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Article

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A Moving Target: Changing Priorities in the Energy Policy of the European Union

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ABSTRACT

Until the end of 2021, the EU's strategic objective is to improve energy market integration while emphasising the goal of energy sustainability. This study summarises the progress made over the last six decades, particularly focusing on the latest steps, and outlines the present and future challenges of the European energy policy. In doing so, the study addresses the following research questions: Will the EU realise its original aspirations in the field of energy? Is the Energy Union on target to deliver the envisioned breakthrough for the EU? Are the benefits of the Energy Union tangible at the integrated EU level? What new conditions and expectations shape and influence the future of the Energy Union?

Keywords: European Energy Union, European Green Deal, Energy Transition, EU Conformity

JEL Classifications: Q43, Q48, Q58

1. INTRODUCTION

Energy policy development must take into account the various political, economic, security and, lately, environmental aspects involved. Policy is typically built on inherited systems, structures and relations, which are not easily or flexibly variable in the short term. At the EU level, the creation of a commonly acceptable strategy/policy or the establishment of the European Energy Union is an immense challenge.

Energy has played a crucial role in the European Union ever since the outset of the European integration initiatives. In fact, the Treaty establishing the European Coal and Steel Community (ECSC) formalised the first European cooperation in 1951. More than six decades later, in 2015, the European Commission (EC) presented a strategic document to create the Energy Union, which is referred to as “the most ambitious European energy project since the Coal and Steel Community” (EC, 2015), to pave the way for the formation of an internal energy market. Handled as a top-priority project by the Juncker Commission, the establishment of the Energy Union took place relatively fast and

was finalised in 2019. In practice, the first years of the Energy Union have already resulted in improvements in the fields of energy and climate.

This paper presents the progression of energy integration in Europe. Specifically, besides outlining the new conditions and expectations shaping and influencing the future of the Energy Union, it examines whether (i) the EU has been successful in realising the original aspirations set for cooperating and coordinating the European energy markets in an integrated manner, (ii) is on target to deliver the envisioned breakthrough for the EU and (iii) whether the benefits of the Energy Union are tangible at the integrated EU level.

2. THEORETICAL BACKGROUND

The idea of creating an Energy Union was proposed in 2014 by Herman Van Rompuy, the at that time President of the European Council to strengthen policy, emphasise and adapt to new goals, adjust measures to meet internal energy market-related objectives,

gas supply security concerns (Austvik, 2016) and start a new approach towards transition (Newbery, 2016, Pérez et al., 2019).

Prior to that was a long history that began with two of the three treaties on which the ECSC was originally based, subsequently characterised by a mixture of new proposals and oppositions involving different member states. Several contradictions regarding the weight of the different goals, such as security of supply or liberalisation of the markets, were negotiated (McGowan, 1989). The Commission started a new approach in the 1980s to reflect the changing attitudes of governments and energy industries and as a response to potential changes in the broader economic environment of the time. The relative drop in gas prices, diversification of energy sources and countries of origin, and energy efficiency all indicated a well-supplied market; this resulted in less concern about security issues and more about obstacles to the free flow of eligible energy supplies at the lowest price (Guibal, 1989). National energy policies of the member states were hard to sustain, and deregulation and competition soon replaced them in the gas and power sectors, leading to a closer-to-optimal allocation of energy resources and lower consumer energy prices. Thus, although the Commission did not implement an energy sector encompassing the European Single Market, the sector was not forgotten, since European integration yields benefits to the various actors of the energy markets as well through the reduction of their costs (e.g. transportation costs, policy barriers, adherence to regulation, legal costs, etc. (Pelle et al. 2020).

Energy transition and progress to the next level on the national energy ladder (Csereklyei et al., 2017) are determined by the country's overall and also the households' income, energy use per capita and the availability of energy sources. In a favourable combination, these result in a high-quality energy profile. The visible differences in energy transitions between countries with similar economic backgrounds can be explained by national resource endowments (Burke, 2013). The contrary is also true: if there is no abundant energy source, improvements in energy efficiency and the need to maintain supply security may appear as the engines of transition.

Lately, carbon neutrality¹ came to the forefront as a target of energy

transition. More and more countries set and bound themselves to carbon neutrality targets to mitigate the effects of climate change. By 2020, over 100 countries made carbon-neutral commitments. These targets cover several fields, such as carbon emissions, use of carbon-neutral materials and, as Sovacool and Griffiths (2020) and Lee et al. (2020) mentioned, even low-carbon energy transitions (Wu et al., 2022).

3. LEGISLATIVE MEASURE DEVELOPMENT OF THE EUROPEAN ENERGY MARKET

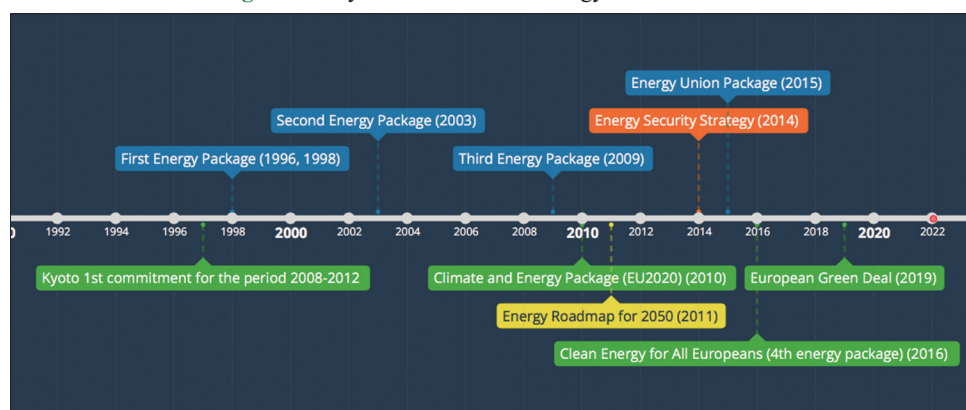
The energy sector is characterised by a large infrastructure asset base that's built and maintained as a natural monopoly on separate markets. Market by market, the sector requires large capital investments and commercial activities dominated by a small number of large companies. The key prerequisite for an internal energy market is the liberalisation of the European energy markets with the aim of creating a common energy market in each sub-market (Smith, 2005). Energy market liberalisation, as expressed later in the three adopted packages, refers to opening the electricity and gas market to free competition. This increases the potential for better price allocation and services and provides an opportunity for new players to enter the market. The need for smooth operation of energy markets is unquestioned within the internal market. However, reaching it involved numerous difficulties.

