2,550	11,817

Our analysis, based on 23% share of renewables in 2030, shows that the **average amount of public support for new renewable energy sources is CZK 11.8 billion per year** (approx. EUR 460 million annually on average), including the costs of electricity and heat storage (the largest item is, for example, CZK 2.2 billion for accumulators for PV

power plants). The annual average value is calculated based on public support costs for the years 2021 to 2030.

Roughly four-fifths of the costs of public support should be provided in the form of an investment grant (average CZK 9.3 billion a year) to households, sole traders, businesses, and municipalities. The remaining part, approximately CZK 2.5 billion, should be provided in the form of operating support. This allocation is based on the currently envisaged models of the financial support, as they are considered and submitted by state institutions, whether it is an amendment to the Act on Supported Resources or upcoming subsidy instruments for the next decade from 2021.

Almost half of the public support would go to renewable communities

We consider it important and we expect that the State will direct most of its efforts to support the development of renewable sources to decentralized small and medium-sized sources owned not only directly by citizens, entrepreneurs, businesses, or municipalities, but also through support for the widest range of **renewable communities** where those mentioned above are involved as well. **The costs of their support are estimated at an average of CZK 5.4 billion per year (200 mil. euro)** – investment support: 3.4 and operating support: 2.04 – of the above-mentioned total average annual costs of support of CZK 11.8 billion.

The calculation of the expected revenues from the trading of greenhouse gas emission allowances showed that these revenues would theoretically enable to cover the total investment subsidies for the whole period of 2021–2030. As an average, approximately CZK 4 billion per year remains for new operating support, which will be paid from the state budget or, more precisely, from the part of revenues from trading of allowances intended for Ministry of Industry and Trade. Within the State's climate policy, it is proposed to introduce a carbon tax for sectors not included in the EU ETS and to use a part of this tax revenue to finance operating support for new renewable energy sources.

The Czech Republic could take advantage of the positive synergy effects of using renewable sources on or inside buildings and increasing energy efficiency to count for a part of the energy produced by renewables into the energy efficiency target. Although the amended Directive 2012/27/EU on energy efficiency limits the inclusion of from renewable source energy by set conditions, making the application very difficult for the Czech Republic, we can see some potential to negotiate with the European Commission. We would like to recommend to the representatives of the State to base their negotiations about the fulfilment of the efficiency objective by an alternative procedure upon the current positive approach to other measures within the climate targets (notably higher renewable electricity share/production).

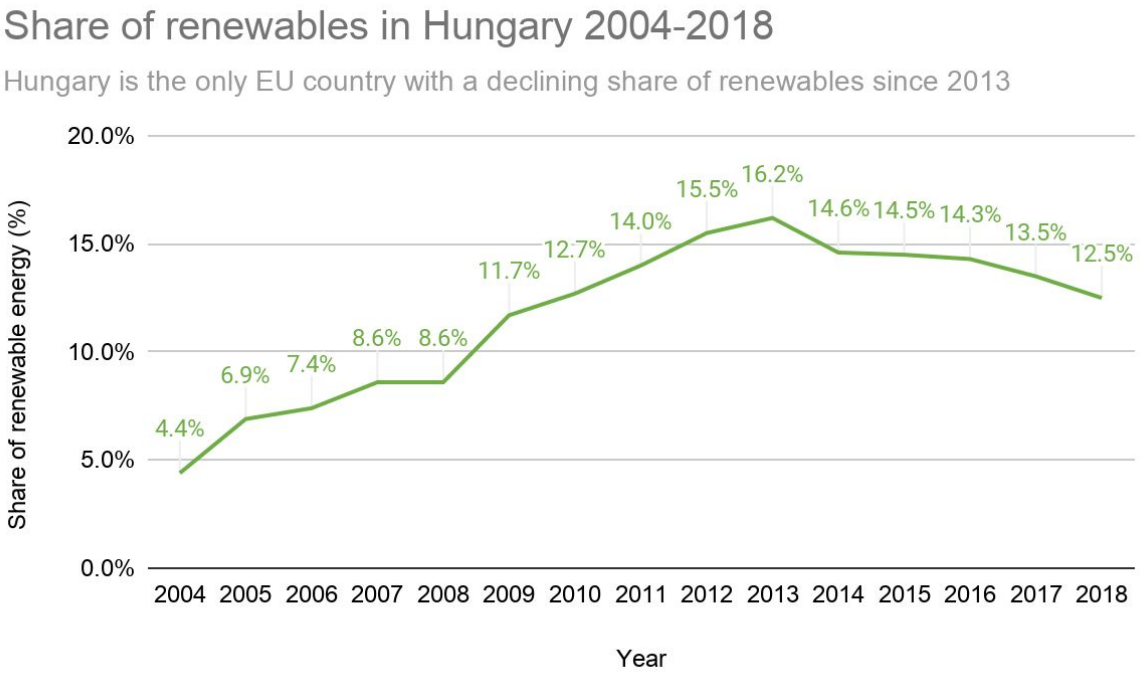
Hungary: A nuclear vision with a solar boost

In accordance with the obligations set by the European Union, Hungary has also prepared its National Energy and Climate Plan for the next 10 years. The document sets

out comprehensive goals and measures through which Hungary intends to reduce its carbon dioxide emissions by 2030, as well as increase the role of energy efficiency and the share of renewable energy sources to 21% by 2030. The plan however projects also an increase in primary energy consumption.

Keeping it low

Hungary is the only EU Member State where the share of renewable energy sources has been declining every year since 2013 (Eurostat).



