

TURNING THE EUROPEAN GREEN DEAL INTO REALITY

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Abstract: *The European Green Deal (EGD) – represents a new model of economic growth, but also the first proposal of the European Commission for 2019-2024, aiming to contribute to the objective of net zero greenhouse gas emissions by 2050, set by the European Climate Law. (Regulation EU 2021/111). This objective generates many problems not only at the European Commission’s level, but also for member states, and because the implications are of an economic (investment risk, mitigation, and adaptation costs) social (public acceptance and engagement, public education and awareness, behavior change and resistance) and ecological nature (land acquisition, waste and pollution, natural resource consumption) this objective is difficult to achieve. (Saraji & Streimikiene, 2023)*

To all these existing problems, new issues such as the COVID-19 pandemic and the war in Ukraine were added. All these factors led the EU to reconsider its position in several sectors, especially in the energy sector. Member States faced unforeseen shortages, which had a direct and considerable impact on the European citizens. As such, the present scientific approach aims to answer the question regarding the actual role of the EGD among the other policies of the European Union in the current complicated international context. This work contributes to the extensive discussion on EGD role in promoting “Europe’s man on the moon moment” von der Leyen, 2019) by analyzing a few of the key policies area, which have been set by the European Commission at European level and for Romania regarding the net zero gas emissions.

Keywords: *European Green Deal, greenhouse gas emissions, green energy, energy efficiency, energy poverty*

JEL classification: *E20*

1. Introduction

The European Commission's priorities are set following a dialogue involving EU leaders, ministers from member countries, EU institutions and political groups in the European Parliament, to which the EU Global Trends Report is added. (EU, 2024 available at https://european-union.europa.eu/priorities-and-actions/eu-priorities/european-union-priorities-2024-2029_en)

The European Green Deal (EGD) is the first of six initiatives proposed by the European Commission for 2019-2024. EGD aims to transform the EU into a modern, resource-efficient, but at the same time competitive economy, with no net greenhouse gas emissions by 2050, with economic growth decoupled from resource use, and the application of the principle that no one is left behind. (EC, 2019).

This initiative addresses critical issues such as climate change, biodiversity loss, food security, deforestation, and land degradation. It also sets new standards for biodiversity that influence trade, industry, agriculture, and economic policy (Ursula von der Leyen, 2019). The EGD provides an initial roadmap of key policies and measures that are necessary to achieve the ambitious objectives (Smol, 2022) assumed by the EU in the field of climate change and sustainable development.

EGD can contribute to meeting the objectives set by the 2015 Paris Agreement, namely the reduction of greenhouse gas emissions, an agreement that was ratified by the participating countries (United Nations, Climate Change, The Paris Agreement available at <https://www.un.org/en/climatechange/paris-agreement>) but where the EU and its member states assumed a leading role in reaching the target of reducing greenhouse gas emissions by at least 55% by 2030, compared to the levels recorded in 1990. It is estimated that EGD can contribute to the

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achievement of the objectives set in the 2030 Agenda for Sustainable Future Development (United Nations, Transforming our world: The 2030 Agenda for Sustainable Development available at <https://sdgs.un.org/2030agenda>) regarding sustainable development.

“The legal form of the Green Deal is a strategy developed by the European Commission. There is no obligation for member states to give prior approval and some complained about the lack of consultation in the matter” (Charveriat, 2023). However, the European Commission agreed with member states on the Green Deal, except for the reform of the Common Agriculture Policy (CAP) and the taxonomy of private finance.

To implement the EGD, the European Commission has adopted a set of proposals to harmonize EU climate, energy, transport, and taxation policies with the aim of reducing net greenhouse gas emissions. The implementation of the objectives of the European Green Deal was supported by the adoption of the European Climate Law that established the reduction of gas emissions by 55% in 2030, as mandatory for all member states.

2. Theoretical background

The European Commission defines the EGD as a new growth strategy that aims to transform the European Union into a fair and prosperous society, with a modern, resource efficient and competitive economy, where there are no net emissions of greenhouse gases by 2050 and where economic growth is decoupled from resource use. (EC, 2019)

The European Green Deal is not per se a legal act, but it represents the communication from the Commission to the European Parliament to take actions to materialize its content, but on 30 June 2021, the European Union adopted the European Climate Law. (Regulation EU 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) Nr. 401/2009 and the (EU) 2018/1999.