A number of major steps were taken to move toward creating a common energy market (Figure 1) which we are to detail next.

The common energy strategy of the European Union started with the First Energy Package launching the market liberalisation process in 1996 (96/92/EC) and in 1998 (98/30/EC). Since then, several steps have been introduced to shift towards more market-based energy sectors. The Second Energy Package (2003/54/EC and 2003/55/EC) demanded legal unbundling to overcome vertical integration. The Third Energy Package (2009/72/EC, 2009/73/EC and Regulation (EC) No 713/2009, No 714/2009, No 715/2009),

through carbon capture, storage, and conversion within a certain period of time, so as to achieve "zero emission" of greenhouse gases.

Figure 1: Key milestones of the Energy Union evolution



Source: own edition based on references used for this chapter

which came into force in 2009, introduced ownership unbundling and established the Agency for the Cooperation of Energy Regulators (ACER) with the purpose of ensuring the smooth operations of the internal energy market (EC, 2009). As we could witness it during and after the financial and economic crisis of 2008-2009, there is huge potential in recognizing the challenges, addressing them by the necessary steps and policy (Somosi 2012).

For the last 10 years, regulations and objectives were determined by the EU 2020 strategy (EC, 2010). Country-level targets were introduced within the Climate and Energy Package 2020, with the process assuring accountability and comparability and therefore enforceability. These are the so-called “20-20-20 objectives” for driving the rate of decrease of greenhouse gas (GHG) emissions and increasing the share of renewable energy in the gross final energy consumption, with commitments to the improvement of energy efficiency at the level required.

The notion of a European Energy Community was brought forward in 2010 in a proposal (Buzek and Delors 2010) that called for a stronger and more effective energy policy, leading to the formation of an enhanced cooperation referred to as the European Energy Community Energy Roadmap (2011). In 2011, the European Commission launched its “Energy roadmap 2050” communication to establish the basis for targets and goals that would determine the future of European energy systems. It covers the implications of carbon capture and storage (CCS) to support the reduction of greenhouse gas emissions from the energy system.

Emphasising the EU-level role of energy and the efficiency of energy markets became the legal basis for the formation of the European Internal Energy Market (IEM), as mentioned in Article 194 and Article 114 of the Treaty on the Functioning of the European Union (TFEU) adopted in 2012. A few years later, the idea of a European Energy Union was proposed by the then Polish Prime Minister Donald Tusk in April 2014. By October 2014, the European Council agreed on the climate and energy policy framework set for the period of 2021-2030 (CoEU, 2014b). It is worth noting that climate and energy were handled together and not separately. The goals of the 2030 climate and energy policy framework were quite ambitious compared to the 1990 levels and included a binding commitment to reduce greenhouse gas emissions by 40%. Renewable energy consumption and energy efficiency improvement were expected to be reduced by at least 27%. Ensuring the realisation of the internal energy market was also an aim.

The European Energy Security Strategy (2014) of the Commission emphasises the need to become less dependent on a single source of energy and to secure a stable and abundant energy supply within the EU. However, it is important to pay attention to the differences in the member states’ various interests and struggles in relation to energy security policymaking.

In 2015, the EU fully committed itself to move away from an economy driven by fossil fuels, an economy where energy is based on a centralized, supply-side approach and which relies on old technologies and outdated business models, “from a fragmented system characterized by uncoordinated national policies, market

barriers and energy-isolated areas” (p. 2).

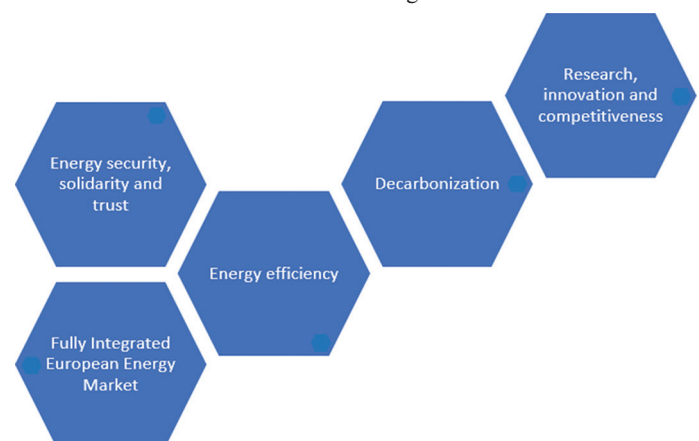
It is clearly stated to move towards “an Energy Union with citizens at its core, where citizens take ownership of the energy transition, benefit from new technologies to reduce their bills, participate actively in the market, and where vulnerable consumers are protected” (EC, 2015, p. 2). Accordingly, the final proposal (EC, 2015) for the Energy Union was launched in the beginning of 2015 and titled “Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy”. It is also known as the Energy Union Package, the purpose of which was to provide secure, sustainable, competitive, and affordable energy throughout the EU. The Energy Union established five official dimensions according to which performance is currently measured (Figure 2).