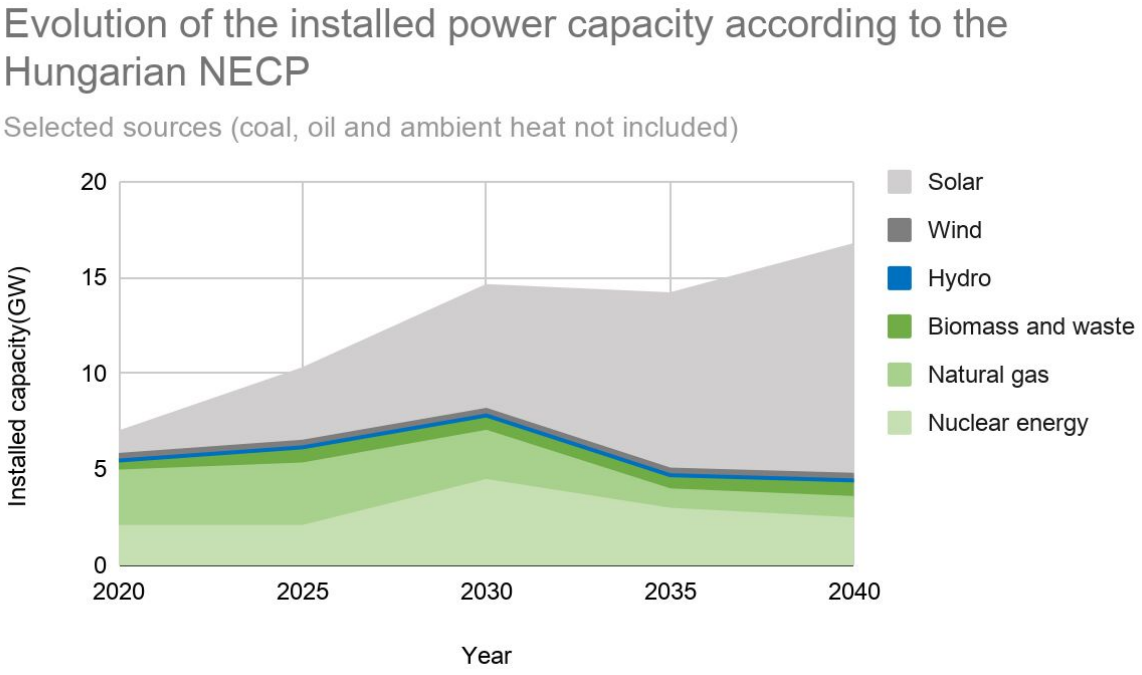
Hungary's NECP sets **a target of 21% share of renewables on** gross final energy consumption in 2030, which is significantly below the EU average (32%) and lower than the recommended 23% for Hungary by the European Commission.

Such a low ambition can be explained by a Hungarian government plan to **rely on nuclear energy – dependent on Russian technology and fuel – as a means to achieve "energy sovereignty"**. NECP also assumes that the domestic energy consumption will increase by 15% between 2017 and 2030.

Serious concerns arise due to the expected **distribution of renewable energy consumption from various technologies**.

The NECP proposes **one-sided expansion of solar panels** and **artificial discouragement of wind energy**. The capacity of solar energy should increase from 1,170 MW in 2020 to 6,454 MW in 2030. Regarding the latter technology, it can be stated with certainty that the cost of return and the good capacity factor (23-25%) of the existing ageing wind farms (compared to the European level), as well as the nature

conservation aspects also claims the advantages and the competitiveness of this technology.



With regard to **biomass**, the intentions of the NECP are not explicit, as it does not clarify to what extent will the planned 80% capacity increase by 2030 compared to 2016 levels will be based on biogas technology or firewood or intensively farmed solid biomass. It should be emphasized that the current form of biomass use in Hungary already raises serious sustainability concerns, as the rate of consumption exceeds the rate of reproduction (Á. Harmat et al. 2018).

Recommendations

- Regarding renewable energy sources, based on the results of Hungarian alternative energy models, the share of renewables in electricity generation could have increased to 30-40% between 2010 and 2030. Considering the significant technology developments of the latest 10 years, it is likely that a 30% ratio could be achieved by 2030 with a supportive energy and climate policy.
- As crucial developments it would be important to increase significantly the wind and biogas capacities. According to independent research their technical potentials are 93 and 80 PJ/year, respectively. Meanwhile their recent electricity production is 2.5 and 1.0 PJ, respectively.
- In the heating sector, excess heat and other ambient heat utilisations should have been mentioned as most important development areas.
- To integrate renewable energy sources, flexible tariff system and smart solutions would be more important.
- To optimize the utilization of the renewable potential and to get closer to the shares above, several changes would be necessary as soon as possible, inter alia:

appropriate financial and regulatory support, the immediate lifting of restrictions on wind energy installations and the restructuring of METÁR, where the capacity expansion of biogas from manure, agricultural crops and biodegradable waste should be supported.

- In general, as a key factor, instead of applying a one-sided technical approach, we consider gaining a multidisciplinary approach and practice in the Hungarian energy planning and management as soon as possible.

Poland: A wind of change is coming

Poland can go through energy transition faster and cheaper than stated in the National Energy and Climate Plan. The industry, responsible for one third of the country's annual energy consumption, can be the key decarbonisation driver.

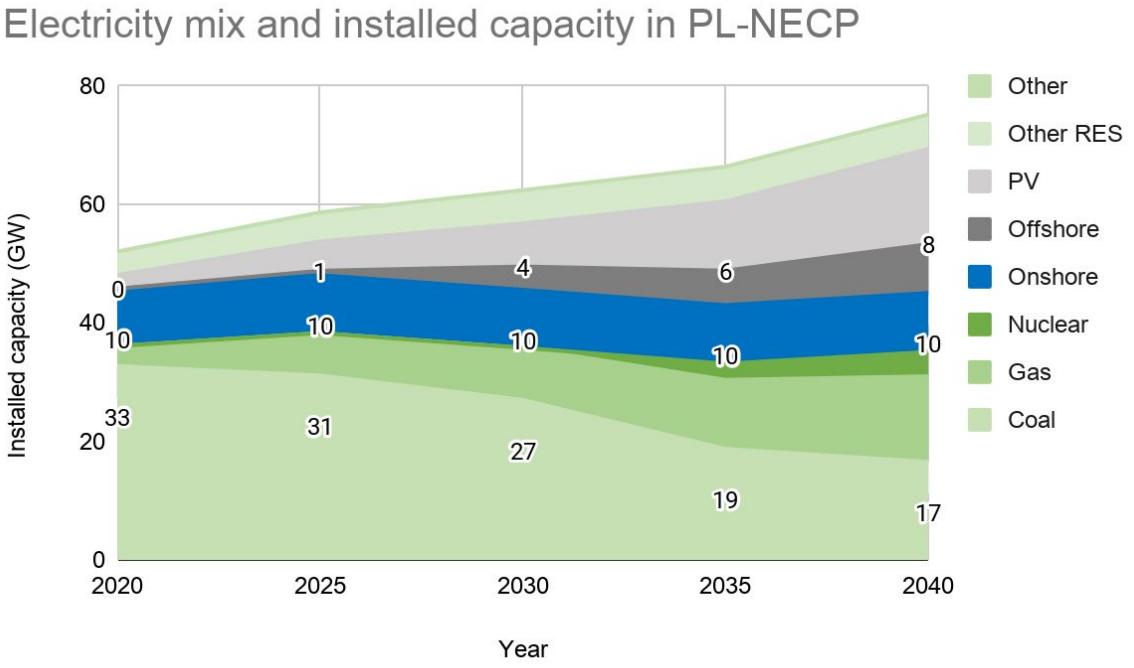
Poland's electricity consumption has been constantly growing within the last decade and reached 175 TWh in 2019. The country's energy production, on the other hand, has been declining in the past few years and was equal to 164 TWh in 2019. The vast majority of this volume - **73,6% - was produced in coal and lignite power plants**. The renewables' position in the Polish energy mix is becoming stronger, with the record-breaking production of over 25 TWh in 2019, however is **still not sufficient to meet the trajectory leading to 15% target in the gross final energy consumption due in 2020**. Unfortunately the **CO2 reduction trend has stopped** and in the past few years Poland has experienced stagnation on this field. In both, 2018 and 2019, the greenhouse gases emission was equal to 412,5 mln tonnes.

