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The Europeanisation of the Energy Transition in Central and Eastern EU Countries

An Uphill Battle that Can Be Won



Center for Energy
& Climate

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Executive Summary

Russia's war in Ukraine, and the brutal decoupling from Russian fossil fuels, is a game changer for the Central and Eastern Europe region which was still heavily dependent on Russia for its energy supply. There are still a few oil, gas and nuclear fuel supplies, but the sharp decline, and search for alternatives, lead to a shift in paradigm: deploying low-carbon technologies and energy efficiency is now a matter of national security and economic security. Hence, following the 2022 energy crisis, the understanding that the European Union's (EU) energy security of supply means an acceleration in phasing out fossil fuels and deploying clean energies has become the newest European *acquis* in energy policy, increasing the importance of the Green Deal at EU, national and local levels. The risk that a carbon wall would be erected within Europe between the West and the Central and Eastern European Member States (CEECs) is no more valid.

The concept of Europeanization is at the core of the analysis of the energy transition in the CEECs. The progress on greenhouse gas (GHG) emissions reduction observed in these Member States (MS) can be considered as a success of the Europeanization process in this region, as its timing coincides with the implementation of the 2020 agenda for climate and energy, to the establishment of which these countries were part of. Moreover, the Clean Energy Package and the Green Deal seem to have been successful in putting in place a mechanism of cognitive framing pertaining to the Europeanization toolbox, by setting a framework for all Europeans to move in the same direction, of a cleaner and healthier way of living, independently of their starting point. Given the status quo in the ten CEECs, the new ambitious objectives regarding transport decarbonization will translate into important transformation costs for the region, which in turn could increase the risk of renegotiation attempts, as the circular Europeanization theory predicts.

The acknowledgment at the EU level that the transition must be just to succeed is one instance of bottom-up Europeanization, where the challenges brought forward by specific Member States shaped the European energy transition agenda and discourse. Large financial support for this end was a first condition for CEECs to support the climate neutrality agenda. The second condition is that CEECs plan to replace their coal fleet at least partially with nuclear power, be they reactor capacity expansions, lifetime extensions, large new reactors or small modular reactors (SMRs). The third condition has been securing a role for the use of natural gas for the transition, which in 2022 turned out to be a costly choice.

With the crisis, CEECs have all taken on board the necessity to boost renewables as a tool to rapidly decrease dependence on imported fossil fuels, to meet the 2030 targets, prepare for the progressive phase-out of free emission allowances while awaiting the new nuclear generation capacities due from 2035 onwards. This strategy is also supported by public opinion, while it remains to be seen how public acceptance of SMRs will be. This gives the CEE region a strong joint interest to push for the inclusion of nuclear energy in EU legislations, alongside France. On gas, countries have switched to LNG and diversified their pipeline supplies, and where possible, try to boost the domestic supply of natural gas and soon, biomethane. Although being relatively far from alternative gas entry points means that for some CEECs Russia remains, to a certain extent, a necessity, this cannot be used as an excuse for undermining EU unity and should push towards harder EU-level reflections on energy solidarity on which some progress was done during the 2022 energy crisis.

It remains to be seen if a new line of fragmentation will not appear between Germany and Austria on the one hand and the CEEs on the other: following the Nord Stream betrayal and denial by Germany of Polish energy security concerns for example, CEECs are concerned about the extraterritorial outreach of Germany's nuclear phase-out policies, and of Austria's continued systemic opposition to nuclear. This plays in the hand of the United States, which is the ultimate gatekeeper to pressure Germany and secure the energy technology choices of CEECs through the export of US technologies. Of note is also the shared concern now over the dependence on Russian nuclear fuels and equipment, and efforts to reduce this. A last source of possible tensions comes from some new gas infrastructure investments which can strengthen resilience but risk locking in gas much longer than the EU trajectory allows for.

Beyond nuclear energy, however, the interest in accelerating the deployment of renewables, and the concern over a just transition, the note shows that there is little in common between the CEECs which have all their specificities.

Last but not least, this note argues that a new risk of fragmentation may emerge, related to the localization of innovation and the volume of state aids and subsidies to industries. While some CEECs appear to be a frontrunner in the deployment of battery cell gigafactories, their financial and budgetary capacities are much more limited compared to Western MSs, and their ability to develop comprehensive, coherent climate plans, and to mobilize EU tools and funding, is also limited. Without an EU Sovereignty Fund, the region will find it hard to keep pace with EU's objectives in the Net-Zero Industry Act and the Critical Raw Materials Act due to limited fiscal space to be leveraged for state aid purposes, despite more favorable conditions.

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Introduction

The European Green Deal has already achieved a Europeanization of the energy agenda in EU Member States (MS) by setting a clear direction of travel:¹ -55% GHG emissions by 2030 and climate neutrality by 2050. Following the 2022 energy crisis, the understanding that the EU's energy security of supply means an acceleration in phasing out fossil fuels and deploying low-carbon technologies has become the newest European *acquis* in energy policy, increasing the importance of the Green Deal at EU, national and local levels. The energy transition is no longer just a matter of being ambitious for the climate and caring for future generations: it has concrete geopolitical and economic dimensions in today's present, which populations and businesses alike fully grasp as they mobilize in favor of installing renewables (residential solar PV, renewable energy systems (RES) PPAs – power purchase agreement) and deploying clean technologies (e.g., heat pumps sales grew by 38% in 2022 vs. 2021 in the EU). However, the EU's accelerated transition must find ways to shield populations and businesses from rising energy costs in a fair and efficient manner, provide a credible story about improved well-being as it has become clear that decarbonization does not automatically mean lower bills. Furthermore, with the United States' *Inflation Reduction Act*, adding to China's *Made in China 2025*, Europe finds itself caught in a technological and investment race for clean technologies. The EU is under the pressure of putting together a major industrial pillar to support its European Green Deal which has been so far mostly about regulatory and legislative changes. This more tangible and pragmatic approach to the energy transition seems to resonate more with the culture of Central and Eastern Europe which in the energy field is more concerned with issues such as adequacy of generation, stability of the grid and resilience against Russia's threats, which turned from possibility to reality in 2022, leading to a moment of reckoning in the EU regarding Germany's mistake in deepening the fossil fuels dependency on Russia. Yet a fundamental challenge will be meeting the immediate demand for energy security while remaining on a long-term pathway of full decarbonization.

The concept of Europeanization is central to this paper. Due to its ambiguous and changing nature, its mere definition has been subject to an extensive debate among academics, with a relative consensus emerging on the fact that it represents a dynamic transformation of domestic structures

1. M-A. Eyl-Mazzega, D. Gherasim, "The European Green Deal Three Years On: Acceleration, Erosion, Fragmentation?", *Briefings de l'Ifri*, Ifri, November 14, 2022.

because of EU membership. The most commonly referred to and, arguably, the most comprehensive definition of Europeanization was put forward by Claudio Radaelli (2000):

“Europeanization consists of processes of (a) construction, (b) diffusion and (c) institutionalization of formal and informal rules, procedures, policy paradigms, styles and ‘ways of doing things’ and shared beliefs and norms which are first defined and consolidated in the making of EU decisions and then incorporated in the logic of domestic discourse, identities, political structures and public policies”.

More precisely, this paper uses the lenses of Europeanization to study the energy transition in ten CEECs that gained membership to the EU in 2004 and 2007 enlargements, namely: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Bulgaria and Romania.

These MS are no more simple “*downloaders of EU law*”² as the energy transition agenda has notably put them in a situation where they have been at the decision-making table from the early days, where the EU started to seriously look at the climate change agenda by fixing targets and monitoring processes, notably the 2020 climate & energy package (in 2008). This focus on the ten CEECs allows to reflect space representations, meanings and imaginaries constructed based on an East-West paradigm, according to which the CEE states’ adherence to the EU has been underpinned by a certain motivation to overcome their “Eastness” often synonymous to backwardness. As H. Grabbe argues, Europeanization for them is about “moving beyond communist legacies and regaining a full role in the European political and economic space”³. Or as was later more the case in certain CEECs, to regain, reclaim and affirm their sovereignty, sometimes this was done through stressing the primacy of NATO and of the alliance with the United States, or through the refusal to align with all the EU norms and standards developed by the historical MSs from the West, ultimately even calling into question some of the founding liberal and democratic rules of the EU. The relevance of this paradigm was recently underlined by EVP Timmermans when referring to the success of the Czech presidency in dealing with the energy crises provoked by Russia’s war in Ukraine, which according to him led to “East and West no longer [being] seen as moral or political qualifications, but purely as geographical qualifications”.⁴

2. S. Bulmer and C. Lequesne, “The new Member States and the EU, in book Member States and the European Union”, Oxford: Oxford University Press, 2004.