Thus, the Energy Union Package aims to provide consumers with secure, sustainable, competitive, and affordable energy. This framework strategy also involves potentially adding the free movement of energy to the existing four freedoms of goods, capital, services, and people, thus making energy the fifth. The package of actions was planned to be a strategic step in creating a better integrated European energy market, with prioritising both the security and sustainability objectives of the member states (MSs). This was essential because any improvements toward environmentally friendly energy production may decrease future reliance on external energy suppliers (Siddi, 2016).

Although the European Economic Union and the EU had already dealt with environment-related issues of energy policy, there was an increasing necessity to pay more attention to climate-related issues in the energy sector due to the recently increasing discussions on environmental problems worldwide. Thus, the Commission introduced its “Clean Energy for All Europeans” package, also known as the “4th energy package”, in 2016 as a reflection of the Paris Agreement (EC, 2016).² The aim was

2 Other ideas were proposed in the meantime, such as that of the Šefčovič European Commission Vice President. His “5Ds-model” included decarbonisation of our economies; democratisation of energy production and consumption; digitisation to optimise energy use and efficiency; diversification of energy supplies and helping innovators deliver on new

Figure 2: Five performance measurement dimensions of the Energy Union Package



Source: own edition based on references used for this chapter

to implement the Energy Union and address energy efficiency, renewable energy, the electricity market's design, electricity supply security, and governance rules for the Energy Union. The following goals were set: (i) put energy efficiency first; (ii) achieve global leadership in renewable energies; and (iii) provide a fair deal to consumers.

The package was completed in May 2019 when all the eight legislative acts³ were adopted, thereby theoretically completing the Energy Union. Practically speaking, this package served as a core for the implementation of the Energy Union: The Commission addressed all the previously introduced five dimensions (Figure 2) and defined the targets to be achieved by 2030. The EU set four EU-wide 2030 targets related to clean energy and climate such as (i) 32% minimum share of renewable energy; (ii) at least 32.5% improvement in energy efficiency; (iii) improvements in electricity interconnection; and (iv) reductions in greenhouse gas emissions.

Energy market liberalisation and the introduction of the European Union may both be considered as answers to the contemporary challenges and threats faced by the EU's energy security and sustainability elements and to the increased/more effective contribution of the energy sector to the internal market in general. One of the key priorities of the Energy Union is to achieve a fully integrated and well-functioning energy market that could serve as a profound base to face the classic energy trilemma of securing energy supplies, providing access to affordable energy for all consumers, and simultaneously consider the environmental and climate-related impacts. At the same time, it also indicates the rearrangement of the EU's target system.

technologies to speed up the process; and disruption of traditional energy cycles.

- 3 Governance of the Energy Union Regulation (EU 2018/1999), Electricity Directive (EU 2019/944), Electricity Regulation (EU 2019/943), Risk-Preparedness Regulation (EU 2019/941), Energy Efficiency Directive (EU 2018/2002), Energy Performance of Buildings Directive (EU 2018/844), Renewable Energy Directive (EU 2018/2001) and the regulation establishing ACER (EU) 2019/942)

The cornerstone of the package was the regulation for the governance of the Energy Union and climate action (EU/2018/1999), which came into force in 2018 as an amendment of the abovementioned "clean energy for all Europeans" package. This regulation, besides emphasising the importance of meeting the EU's 2030 energy and climate targets, underlines the essential cooperation between the EU countries and the Commission to achieve the Energy Union's goals. It regulates that member states should prepare national energy and climate plans (NECPs) for the 2021-2030 period. These plans should cover the five broad, interrelated policy tasks, the so called dimensions of the Energy Union. Table 1 summarises the subdimensions and the indicators for a better follow-up of the developments at the member state level. As the first term of the MSs' NECP is from 2021, the MSs were supposed to prepare their NECP drafts by the end of 2018 and their final plans by the end of 2019.

The EU's latest step to impact energy-related strategies was the European Green Deal (EGD) (EC, 2019), which provides a strategy for economic growth and environmental issues and also influences energy regulation and investments. Its aim is to provide a set of transformative policies, including those for clean energy and the transition to its use. Emphasising the need for coherent planning and activities, the EGD requires the active and real contribution of the MSs, first with the NECPs and later through the implementation of its contents by targeting the transition to climate neutrality, energy efficiency, or energy poverty. The objective of the EU to become a climate-neutral community appeared in the strategy of the European Green Deal. This was further developed and supported by the Commission's work programme for 2021. Previous initiatives and their revisions to the European Green Deal climate actions, particularly the climate target plan's extended 55% net reduction target, were presented under the "Fit for 55" package (Table 2).

The European Green Deal is supported by a necessary plan for investment needs. The Sustainable Europe Investment Plan has been designed to help meet the additional funding needs for the transition. The Just Transition Mechanism and the Just Transition Fund will ensure the support and capacity to respond to new challenges for those most affected by structural changes

Table 1: Dimensions and indicators of the Energy Union package

Dimensions	Sub-dimensions	Indicators
Developments in energy security, solidarity, and trust	Import dependency and diversification of supply Gas security	Net import dependency (NID) Supplier concentration index (SCI) N-1 rule for gas infrastructure
Expanding the internal energy market	Wholesale market functioning Consumers	Interconnection, concentration index, and prices Annual switching rates Energy affordability
Increasing energy efficiency and moderation of demand	Primary and final energy consumption Final sectors	Final energy intensity in industry and service sectors Final residential energy consumption per m ² Final energy consumption in transport
Reducing emissions and decarbonising the economy	Decarbonisation of the economy	Greenhouse gas emissions Renewable energy
Supporting research, innovation, and competitiveness	R+D investments and patents Competitiveness	Share of energy R+D in GDP, patents on Energy Union priorities Real unit energy costs in the manufacturing sector as % of value added

Source: own edition based on the EC (2015)