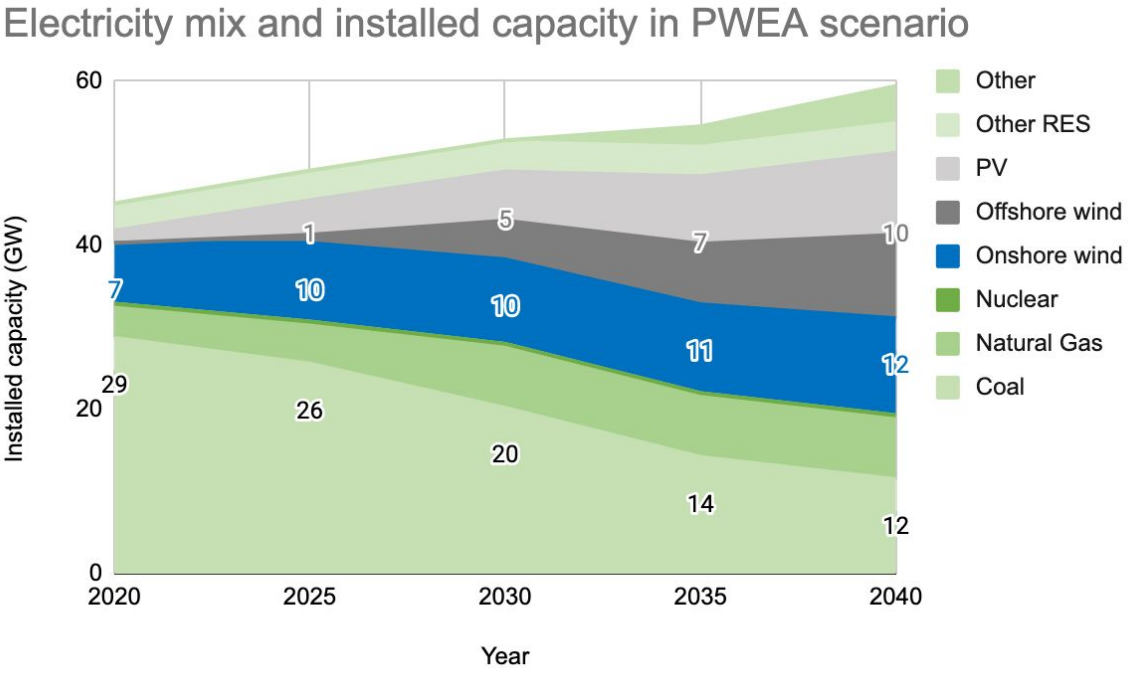
Turning the carbon ship around

The works on the National Energy and Climate Plan, conducted parallelly with the works on the **state's draft energy policy**, provoked great discussion on the Poland's **preferred energy mix in the next two decades**. The Polish Wind Energy Association (PWEA) has been an active participant of this debate and proposed an energy mix and decarbonisation scenario alternative to the one prepared by the government. It demonstrates that **Poland can be more ambitious in the decarbonisation and the deployment of renewables in the perspective of 2030 and beyond**, than it is presented in the Polish NECP. The energy **transition** can proceed at a **faster pace** and can be **cheaper** than calculated by the government.

The NECP relies on **renewable energy** and **gas-fired capacity** to close gaps left by the **phase-out of coal**, but does not fully utilise the **potential of wind** while proposing a **nuclear** project to be commissioned in 2035. Many doubt the actual feasibility of the nuclear project, even regardless of its huge cost.

There are slight differences on the demand side between PWEA's projected demand for electricity and the forecast contained in the NECP. The NECP relies on a forecast of demand for electricity with a 1.2% average annual growth in 2018-2040. PWEA's mix is based on a similar growth rate (+1.4% p.a. until 2030, +1.0% p.a. thereafter).

