

Implementation by Romania of the Energy Governance based on the Integrated National Energy and Climate Plan

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Abstract. *The current paper completes the empirical literature on the European Union (EU) climate and energy policy design and evaluation, namely the implementation part related to the development, assessment and approval of the Integrated National Energy and Climate Plans (NECPs) of the Member States (MS) for the period 2021-2030. These strategic documents are foreseen by the Governance Regulation no. EU 2018/1999 as the main tools used to implement the climate and energy policies and targets by 2030.*

This paper is organized as follows: the abstract gives an overview of the paper and its main conclusions. Section 1 depicts the introduction and background about the whole process around NECPs and the main provisions related under the Governance Regulation. Section 2 reviews literature from the perspective of the EU negotiations on 2030&2050 energy and climate targets, legal aspects of climate and energy governance and the process of NECPs development and approval. It also includes a short presentation of the data used for the analysis, including their sources. Section 3 gives an insight about the approval of Romania's NECPs by the European Commission. At the same time, this section briefly comments on proposals made by the national authorities and the recommendations using as starting point Romania's position in 2014 during the 2030 climate and energy negotiations while taking into account the dynamic of the geopolitical situation to date. Section 4 concludes.

Keywords: 2030/2050 climate and energy targets, Governance Regulation, Integrated National Energy and Climate Plans, Energy security, EU funding, Visegrad group

Introduction

In 2019 the Clean energy for all Europeans package was adopted, including the Regulation EU 2018/1999 on the governance of the energy union and climate action (the Governance Regulation). Under this legislation, MS submit their National Energy and Climate Plans (NECPs) as the main tool used to implement the climate and energy policies and targets by 2030. In this respect, the NECPs reflect the way how MS accommodate on medium term: energy efficiency, renewables (RES), greenhouse gas (GHG) emissions reductions, interconnections and research and innovation (R&D).

By 31 December 2018, MS sent to the European Commission their first draft of NECPs for the period 2021-2030. The Commission conducted an analyse for all the NECPs (Balode et al., 2021) and the end of the process, in June 2019 published an overall assessment and country-specific recommendations based on the GHG and energy targets, the possibility to reach them and weak points of the plans (Balode et al., 2021). After having all the recommendation considered in their new documents, MS submit their final NECPs by 31 December 2019.

Nine months later, in September 2020, the Commission presented a detailed EU-wide assessment of the final NECPs for all MS. In order to guide the MSs in the implementation phase of their NECPs but also for improving their proposed actions and measures in the field of climate and energy, the Commission also released individual assessments of each of the national plan. This

step was a follow up to the submission of the final NECPs by MS while being a part of the 2020 Energy Union Report.

Every two years, MS must analyse and consider the results obtained and submit a progress report. As part of the state of the energy union report, EU progress as a whole for all Member States will be monitored by the European Commission.

To better develop and implement the actions and measures proposed in their national documents, the MSs were required to conduct a public consultation in the drafting and finalisation phases. The national authorities were required to present and take into account the views of citizens and other stakeholders (e.g. businesses, regional and local authorities) when drafting and finalising their NECPs.

All MSs presented in their NECPs the implementation of the EU 2030 energy and climate targets, namely the reduction of GHG emission at least by 40%, a minimum share of 32% final energy consumption by renewable energies and increased energy efficiency by a minimum 32,5%.

National long-term strategies looking forward to 2050 are also mandatory under the Governance Regulation. By 1 January 2020 and every ten years thereafter, MS should submit these strategies with a perspective of at least 30 years. The long-term strategies should be consistent with MSs' NECPs for the period 2021-30. If needed, MSs should renew their strategies every five years. The submission of the long-term strategies is linked with the obligations set by the Paris Agreement and achievement on long term of the transition to green energy. All Parties to the Paris Agreement were invited to communicate, by 2020, their mid-century, long-term low greenhouse gas emission development strategies.