Table 2: Summary of target advancement of energy and climate indicators

Targets set	Following the Kyoto Protocol in 1997 ⁴	EU 2020 ⁵	EGD in 2019 for 2030	CEP in 2018 for 2030	2011 Roadmap for 2050
GHG	8% cut compared to base year for 2012	20% cut (from 1990 levels)	40% cut, followed by an increase to 50% and towards 55% compared to the '90 levels	40% cut in emissions compared to '90	80-95% reduction
RES	12% by 2010	20% of EU energy from renewables	25% of EU energy from renewables	50% of electricity from RES; carbon free for '50; 32% for RES in the energy mix	
Ee	no official target	20% improvement	27% improvement	32.5% improvement relative to '07	

GHG: greenhouse gas, RES: renewable energy sources, Ee: Energy efficiency

Source: own edition based on the Kyoto protocol and Amsterdam Treaty⁶ (1997), climate and energy package (2007), energy roadmap (2011), climate and energy framework (2014), and clean energy package (2018).

in business models, new skill requirements, and relative energy prices. The overall principle of this “just transition” also appears at the MSs level and is reflected in different domestic policies. The legislative proposals include the strengthening and the extension of the emission trading system (ETS), the proposal for a Carbon Border Adjustment Mechanism (CBAM), and a social fund to address the social impacts of the new measures.

4. PERFORMANCE EVALUATION OF THE ENERGY UNION

This section focuses on the practical relevance of the Energy Union. Particularly, it presents an analysis and evaluation of the Energy Union's performance based on the fifth State of the Energy Union Report published by Eurostat in 2020 (EC, 2020). The five dimensions and indicators defined by the Energy Union Package were used to perform the analysis,⁷ and the EU as a whole was examined. EU average refers to the EU 27 after Brexit. Throughout the analysis, comparisons were made between the data from 2015 – the start date of the Energy Union – and the most recent data available regarding the particular dimensions to show the present situation⁸.

The slow progress of the overall Energy Union could be partially explained by the complexity of the EU's target system. The Energy Union has a complex setup, resulting in the EU being lost among the objectives. Instead of focusing on an objective, the Energy Union tries to deliver everything under a single roof. Additionally, priorities are constantly changing, which makes it more difficult

to come up with positive results. The EU's main objective in connection with energy policy was to give rise to competition that would lead to the formation of the internal energy market. Interestingly, with the Fourth Energy Package, the EU took a new approach. Instead of concentrating on and allowing further market liberalisation processes, it prioritised the establishment of the Energy Union and energy transition. Thus, the Fourth Energy Package marked a shift from the EU's original idea of solely building an internal energy market towards something more: a consumer-oriented, fully functioning, integrated European Energy market with a greener energy mix, lower prices, and reduced dependency on third-country energy suppliers. After reviewing the official documents, it is also apparent that the theoretical setup and the whole aspiration of a common European Energy Union was built on two fundamental pillars: (1) the security of gas supply has always been an essential and frequently highlighted part of the discussion, and (2) climate-related issues have gained an ever-growing importance in the realm of the energy policy. Thus, the security of clean energy supply was debated. During the Juncker Commission, the realisation of the Energy Union was of utmost importance. Ursula von der Leyen, the current president of the European Commission, appointed the fulfilment of the European Green Deal as a top priority in her State of Union speech in September 2020 (von der Leyen, 2020).

The policy of the Energy Union is already different from its initial state. The focus of its target system shifted from the internal energy market to energy transition. The emphasis is not on which and how many actors are to operate in the energy sector (state- or privately owned companies) anymore and whether there is competition. It is now about realising the energy transition regardless of who is executing it. The energy and climate policies have not only become very much intertwined but have also pushed the EU away from the original aim of creating an integrated internal energy market (Deloitte, 2020).

The performance summary in Table 3 presents the results of the first years of the Energy Union.

The objective shifts were not merely due to ideological changes resulting from low performance, but they definitely did not help meet the original objectives. The table shows the overall progress and makes it easier to spot those areas where special attention and further reinforced commitment might be needed.

4 Kyoto 1st commitment period (2008-12) and https://ec.europa.eu/clima/system/files/2016-11/table_emm_limitation_en.pdf

5 This target is in line with the Kyoto 2nd commitment period. The targets were set in COM (2008) 30 - Communication from the Commission: 20 20 by 2020 - Europe's climate change opportunity

6 The Amsterdam Treaty (1997) set the basis for supporting RES. Later, EU member states expressed their commitment to the Johannesburg Renewable Energy Coalition in 2004, regarding the support of renewable energy sources.

7 Eurostat. Energy Union indicators webtool. Available: https://ec.europa.eu/energy/data-analysis/energy-union-indicators/scoreboard_en?redir=1

8 The most recent data is usually from 2018 or 2019. Unfortunately, in the case of some indicators and certain countries, there is no available data at all.

9 Please note that these prices reflect those from 2018, so they are below the current (2022) prices caused by the impact of the so far two year-long COVID-19 and the Russian-Ukrainian war.