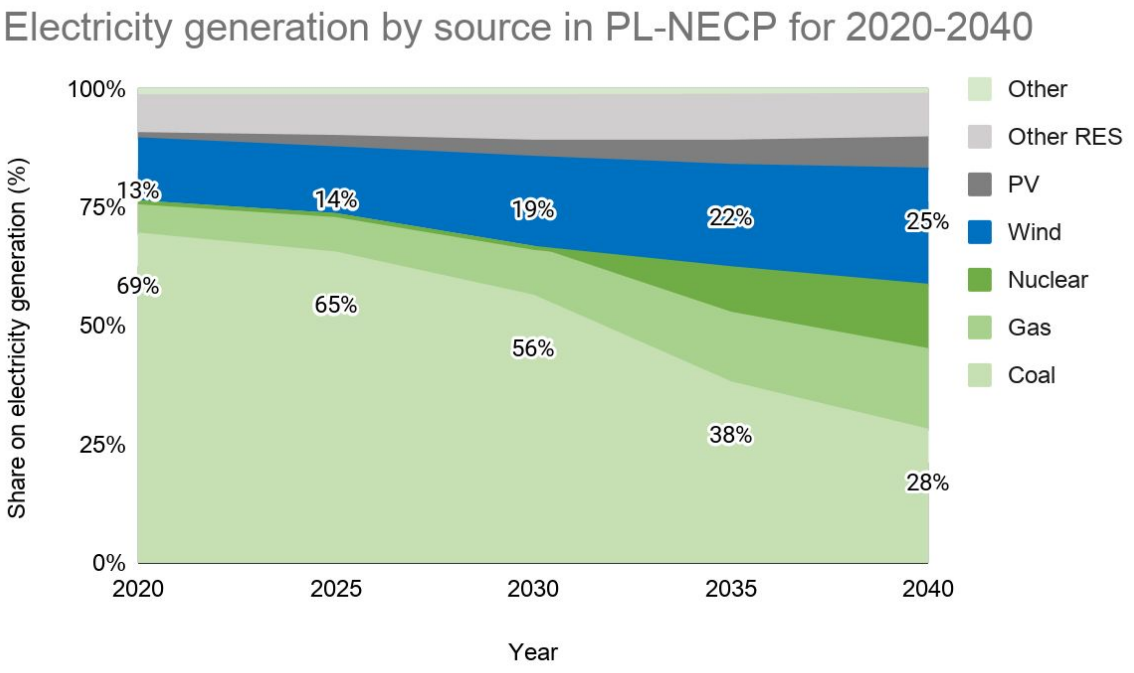


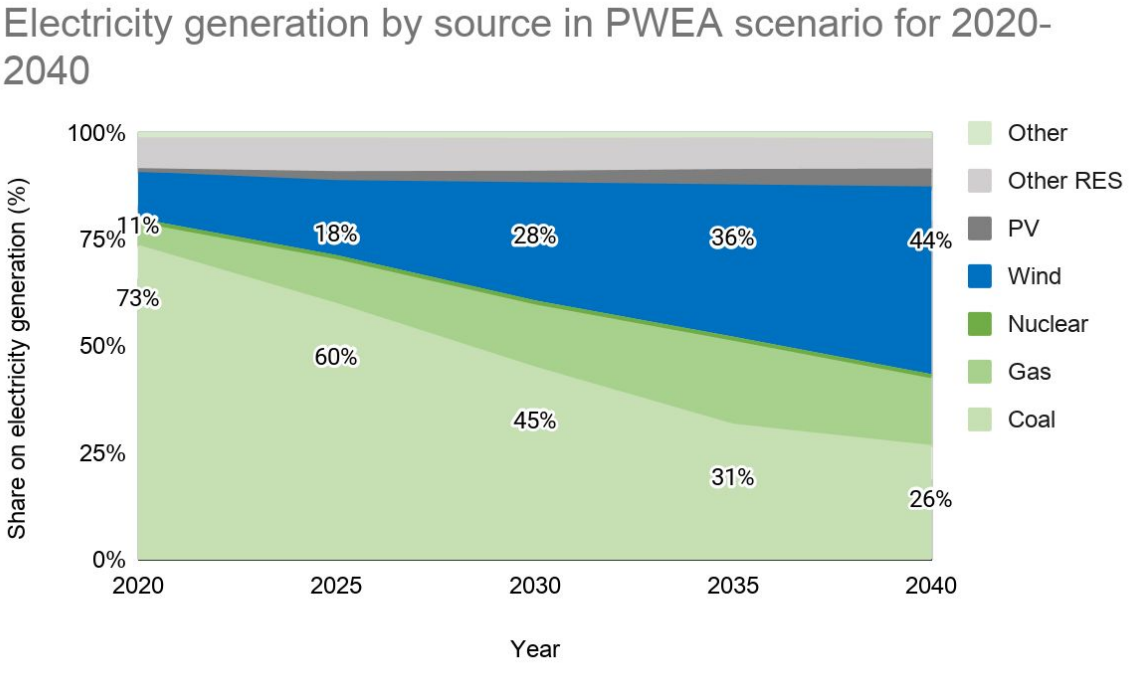


Wind and gas beat nuclear

PWEA scenario demonstrates that **the potential of wind supported by gas-fired capacity is enough to meet more ambitious targets** without the need to develop the highly uncertain nuclear project post-2030. The **5 GW of offshore wind** until 2030 and over 10 GW by 2040 would be a both relatively ambitious and realistic plan, even though the potential of the Baltic sea is even greater (12-14 GW). This would allow the country to: meet the demand for electricity, fulfil RES-related targets, accelerate the reduction of

CO2 emissions and contain the escalation of electricity costs. The NECP reduced the ambition expressed primarily in the draft, and estimates 4 GW of offshore wind capacity in 2030 and 8 GW in 2040.