Literature review

EU negotiations on 2030 and 2050 energy and climate targets

Three main targets are the pillars of the EU climate and energy governance, namely the GHG emission reduction, the share of RES in final energy consumption and energy efficiency (Siddi, 2021); in 2014, the European Council established under the 2030 climate and energy framework a target of at least 40% greenhouse gas emissions reduction and 27% target both for renewable energy and energy efficiency. The same author presents that these two targets were increased after the adoption of new legislation in 2018, as follows: 32% at least for renewable energy and 32,5% at least for energy efficiency.

This is also the vision of Energy Council of the EU namely the reduction of GHG emission at least by 40%, a minimum share of 32% final energy consumption by renewable energies and increased energy efficiency by a minimum 32,5% (Knodt et al., 2020).

Under the European Green Deal, the president of the European Commission, Ursula von der Leyen ranked the climate policy high on the EU agenda and proposed “a modern, resource-efficient and competitive economy where there are no net emissions of green house gases in 2050”; on the way to the new goal set, the EU must reduce its GHG at least 55% by 2030 (Siddi, 2021).

The legislative proposals from the Fit for 55 package foresee that by 2030 the EU has to increase the target of renewable to 40% and increase energy efficiency targets at EU level, make them binding while delivering an overall reduction of 36-39% for final and primary energy consumption (European Commission, 2021). Commission President, Ursula von der Leyen ranks climate change high on her agenda but lacks political support of East-Central European governments that are reluctant of ambitious climate and energy targets (Von der Leyen, 2019).

Legal aspects of climate and energy governance

The literature characterizes the “hardness” of “soft” governance foreseen in the European Energy Union (Knodt et al., 2020). While hard governance is considered for legally binding provisions and enforcement, soft governance refers to legally non-binding arrangements within EU and combined efforts of all MSs to reach commonly agreed targets and objectives. Thus hard or soft legislation which later results in hard or soft governance has three elements: obligation, precision and delegation. The authors consider that obligation goes to the fact that whether the provision is legally binding or not; the precision is directly linked to how precise a rule is described while delegation refers to the possibility of delegating to an authority the implementation of the legislation.

Article 194 of the Treaty on the Functioning of the European Union (TFEU) foresees that in the field of energy, the functioning of the energy market, energy security, energy efficiency, energy saving, the development of new, renewable forms of energy and interconnection of energy networks are decided at European level. The competencies for deciding the energy mix are the sovereignty right of each MSs.

The energy policy and the climate one as well, are under high political pressure while there always had been two groups of countries echoing the two opposite visions. On the one hand, the Visegrad extended group including Romania and Bulgaria supported the security of supply (Knodt, 2018; Szulecki et al., 2016), the recognition of major contribution to the EU’s overall GHG emission reduction and the right to decide the energy mix at MS level not at EU’s level. On the other side, there was the group of Northern/Western MSs supporting the sustainability and climate friendly approach while pushing climate and energy ambitious targets. As a direct consequence, the cleavage of these groups resulted in the 2030 climate and energy framework without national binding targets for renewable energies and energy efficiency.

Methodology

In the beginning was scrutinized the existing legislation on the energy and climate governance, including future provisions under the Green Deal and the new legislative proposals of the European Commission known as Fit 4 55 Package. The starting point for the analysis was the negotiations held in 2014 on climate and energy framework when the targets for 2030 in these two areas had been established. I considered the position of Romanian authorities including joining the Visegrad group (Poland, Czech Republic, Hungary, Lithuania, Latvia, Bulgaria, Romania) from energy security perspective, since 2014 until nowadays, in the geopolitical context related to gas supply from Russia. The assessment was conducted also from author’s previous position and experience as insider knowledge on Romania’s contribution to the negotiations and policy making in the EU and its institutions.

From legal point of view the provisions of the TFEU with the literature on soft and hard governance were compared, concluding that the Governance Regulation implies hard governance since it is mandatory in all its elements for all MSs.