Along the same lines, Fetting (2020) argued that “the European Green Deal is not a law in itself, but a general policy strategy outlining the ambitions and goals in different policy sectors” (Fetting, 2020). The European Green Deal has the potential to be a central element of the European economic model, representing more than the sum of its distinct parts. All policies need to be harmonized and legislation adapted to support crucial objectives such as climate and sustainability (Vela - Almeida et. al., 2023).

In contrast, the European Green Deal should not be planned in detail until 2050, nor is it enough to declare it as an ambitious objective for that year (Wolf et.al., 2021). Establishing and announcing major objectives without them benefiting from sufficiently detailed action plans regarding the way in which they can be achieved can be appreciated as an interpretable approach (Fleming & Mauger, 2021). “The European Green Deal does not need to redefine EU economics. All it needs to do is to shift our economy from fossil fuels to zero carbon in a way that is socially and politically viable”. (Claeys et.al, 2019) without consequences for European citizens.

If the EU fails to set a fair set of national climate targets, social hardship may arise, making the collective climate target difficult to achieve (Ruiz et.al., 2023). Because member countries have different visions regarding gas emissions, none of the ambitious strategic goals to reduce emissions at the international level can be achieved without evidence-based actions carried out within some individual countries (Gavurova et.al, 2021).

Achieving greenhouse gas neutrality by the EU by 2050 requires huge efforts that far outweigh the challenges of meeting the shorter-term 2030 climate targets and none of the sectors are ready to meet the reduction target of greenhouse gases for the year 2050 of 80%-95%. Therefore, efforts can be directed towards increasing energy efficiency (Duscha et.al., 2019). This is the best option for the majority of member countries.

The implementation of EGD has a direct and indirect financial impact on the entire EU, and the ecological transition is to take place when European citizens agree to bear the costs and participate in the process (Sikora, 2021), while being aware of the consequences. Regarding the financing of the

European Green Deal, “the European Commission also needs to ensure that the additional allocation of funds for the Green Deal is indeed supplementary to the preexisting budget, rather than a reshuffling of commitments already made earlier” (Siddi, 2020). Because of the outbreak of the Russian war in Ukraine, the Green Deal element became even more important in the transition towards renewable energy, becoming a tool to create true European energy sovereignty (Timmermans, 2023).

The effects of the armed conflict and the restriction on the import of gas from Russia can have major consequences not only for greenhouse gas emissions and therefore on the objectives of the Green Deal. This can also lead to the increased use of coal and changes in population behavior (Filipiak & Wyszowska, 2022).

The EU can achieve deep decarbonization by 2050, but one must acknowledge that the objectives set for 2030 are as ambitious as possible, requiring an optimal reduction of emissions specific to each country (Sotiriou, Zachariadis, 2019). But European directives are not enough to achieve the EU's gas emission reduction objectives, so each member state must introduce additional measures and the EC must support the countries. (Marotta et.al., 2023). Analyzing the situation of each individual country is quite a complicated problem.

That is why political factors must consider the energy situations and the transition strategies across EU member states, allowing flexibility in the targeted measures and the strategies specific to a given region, both essential components for an effective decarbonization. (Gajdzik et.al., 2024).

The European Green Deal is composed of 8 action areas, namely: 1) increasing the EU climate ambition for 2030 and 2050; 2) supplying clean, affordable, secure energy; 3) mobilizing industry for a clean and circular economy; 4) building and renovating in an energy and resource efficient way; 5) zero pollution targets for a toxic-free environment; 6) preserving and restoring ecosystems and biodiversity; 7) farm to fork: a fair, healthy and environmentally friendly food system; 8) accelerating the shift toward sustainable and smart mobility (Fetting, 2020).

Each of the 8 areas of action has its importance in the implementation of the European Green Deal. (Ejdys, Szpilko, 2022)

EGD implementation is closely monitored through the European Green Deal Barometer. The European Green Deal Barometer is a document based on the Think2030 survey. The survey is a consultation of 300 sustainability experts from various backgrounds. The report appears annually and in the 2024 report respondents see the most problems for EGD as being created by election results (67%) and the lack of commitment from the member states (62%) (European Green Deal Barometer, 2024).

3. Research Methodology

We applied the SALSA method in our research, meaning search, appraisal, synthesis, and analysis of the relevant literature. This technique enables a literature review while minimizing the possibility of subjectivity, but it allows the author to draw his own conclusion in the matter. It also ensures the works' s methodological accuracy and completeness. The analysis evaluates assumptions through the method of critical discourse analysis.