Table 3: Performance summary at the EU level

Energy Union Dimension	Sub-dimensions	Indicators	Unit	Value		Progress*	
				2015	Most recent data		
A fully integrated internal energy market	Wholesale market functioning	Electricity interconnection	% of installed capacity	28.00	35.89	incr.	✓
		Market concentration index - gas	0-10000 (10000 means a single supplier)	4918	no data	N/A	NA
		Market concentration index - electricity	0-10000 (10000 means a single supplier)	3837	no data	N/A	NA
	Consumers	Wholesale prices - electricity	EUR/MWh	38.57	3.33 (2018)	decr.	✓
		Wholesale prices - gas	EUR/MWh	22.41	5.33 (2018)	decr.	✓
		Annual switching rates - electricity	% of total consumers	6.02	7.20	incr.	✓
		Annual switching rates - gas	% of total consumers	6.70	6.88	incr.	✓
		Energy affordability	% of energy related expenditure in total household expenditure for the lowest decile (i.e. poorest 10% of population)	10.77	8.32 (2018)	decr.	✓
Energy security, solidarity and trust	Import dependency and diversification of supply	Net import dependency (NID)	% of gross inland consumption + international bunkers	56.72	60.62	incr.	x
		Supplier concentration index (SCI)	0-100 (100 means maximum concentration)	25.74	12.84	decr.	✓
		N-1 rule for gas infrastructure	% of total demand that can be satisfied if the largest item of gas supply infrastructure is disrupted	134.02	130.06	decr.	x
Energy efficiency	Primary energy consumption	Primary energy consumption	toe/Million EUR GVA2015	50.14	50.95	incr.	x
	Final sectors	Final energy consumption in industry	Mtoe	8.63	8.97	incr.	x
		Final energy consumption in services	Mtoe	4.82	4.95	incr.	x
		Final energy consumption in households	Mtoe	9.03	9.08	incr.	x
		Final energy consumption in transport	Mtoe	10.10	10.62	incr.	x
Decarbonisation of the economy	Decarbonisation of the economy	Greenhouse gas emissions	% of the level in 1990	85.83	76.34	decr.	✓
		Renewable energy	% of renewable energy in gross final energy consumption	20.34	19.73	decr.	x
Research, innovation and competitiveness	R&D investment and patents	Share of energy R&D spending	% of GDP	0.03	0.02	decr.	x
		Patents on Energy Union priorities	Patents per million inhabitants	10.52	12.49	incr.	x
	Competitiveness	Real unit energy costs in the manufacturing sector as % of value added	% of value added	18.00	18.15	incr.	X

Source: Own edition based on Eurostat data. incr. = increased; decr. = decreased

Notably, the fifth and the sixth State of the Energy Union reports both state that the COVID-19 pandemic facilitated certain areas to meet some of the targets. However, it also resulted in some other areas being halted. This does not mean a structural change – rebound effects are to be expected upon the recovery of the economy (EC, 2020, 2021). Furthermore, even the sixth report works with data from 2018 to 2020, dependent on data availability. Therefore, certain cases don't reflect, for example, the huge wholesale and consumer price increase in 2021 that affected all EU member states.

Next is the performance evaluation of each dimension. Regardless of the shifting objectives of the Energy Union and its weak

governance system, the indicators defined to measure progress in the specific dimensions speak for themselves and give an adequate picture of the evolution of the Energy Union in practical terms.

There can be no Energy Union without establishing the internal energy market first. There is no data describing the market concentration of wholesale gas and electricity, but positive progress for every other indicator was seen in the Fully integrated internal energy market dimension. However, as respect to earlier findings of Somosi (2011) it is visible that in the last 10 years there were no remarkable changes in the number of actors on any of the sub-markets Moreover, lately, the launch of the last

report on the state of the Energy Union, there was a significant increase in the energy prices throughout the EU⁹. Despite the fact that economic players and consumers are already experiencing its effects, this price increase will be visible in the statistics and reports only 1-2 years from now. The price increase reasons include the supply shortages upon the reopening of markets after the shutdowns due to the coronavirus outbreak. Besides, there are structural and geopolitical causes as well. Moreover, the earlier flexibility to mitigate price fluctuation has also dropped due to the -22% lower level of stored gas volume¹⁰.

In October 2021, the EU energy ministers started a discussion about the spike in energy prices and the possible measures to handle it at the national and EU levels. Varying opinions were shared on whether the EU and its MSs should introduce national or EU-level measures and on the length of their impacts on short-, medium-, and long-term policies¹¹.

Since then, according to European Central Bank sources, it has been clear that the higher energy prices will remain for a longer period of time than previously expected¹². This may call for fundamental changes in how the energy market operates, as has already been suggested by the French and Spanish lead group of MSs¹³. The increased wholesale energy prices will definitely have an impact on energy affordability throughout the EU.

In the Energy security, solidarity and trust dimension, positive progress was only made in the sub-dimension of gas security. Nonetheless, it is not evident whether the EU will ever manage to make significant progress in this dimension due to its politicised nature and the inherently differing national interests¹⁴. None of the MSs, not even the ones within the same region, share clearly the common positions on energy-related issues, as can be seen in the case of Central and Eastern European (CEE) countries (Austvik 2017). For example, some CEE countries consider the Energy Union to be an obstacle when it comes to negotiations with external suppliers (Politico 2015). Numerous articles argue that the confederative structure of the EU and diverging national realities hinder the establishment of an effective common energy policy (Austvik, 2016). However, others think that the political

division did not explicitly lead to the blockage or stagnation of the process of widening and deepening the EU's energy policy, particularly when it comes to climate-related energy policy areas (Buzogany 2019). In its latest report (EC, 2021), the Commission has emphasised the need to increase the resilience towards energy price fluctuations. This would require the enhancement of energy security and safety and phasing out of fossil fuels. The decentralisation (democratisation) of energy systems can also increase with the implementation/introduction of higher RES proportion. The gas import dependency in 2019 reached a historical height in the last 30 years. The energy system interconnectivity (from the 2nd dimension) and energy efficiency improvements (from the 3rd dimension) contributed to achieving the targeted energy security. Furthermore, at the end of 2020, the Commission also proposed two new directives on the resilience of critical entities and the security of network and information systems, aiming to improve the resilience of the energy sector within the framework of its EU Security Union strategy.