Official EU and Romanian policy, legal documents and sites are the main primary sources for this study. It was used especially to the Governance Regulation no. EU 2018/1999, the data resulted from the assessment of the NECPs by the European Commission, Fit 4 55 Package – sections dealing with climate and energy targets, Commission Staff Working Document SWD (2020) 922 final - Assessment of the final national energy and climate plan of Romania and Government Decision no. 1076/2021 for the approval of the 2021-2030 National Integrated Plan in the field of Energy and Climate Change.

The achievement of the energy and climate targets by 2030 based on the data from the Commission provided in the “National Energy and Climate Plans: MS contributions to the EU’s 2030 climate ambition” was evaluated.

At the same time, we assess the figures on funding under the Modernisation Fund (MF) and its implementation at EU and national level. Data considered were taken from the European Commission and European Investment Bank site for the abovementioned fund (accessed on February 2022, at <https://modernisationfund.eu/how-it-works/>). European Energy Exchange/EEX was selected as pillar of the allowances prices for the period 1 January 2013 - 31 December 2020 and for the year 2021. The MF’s site is a trustworthy, independent online communication tool that collects, publishes, and distributes news and aggregate data concerning this ETS funding mechanism. The same goes for the EEX when considering allowances prices and related dynamics on the EU carbon market.

Using 2021 as the starting point, we analyzed the allocations of EUAs under the MF, including the transfers of the MSs allowances from other ETS mechanisms to MF, the dynamics of EUAs prices and the revenues generated from the auctioning of EUA from MF at national level. Finally, we compared the results obtained for our country to those of the European Commission within recommendations made to the Romanian authorities regarding the NECP funding.

The contribution to the literature is the analogy developed by comparing the recommendations of European Commission and the final proposals of Romanian authorities within NECP, namely on energy security, energy mix and EU funding. Regarding funding, this paper further completes the research made in the papers „The revision of the IV phase of EU ETS in the context of the climate change policy design and its implementation” accepted by 38th IBIMA Conference and „The present and future design of the Modernization Fund and its implementation across EU and in Romania” to be submitted to the 39th IBIMA Conference. Both of these papers have figures and estimations on the revenues obtained and to be obtained by Romania from ETS and Modernization Fund.

This paper includes an analysis on the legal and technical aspects regarding the implementation by our country of the climate and energy governance via NECPs, as well as a perspective on Romania’s position during 2030 climate and energy negotiations.

Results and discussions

The assessment of the Integrated National Energy and Climate Plans

The NECPs is a key instrument to the comprehensive overview and coherent picture of how the EU and its MS will achieve the climate and energy targets by 2030. The NECPs must provide enhanced visibility to the energy sector over the next 10 years and attract investments and generate jobs and growth, including in economically disadvantaged areas.

The European Commission conducted an assessment of the NECPs submitted by all MS and published in September 2020 a detailed EU-wide assessment. As a follow-up, and as part of the 2020 energy union report, the Commission published individual assessments of each of the national plans for further guidance. From the Commission’s analysis resulted that full implementation of these plans would put Europe on track to surpass its current 2030 targets for greenhouse gas emissions reduction and renewable energy as shown in *Table 1* below.

The energy efficiency improvements have a double effect on the GHG reduction compared to RES (Dolge & Blumberga, 2021). Therefore additional efforts need to be done by all MSs and future measures to be applied, e.g. the Renovation Wave including energy poverty (making energy

affordable to vulnerable people irrespective of the dynamic of its prices), renovation of public buildings; low CO₂ production and transport of energy for cooling and heating.

Table 1. The 2030 climate and energy targets – current status and proposals

2030 targets*	Expected results under existing targets	Proposed new 2030 targets
Greenhouse gas emissions at least 40% GHG** reduction	45%	55%
Renewable energy 32% EU energy from RES**	33,1% - 33,7%	38-40%
Energy efficiency 32,5 % improvement in energy efficiency	29,4% - 29,7%	36%-39%

*It should be mentioned that the 2030 climate and energy framework also included the target of 15% for interconnection of power market

** RES Energy from renewable sources; GHG greenhouse gas; EU European Union

Source: Author's interpretation on European Commission's data from "National Energy and Climate Plans: Member State contributions to the EU's 2030 climate ambition".