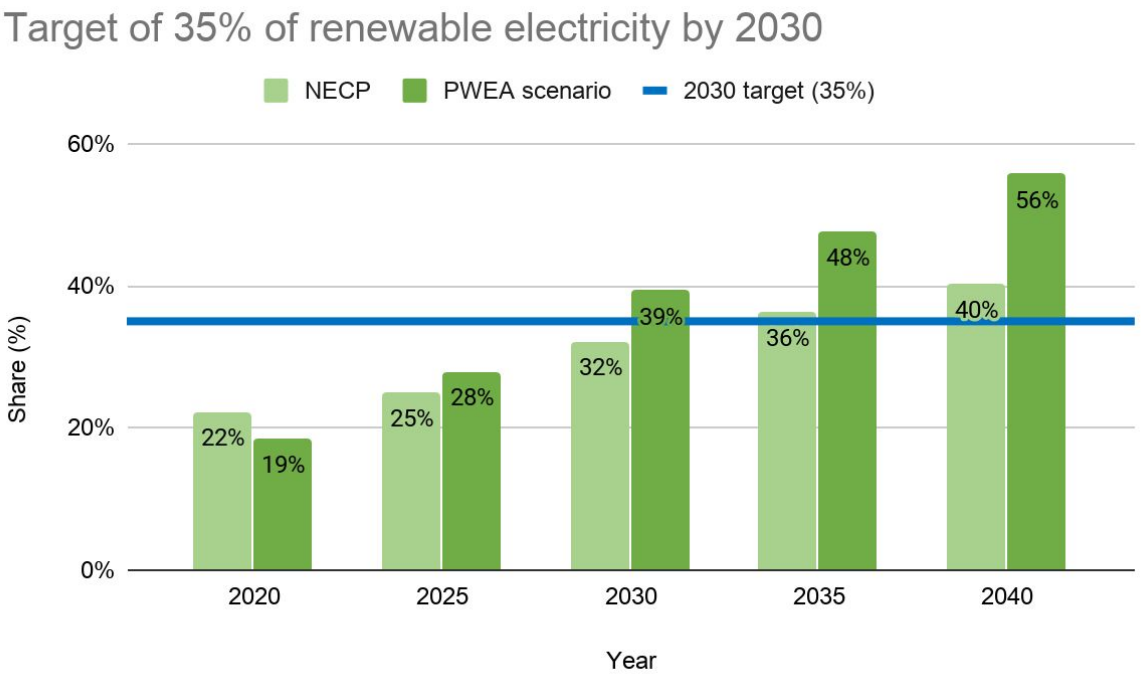
Better value proposition with wind

The scenario proposed by PWEA would help Poland meet the EU-wide targets for 2030 and beyond that date. After the revision in 2019 the EU-wide target is 32%. In Poland's case reaching this overall level (incl. electricity, heating/cooling and transport) would

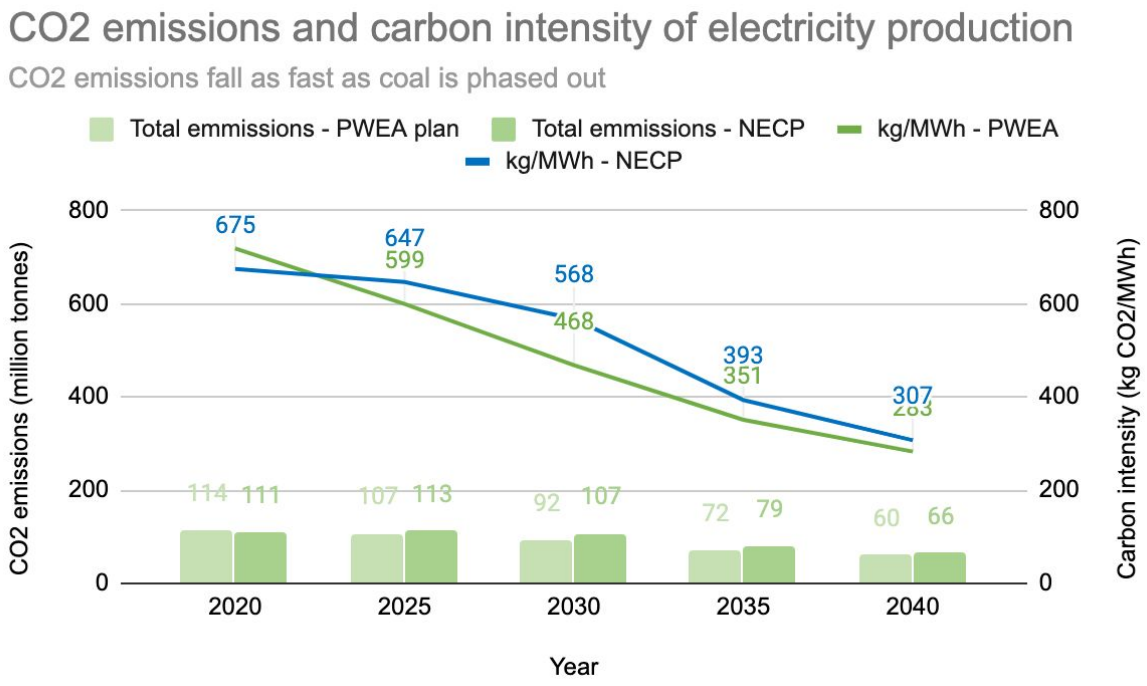
require a share of about 35% of renewable energy in gross electricity use. What is of relevance this approach would cost Poland less than the path followed by the government.

The cost of electricity (volume times LCOE) will reach around PLN 55b (EUR 12.3b) a year in 2020. PWEA's plan heavily relies on cheaper sources like onshore wind – installed capacity is estimated at 10,3 GW in 2030 and almost 12 GW in 2040. **The effect becomes most pronounced after 2034 as we avoid the expensive nuclear energy provided in the draft NECP**. The difference is PLN 8b/year as at 2040.

A significant part of the energy transition cost may be borne by the industry in Poland which is growing more and more aware of the advantages the renewable energy brings. Onshore wind is currently the cheapest new energy generation source in Poland and PV costs are also decreasing and becoming more and more attractive. With the yearly consumption of circa 60 TWh industry in Poland is becoming concerned with the increasing energy prices posing huge risk to their business competitiveness.



Another factor is the **high carbon footprint of goods produced in Poland which makes them less attractive for a growing number of consumers**, and reduces their sales opportunities. In case of companies in Poland within supply chain for international corporates – e.g. members of RE-100 declaring to be carbon-neutral by 2050 at the latest – it may mean the loss of the market if the carbon neutrality is not met in a near future.