3. H. Grabbe, “The EU’s Transformative Power. Europeanization through conditionality in Central and Eastern Europe”, New York: Palgrave Macmillan, 2006.

4. European Commission, “Opening Remarks by Executive Vice-President Timmermans at the Environment Council press conference of 20 December”, December 2022, available at: <https://ec.europa.eu>.

The aim of this paper will be to examine to which extent the energy transition process in these CEECs can be seen as a successful proof of Europeanization, and whether there is still a risk of East-West fragmentation in Europe with the CEECs lagging behind and a carbon or investment wall possibly being erected. To this end, the note first looks at key indicators such as the reduction in GHG emissions and the uptake in low-carbon technologies such as electric vehicles and heat pumps. Secondly, it will provide insights into the consequences of the 2022 energy crisis in this region and how these could mark a different phase in the Europeanization process, with more circular and bottom-up dynamics taking shape. Finally, it will provide key recommendations to foster the implementation of the energy transition in a more coordinated and efficient manner, acknowledging that these CEECs in no way form a coherent bloc.

Complex and Different Realities in CEECs, but Overall, the Decarbonization Trend is Picking Up

In 1990, Vaclav Havel stressed that Central European countries should act as a unified political actor in order to approach the EU “not as a poor dissident or a helpless, searching amnestied prisoner, but as someone who has something to offer”. However, unity among the CEECs has never fully materialized, especially because of differences in economic structures, interests, historical tensions, weak political ties, but also because of a lack of incentives (for instance, the EU accession process was on a case-by-case basis, which in practice entailed rather a competition than a cooperation mindset between these countries). The ten CEECs have different interests and views also on energy issues, which results in a variety of cooperation formats from more intra-regionally focused ones (like the Visegrad Group or the Three Seas Initiative), to broader cooperation formats, for instance on offshore wind (in the Baltic Sea between eight MSs – Germany, Denmark, Sweden, Finland, Lithuania, Estonia, Latvia and Poland) or in the nuclear field (the Alliance recently launched by France and joined by Poland, Czech Republic, Slovakia, Slovenia, Romania, Bulgaria, Hungary, Croatia, Finland, Sweden).

If one cannot refer to these ten CEECs as a bloc, these MSs still have an essential common thread, which is key for the success of the energy transition: a level of economic development which remains below the EU average, as shown in the table below. This means that households and governments have less budgetary space available to foster investment in low-carbon technologies and infrastructures, hence the importance of EU funds to support this transition at all levels (e.g. Modernization Fund, Just Transition Fund, Recovery and Resilience Facility). This also means that governments in the region have actually a double urgent issue to solve : catching up with richer Western MSs while stepping up efforts on decarbonization of their economies, knowing that the successive crises (2008 financial crisis with its extended repercussions, followed by Covid-19 and the war in Ukraine, bringing along the energy crisis and inflationary pressures) have further complicated the policy equation, adding resilience, adaptation and social acceptance on the agenda. The second common feature of this region has been its over-reliance on Russian fossil fuels, notably oil for all of them, and natural gas (with a few exceptions lately such as Poland). Finally, coal production and consumption is a key element in many of these MSs which together accounted for almost half of EU’s coal

consumption. Nevertheless, in many aspects, CEECs exhibit different realities, as shown in the table below: different exposures of the population to the risk of poverty (ranging from 34.4% in Romania to well below EU average in Czech Republic – 10.7%), different levels of GHG emissions/capita (depending on the GHG intensity of the energy mix, as well as the degree of industrialization of the country) and different levels of overall dependency on energy imports (influenced namely by the choice of the energy mix and resource exploitation potential).

Figure 1: Key socio-economic indicators for CEECs related to energy (2020, 2021 or 2022 data)

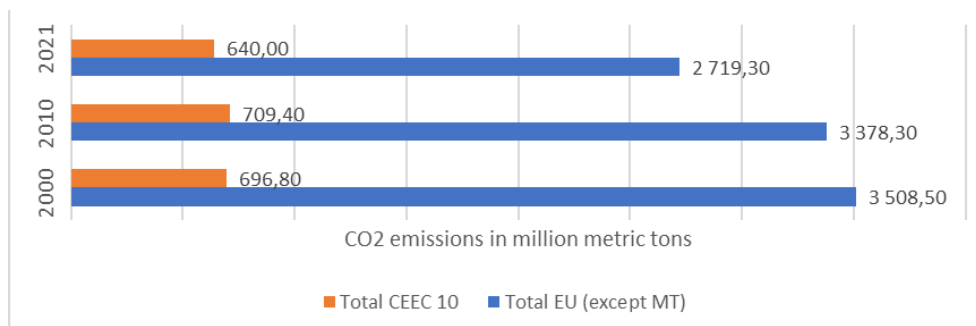
	EU	BG	CZ	EE	HU	PL	LV	LT	RO	SK	SI
People at risk of poverty or social exclusion (as% of the population) in 2021	21.7%	31.7%	10.7%	22.2%	19.4%	16.8%	26.1%	23.4%	34.4%	15.6%	13.2%
GDP per capita (€ per habitant)	27 880 €	6 950 €	18 020 €	16 490 €	13 690 €	13 760 €	12 970 €	14 820 €	9 610 €	15 920 €	21 310 €
GHG emissions (tonnes per capita) in 2020	7.5	7.2	10.6	8.7	6.5	10	5.6	7.3	5.7	6.8	7.6
RES (as % in gross final energy consumption) in 2020	22%	23.3%	17.3%	30.1%	13.9%	16.1%	42.1%	26.8%	24.5%	17.3%	25.0%
Electricity prices for HH (€/MWh, incl. Taxes) in 2022 - S1	252.5	109.3	305.9	205.6	94.8	146.4	131.2	149.7	236.2	179.6	139
Energy imports dependency (% of gross available energy) in 2021	55.6%	36.1%	40%	1.4%	54.1%	40.4%	38.3%	73.3%	31.6%	52.6%	48.6%
Share of industry contribution to GDP (World Bank, 2021)	22.8%	20.8%	30.3%	23.1%	24.3%	27.9%	19.9%	25.3%	27.8%	28.2%	28.5%

Source: Author, based on Eurostat Country Facts, World Bank

The Region Has Been Experiencing a Decarbonization Trend Since 2010, a Success for the Europeanization and Green Deal Agenda

Between 2000 and 2010, CO₂ emissions in CEECs increased by 1.8% (driven namely by increases in emissions in Poland, followed by far by the Baltics, partially offset by reductions namely in Romania, Czechia and Hungary) while EU’s overall emissions declined by 3.7%. Yet over the period 2010-2021, CEECs aligned with the EU on a declining trend of CO₂ emissions, with an overall reduction of -10%, less rapid though than the EU overall trajectory of -19.5% over the same period. This explains why the share of CEECs emissions in overall EU emissions has been growing since 2000 from 19.9% to 23.5% in 2021, although it should be noted that overall, the CEECs taken together have been emitting less than Germany, only in 2021 the trend inverted, with Germany managing to emit slightly less than the CEECs. This progress on emissions reduction can be considered as a success of the Europeanization process in this region, as its timing coincides with the implementation of the 2020 agenda for climate and energy, to the establishment of which these countries were part of.

Figure 2: Evolution of CEECs vs. EU CO2 emissions reduction, 2000, 2010, 2021



Source: Author, based on data by Statista⁵

The European Green Deal, and subsequently the European Climate Law, making the -55% GHG emissions reduction objective by 2030 and of climate neutrality by 2050 legally binding, resulted in an even stronger push to phase out fossil fuels in Europe, starting with coal production and consumption. Beyond delivering much-needed emissions reductions, the European Green Deal aims to improve citizens' health and well-being given that 300 000 premature deaths in the EU in 2019 were caused by fine particulate matter with residential boilers and stove burning fossil fuels being a key source of these emissions. The challenge here is massively important for countries like Poland, Czechia and Bulgaria.