The Commission's assessment reveal that MSs will overachieve the EU target by 1,1% - 1,7% for RES. Nonetheless, further efforts are needed in order to deliver the new proposed target of 38-40%. The measures planned by MSs to reach their current target cover the following areas: Austria - installing 100,000 rooftop solar panels; Lithuania - financial support to consumers for installation of small-scale power plants; Denmark - investments for offshore wind capacity; France - six offshore wind tenders; Greece and Portugal - building solar farms and hydrogen infrastructure on former lignite mining sites.

Regarding energy efficiency, the current NECPs from all MS show an ambition gap of 2,8% for primary energy consumption and 3,1 % for final energy consumption in the EU. The measures planned by MSs cover the following areas: Bulgaria - renovation of more than 5% of public buildings per year; Latvia – renovation of 2,000 multi-apartment and 3,000 single family buildings by 2030; Romania – establishment of an energy efficiency investment fund financed from private, national and EU sources.

Romania's Integrated Energy and Climate Plan

The national authorities submitted Romania's Integrated Energy and Climate Plan (as shown in Figure 1) in April 2020 and received the European Commission recommendations in October 2020. The objectives and measures from the strategic document are based on the 5 dimensions of the Energy Union: decarbonisation having in mind the GHG emissions reductions and energy from RES; energy efficiency; internal energy market; energy security; research, innovation and competitiveness.

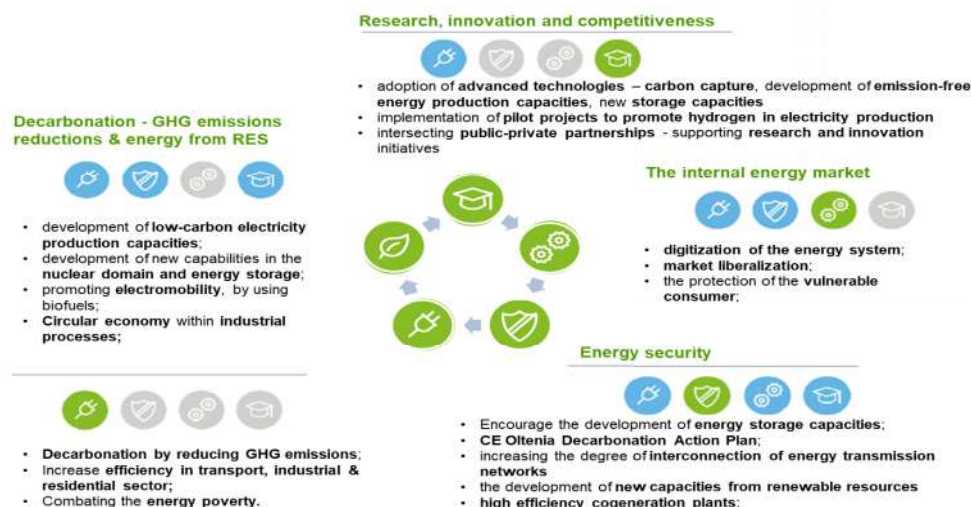


Figure 1. Romania's Integrated Energy and Climate Plan – RO's INECP

Source: Government Decision no. 1.076 / 2021 for the approval of the 2021-2030 National Integrated Plan in the field of Energy and Climate Change.