4. The implementation of EGD on GHG emissions, the automotive sector, electricity production, energy efficiency and energy poverty

With the adoption of the European Green Deal, E.U. Member States unanimously took it upon themselves to implement policies in areas such as climate, energy, transport, and taxation, all this with the aim of achieving 2030 targets, and to completely eliminate emissions by 2050.

The 2030 target became tighter in December 2021, when the Commission proposed the "fit for 55" package (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions „Fit for 55”: Delivering the EU’s 2030 Climate Target on the way to climate neutrality, COM 550 final) a set of proposals to review and update EU legislation on energy, climate and biodiversity.

Since its entry into force on 29 July 2021, the EU Climate Law, which represents the first output of the European Green Deal of 2019, establishes a binding commitment of the Union and its member states to achieve a 55% net greenhouse gas emissions reduction in 2030 compared with 1990. (Schlacke, Wentzien, Thierjung, Köster, 2022)

The binding nature of the legislative acts (directives and regulations) regarding the adoption of renewable energy directive and the Refuel EU Aviation Regulation, the European Union has now legally binding targets covering all key sectors of the economy. (European Commission, 2023)

As such, Member States must fulfill them, even if the war on the EU's border has direct consequences on the economies of member states through the price paid for gas, along with the reduction of Russian imports.

The implementation of EGD on net greenhouse gas (GHG) emissions support the objective of reducing them compared to 1990, an objective assumed by all member states.

Table 1: Net greenhouse gas emissions

Time	1990	2019	2020	2021	2022
Geo					
European Union - 27 countries (from 2020)	189.0	73.9	66.1	69.9	69.8
Belgium	100.6	83.2	75.8	78.4	74.3
Bulgaria	100.0	55.1	47.4	54.9	68.4
Czechia	100.0	68.5	64.2	65.5	63.1
Denmark	100.0	62.3	56.8	56.2	54.8
Germany	100.0	63.6	58.8	68.2	68.3
Estonia	100.0	51.2	36.8	38.5	41.2
Ireland	100.0	111.7	186.1	118.4	118.3
Greece	100.0	81.7	69.1	72.5	73.8
Spain	100.0	188.9	89.3	96.6	181.4
France	100.0	81.0	78.9	75.7	73.7
Croatia	100.0	81.8	75.5	77.2	81.7
Italy	100.0	74.8	67.9	75.2	76.1
Cyprus	100.0	156.7	139.1	147.2	158.8
Latvia	100.0	69.6	82.4	94.9	111.7
Lithuania	100.0	33.9	32.8	34.6	29.9
Luxembourg	100.0	92.7	78.8	81.2	72.3
Hungary	100.0	65.2	68.6	61.7	58.1
Malta	100.0	93.9	81.4	83.4	94.1
Netherlands	100.0	84.9	75.4	76.8	72.2
Austria	100.0	125.1	181.4	98.9	183.8
Poland	100.0	81.9	78.8	84.2	77.6
Portugal	100.0	94.2	88.6	77.3	88.8
Romania	100.0	29.8	27.8	29.1	27.5
Slovenia	100.0	114.6	187.5	189.8	187.2
Slovakia	100.0	54.3	46.5	52.7	46.4
Finland	100.0	185.8	87.8	185.6	185.3
Sweden	100.0	58.3	18.4	24.2	27.6

Source: https://ec.europa.eu/eurostat/databrowser/view/sdg_13_10/default/table?lang=%20online%20data%20code:%20sdg_13_10%20

As noticeable from the Table 1, the EU and its member states have made progress on GHG emissions, which decreased by 31% during 1990 and 2022, while the bloc's economy grew by approximately 67% over the same period (EC, 2024). A brief 3% relapse only occurred in 2021 because of the COVID crisis, when some member states also used other sources of energy production to ensure their economic growth. The decrease continued in all member states across 2022, as GHG levels dropped

below the pre-COVID numbers (Crippa et al., 2023). "In 2023, GHG emissions in the EU fell by 8% compared to 2022, according to estimates reported by Member States and compiled and quality-checked by EEA" (EEA, 2024). This represents the most important reduction in recent times and overall, GHG emissions fell by 37% compared to 1990 levels. The reduction in 2023 is due on the one hand to an increase in the share of renewable energy in the EU's total energy consumption to 24%,"; in other words, renewable energy was the leading source of electricity in the EU, accounting for 44.7% of all electricity production. Renewables generated 1.21 million Gigawatt-hour (GWh), marking an increase of 12.4% compared with 2022" (Eurostat, 2024). On the other hand, final energy demand decreased as well, due to high prices and the war in Ukraine. These factors were linked to the EU's desire to reduce dependence on imports from Russia by accessing other, more expensive energy sources such as liquefied gas. However, the E.U. did not have the appropriate infrastructure for liquefied gas from the beginning. Projections on GHG emissions resulting from Member States reports suggest a 49% reduction compared to 1990, thus missing the 55% reduction target for 2030 (EEA, 2024).