The acknowledgment at EU level that the transition must be just to succeed is one instance of bottom-up Europeanization, where the challenges brought forward by specific MS shaped the European energy transition agenda and discourse, hence enhancing adhesion to the common cause of fighting climate change and transforming the energy and economic systems. Indeed, as shown in the table below, the ten CEECs represent almost 50% of EU's coal consumption, whereas they account for 11% of EU's GDP and 22% of EU's population. While EU's overall hard coal production was down by 79% in 2021 compared to 1990,⁶ Poland (96%) and Czechia (4%) were the only two countries still producing hard coal (57 Mt) in the EU, albeit compared to the 2012 peak, they have decreased their production by 31%, respectively 81%. In terms of coal consumption, Poland and Germany were leaders: in 2021, Poland accounted for 41% of the hard coal consumption in the EU and 19% of the brown coal consumption, while Germany leads the brown coal consumption (46%) and accounts for 23% of the hard coal consumption.

5. "Carbon dioxide (CO₂) Emissions in the European Union in 2000, 2010, and 2021, by Country", Statista, available at: www.statista.com.

6. "Coal Production and Consumption Statistics", Eurostat, available at: <https://ec.europa.eu>.

Figure 3: Share of coal consumption of CEECs within EU27

Country	Hard coal consumption (thousand tonnes, 2021)	Brown coal consumption (thousand tonnes, 2021)	Total coal consumption (thousand tonnes, 2021)
Bulgaria	887,599	28 301,049	29 188,648
Czechia	5 567,550	28 949,387	34 516,937
Estonia	5,660	0,000	5,660
Latvia	30,873	0,000	30,873
Lithuania	242,510	1,578	244,088
Hungary	1 148,901	5 051,695	6 200,596
Poland	65 919,452	52 614,450	118 533,902
Romania	889,000	17 833,000	18 722,000
Slovenia	10,362	3 227,022	3 237,384
Slovakia	3 281,000	1 367,000	4 648,000
CEEC 10	77 982,907	137 345,181	215 328,088
EU27	160 781,954	276 775,573	437 557,527
%CEEC10 in EU	48,5%	49,6%	49,2%

Source: Author, based on Eurostat data⁷

Another major factor of change toward adopting the European Green Deal has been the growing awareness of energy and emission intensive industries from the region that there is no alternative but to decarbonize, starting with power generation, and then industrial processes. These industries are either part of wider European or international groups, or exporting in the rest of Europe, and hence, have to align with the wider trend to remain competitive, be bankable and meet the expectation of consumers and the corporate group. They also have to comply with the European Union Emissions Trading System (ETS) and have anticipated an unavoidable reduction in free emissions. It is thus no surprise that Polish energy intensive industries have engaged in an ambitious program to develop SMRs with North American technology providers⁸ as they understand they will have to decarbonize to remain in business, and that such technologies offer potential advantages for joint heat or hydrogen production. And governments in the region seem to be increasingly understanding that the attractiveness of their economies for investments will depend upon the credibility and efficiency of their decarbonization pathways.

EV Penetration and Charging Infrastructure Deployment Are Lagging, which Comes with Systemic Challenges

According to data released by the European Environment Agency,⁹ 2021 saw a significant increase in sales of electric cars and vans in the EU-27, equal to 17.8% of total new car registrations (compared to 10.7% in 2020).

7. *Ibid.*

8. "Polish Companies Sign Mous on SMR Deployment and Supply Chain", World Nuclear News, September 23, 2021, available at: www.world-nuclear-news.org.

9. European Environment Agency, "New Registrations of Electric Vehicles In Europe", October 26, 2022, available at: <https://eea.europa.eu>.

Nevertheless, the share of EVs (electric vehicles) sales in the total cars sales in CEECs accounted for only 4.3%, with the top 3 performers being Romania, Hungary, and Lithuania. To be noted that in terms of absolute numbers, the top 3 most important markets for EVs sales are Poland, Romania, and Hungary. It is worth noting that approximately $\frac{2}{3}$ of EVs sold in Poland in 2021 are plug-in hybrid, whereas in Romania approximately $\frac{2}{3}$ are battery EVs, and in the case of Hungary there is an equal distribution between the two categories. Out of all the electric car registrations in EU-27 in 2021, total registrations in CEECs represented only 2.8%. In absolute numbers, the total number of units sold in these CEECs, that is 47,372 units, is barely equivalent to the number of units sold in one EU country, Austria – 47,874.

Figure 4: Sales of Electric Vehicles in CEECs and EU-27

	EVs sales (units)	Total car sales (units)	Share of EV in total sales of MS	Country % of total CEEC10 EV sales
Bulgaria (BG)	1 069	24 035	4,4%	2,3%
Slovakia (SK)	1 561	74 860	2,1%	3,3%
Slovenia (SI)	2 223	51 858	4,3%	4,7%
Czech Republic (CZ)	6 369	200 971	3,2%	13,4%
Hungary (HU)	8 104	115 207	7,0%	17,1%
Romania (RO)	9 200	120 775	7,6%	19,4%
Poland (PL)	16 040	440 157	3,6%	33,9%
Latvia (LV)	547	14 166	3,9%	1,2%
Lithuani (LT)	1 547	30 928	5,0%	3,3%
Estonia (EE)	712	22 316	3,2%	1,5%
Total CEEC10	47 372	1 095 273	4,3%	
Total EU27	1 728 967	9 695 706	17,8%	

Source: Author, based on data by European Environment Agency

As a reminder, based on the agreement achieved under the Czech presidency of the Council on the regulation regarding the CO₂ standards for new cars and vans, all new cars and vans in the EU will need to be 100% emissions-free by 2035, meaning that by that date EV sales in CEECs will need to go from covering 4% of new cars sales to covering almost 100%.

This is a monumental transformation, challenging not only from a social point of view (given the GDP per capita of these countries), but also from an infrastructure point of view, as it will require a massive development of charging infrastructure as well as expanding the power grids. In terms of availability of electric car charging points across the EU, according to ACEA,¹⁰ 42% of the charging points are concentrated on 10% of EU areas (Netherlands and Germany). The Netherlands has almost 70 times more charging points (111,821 chargers) than Romania (1,658 chargers), a country whose surface is almost six times bigger than the Netherlands' but whose GDP is roughly four times lower. This situation should change based on the obligations fixed in the new Alternative Fuels Infrastructure Regulation recently agreed between the institutions, setting a target of electric charging stations (along core TEN-T network) for cars at least every 60 km, for trucks – every 120 km, and hydrogen refueling stations at least every 200 km.

Given the status quo in these ten CEECs, the new ambitious objectives regarding transport decarbonization will translate into important transformation costs for the CEE region, which in turn could increase the risk of renegotiation attempts, as the circular Europeanization theory predicts. Indeed, MS may resort to rejecting EU policies based on domestic timeframes (elections), salience of issues (cost of buying an EV against an inflationary economic background) and their degree of politicization (making Green Deal objectives the scapegoat for poor national policies or economic downturns, as already documented in some countries¹¹). As a matter of fact, Germany opened an opportunity window in this sense through its refusal to ratify the deal as long as e-fuels are not explicitly included. Although e-fuels cannot be a solution for the CEE region, given their scarcity and high cost, several countries rallied behind Germany's position and, ultimately, Poland voted against the adoption of the regulation on CO₂ standards while Romania and Bulgaria abstained (together with Italy). Nevertheless, the region must come to see this ambition as a unique opportunity to absorb the unprecedented level of funding available at the EU level to rehaul transportation and fight air pollution in cities, which in turn will increase the quality of life for populations.

Moreover, the region is at the forefront of the EU's ambitions in the deployment of a European-based battery value chain: foreign direct investments in Hungary in the last six years in the battery sector reached

10. ACEA, "Interactive Map – Correlation Between Electric Car Sales and Charging Point Availability (2022 data)", February 23, 2023, available at: www.acea.auto.

11. K. Sefcikova, "The European Green Deal and the Energy Crisis in the Czech Information Space", Prague Security Studies Institute, PSSI Analysis, June-December 2022.