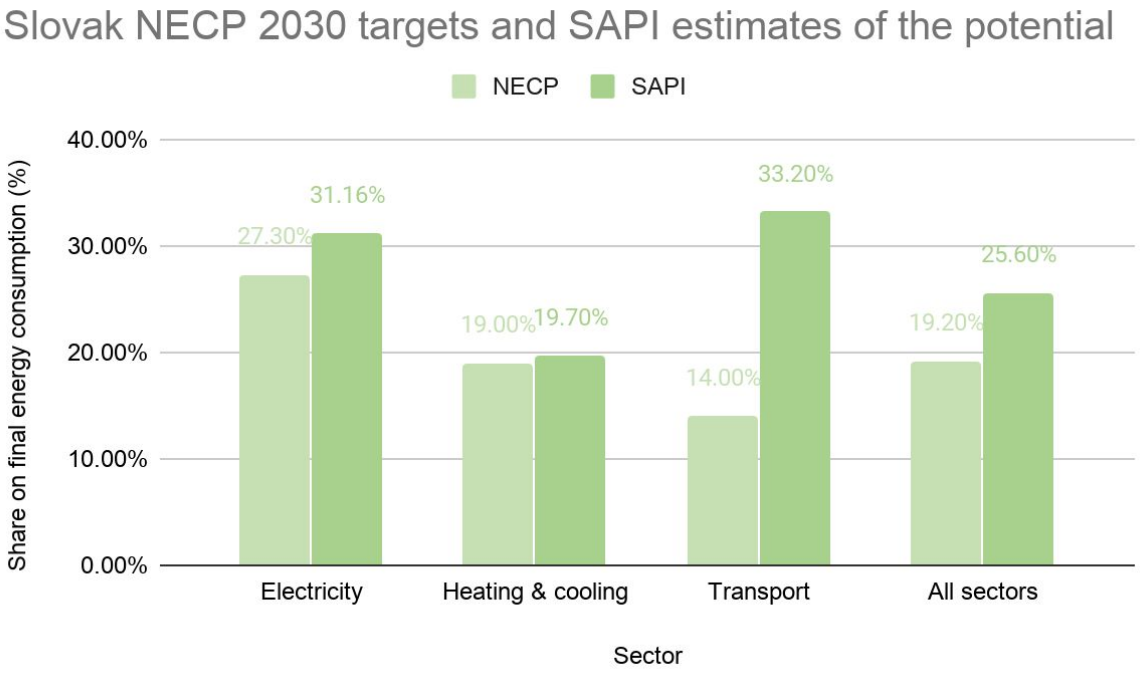


Hence the enormous interest of industry in Poland in renewables. Energy intensive industry alone, which consume 30 TWh per annum, estimate that they could adopt up to 3 GW of RES (1,2 GW wind and 1,7 solar) via physical cPPAs within next few years, provided favourable regulatory framework is in place. This could cover up to 20 % of their energy mixes and could be balanced within their own grids. With strategies aiming at 50 % green mix by 2030 even bigger volumes could be contracted in other cPPA models. The possible volume for the industrial energy offtake in Poland among non-intensives has not been estimated yet, but their total annual 30 TWh consumption also gives and idea of the potential for renewables' development.

These numbers indicate that industry could be a key driver for Poland's energy transition and decarbonisation and the model of contracting energy directly between RES producer and the energy offtaker, so called cPPAs, could play a vital role in this process. However, the Polish NECP does not mention it, despite the European Commission guidelines to describe measures facilitating cPPAs in the energy and climate plans.

Slovakia: Renewables as a measure of last resort

This analysis summarizes the role of renewable energy sources in the Slovak NECP approved in December 2019 and discusses three key areas of the decarbonisation dimension: electricity production from renewables, heating and cooling from renewables, and utilization of renewables in transport.



The NECP – with 19.2% share of renewables by 2030 – is largely missing out on the opportunities provided within the Clean Energy Package framework. The "final" version of the NECP, as submitted to the European Commission, provides what can be in general described as "slightly above the emergency minimum" with respect to targets and measures to meet them. Taking into account all three sectors of decarbonization, **it is possible to achieve the contribution of renewables at 22.7% until 2030**. Alternatively at 24.8% after taking into account the coefficients in the battery and hydrogen electro-mobility sector.

Unrealistic assumptions with nuclear energy in focus

The NECP works with the figure of 14% share of renewable energy as a baseline for 2021. However, the current development in the renewables support policy of Slovakia suggests that it is **unrealistic to achieve this target by 2021**. The proposed trajectory of renewables for the next period until 2030 is therefore not set on a realistic basis and needs to be adjusted.

The NECP also provides **projections for final energy consumption** in Slovakia, which are based on assumptions **which are not supported by available data** on final electricity consumption provided by the national transmission system operator. This has an impact on the share of renewables on this final energy consumption.

High share of nuclear energy in electricity production and very high level of gasification makes the government less eager to propose ambitious renewable targets until 2030.

The **NECP does not evaluate the effectiveness of this preferred energy architecture** (nuclear electricity, district heating) in any relevant way, e.g. in terms of the LCOE indicator or in terms of value for money. This flaw provides a free pass to **focus the government's planning predominantly on the development of nuclear energy as a cornerstone of decarbonization**.

Much higher potential with innovative support measures

In the sector of electricity production from renewables, we **welcome the positive ambition of the Slovak Republic to increase installed power in solar photovoltaic and wind power plants**. Given the technically and economically usable potential offered by the climatic conditions of the Slovak Republic and the current level of technological solutions, we propose to increase the ambition of the contribution by 2030, especially in connection with our expectation that the support of these types of renewables will have minimal impact on public finances.

After removing the administrative obstacles, it is possible to significantly increase the use of photovoltaics primarily through the **model of self-consumers** and secondarily as larger ground-mounted installations (in the range of about 1 - 5 MWp).

The support of the latter ones will be firstly conducted via auctions and later they will contract customers through private **power purchase agreements** (PPA) business models. In the case of wind energy it is already possible to deploy these projects through the private PPA concept, it is also applicable in Slovakia for larger wind energy sources due to the permanently declining price of technology and at the same time increasing production efficiency.

Taking into account all these factors, the Slovak Association of Photovoltaic and Renewable Energy Industry arrived at the proposal of the **contribution of renewables in electricity for 2030 at the level of 31.16%, which is 3.86 percentage points more than what is stated in the NECP.**

Biomass sustainability concerns in the heat sector

According to the NECP, one of the main directions for the additional increase in the total share of renewables in 2030 is the area of heating and cooling. A **high degree of centralization of heat supply** should constitute good technical conditions for the use of **biomass, biomethane and geothermal energy**.

However, this is counteracted by the fact that the possibilities of using biomass, bio-methane, as well as energy recovery of waste to a greater extent are limited in Slovak conditions by the availability of a suitable and affordable resource base while complying with **sustainability criteria** laid down in the EU Renewable Energy Directive.

Another problem is the relatively **high investment costs for the modernization** of the technology of combustion of energy raw materials and for modernization and reconstruction of district heating distribution systems.

In the heating and cooling production sector, we also identified a relatively **low level of ambition in the Slovak Republic in the field of heat pump technology**, which should be one of the main technological component to achieve the required energy standards for buildings. The analysis that the initial state of final energy consumption in this sector as an assumption of the NECP for 2021 does not correspond at all with the data reported to Eurostat and the final energy consumption used in the NECP is thus grossly underestimated.

Based on our calculations it is realistic to achieve the contribution of renewables of 19.7% in the heating and cooling sector by 2030, which is 0.7% more than the plan stated in the NECP.

Untapped potential in transport

The advantage of Slovakia's relatively low-emission energy is largely missed out in the plans of decarbonization of transport, where the NECP proposes to achieve only the required minimum share of 14% by 2030.