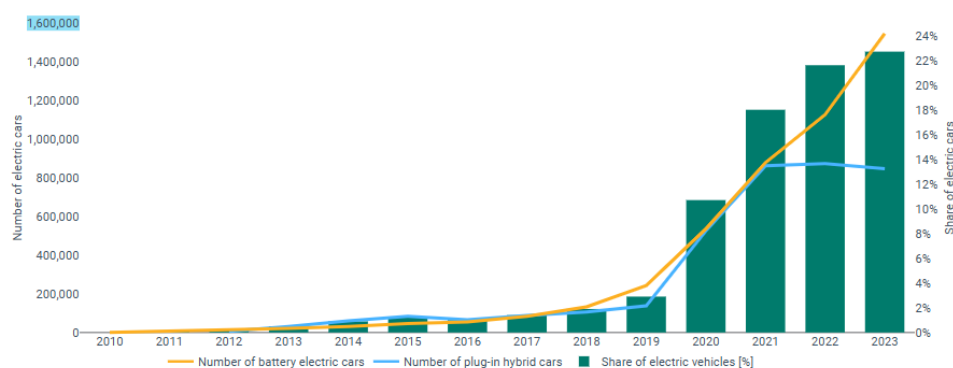
In Romania, the trend of reducing GHG emissions continues, due to a significant decrease in energy demand because of the reduction of industrial activity, the gradual compliance with more restrictive environmental standards especially in the energy sector and the important investments made in renewable energy over time along with a timid increase in energy efficiency.

The implementation of the EGD on the automotive sector start with the transport sector, as it generates 25% of total emissions in 2019 across the E.U. This sector accounts for 20% of the EU's total greenhouse gas emissions and cars produced 60% of the sector's gas emissions in 2019 (EU, 2023). According to the new CO2 emission standards, introduced in 2020, all new cars and vans registered in Europe will have to generate a low level of emissions by 2035. As such, this level must be 95 g/km in 2024 and reach 49.5 g/km by 2034 (EU, 2019). According to the European Environment Agency, emissions have decreased in 2020, 2021 and 2022, due to an increase in the number of new electric cars registered (EEA, 2024). Moreover, emissions from new passenger cars should decrease by 55% by 2030, contributing to zero emissions by 2050 (EC, 2021).

From 2035, the sale of cars with internal combustion engines in the EU will be prohibited - this is an important objective set out in the "Green Deal". The subject generates discussions both at member state level as well as among manufacturing companies regarding benefits of adoption of electric vehicles which consists in sustainable and efficient urban environment with lower operating costs, reduced greenhouse emissions, improved air quality. Implementing electric vehicles faces challenges as high costs, limited driving range, charging infrastructure, inadequacy, and public perception (Alanazi, 2023)

The transition to electric cars as a solution was initially supported by financial incentives granted by member states (Martins et al., 2024) which led to an increase in sales, but later the interest in these cars decreased mainly due to a vehicle autonomy below customer expectations, high sales prices, and the reduction of incentives, many of which were paid for using taxpayer money.

Figure 1: New registration of electric cars, EU-27



Source: <https://www.eea.europa.eu/en/analysis/indicators/new-registrations-of-electric-vehicles>

The number of new fully electric cars and vans in the total number of new cars increased from 1% in 2018 to 22.7% in 2023, of which 14.6%, meaning 1.5 million cars were electric. This number reached a total of 4.5 million cars in 2022. In 2023, approximately 91,000 electric vans were registered. This represents 7.7% of the market share and a two percent increase when compared to 2022. The highest number of electric vehicle registrations in 2023 took place in Sweden (61%) and Iceland (60%), followed by Germany, France, and Norway. Together, these countries accounted for approximately 54% of all registrations (EEA, 2024)

The topic of electric cars also related to the fact the Chinese industry that produces electric cars receives support that is difficult to prove from the Chinese state (Ehsan et al., 2024) while European manufacturers have problems related to costs and competitiveness, which makes it difficult to resist Chinese competition. That's why, at the end of 2024 the EC imposed additional taxes, ranging from 7.8% for Tesla to 35.3% for China's SAIC, on top of the standard 10% EU car import tax. The Commission estimates the market share of Chinese brands on the EU market at 8%, from below 1% in 2019, and could reach 15% in 2025, according to ACEA - European Automobile Manufacturers' Association.