14 bn€,¹² coming second after Germany as a leading destination for new battery cell manufacturing plants. More broadly projects planned in the region (Hungaria, Slovakia, Poland) represent roughly 30% of the total capacity planned in Europe (EU-27+UK and Norway) by 2027 and already in 2022, the majority of EU battery production came from LG Chem in Poland and Samsung SDI in Hungary, according to Transport & Environment.¹³ It goes without saying that these MSs will need to rapidly decarbonize their energy supplies to keep manufacturing plants on their territories and create a competitive advantage for their economies based on green batteries production.

Heat Pumps Penetration and Residential Solar PV Deployment Gather Speed

There are different estimations regarding the evolution of the heat pumps market in Europe, the total number of heat pumps in operation in 2020 in the EU being estimated by EHPA at 14.86m (restricted to heat pumps primarily used for heating) and by EurObserv'ER at 41.9m (including also reversible heat pumps used as air conditioners). Taking as a reference the second estimation using publicly available data, the table below shows that the share of CEEC10 heat pumps in operation within the EU's total is remarkably low although it has been going up from 0.7% to 3.2% over the period 2013-2020. Nevertheless, data also shows that the pace of increase in number of units installed in 2020 vs. 2019 was much higher in the CEEC10 (+16.5%) than in the EU overall (5.5%). Particularly dynamic markets are Slovakia, Lithuania, Hungary, and Poland.

Figure 5: Number of heat pumps in operation (2013-2020) in CEECs vs. EU total

N° of heat pumps in operation from 2013-2020 in CEECs vs. the EU total									
	2013	2014	2015	2016	2017	2018	2019	2020	Change in 2020 vs 2019
Total CEEC available	171 865	214 688	257 690	321 998	415 642	514 868	1 160 940	1 352 286	16,5%
EU total	25 000 000	27 700 000	29 500 000	31 900 000	34 800 000	37 700 000	39 700 000	41 900 000	5,5%
%CEECs in total EU	0,7%	0,8%	0,9%	1,0%	1,2%	1,4%	2,9%	3,2%	

Source: Author, based on compilation of data published by Statista and EurObserv'ER for the full 2013-2020 period for 6 CEE countries and restricted to 2019-2020 period in the case of Slovenia and Bulgaria. Equivalent data for Latvia and Romania was not available.

Poland became a success story in the field of heat pumps deployment: according to EHPA 2022 report¹⁴, in a context where the EU heat pump

12. Euractiv, "German Car Giants and Asian Battery Kings Chose Hungary for Multi-Billion Deal", December 13, 2022, available at: www.euractiv.com.

13. Transport & Environment, "A European Response to US IRA. How Europe can use its soft and financial powers to build a successful electric vehicle value chain", January 2023, available at: www.transportenvironment.org.

14. EHPA, "Heat Pump Record: 3 Million Units Sold in 2022, Contributing to REPowerEU Targets", February 20, 2023, available at: www.ehpa.org.

market reached record sales of 3m units, Poland has been leading the growth in sales with a +102% increase compared to 2021, followed by the Czech Republic (+99%) and quite distantly by the Netherlands (+60%). Moreover, based on a limited sample of 2022 announcements made by heat pumps manufacturers compiled by the JRC¹⁵, almost 40% of their programmed investments around heat pumps manufacturing are expected to happen in Poland, Czech Republic, Slovakia, showing there is an opportunity to be seized in the CEEC10 in terms of putting the green transition at the heart of their economic growth. This is a major achievement for the CEECs, but it needs to be further enhanced via national policies to make a real dent in the decarbonization of their building stock.

While MSs have deployed to some extent schemes to support renewable heating in buildings, as shown in the table below, in most cases, there are no clear deadlines for phasing out fossil-fuel heating. As an exception, Slovenia plans to ban sales and installation of new fuel and oil boilers in 2023, as well as some cities in Poland and Lithuania. In 2019, Kraków became the first Polish city to ban the burning of coal in homes, while overall, 11 of 16 Polish regions are to impose emissions standards¹⁶ that would make it illegal to use certain heating appliances beyond a period ranging from 2022 to 2027.

Figure 6: Overview CEEC10 programs for decarbonizing buildings (non-exhaustive)

MS	Coal phase-out deadline	Fossil fuel phase-out in heating	Renovation/Green energy in buildings programs
BG	2038	N/A	<ul style="list-style-type: none"> Government level: The Energy Efficiency and Renewable Sources Fund (new high-efficiency boilers, high-efficiency fossil-fuel or electric-powered heat pumps). Local-level grant scheme for renewable energy heating systems as part of the “Bulgarian Municipalities Working Together to Improve Air Quality” project, which runs to 2024. Improved use of RES in buildings connected to tax rebate (class A or B energy performance). Accelerated tax depreciation benefit for energy efficient equipment.

15. L. Lyons, A. Georgakaki, A. Kuokkanen, S. Letout, A. Mountraki, E. Ince, D. Shtjefni, G. Joanny, O. D. Eulaerts, and M. Grabowska, Clean Energy Technology Observatory, “Heat Pumps in the European Union – 2022 Status Report on Technology Development, Trends, Value Chains and Markets”, Publications Office of the European Union, Luxembourg, 2022.

16. Foresight Climate & Energy, “Polish Coal Boiler Phase-Out: an Inspiration for Clean Heat”, February 2020, available at: <https://foresightdk.com>.

SK	2023	N/A	<ul style="list-style-type: none"> Slovak Green Home: heat pump purchase incentive. SlovSEFF III program: credit line to promote energy efficiency and RES. Slovak Green Renovation program: renovation of heating systems for homes older than 15y.
SI	2033	Ban on new oil & coal boilers from 2023	<ul style="list-style-type: none"> Eco fund: grants for installing district heating systems, heat pumps.
CZ	2033	No clear policy, but a boiler scrappage scheme for old, inefficient coal boilers	<ul style="list-style-type: none"> New Green Savings grant program: installation of biomass boilers, heat pumps, solar thermal systems, construction of new high energy performance buildings.
HU	2025 (uncertain following 2022 announcements)	N/A	<ul style="list-style-type: none"> Green District Heating Program: target to reduce district heating reliance on natural gas from 70% in 2020 to 50% in 2030; grants are available for heat pumps and rooftop solar panels from November 2021. Warmth of Homes Program: support for energy efficiency retrofits via grants and loans.
RO	2032	N/A	<ul style="list-style-type: none"> Green Home (Casa Verde) scheme: grants for residential heat pump installations (up to 60% of cost), insulation improvements, solar PV, EV charging station; scheme has been running since 2010.
PL	2049	In some cities, ban on heating based on coal combustion	<ul style="list-style-type: none"> Clean Air Program: approximately 26bn\$ over 2018-2029 to reduce the share of coal boilers and stoves for heating.
LV	No coal in electricity mix	N/A	<ul style="list-style-type: none"> Starting May 2023, 12.44 m€ available from EU money to replace old wood heating furnaces, coal and peat boilers. Connections to a district heating system are a priority and supported at 95%.
LT	No coal in electricity mix	Vilnius: Phase out the use of coal for heating from June 2023	<ul style="list-style-type: none"> Replacement of Boilers in Households regulation: incentivize upgrading / replacing old inefficient biomass boilers (including with heat pumps), covering 50% of costs. Budget: 4.8m€.
EE	No coal in electricity mix	N/A	<ul style="list-style-type: none"> Based on Cohesion Policy funding (2015-2020), grants for renovation of apartment buildings built before 1993, support rate up to 50%.

Source: Author, based on Bloomberg NEF Climatescope and press articles

The positive local, citizens-led developments feed into an assumption at the EU level that the aspirations of EU societies will align with the value proposal of the Green Deal in terms of fighting all forms of pollution and environmental degradation. Indeed, the Clean Energy Package and the Green Deal seem to have been successful in putting in place a mechanism of cognitive framing¹⁷ pertaining to the Europeanization toolbox, by setting a framework for all Europeans to move in the same direction, of a cleaner and healthier way of living, independently of their starting point. Data largely supports this assumption.

According to a survey,¹⁸ there is an overwhelming support for renewables among populations, with 82% in Romania, 74% in Bulgaria and 69% in Poland who would support the building of onshore wind farms next to them and even higher shares support the installations of solar panels on buildings (90% in Romania, 80% in Czechia, 84% in Poland, 85% in Bulgaria). On the opposite, citizens in these countries are largely opposed to the building of coal-fired power plants (BG 73%, CZ 74%, PL 66%, RO 57%), oil or gas-fired power plants (BG 60%, CZ 67%, RO 63%) and even nuclear power plants (BG 52%, CZ 53%, PL 51%, RO 66%) next to where they live. The majority of the population in this region would also be interested in being part of an energy cooperative (BG 75%, CZ 59%, PL 74%, RO 85%), especially if this could help them bring down the costs of their energy bills (BG 89%, CZ 85%, PL 86%, RO 90%).