The NECP underestimates the opportunities to increase the share of renewables especially in the battery and hydrogen electrical mobility sectors, where the Ministry of Economy has chosen a very conservative scenario that does not even correspond to the global average growth of these sectors.

An important policy tool for the support of both battery and hydrogen electrical mobility is the possibility of counting the consumed renewable electricity in road transport with a coefficient of 4 in road transport and 1.5 in rail transport. This instrument will make it possible to increase the target for the share of RES in total gross domestic energy consumption in transport from the presented 14% to 33% in 2030.

Financing the transition

Regarding the impact on public finances, according to the NECP, the total investment costs for achieving the renewable targets are estimated at EUR 4.3 billion. However, it is not clear what share of these investment costs, according to the Ministry of Economy of the Slovak Republic, should be financed from public sources. Therefore, it is not possible to make a sufficiently relevant assessment of the estimated total investment costs as reported by NECP. In addition, it is not clear what structure of investment costs the material is talking about. Also, their allocation between individual technologies is not obvious. In our opinion, the overall impact of the measures on public finances is not sufficiently justified.

Recommendations

- Provide realistic scenarios of **final energy consumption** development.
- Built the energy policy based on **cost-effectiveness** of various competing technologies (cost of individual resources based on LCOE or value for money).

- Increase focus on **smart grid** development to lower the barriers for new installations.
- Speed-up the development of **energy storage**
- More **ambitious renewable energy targets** especially in the electricity and transport sectors.

Austria: A new plan is needed

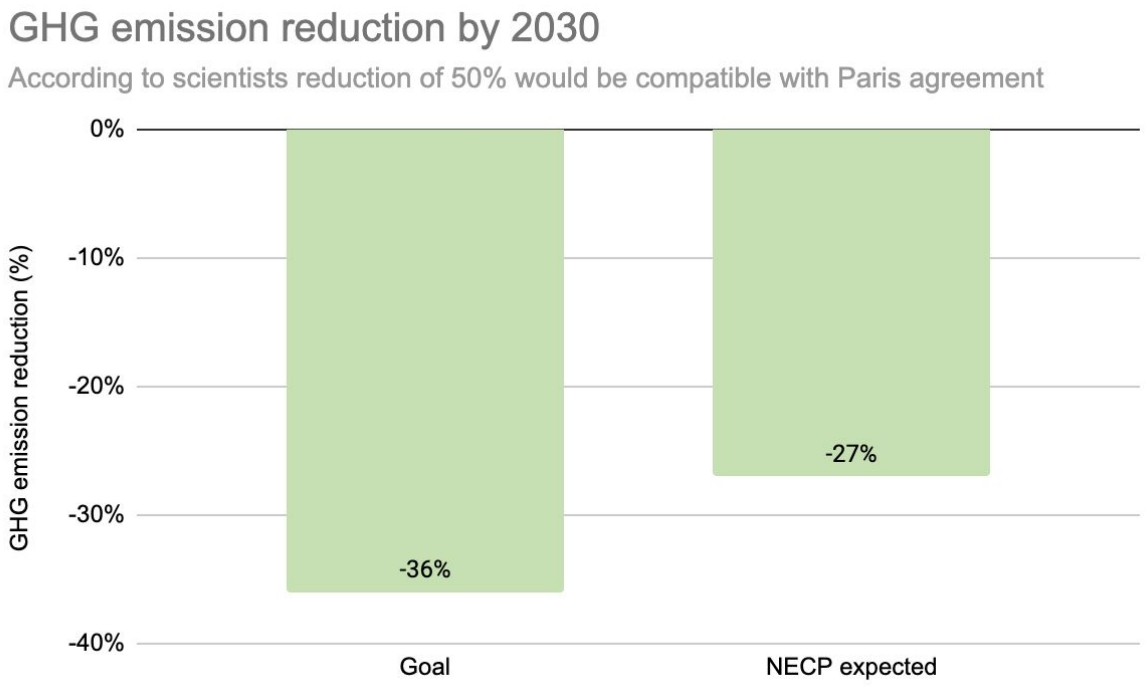
Between June 2019 and January 2020, Austria was governed by a purely “administrative” transitional government which did not want to make far-reaching decisions but to keep an “administrative” status and postpone political decisions to the forthcoming new government. This new government was sworn in January 2020, after the deadline to submit final NECPs. For the first time in the history of the country it was a coalition between a conservative and a green party.

Outdated upon submission

The finalisation and submission of the Austrian NECP was “administered” by the transitional government, and it **lacks the necessary ambition to meet the aspired target regarding the reduction of greenhouse-gas emissions and the development of renewable energy sources**.

Moreover, the **program of the new government even exceeds the NECP in some parts, for example the exit of oil-heating-systems until 2035 and the reduction of natural gas heating. So the NECP could be considered being politically outdated just a few days after its completion**. Since then, the need to improve the Austrian NECP has been expressed by many actors, among others by the responsible minister herself. It has also been emphasized by Austrian Renewable Energy Association (EEÖ).

The scenario on which the model for the further development of the energy situation of Austria is based on, a “WAM”-model (“with additional measures”), fails to meet the Austrian climate goals. **From the aspired reduction of emissions by 36%, only 27% will be reached until 2030**, leaving a gap of 5.2 million tons of CO2eq. Moreover, climate-scientists claim that a reduction of 50% is necessary to be in accordance with the Paris-goal (COP21).



The WAM-scenario would narrowly reach the planned share of 46 to 50% renewable energy set by the Austrian NECP. This goal itself, however, lacks ambition, **Austrian Renewable Energy Association (EEÖ) proposes a necessary share of 60% renewables until 2030**.

Concerning electricity, Austria is in a quite convenient position with a long tradition of hydropower. So the goal of reaching 100% renewables in electricity-supply in 2030 is achievable. It is explained in terms of being "100% nationally balanced", which means that the national production of renewable electricity should balance the national demand on an annual scale, but not on a day by day-balance. Exports and imports will be possible in the future. The presented WAM-scenario, however, lists 11 TWh of fossil-based electricity for 2030 (p 257 in the NECP), while it should be (nationally balanced) zero in 2030.