To summarize, the long-term perspective proposed by Romania for the energy sector refers to: diversified energy mix by 2030, considering decarbonizing the energy system, as well as ensuring the flexibility and adequacy of the Energy System; reducing the share of conventional energy sources by replacing them with RES; increasing the share of electricity in national energy consumption; replacing coal based power plants with cogeneration on natural gas, refurbishment of a nuclear unit and construction of a new one until 2030, including integration of socio-economic aspects in mono-industrial regions. Moreover, the national authorities proposed to eliminate the subventions for fossil fuels and to introduce additional carbon taxes for electricity imported from non-EU countries. By the proposed measures, national authorities also intend to reduce dependency on imports from third countries, from a level of 20.8% in 2020 to 17.8% in 2030.



Figure 2. Projects on diversification of resources

Source: Government Decision no. 1.076 / 2021 for the approval of the 2021-2030 National Integrated Plan in the field of Energy and Climate Change.

At the same time, it is proposed the resources diversification in order to increase energy security based on different type of projects as presented in Figure 2 above, such as: the power and

natural gas infrastructure, new RES capacities, implementation of the legal framework necessary for Black Sea, new nuclear capabilities and diversification of uranium sources for Nuclearelectrica, CE Oltenia Decarbonisation Plan - the sustainable transition to a low CO₂ emissions power production.

As presented in Figure 3 below, Romania plans to diversify the energy mix by 2030 due to an increase by 35% in 2020 compared to 2020, namely additional 2,302 MW generated by wind and more 3,692 MW generated by solar energy.

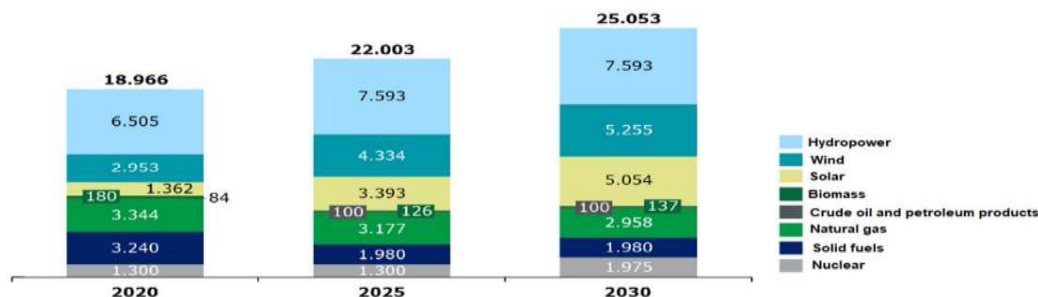


Figure 3. Diversified energy mix by 2030

Source: Government Decision no. 1.076 / 2021 for the approval of the 2021-2030 National Integrated Plan in the field of Energy and Climate Change.

Regarding the total investment needs estimated based on the objectives of Romanian energy strategy they represent around EUR 150 billion for 2021 to 2030, e.g. annually around 7% of current GDP. National authorities identified 28, 6 billion EUR to be spent in 9 years from various sources: Structural Funds (European Regional Development Fund, Cohesion Fund, Just Transition Fund), InvestEU, Modernization Fund, loans from European Investments Bank, state budget.

European Commission recommendations on Romania's proposals

The services of the European Commission made 10 recommendations to the Romanian authorities which had been taken into account by these when finalizing the NECP. 80% of the recommendations had been addressed partially by the final plan, namely regarding decarbonisation – renewables, energy efficiency, energy security, internal energy market, investments and funding sources, regional cooperation, energy subsidies, air quality, just transition and energy poverty. The NECPS does not present any national objectives, funding targets, concrete policy or measures for research, innovation and competitiveness for the period after 2021-2030; as a result, 12,5% of the recommendations had not been addressed in the final NECP. Only 12,5% of the recommendations had been totally taken into account in the field of decarbonisation – greenhouse gas emissions reduction where Romania considered the 2030 national target of minus 2 percent for non-ETS emissions in line with the current legislation. At the same time, it is mentioned that the NECP did not present the possible revenues and benefits resulted under the mechanisms to be used for the overachievement in the non ETS sector.