At the same time, industry associations representing the renewable energy sector, as well as think tanks in the region point out a tendency of national governments in CEECs to adopt a conservative approach regarding the potential of RES deployment which translates into a lack of ambition with respect to the targets fixed in the National Energy and Climate Plans (NECP) and beyond. For instance, according to data collected by Solar Power Europe¹⁹, solar energy capacity targets fixed for 2030 have already been reached at an extent of almost 50% or more in most CEECs¹⁰ by the end of 2022 already, as shown below. In the case of Poland, the country is currently the most important EU job market for solar (already 100 000 workers in the field, but still not enough compared to the needs), its ambition for 2030 was to have 1 million prosumers, but de facto already today there are 1.2 million, and the capacity planned for 2030 in the NECP was delivered last year, while the capacity planned for 2040 is expected to be delivered in 2023.

17. C. Knill and D. Lehmkuhl, “The National Impact of EU Regulatory Policy: Three Europeanization Mechanisms”, *European Journal of Political Research*, 2002.

18. European Climate Foundation, “Europeans Support New Wind and Solar Projects in Their Local Area”, October 2021, available at: <https://europeanclimate.org>.

19. Solar Power Europe, “EU Market Outlook for Solar Power 2022-2026”, available at: www.solarpowereurope.org.

Figure 7: NECP PV capacity targets vs. PV cumulative capacity in place in 2022

Source: Author based on data from the Solar Power Europe, EU Market Outlook for Solar Power

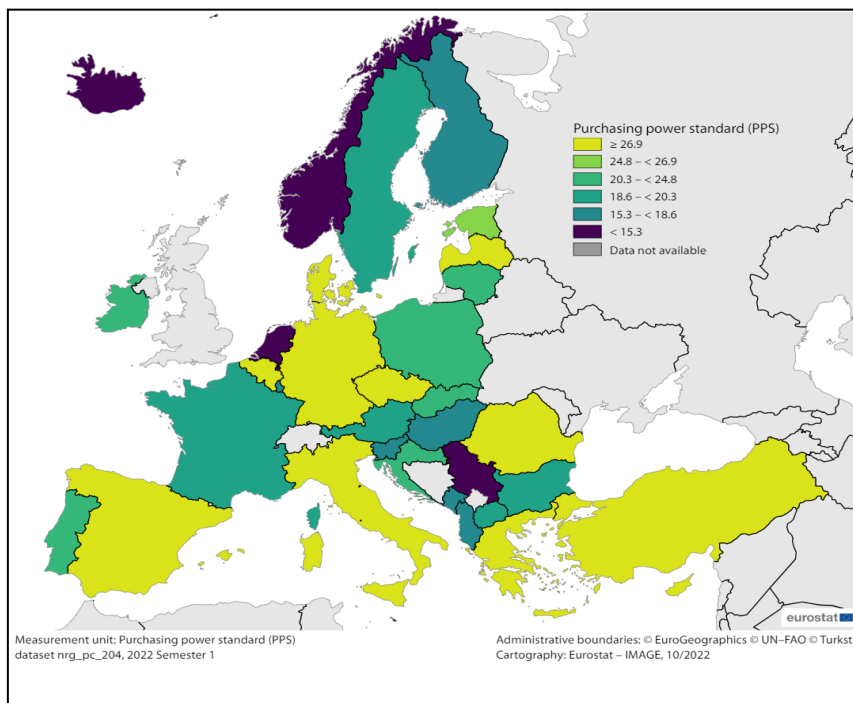
Country	NECP PV capacity target 2030	PV cumulative capacity 2022 and share of NECP
Bulgaria	3216 MW	1545 MW (48%)
Czech Republic	3975 MW	2573 MW (65%)
Estonia	415 MW	788 MW (190%)
Hungary	6500 MW	3913 MW (60%)
Latvia	N/A	67 MW
Lithuania	839 MW	394 MW (47%)
Poland	7300 MW	12527 MW (172%)
Romania	5100 MW	1833 MW (36%)
Slovakia	1200 MW	574 MW (48%) in 2021
Slovenia	1650 MW	771 MW (47%)

2022-2026

The 2022 energy crises have nonetheless brought a major paradigm shift in the government's attitude to RES, with steps being taken to accelerate permitting procedures, as rising energy costs become a major source of social and economic concerns: according to Eurostat, in the first half of 2022, electricity prices based on purchasing power standard were highest in Romania (44.6) and Czechia (38.9).²⁰

20. Eurostat, "Electricity Price Statistics", October 2022, available at: <https://ec.europa.eu>.

Figure 8: Electricity prices for household consumers in power purchasing standard, 2022 S1



Source: Eurostat

The increasing support for renewable energy sources, especially residential PV, in CEECs is even more fascinating in the light of the “boom and bust” story of solar PV in this region, as pointed out during discussions with associations representing the solar sector in Bulgaria, Romania, Poland and Czech Republic. Indeed, starting with 2008 and up until 2013/15, in the framework of implementing the EU’s first legislation on renewables, these countries have put in place public support schemes for RES, which were afterward retroactively changed (around the year 2015), undermining the trust of investors and leading to a flattening of the solar deployment curve. Together with the subsidies put in place by governments for solar PV systems and heat pumps, the war in Ukraine has contributed to a new boom of solar power in the region where impressive solar PV capacities were added in 2022 (ex. 4.9 GW in Poland, 300 MW in Czechia), further strengthening the position of these countries as GW-level ones. This second boom is now being led by citizens and businesses and the RES industry expects it to last, as it resonates with the pragmatic mentality of the populations in the region for whom ownership and self-reliance are essential. The remaining challenges underlined by the RES sector in the region are insufficient grid capacity and lack of transparency around available capacity, political instability and lack of political vision for RES deployment, a lack of transposition of EU legislation and regulatory instability, the high cost of finance, the red tape and the complexity of the business environment.

The 2022 Energy Crisis Brought Energy Security Back at the Core of the Energy Agenda, Enhancing Bi-Directional Europeanization Mechanisms

Natural Gas Developments to Address Energy Security Concerns

The energy crisis caused by Russia's war in Ukraine and the weaponization of gas supplies have hit the CEE region from the first quarter of 2022 when Gazprom unilaterally changed the terms of its gas contracts, imposing the "gas-for-ruble" scheme, ultimately completely halting the Yamal pipeline gas flows and those via Nord Stream 1 (preceding the physical destruction of both Nord Stream 1 and 2, still under investigation). Russian gas exports to Europe continue via Turkstream (supplying in principle namely Hungary, Bulgaria, Romania, Greece) and to some extent via Ukraine (sending some gas namely to Slovakia, Austria, Italy). When combining pipeline gas and the liquefied natural gas (LNG), total volumes of Russian gas expected in 2023 can amount to 40 bcm²¹, but a total halt of supplies scenario cannot be excluded even in the absence of EU sanctions. The ban on Russian coal imports (in place since 10th August 2022), coupled to a higher coal demand for security of supply reasons, has resulted in an increase in the regional production of coal (Poland, Czech Republic, Bulgaria, Romania) and in the costs of coal imports due to the need for diversification (for instance, in Poland).²² The EU ban on seaborne imports of crude oil coming from Russia (from 5th December 2022) and on refined oil products (from 5th February 2023), excludes Russian oil exports via the Druzhba pipelines, an exemption allowing Slovakia, Poland, Czech Republic, Hungary and Austria to continue importing Russian oil, although EU imports via this pipeline have been falling.

21. L. Palti-Guzman, M.-A. Eyl-Mazzega, "The Strategic Repositioning of LNG: Implications for Key Trade Routes and Choke Points", *Études de l'Ifri*, Ifri, April 2023.

22. Central European Energy Partners, "The Energy Crisis and Russian aggression against Ukraine. Key challenges for the Central European Energy Sector", December 2022.