In the Energy efficiency dimension, no progress was made based on the dataset. At the EU level, the primary consumption of energy grew further in all the examined sectors during the reference period. The industry sector showed the largest increase and household sector the smallest. As a considerable challenge, the consistent application of the "energy efficiency first" principle has to be mentioned which is visibly also backed/supported by enhancing the overall efficiency and the importance of innovation in the industrial strategy of the EU (Pelle, Somosi 2018). This principle was not only repeatedly stressed in EU communications and incorporated at the EU legislation level but also systematically applied for particular funding and investment decisions (Rubio et al., 2016). The capacity and willingness of EU actors, including the MSs, to apply the "energy efficiency first" principle is what will determine, in the long run, if there is an actual commitment to realising the Energy Union in practice or if it will remain a fancy catchphrase. It is especially important to show perseverance even if the initial results are negative. Research shows that the implementation of ambitious climate policies might cause real improvements in the indicators around 2040 in comparison with the data from 2000 (Guivarch and Monjon, 2017). However, the latest report (EC, 2021) conveyed a primary energy consumption decrease from 2019, even though it was still above the linear trajectory to reach the target set for 2020. Final energy consumption also declined in 2019 for the first time in six years, but the yearly decline of 0.6% in 2019 was not sufficient to reach the target. The EU could also reduce its primary energy intensity by over 3%. According to the report, the parallel changes of the three indicators seem to be an impact of the recent weather conditions. Moreover, examining the COVID-19 and economic re-opening impacts revealed that the targets of these indicators are highly reliant on conditions independent of the efforts and targets of the EU and the MSs. Therefore, better tailored, updated, and proper implementation of the NECPs are required.

Decarbonisation of the economy is the only dimension in which the EU made significant progress, revealing why the fifth State of the Energy Union report refers to the Energy Union as an

9 The peaks of wholesale electricity price were like 80 euro/MWh in 2008 and 60 euro/MWh in the end of 2018, it increased above 120 euro/MWh for the end of 2021. The wholesale prices for natural gas shows the same pattern: it used to be around 30 euro/MWh in the second half of 2008 and 2018 and peaked around 75 euro/MWh in the end of 2021. In October 2021, the TTF spot price signaled a +216% increase with respect to July levels, while forward contract prices experienced a relatively lower +155% increase compared to July levels for Calendar 2022 contracts.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0660&from=EN>

10 <https://fsr.eui.eu/publications/?handle=1814/73596>

11 <https://www.bruegel.org/2021/11/rising-energy-prices-european-union-countries-views-on-medium-term-policies/>

12 <https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220108-0425a24eb7.en.html>

13 <https://www.bruegel.org/2021/11/rising-energy-prices-european-union-countries-views-on-medium-term-policies/>

14 Moreover, here the interests/conditions of the countries of origin is also a determinant, such as in the case of Liquefied Natural Gas (LNG) imports from the USA being long considered as "freedom gas".

“essential pillar for achieving the Green Deal (EC, 2020)”. The EU overachieved its 20% target regarding GHG emissions, and GHG emissions levels in 2020 were their lowest in 30 years; the majority of the member states were on track to achieving their targets. However, in the case of the share of renewable energy in gross final energy consumption, the EU could only get close to its target. The improvement could be explained by the legally binding nature of increasing the share of renewables, which actually proved to be effective, as well as by other factors: the ongoing decarbonisation trends, energy efficiency improvements, technological learning in the RE sector, and COVID-19 outbreak and related closure of certain economic and industrial activities (EC, 2021). However, the failure to meet the target can be reasoned by the fact that the value of renewable energy investment in Europe declined: it was highest was in 2011 at 131.7 billion U.S. dollars; it then fluctuated and peaked in 2019 at approximately 58.4 billion U.S. dollars¹⁵.

In the Research, innovation and competitiveness dimension, there was a step back in every observed area which accompanied the earlier trends revealed regarding the division and differences in the evolution of overall competitiveness (Pelle, Laczi 2015). A smaller share of the GDP was spent on Energy Union priorities, which is at least partially the reason why the number of patents on Energy Union priorities also decreased. It also explains why the amount of money to be spent on one unit of value added for the manufacturing sector increased, thus reducing the competitiveness of the sector. The research, innovation and competitiveness dimension seems to clearly indicate the overall commitment of the MSs to the Energy Union: since public research and innovation (R&I) support is critical for the energy revolution (Pellerin-Carlin, Vinois 2017), the more R&I is done by a MS, assumably the more committed it is. Regarding the partial market, different tendencies can be seen. In terms of global market shares in certain value chain segments of clean energy technologies, the EU is well positioned. Based on data from the JRC SETIS,¹⁶ it has a greater share of green inventions in climate change mitigation technologies than other major economies, but the EU's rate of public investment in clean energy technologies for decarbonisation is the lowest of the major economies (0.027% of GDP in 2019) (EC, 2021). Overall public clean energy R+I investments in MSs are still below 2010 levels. However, a new impetus has been given to this area by the European Green Deal and the NextGen EU. According to the sixth report on the state of the Energy Union, the EU has great potential in some fields, such as renewable hydrogen and other fuels, smart grids, and batteries, due to the increasing future demand stemming from the policy driven expansion of these markets.

5. CHANGES AND CHALLENGES

The theoretical framework for this study was the intention to create an internal, integrated energy market through liberalisation as a priority of the energy policy. Its importance is evident since it even

became one of the pillars of the Energy Union. Interestingly, the EU took a new approach in 2016: Instead of concentrating on and allowing further market liberalisation processes to give place to competition and to the formation of the internal energy market, the EU's focus shifted towards something more. Its efforts broadened to a consumer-oriented fully functioning and integrated European Energy market with a greener energy mix, aspired lower prices, and reduced dependency on third-country energy suppliers – these were embodied by the Energy Union. It became apparent that the theoretical setup and aspiration towards the European Energy Union was built on two fundamental pillars: The security of gas supply has always been an essential and frequently highlighted part of the discussion; and climate-related issues have gained an ever-growing importance in the realm of the energy policy as well, causing the security of clean energy supply to enter the debate.