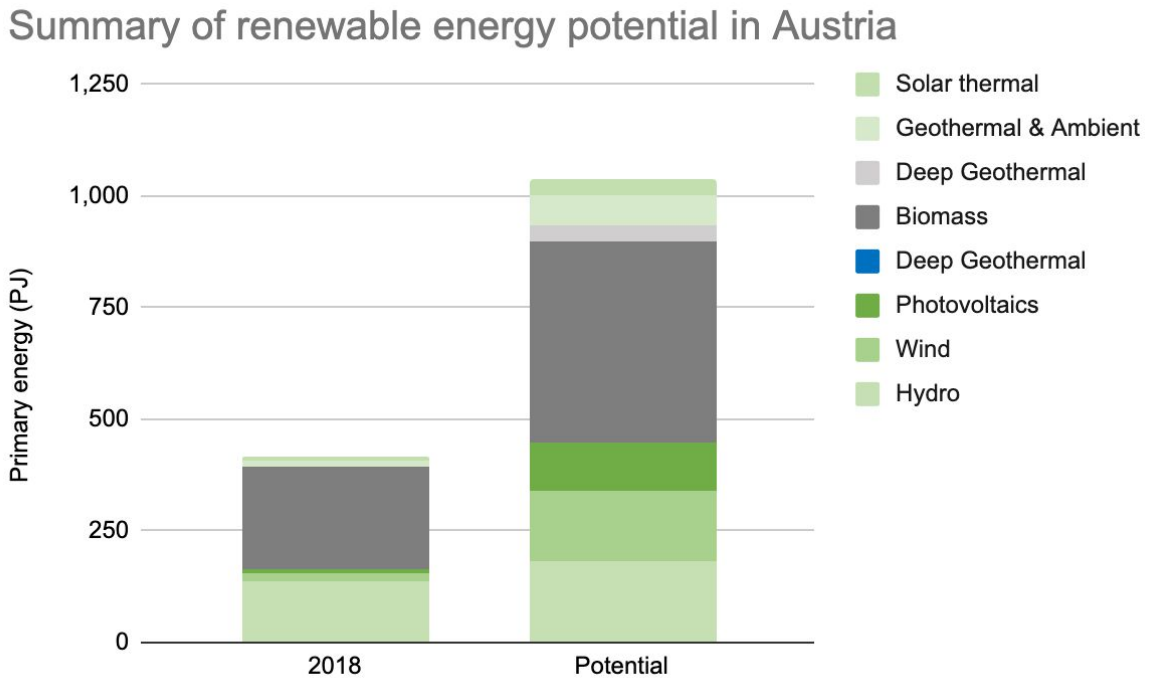
To support renewable electricity, EEÖ proposes a direct marketing plan (market-based premium model), which is oriented on the German model. The producers can sell the electricity on their own, and they would receive an additional market premium up to a certain threshold. If the market price equals or surpasses this threshold, the market-premium would be zero.

Detailed targets and roadmaps are also lacking for the heat sector. Such targets will be expressed in a **heat-strategy** (forthcoming later in 2020). For the heat sector, the government-program (issued in January 2020, only a few days after submission of the NECP) explains some targets in more detail than the NECP (for example how to exit from oil heating systems).

Challenges in the heating sector

Issues concerning the heat sector are even more complicated in Austria because many of the political decisions have to be decided upon and implemented by the nine federal states ("Bundesländer"). The policies often differ from one state to the other. What can be – and has been – an advantage in the past, when the best supportive policy can be identified in somewhat competitive surroundings, prevents the formulation of a consistent national policy at the same time.

The planned exit from the existing 660,000 oil-heating systems is a large-scale project. **EEÖ proposes a bundle of six measures to cope with this challenge:** improvement of basis for stirring and decisions, expertise and trainings, financial support and subsidies, elements of political order, innovative financing and taxing, measures to support efficiency and communication. Furthermore, EEÖ has issued a position for the decarbonisation of the heating-market.



The technical potential of indigenous renewable resources, according to a study by Austrian Renewable Energy Association (EEÖ) amounts to some 1,037 PJ in 2040. **To supply the country solely with renewables, efforts in energy-efficiency would be desperately needed**. An energy efficiency law is forthcoming, the old energy efficiency law failed to reduce energy demand but stimulated a lot of purely artificial actions.

Currently, the NECP only proposes a reduction of primary energy intensity by 25 to 30% (2030 vs. 2015), and there are no final energy targets yet. A new energy efficiency law

will be issued until end of 2020 and must contain binding absolute (as opposed to intensity) targets.

A "significant" share of natural gas shall be replaced by renewable gases (bio-methane, hydrogen, synthetic gases). The government-agreement issued after submission of the NECP details the res-share in the gas-network. A hydrogen strategy is being elaborated since 2019. It shall play a role in the greening-the-gas strategy, hydrogen shall be used as a long-term storage system for electricity, for industrial processes, and generally as an element for sector-coupling.

Concerning transport, 7% biofuels/synthetic fuels shall be added to diesel and 5% ethanol to gasoline by 2030. The goal is to have 14% renewables in transport by 2030, starting from 9.6% in 2017, which includes railway electricity and ropeways. 1.8% of the increment should come from e-mobility.

Generally saying, the Austrian NECP follows an inadequate scenario (WAM) which does not meet emission targets. It lacks details regarding the measurement, instruments, and financing for practically all sectorial targets (from support schemes to carbon taxes) to reach the necessary goals.

Recommendations

- The renewable energy goal of 46-50% lacks necessary ambition. Austrian Renewable Energy Association (EEÖ) proposes a share of 60% renewables until 2030 in order to meet the necessary GHG emission reduction.
- To support renewable electricity, EEÖ proposes a direct marketing plan (market-based premium model), which is oriented on the German support scheme.
- EEÖ proposes a bundle of six measures to cope with the challenge of decarbonizing Austrian heating sector: improvement of basis for stirring and decisions, expertise and trainings, financial support and subsidies, elements of political order, innovative financing and taxing, measures to support efficiency and communication.
- A new energy efficiency law to be issued until end of 2020 must contain binding absolute targets (as opposed to intensity).

About Visegrad+RE

Visegrad+ for Renewable Energy (V+RE) platform of renewable energy associations from Visegrad Group countries and Austria has been established in Prague in May 2019 to gather representatives of the renewable industries and challenge the low level of ambition in the energy transition in the region.

Members of the platform include Czech Renewable Energy Chamber (CZ), Energiaklub (HU), Polish Wind Energy Association (PL), Slovak Association of Photovoltaic and Renewable Energy Industry (SK), Austrian Renewable Energy Association (AT) and E3G.

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