There are now three major trends in the CEECs in terms of ensuring their security of supply in the context of the energy crisis and looking forward: diversification and expansion of natural gas infrastructure, new investments in nuclear energy capacities and a renewed consensus on the need for supporting the deployment of renewable energy sources, as already noted in the first section. While the first two are not new and are now accelerating, the third represents a new paradigm.

Coal-to-gas switching has been considered as key by the region to reduce its emissions (a good illustration being the inclusion of natural gas in the EU Taxonomy), but with the European Green Deal fixing the climate neutrality target for 2050, it has become clear that the role of natural gas as a transition fuel must progressively be reduced and eventually all molecules circulating in European gas networks must be decarbonized. Through the lenses of Europeanization, one can observe a sort of “functional dualism” whereby “national elites talk the European talk while continuing to walk in a national walk”²³ when it comes to new investments in terms of natural gas infrastructure. For instance, Romania included in its Recovery and Resilience Plan a project to build 1,870 km of gas pipeline in Oltenia region, supposed to transport at least 20% green H₂ at the time of commissioning and fully renewable gases after 2030, a project which raises questions not only with regards to its feasibility, but also with respect to the coherence of such a move given the scarcity of green hydrogen and the imperative of using it in hard-to-decarbonize sectors, while prioritizing the electrification of residential heating. The approval of such projects by the EC could send the wrong signals to countries, increasing their tendency to opt for a thin form of Europeanization in the form of “ticking the box”.

Against this background, the war in Ukraine has opened a window of opportunity for the acceleration of gas infrastructure developments in CEECs, which had already been driven by some MSs seeking to escape Gazprom’s dominant position. First, as detailed below, new interconnectors were put into operation, placing Poland notably as a central actor in future gas flows in the region, happening in a context where Poland’s role in the European security panorama has been reinforced by the war in Ukraine:

- The Baltic Pipeline, a bidirectional pipeline connecting Poland to Norway via Denmark, that will also facilitate gas supply to other Baltic countries, became operational in November 2022. It was recognized as a Project of Common Interest (PCI) by the EC in 2013 and final investment decision was made in 2018. It can supply 10 bcm/y to Poland and 3 bcm to Sweden and Denmark. For the moment, Poland’s PGNiG signed a 10-year contract with Norway’s Equinor for a volume of 2.4 bcm/y. The Baltic Pipeline is at the heart of the Polish strategy to

23. Jacoby, *quoted in* H. Grabbe, “The EU’s Transformative Power. Europeanization Through Conditionality in Central And Eastern Europe”, New York: Palgrave Macmillan, 2006.

diversify away from Russian gas but it remains to be seen if and how Poland will use its strategic investments and location to strengthen the region's energy security.

- The gas interconnection between Poland and Lithuania (GIPL) is also a PCI, in operation since May 2022. It enables flows of Lithuanian LNG from the Klaipėda LNG terminal to Poland's Świnoujście LNG Terminal. This reinforces regional market integration advanced by the Balticconnector (Finland-Estonia), the Latvian-Estonian interconnector, the expansion of the Latvian-Lithuanian interconnector (scheduled for 2023) and the upgrade of the Inčukalns underground storage in Latvia (2025).
- Poland-Slovakia interconnector (became operational in August 2022): also a PCI, it follows the logic of a North-South gas infrastructure corridor, adding to the existing Slovakia-Hungary interconnector, and which is expected to be further completed with a Hungary-Slovenia gas interconnector (expected around 2026).
- Greece-Bulgaria interconnector was inaugurated in October 2022, enabling supply of Azeri gas from the Caspian Sea to Bulgaria (via Turkey and Greece). It has a technical capacity of 3 bcm/y and a potential to expand up 5 bcm /y. Bulgaria booked half of the capacity, Romania, Hungary, Moldova and Serbia being also interested in securing capacity.
- Last but not least, Poland and Croatia are planning to enhance their LNG import capacities based on existing terminals. Croatia decided to increase the capacity of its Krk LNG terminal to 6.1 bcm/y from 2.6 bcm previously, serving the diversification of supplies in the CEE region.

Second, new investments in indigenous exploration of gas and FSRUs are also foreseen to further diversify away from Russian supplies:

- Floating storage and regasification units: The Baltics are expected to profit from Finland's first FSRU which entered into operation in January 2023 and has a regasification capacity of 5 bcm/y. The Czech Republic secured a stake in a new floating LNG Terminal in the Netherlands to ensure a 3 bcm/y supply of natural gas, which according to the government would reduce Czechia's dependence on Russian natural gas by one-third, and the country will be connected to the German Lubmin FSRU and the onward pipelines operated by Gascade. Slovakia has secured capacity in different LNG terminals in Italy and Croatia to import LNG from ExxonMobil, SPP declaring that it has managed to diversify away from Russian gas 65% of its gas needs.
- Indigenous gas exploration projects: Discovered in 2012, the Neptun Deep gas field in the Black Sea, with an estimated capacity between 42-84 bcm, has become a central piece of Romania's strategy to reduce its reliance on Russian natural gas in the context of the energy crisis,

following a period of regulatory tensions (export restrictions, price limits). The consortium made of OMV Petrom and Romgaz (Romanian state-owned gas company, which bought ExxonMobil shares in the project) is expected to make a final investment decision by mid-2023 and first gas production to start by 2027. While the completion of this project could make Romania a key gas producer in Europe, there are doubts expressed regarding Romania's ability to complete such a major infrastructure project of a size not seen since the major infrastructure projects of the Communist period, as well as a risk that this could distract the country from investing in readily available RES, for instance in the Black Sea.

- Other related gas pipeline infrastructures: a project for an interconnector between Serbia and Romania pipe interconnector which would enable connection to the BRUA pipeline is envisaged, as an attempt to lessen dependence on Russian gas in the Balkans. The status of the Eastring pipeline (supposed to connect Slovakia, Hungary, Romania and Bulgaria) remains uncertain, being included in the list of investments of the Three Seas Initiative and in ENTSOG's 2022 TYNDP, but no major progress in its development has been noticed. The extension of TAP to the Balkans remains in the realm of political declarations, with no new developments on the ground.

Renewables for the Short Term, Nuclear for the Longer Term

The bi-directional nature of Europeanization is illustrated in the field of nuclear energy, where MSs upload their own interests and policies at the EU level. The EU agreed on 10 packages of sanctions against Russia, leaving nuclear power technologies out of the scope for now, despite pressures from Ukraine and efforts from some CEECs to include it (e.g. Baltics, Poland), this being a contentious issue in the region where Hungary and Bulgaria (together with France) have been opposing sanctions on Russian uranium and nuclear technology or service industry. Five EU MS operate 19 Russian-made reactors, predominantly in the CEEC (six in Czechia, five in Slovakia, four in Hungary, two in Finland and two in Bulgaria). 15 of these are VVER-440 models while the other four are VVER-1000 designs. Phasing-out Russia's dominance in the nuclear sector in this region will be a key challenge as the duration and implications of the war in Ukraine are expanding. Nevertheless, Slovakia and Czechia have started procedures to cut their dependence on Russian nuclear fuel, being in discussions with Framatome (FR) and Westinghouse (U.S.) for new supplies. As for Hungary, whereas it initially had decided to continue strengthening its dependency on Russian nuclear technology by building two nuclear reactors with Rosatom (expected to come into operation in 2030), it may be that Budapest is looking for alternative options (notably among French players).

While half of the ten CEECs already dispose of nuclear power generation (Czechia, Hungary, Bulgaria, Slovakia, Romania, and Slovenia), the energy crisis has accelerated the reflections on new developments in this sector. Poland has been accelerating preparations for its nuclear power plant program with an objective of building 6 GW to 9 GW of large reactor capacities. In early 2023, Poland's PEJ finalized a contract with U.S.' Westinghouse allowing to start the first engineering works to build, in a first phase, three AP1000 pressurized water reactors (construction to start in 2026, commissioning of the first unit in 2033). At this stage, it remains unclear which company will be chosen to build the remainder of the reactors in a growing geopolitical competition for market share in nuclear technologies between the U.S., South Korea and France (China and Russia hardly being options now). It should be noted however that other two Polish energy companies ZE PAK and PGE, have signed a letter of intent with Korea Hydro & Nuclear Power company intending to assess the viability of building 4 reactors of 1.4 GW using APR1400 technology (Westinghouse sued KHNP on intellectual property reasons, which may have an impact on South Korea's nuclear technology success). Finally, several energy-intensive industries (copper, chemicals) in Poland aim at building SMRs to decarbonize their production: for instance, the copper producer KGHM signed an agreement with NuScale for building four 77 MW reactors²⁴. Nevertheless, a certain silent competition between the private and public sectors in the field of nuclear energy might delay the roll-out of SMRs in the country.