Decarbonisation is now one of the new expectations of competitiveness. Despite the results in renewable energy use and transition, more efforts are required to transform the energy sectors. The differences in these efforts, the imbalanced and uneven financial support, and the various approaches are all visible within the EU as well.

Studies show that natural and built resources may impede RE production in the EU MSs as well. Thus, to achieve the ambitious goals related to renewable energy deployment, the EU needs additional policies that explicitly tackle path dependency determined by existing natural or built sources and their pernicious effects. These may include rent-capturing by politicians, rent-seeking by corporate vested interests, and lack of economic incentives to diversify (Ahmadov and Borg, 2019).

According to the IEA (2021), there was a decrease in investments targeting energy companies active originally in the fossil fuel industry, and it was not counterbalanced by additional investments in clean energy and infrastructure. Among the reasons for this phenomenon are COVID-19 and the rapid but uneven global economic recovery after the closures. Despite advancements being made by renewables and electric mobility, 2021 witnessed a large rebound in coal and oil use, sparking sharp price increases in the natural gas, coal, and electricity markets and resulting in the second-largest annual increase in CO₂ emissions in history (IEA, 2021).

Besides COVID-19, there was also a push towards phasing out fossil fuel from the energy mix. The sometimes aggressive and hypocritical and, in many cases, “green-washing” nature of Environmental, Social, and Governance (ESG) phenomena further supports the shutting down of functioning and economically reasonably maintained power plants run by traditional fuels or nuclear power. The decreased financing of energy companies and projects of traditional energy market actors have impacted the EU market as well. Investment costs are increasing, so projects are extended or even cancelled. As long as there is no effective level of substitutes from preferred renewable sources, as demand is likely to be stable or rather increase, the energy efficiency improvements are not enough to counterbalance the missing energy. The prices of traditional

15 <https://www.statista.com/statistics/1066269/renewable-energy-investment-europe/#statisticContainer>

16 https://setis.ec.europa.eu/publications/setis-research-and-innovation-data_en

primary energy sources are also expected to increase, as it was already visible in 2021 in the European market. The estimations of the IEA (2021) show that 700 billion USD investments would be required to reach net zero.

Last, with regard to decarbonisation, it is important to consider the EU-level debate over nuclear power. Almost half of the MSs have been waiting since 2018 for Commission's decision to declare nuclear energy as carbon-free. Nuclear energy was a major contributor to clean energy, accounting for 40% of low-carbon electricity generation worldwide and 24.6% within the 13 member states of the EU in 2020¹⁷. Therefore, nuclear energy is a strategic tool to ensure national energy security and also achieve carbon neutrality. Of course, if the debate was only about climate policy and carbon emissions, it would not have lasted this long.

The Internal Energy Market itself brings conflicts and challenges for the MSs. As previously mentioned, the price increase within the internal energy market has been a challenge for the MSs. Will they let market forces determine the market price or maintain a little bit of competitiveness and keep social aspects in the front while introducing something to mitigate the energy price increase? Apart from the existing price caps controls and regulated prices in the electricity (12 MSs) and gas markets (10 MSs),¹⁸ in 2018, the Bruegel think tank summarised the various measures MSs have introduced or plan to introduce in the near future¹⁹ due to recent events. The report found that, besides retail and wholesale price regulation, reduced energy tax, transfers to vulnerable groups, and mandates for state-owned firms have all been considered in at least 16 MSs.

Berka and Dreyfus (2021) assessed the multiple layers and positive impacts of energy decentralisation (ED) partly through RES and by establishing energy communities²⁰. However, it is also worth considering that, alongside its obvious role in the institutional background and on the regulatory side, state ownership of the energy sector can cause interesting outcomes. As revealed by Haney and Pollitt (2010) and Mayer and Rajavuori (2017), state-owned enterprises control significant shares of economic sectors that can appear as central elements in a carbon-intensive economy. Thus, they can actively participate in the development of a carbon-neutral economy. They can also substitute the recently missing financial background. As in the case of the European Green Deal, which serves its purpose as a state aid/investment as it happened a decade earlier (Somosi, 2012), there are markets where the investments artificially appear due to the policy-driven growth of demand.

As Millot and Maizi (2021) stated, "Unlike past transitions, the low-carbon energy transition will not happen spontaneously and

will require active coordination between all actors at global, national and local levels, coupled with controls to effectively target a carbon neutrality goal. The role of governments will be crucial to steer this process" (p. 1). The role of the leader – be it the EU and/or the decisionmakers of a MS – in the transition is the most important. Holistic management of the internal and external sides of a domestic energy market, thus bringing together the latest environmental concerns, market efficiency objectives, and a foreign and security policy objective, is as important at the macro level as it is at the supranational level (Austvik, 2016).

Climate and energy policy are still influenced to a large extent by individual MSs' national interests and national policies, because MSs can freely determine the conditions for exploiting their own energy sources and composing their energy mix (see TFEU). Due to this division over the MSs' energy mix, the EU's energy policy is still just a patchwork of national policies (Deloitte 2020). The choice of energy mix depends on each MS's political, economic, institutional, and infrastructural situation in the energy sector, deriving from their geographical position and historical traditions and further refined by their educational and employment system, general attitude towards energy- and climate-related (both public and private) R&D, and commitment to private or public ownership. Additionally, MSs gradually tend to opt for energy mixes with higher quality; however, path inertia and dependencies emerge due to infrastructure and resource establishments (Csereklyei et al., 2017).

The regulatory background has a significant impact. Both the EU and MSs for the natural and legal persons set the playing field for the energy sector and its transition, and there are visibly louder voices for "harder soft governance" within the European energy market (Knodt et al., 2020). Regardless, there is room for changing and differently weighting the main goals of the Energy Union.