The 30,7% of gross final energy consumption in 2030 as RES target proposed by Romania is considered under the 34% level (estimated in accordance with the provisions of the legislation in place) to be reached while the measures for electricity, heating and transport sector cannot be clearly quantified. At the same time, European Commission considered that the improvement in energy efficiency is low in ambition.

In the field of energy security, Romania plans to decrease its energy dependency to 68% by 2030 which represented an improvement compared to initially draft submitted. Positive aspects are

related to the diversification of sources, i.e., renewable energy and energy efficiency targets, transition from coal to cleaner sources, including nuclear. NECP also foresees policy objectives and measures regarding the internal market.

Author's assessment on the Romania's proposals and European Commission recommendations

As general legal comment, although considered "soft governance" (Knodt et al., 2020), the Governance Regulation is per se a hard governance as the article 288 of TFUE foresees that the regulation as legal instrument is entirely legally binding and directly applicable in all MSs. Moreover, although the target for renewable energy is established at EU level, each MS contribution to the Union's 2030 target for renewable energy is assessed by the Commission and approved if the level proposed by the national authorities is the one as indicated by the formula in Annex II under Regulation EU no. 2018/1999. In other words, the regulation as type of legal instrument is "hard law" being characterized by obligation and precision.

Going to the technical assessment made by the European Commission, the transition to green energy is taking place at a slow pace considering that coal is not excluded from the energy mix and also no aggressive measures being taken for the conventional fuels sector. Although criticized by the Commission and considering that the national energy mix is a MS prerogative and varies from one MS to another, Romanian authorities supported the security of supply by keeping the coal as one of the resources to produce energy despite being a high CO₂ emitter. This approach reflects a high level of continuity and a steady position of authorities regarding the use of coal who supported the position of the Visegrad group across time, starting 2014 when the negotiations on 2030 climate and energy targets started. At the same time, it should be mentioned that, in the energy mix estimated by the authorities for 2030, coal represents a low share, namely only 7,9% of the total.

On the other hand, a very good point of the energy mix, both from energy security and climate perspective, is the high share 30,3% hydropower combined with even higher share of 41,69% from RES. In addition to the abovementioned positive aspects, 7,88% comes from nuclear energy which is also a low CO₂ emitter.

Security in supply has always been and it is presently kept as very important trigger for the energy mix if we look at the disputes over the gas deliveries between Ukraine and Russia (2006, 2009), between Belarus and Russia (2007) and current situation between Ukraine and Russia. Therefore the role of natural gas in mid-term decarbonisation of the energy sector is appropriately addressed by the Romanian authorities, being included downward trend used in power generation with a decrease of 12% by 2030, from 3.344 MW installed capacity in 2020 to 2.958 MW installed capacity in 2030. The private sector from gas industry will have to create its own long-term decarbonization strategy around biogas, biomethane, power to gas, green hydrogen and carbon capture and storage technology.

The implementation measures are formulated too largely, missing a correlation between the measures, responsible authority, timeline and financing sources regarding research and innovation. Competitiveness area is missing specific objectives.

Although the NECP accommodate the synergy of funding, the confidence in absorbing EU Funds is low. Thus, the capacity building and expertise should be strengthened in the financing area. The lack of resources at institutional level is also reflected by the low efficiency in use of the EU Emission Trading funding mechanisms to be used for the modernization of the energy sector. Overall, although the necessary investments represent 150 billion by 2030, the national authorities identified 28,6 billion EUR to be spent while the European Commission indicated 73,6 billion EUR

as potential funding from EU sources to Romania for the period 2021-2027. The amount estimated by European Commission is much higher considering the revenues generated both by the general auctions under ETS and also those resulted from the Modernization Fund. Romania decided to increase its initial volume of 33.018.490 EU allowances by additional transfer of 167.747.579 EU allowances for the period 2021-2030. Thus the 3 billion EUR the amount initially estimated by the Commission can be at least doubled representing 6,57 billion EUR at Romania disposal. This is the lowest value considered if the starting point is the average EUA price of 56,03 EUR/EUA, calculated based on the EUA prices on the carbon market during 2012-2020 as shown by the EEX¹. To date the EUA price is 88 EUR/EUA and it is estimated to go up based on the high volatility on the carbon market; if we consider 100 EUR/EUA as the average price for the period 2021-2027, the revenues from the Modernization Fund can reach 11,74 billion EUR. The same context goes to ETS revenues.² So, the funding of at least 77,17-82,34 billion EUR for the period 2021-2027 is supplemented by another part which can be accessed by our country from those 511,5 billion EUR at the disposal of all MS.