Slovakia, which currently generates half of its electricity from nuclear based on four reactors, could become the second country in the EU in terms of the share of power generation from nuclear: it has connected a fifth reactor to the grid in 2023, another one is expected to be connected in 2024. For its part, Romania has already two nuclear reactors at the Cernavoda powerplant (1.3 GW) based on Canadian Candu technology and intends to build two new units (720 MW each), using the same technology, after the government decided to terminate negotiations with Chinese companies in 2020²⁵. Beyond securing US financing for building these units (3bn\$), Romania is also set to become the first European country to deploy the SMR technology on its territory with the American firm NuScalePower by 2030.

In light of these new developments in CEE suggesting that nuclear is seen as a key asset for decarbonizing the region, France has been spearheading a “nuclear alliance” made of 10 other EU MS, the majority of them from the CEE region (Romania, Bulgaria, Hungary, Czech Republic,

24. M. Wilczek, “Polish Business bets smaller is better in nuclear”, *Balkan Insight*, October 4, 2021, available at: <https://balkaninsight.com>.

25. World Nuclear Association, “Nuclear Power in Romania”, January 2023, available at: <https://world-nuclear.org>.

Poland, Slovakia, Slovenia), mainly to stand up to opposition from Germany and other anti-nuclear countries to the inclusion of nuclear energy in a set of EU legislations. This gives *de facto* a strategic leverage to the CEE region, which nevertheless must realize that meeting their 2030 targets largely depends on accelerating the deployment of renewable energy sources, riding the wave of a public opinion largely supportive of renewables and available funding possibilities, and not on new nuclear capacities which will come too late to make a difference for both their energy security and the achievement of their 2030 decarbonization targets.

The war in Ukraine has also created a consensus in the EU, including in the CEE region around the need to accelerate renewable energy deployment, leading to an acceleration of permitting procedures and fixing a higher RES ambition at the EU level (42.5% in final energy consumption, according to the recent provisional interinstitutional agreement), than what was originally proposed by the EC in the *Fit for 55* package (40%). This is seen as a major opportunity by the renewables sector in these countries, leading to bottom-up pressures on governments in CEEC10 to update their RES targets and put in place a favorable regulatory environment to unlock potential which remains today insufficiently exploited. On solar PV, the CEEC10 cumulates approximately 25 GW in installed solar capacity, which is about 12% of the total installed solar capacity in the EU based on Solar Power Europe data²⁶. On the offshore and onshore wind, data published by Wind Europe²⁷ shows that the region holds only 13.5 GW of wind capacity (exclusively onshore), meaning 7% of the EU's total installed capacity and only 10% of the newly installed capacity in 2022 happened in this region. These new additions were concentrated in Poland (>90%), knowing that industry data shows that these installations were permitted before the adoption of the law that bans the construction of onshore wind farms within a distance of ten times the height of a turbine with respect to residential buildings (10H rule). While the rule has been relaxed to impose a 700m distance rule, the energy industry at EU and national level keeps the pressure up on national government to further limit this distance at 500m, emboldened by the acceleration of EU's ambition to phase out its dependency on Russian fossil fuels by 2027.

The same pressures for a true transformation of the energy landscape can be noticed in Romania, where voices in the research sector are engaged in aligning the national path with the EU's one: for instance, according to the think tank Energy Policy Group²⁸, Romania and Bulgaria need to work

26. Solar Power Europe, "EU Market Outlook for Solar Power 2022-2026", available at: www.solarpowereurope.org.

27. Wind Europe, "Wind Energy in Europe. 2022 statistics and the outlook for 2023-2027", February 2023, available at: <https://windeurope.org>.

28. Energy Policy Group, "Offshore wind – the Enabler of Romania's Decarbonization", January 2023, available at: www.enpg.ro.

together to develop 15 GW of offshore wind capacities in the Black Sea by 2050 to support their decarbonization pathway. This is a major objective given the current lack of ambition of these countries, as revealed by their submissions under the revised TEN-E regulation²⁹ (see table below) requiring all EU MS to jointly define and agree on the amount of offshore renewable generation to be deployed within each sea basin by 2050, with intermediate steps in 2030 and 2040. Romania and Bulgaria should at minima follow the example set by Poland, Lithuania and Estonia in the field of offshore wind to offer visibility to investors and seize opportunity to reduce their dependency on energy imports.

Figure 9: Non-binding offshore renewable energy goals of CEECs

	Non-binding offshore renewable energy goals		
	Goal 2030 (GW)	Goal 2040 (GW)	Goal 2050 (GW)
Bulgaria	0	0	0
Estonia	1	3,5	7
Latvia	0,4	0,4	0,4
Lithuania	1,4	2,8	4,5
Poland	5,9	10,9	10,9
Romania	1	1	1
Slovenia	0	0	0

Source: Author, based on data submitted by MS to the EC

29. European Commission, “Member States Agree New Ambition For Expanding Offshore Renewable Energy”, January 19, 2023, available at: <https://energy.ec.europa.eu>.

The Europeanization of the Implementation of the Energy Transition Agenda: Walking the Talk to Fully Grasp Opportunities

The true test for the depth of the Europeanization of the energy agenda in EU countries comes with the implementation of the European Climate Law and of the agreements found in the *Fit for 55* package and more broadly in all upcoming legislations that aim at translating the European Green Deal into reality. In the process of implementation, MS must be convinced of the need to undertake this holistic transformation of their energy system, to deliver sincere efforts and break apart from a “ticking the box” reflex, and to engage with the populations and civil society actors in a process of understanding their expectations, deploying preventive actions to mitigate negative impacts and building more resilient and just living conditions.

Some key recommendations for maximizing the chances for a successful implementation of the European energy transition agenda include:

- Putting in place a clear and ambitious climate governance framework: the National Energy and Climate Plans, as well as the National Long-Term Strategies in the ten CEECs must set clear targets and pathways of action in order for countries to align with the climate objectives decided jointly at the EU level. The revision of the NECP in 2023 provides an excellent opportunity and should fully integrate the ambitions of the *Fit for 55* package. It is important for the political elite in the CEECs to understand that the NECPs and the long-term strategies are not purely bureaucratic tasks imposed by the EC (as these seem to have been treated so far), but the very investment agendas through which governments can give key signals to the business sector regarding the opportunities available to open or develop new clean technologies markets. The European Commission, through its Technical Support Mechanism, should provide support to those governments who might not have the expertise to build such strategies and plans, and the exchange of best practices between EU Member States, as well as consultations with industry and civil society should be pursued and encouraged. The EC must also take a much more active role in following up on these strategic documents.

- Go fast on the low-hanging fruits: Phasing out coal by 2030 in most of the CEECs is not a mission impossible, on the contrary, it is a low hanging fruit. There is now a strong framework to make this happen:
 - Money from the Recovery and Resilience Facility (close to 100 bn€, mainly grants, as only Romania, Poland and Slovenia have requested together around 27 bn€ in loans) and the REPower EU additions,
 - together with the relaxation of state aid rules for supporting investments in decarbonization and clean technologies and other existing sources of funding at the EU level,
 - the high level of acceptability of RES projects, interest from the business sector in signing RES PPAs,
 - and an increase in the cost of coal imports, are the perfect setup to bring forward coal phaseout deadlines.

This should happen in parallel with strengthening and modernization of the electricity grids to enable the integration of decentralized RES, as well as demand-side response and flexibility sources. The decarbonization of heating in buildings through speeding up the deployment of heat pumps and refurbishment of district heating and cooling networks, which should be fueled increasingly with renewable energy to be in line with the revised Renewable Energy Directive, are key. So far, based on data from the Recovery and Resilience Scoreboard as of the end of March 2023, the share of green spending in the total of money disbursed in some of the CEECs is very low, ranging from approximately 10% in Bulgaria to 3% in Romania and 0% in Latvia, as these countries are giving priority to the health, social and economic sectors, which is understandable but MSs need to boost their capacity to deal with multiple objectives at the same time, given the urgency to decarbonize their economies including for preserving their competitiveness.