Furthermore, the MSs also have the freedom to decide how they put into practice the EU's energy objectives, which has actually led to incoherence between various national policies and between national and EU energy policies (Pellerin-Carlin, Vinois 2017). This leads not only to a distinct set of energy mixes throughout the EU but also to diverse policy priorities and varying levels of ambition with regard to the different dimensions as well as conflicts among the MSs. Discrepancies such as the lack of coordination between the MSs' energy mixes (including the differing dependence on third-country suppliers), policies, and priorities create obstacles to the creation of an integrated internal energy market. Although the EU has shared competences in energy since the Lisbon Treaty, the lack of full competence prevents the EU from delivering most of the Energy Union's dimensions, which could undermine the creation of an internal energy market and the climate neutrality by 2050 goal in the long run. To prevent this failure, the EU should step up against the MSs and strongly emphasise their responsibility to coordinate their energy policies, because this could eventually become the key determinant of success at the EU level.

From the opposite perspective, more room should be provided for the MSs since an increased push towards the EU's energy transition

17 Eurostat and World Nuclear News

18 Council of European Energy Regulators (CEER), 2019: Monitoring Report on the Performance of European Retail Markets in 2018; <https://www.ceer.eu/documents/104400/-/-/5c492f87-c88f-6c78-5852-43f1f13c89e4> (last accessed: 2021.03.06)

19 <https://www.bruegel.org/publications/datasets/national-policies-to-shield-consumers-from-rising-energy-prices/>

20 Renewable Energy Communities (REC) in the 2019 RED II Directive

goals may further increase the strains and tensions between the West and East (Pérez et al., 2019) and between nuclear-reliants and greens.

From the perspective of the EU as a whole, challenges are still visible. The success of reaching the target of 20% RE share within the energy mix has been questioned. Due to the shift from the 2020 package to the 2030 climate and energy framework, the renewable energy target lost its binding nature at the MS level.²¹ This shift can be linked, first of all, to the Lisbon Treaty by which the EU was given shared competences in the field of energy and, second, to the political negotiations and compromises of the MSs (Monti, 2020). The political negotiations resulted in the polarisation of several matters, just like in the case of the renewable energy target. On one hand, the Central and Eastern European countries with Poland's leadership continuously emphasised their national sovereignty over the choice of energy mix, while on the other hand, environmentally progressive countries, such as Sweden, Denmark and Germany, called for the retention of the targets already included in the 2020 package (Monti 2020). As a third group, MSs like the Netherlands supported a strong climate target but rejected the adaption of a new target with a legally binding nature (Monti 2020). All this culminated in the 2030 climate and energy framework, which only became binding at the EU level and not the MS level. Consequently, the non-binding nature of the rest of the energy and climate-targets at the national level is what makes the practical relevance of the Energy Union questionable; therefore, strong Energy Union governance with an effective enforcement toolkit is needed. The EU actually recognised and addressed this issue by implementing the Governance of the Energy Union Regulation (EP, 2018); however, its effects can only be evaluated in 2023, which is when the first biennial progress reports will be presented by the MSs. Furthermore, the governance system is built on the NECPs, which were designed for the 2021-2030 period. Therefore, a more accurate assessment of the Energy Union as a policy can only be carried out at the end of this period. A necessary update of the NECPs should reflect the higher target set for 2030, and they should bring together or address the solutions as well.

The most important step in improving the Energy Union is to decide on the exact objectives and accordingly develop a binding target system at the EU level, which would be strongly monitored by the Energy Union's governance. Additional tools and measures, such as those related to green recovery and new mechanisms introduced within competition regulation, can provide additional support to reach these goals. However, without a bottom-up commitment from the MSs, a top-down "forced" system including performance and reporting obligations could be highly counterproductive. At the same time, it has to be highlighted that the governance system was built on the NECPs for the 2021-2030 period and was thus not in force during the assessed period. Considering this, it would worth reevaluating the Energy Union as a policy after the first NECP results are available.

6. CONCLUSIONS

Due to the nature of the energy sector and climate-related topics, a far-reaching conclusion cannot be drawn. The present paper

instead serves as an evaluation of the state of art in the end of 2021 of the Energy Union from different aspects.

The policy of the Energy Union is already different from its initial state. The focus of its target system shifted from the internal energy market to energy transition, so the first years of the Energy Union did not result in an overwhelming breakthrough. This is partially because the EU would like to deliver all the environmental and climate-related initiatives under a single roof.

However, practically speaking, an actual Energy Union seems to be a distant goal for now; the in-depth desktop statistical analysis showed that success in certain areas such as GHG emissions or the share of renewables cannot be denied, but an overall improvement across all five dimensions at the EU level has not yet taken place.

It derives from the challenge of integrating the agendas of market liberalisation, energy security, and energy transition that the Energy Union objectives became clearly intertwined with the broader objectives of the European Green Deal. The EU admits in its fifth report on the State of the Energy Union that *"the Energy Union objectives are clearly intertwined with the broader objectives of the European Green Deal"* (EC, 2020).

Overall, even if the existing infrastructure, pipelines, power plants, and nuclear plants are not considered to be so, flexibility at all levels is important. Flexibility of micro level actors of the economy, whereas by their transformation of energy consumption market actors, companies make a shift in their energy mix from simply buying energy as an input towards finding more effective ways to use it and furthermore even producing their own energy needs. The Ukrainian-Russian war especially demanding flexibility beyond an unexpected level forcing EU actions on common and member state policy and strategic gas and oil contract levels which will have a major impact on the short-term actions for the Energy Union. On the other hand, there should also be additional flexibility on the market level. New competitors arise (renewables), new ways of supplying energy appear in giant network economies, new disruptions may happen regarding the possible sources of energy, and consumer preferences toward green products change. Thus, flexibility is also important in letting diversity appear in the inclusion of all energy markets, the domestic regulation of energy production, the regulation of government/EU-level support, and the establishment of performance standards.

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21 When a target is binding at MS level, it can be usually enforced through an infringement procedure.

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