Conclusions

The current paper completes the empirical literature on the EU climate and energy policy, namely the implementation part related to the development, assessment and approval of the NECPs of the MSs for the period 2021-2030. A deeper analyse is conducted for Romania's NECP using as milestone the Governance Regulation. This paper includes a analyse on the legal and technical aspects regarding the implementation by our country of the climate and energy governance via NECPs, as well as a perspective on Romania's position during 2030 climate and energy negotiations.

The Governance Regulation besides being legally binding for all its elements (obligation), has also precision. These two characteristics place it in the category of "hard law" instrument not in the "soft governance".

NECPs are the main instrument to implement the climate and energy policy as they set out how MSs will contribute to the EU-wide climate and energy targets from 2021 to 2030. From the Commission's analyse resulted that by full implementation of these plans Europe will overachieved its current 2030 targets for greenhouse gas emissions reduction and renewable energy. It is estimated that the current target of 32,5% improvement in energy efficiency by 2030 not to be reached. Additional efforts are requested from the MSs since European Commission proposed in 2021 (under the legislative proposals of Fit for 55 package), an increase in all three targets by 2030, namely from at least 40% to 55% for GHG, from 32,5 % to 36%-39% improvement in energy efficiency, from 32% to 38-40% for RES.

While the EU has common climate and environmental targets, the national energy mix is a MS prerogative and varies from one MS to another, with some still reliant on high CO2 emitting coal. The disagreement of the Visegrad group and Northern/Western countries, security in energy supply vs. sustainability, resulted in the 2030 climate and energy framework without national

¹ Exchange for European power in both the primary and secondary market for carbon emission allowances under the EU Emissions Trading Scheme.

² The empirical literature presents the evolution of carbon price: the range 50-60 EUR/ EUA in mid 2021 and its increase in a scenario with GHG reduction target of 55% by 2030 (Osorio et al., 2021), by 2030 the band between 61-169 EUR/ tonne of CO2 (Knopf et.al, 2013), 101,44 EUR/EUA in December 2022 (ICE <https://www.theice.com/products/197/EUA-Futures/data?marketId=6734673> via the Modernization Fund site of the European Commission and European Investment Bank <https://modernisationfund.eu/how-it-works/>)

binding targets for renewable energies and energy efficiency. The difference in positions of Visegrad group and Northern/Western countries and keeping MS's right to use coal, is also echoed by the legislation for EU Emission Trading Scheme which foresees two specific mechanisms for funding the modernization of the energy sector and diversify energy mix under the provisions of article 10c and 10d.

The continued use of coal by Romania is justified both from energy security perspective, as well as from the climate one as the share of coal in the energy mix is decreased by 2030 when it represents only 7,9% of the total. More than 71% of the energy mix in 2030 is represented by the lowest CO₂ emitter, hydropower and RES, used for the energy production. As part of the decarbonisation dimension, the GHG target undertaken by Romania in the field of non ETS sector to reduce emissions by 2% vs. 2005 level is the only field where the Commission considered its recommendations had been totally addressed.

Although Romania's NECP accommodate the synergy of funding, the confidence in absorbing EU Funds is low. Thus, the capacity building and expertise should be strengthened in the financing area. At least 77,17-82, 34 billion EUR for the period 2021-2027 billion EUR is supplemented by the ETS revenues and the part which can be accessed by our country from those 511,5 billion EUR at the disposal of all MS.

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