- Laying out decarbonization trajectories for industries and supporting their energy transition: Taken together, the increasing interest for corporate PPAs in the CEE region, as identified in Poland³⁰, coupled with the potential for renewable energies deployment and the reinforced requirements on emissions reductions under the ETS for energy intensive industries which will push CO₂ prices beyond 100€, must lead governments in the CEE region (which has higher industrialization rates than the EU average in many cases) to craft concrete pathways for supporting their industries to slash GHG emissions. Such industrial decarbonization strategies must leverage

30. K. Gosh, “PPA Prices Continue to Rise Across most European Markets”, Edison Energy, February 23, 2023, available at: www.edisonenergy.com.

electrification, energy efficiency improvements, CO₂ capture and storage, as well as clean H₂ as main tools to decarbonize, while providing full clarity on the funding mechanisms available, especially under the Modernization Fund which focuses exclusively on the 10 lower-income MS and is expected to make around 48 bn€ from 2021 to 2030³¹ (at EUR 75/tCO₂, and potentially even more depending on the increase of the carbon price). This is even more important as the EU aims to strengthen its manufacturing industry and boost domestic clean technologies production and critical raw materials extraction, production and recycling. The CEECs have an opportunity to shape the industrial pillar but they need to guarantee abundant clean energy supplies to their industries and regulatory predictability and support.

- Making the just transition happen on the ground starting from a clear vision of the challenges ahead: Existing assessments of the LTS in the region^{32,33} point to the fact that there is a lack of compelling vision of the amplitude of negative socio-economic impacts of the energy transition and of an action plan to tackle those. This is paradoxical for a region that cumulates almost half of EU's coal consumption and where countries like Romania and Bulgaria show the highest energy poverty rates, which most probably have been further exacerbated by the 2022 energy crisis. Under the Just Transition Fund, 56% of the 19.3 bn€ is dedicated to the ten CEECs, with particularly high shares available for Poland and Romania, in addition to Cohesion Funds. Hence governments in the region must learn to think pragmatically about how to best use this money to offer new opportunities to the local communities most at risk of losing their jobs or of falling into energy poverty. Again, the Just Transition Plans that government must submit to the EC to receive their share of money should not be reduced to a bureaucratic exercise but become an investment and development agenda dedicated to the most vulnerable regions and populations.
- Improving administrative capacity, data collection and reporting: With the new legislations and funding mechanisms put in place, governments and authorities in charge of implementation face the risk of being overwhelmed, which will eventually translate into difficulties for populations and businesses to access opportunities. On one hand, governments in the CEEC10 are exposed to a great deal of funding opportunities which require planning and reporting such as: Just Transition Plans, Recovery and Resilience Plans, Social Climate Plans (under the newly created Social Climate Fund, accompanying the

31. European Commission, Modernisation Fund website available at <https://climate.ec.europa.eu>.

32. K. Kobyłka, K. Laskowski, A. Śniegocki, "Assessment of the National Long-Term Strategies of the Visegrad Group Countries", Wise Europa, January 27, 2022, available at: www.wise-europa.eu.

33. L. Miu, "An assessment of Bulgaria's Long-Term Strategy", Energy Policy Group, December 2022, available at: www.enpg.ro.

creation of the ETS II for buildings and road transport). Without boosting their administrative capacity to both collect data on the needs on the ground in order to make the right planning decisions and to ensure the follow up on the implementation, including efficient and timely disbursement of funds, this unprecedented amount of money risks to be lost at the detriment of the populations who will be increasingly under the pressure of CO₂ pricing mechanisms. On the other hand, the latest legislations on renewable energy, net-zero industry and critical raw material demand from MSs to put in place speedy permitting procedures for projects of strategic interest, with deadlines limited to 12-24 months or even three months for some RES projects, which require a digitalization of procedures, more human resources available to deal with requests who should also have the skills and knowledge to this end. The EC needs to boost its Technical Support Instrument with increased funding and staff to accompany national administrations in getting up to speed on EU legislation and procedures. It is important for the EU level to go beyond the normative approach (i.e. establishing targets) towards more operational tasks such as support in data collection based on key performance indicators, increasing transparency for businesses on country-level progress and following more closely implementation on the ground.

- The EU should not risk the integrity of the internal single market by overemphasizing the relaxation of state aid rules over EU-level funding: The recent relaxation of state aid rules to allow the EU to compete with the massive funding proposed by the US under the IRA does not come without a risk of seeing widening economic gaps between more developed EU countries and those who have limited fiscal space to support their economies (in spite of more advantageous conditions being offered to them through the Temporary Crisis and Transition Framework). The IPCEI is often mentioned as a magical solution for supporting the building of batteries and hydrogen value chains in Europe, but a closer look to the last 4 IPCEIs (2 in batteries, 2 in H₂ technologies) shows that 6 countries in the CEECs have never been involved in an IPCEI (Bulgaria, Romania, Hungary, Slovenia, Latvia and Lithuania), Czechia and Estonia have been involved once and only Poland and Slovakia are key players with respectively four and three participations. In comparison, France, Italy, Belgium, Finland are omnipresent, and based on the only IPCEI on which data is accessible (the IPCEI on the battery value chain approved in 2019), Germany represented 40% of the state aid approved³⁴. Hence, an EU Sovereignty Fund must be supported by EU-27 and channeled towards meeting the

34. European Commission, “State aid: Commission Approves €3.2 Billion Public Support by Seven Member States for a Pan-European Research and Innovation Project in All Segments of the Battery Value Chain”, December 9, 2019, available at: <https://ec.europa.eu>.

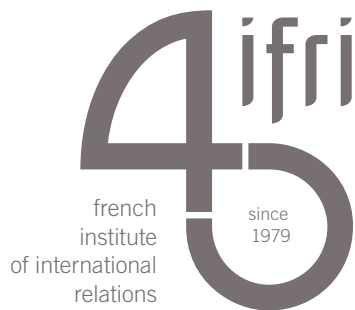
objectives of the Critical Raw Materials Act and the Net-Zero Industry Act. At the same time, it is imperative for CEEC10 to show through concrete results that the spending of the money under RRF, REPowerEU, JTF is done in accordance with EU's objectives – the Recovery and Resilience Scoreboard³⁵ should hence be kept updated and provide quality data on expenditure made and results (ex. it should include jobs creation, added value to GDP, impact on GHG emissions etc).

35. Website of the Recovery and Resilience Scoreboard available at <https://ec.europa.eu>.

Conclusion

Whereas the progress on the energy transition is difficult to assess in the CEE region as a whole given the specific situations and challenges of each MS, through the lenses of the Europeanization theory, one can acknowledge that the European agenda, discourse, and regulatory pressures have led to an alignment of these MSs on a trend of emissions reduction which had started in the EU prior to their adhesion. Despite a political lag in terms of ambition, which needs to be acknowledged and addressed, together with existing major challenges like coal phase-out, it must be noted that a genuine revolution seems to be underway in these countries, led by citizens and businesses, and visible under the form of an unprecedented deployment of decentralized solar PV and heat pumps, showing that the economics of the Green Deal work also in the CEECs. This bottom-up alignment with the EU agenda and objectives must be sustained through dedicated funding and a clear and predictable regulatory framework and adequate infrastructure, key also for the decarbonization of transport and industry. This in turn should allow for a deepening of the Europeanization process in the energy field, a condition sine qua non for translating the objectives of the European Climate Law into reality – EU's status of first global power to reach climate neutrality depends on CEECs managing to decarbonize in a speedy and just manner.

Beyond mostly qualitative evaluations at this stage, the true test for the Europeanization of the energy agenda in CEECs will be the actual completion of the 2030 milestone. Moreover, several of the CEECs have today a higher share of industry contribution to their GDP than the EU average, hence Europe's industrial pillar must offer credible and quick solutions for clean energy supply for energy intensive industries subject to reinforced ETS decarbonization requirements. A conversation must take place on industrial decarbonization and should be translated into industrial decarbonization blueprints accompanied by a financing agenda. Finally, without an EU Sovereignty Fund, the region will find it hard to keep pace with the EU's objectives in the Net-Zero Industry Act and the Critical Raw Materials Act due to limited fiscal space to be leveraged for state aid purposes, despite more favorable conditions.



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