The implementation of EGD on electricity production start from the fact that this sector is responsible for producing more than 75% of EU GHG emissions (EC, 2022). The electricity production sector faces two problems: on the one hand, it must ensure the increase in the share of energy from renewable sources, and on the other hand, it must support the fastest possible reduction of dependence on the import of fossil fuels, especially from Russia. The war in Ukraine accentuated the energy crisis due to the high EU dependence on Russian gas.

Table 2: Energy production from renewable sources 2014 -2020

Time	2014	2019	2020	2021	2022	2023
Geo						
European Union -27 countries (from 2020)	17.416	19.887	22.038	21.886	23.091	
Belgium	8.638	9.929	13	13.076	13.817	14.736
Bulgaria	18.05	21.545	23.319	19.445	19.044	22.583
Czechia	15.074	16.239	17.303	17.614	18.123	18.586
Denmark	29.31	37.02	31.681	41.813	42.383	44.923
Germany	14.381	17.266	19.09	19.281	20.913	21.547
Estonia	26.13	31.73	30.069	37.342	38.542	40.95
Ireland	8.516	11.979	16.16	12.996	13.068	15.253
Greece	15.683	19.633	21.749	22.017	22.678	
Spain	15.879	17.852	21.22	20.55	21.896	24.852
France	14.362	17.174	19.109	19.316	20.445	22.283
Croatia	27.817	28.466	31.023	31.285	28.088	28.051
Italy	17.082	18.181	20.359	18.883	19.131	19.561
Cyprus	9.144	13.777	16.879	19.069	19.427	20.213
Latvia	38.629	48.929	42.132	42.096	43.72	43.223
Lithuania	23.592	25.474	26.773	28.166	29.599	31.926
Luxembourg	4.471	7.046	11.699	11.726	14.429	11.619
Hungary	14.618	12.634	13.85	14.134	15.193	17.361
Malta	4.744	8.23	10.714	12.631	13.969	15.077
Netherlands	5.415	8.886	13.999	12.956	14.902	17.154
Austria	33.55	33.755	36.545	34.792	34.075	40.844
Poland	11.605	15.377	16.102	15.62	16.847	16.496

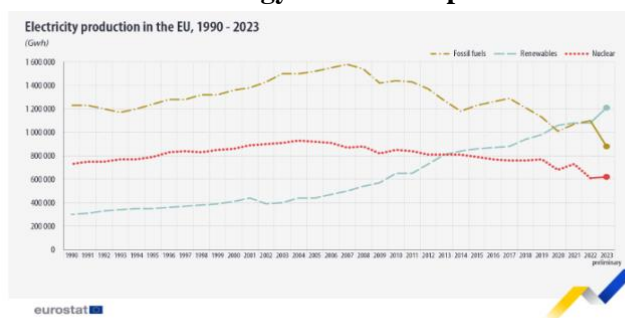
Portugal	29.508	30.623	33.982	33.982	34.675	35.163
Romania	24.845	24.29	24.478	23.871	24.229	25.757
Slovenia	22.459	21.968	25	25	25.002	25.066
Slovakia	11.713	16.894	17.345	17.419	17.501	
Finland	38.633	42.807	43.939	42.854	47.886	
Sweden	51.151	55.785	60.124	62.527	66.287	66.393

Source: https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_REN/default/table

At the European level, the share of renewable energies increased from 16.5% in 2013 to 23% in 2022, with a small decrease in 2021. Compared to 2022, the share increased by 1%, reaching 24.1% in 2023. The biggest increases in 2023 were recorded by Sweden, Finland, and Latvia, while the smallest growth occurred in Belgium and Luxembourg (EEA, 2024).

The solution toward these increases was an improvement of the energy mix at the European level and the reduction of the use of fossil fuel.

Figure 2: Evolution of the energy mix at European level 1990-2023



Source datasets: [nrg_ind_pehcf](#) and [nrg_ind_pehmf](#)

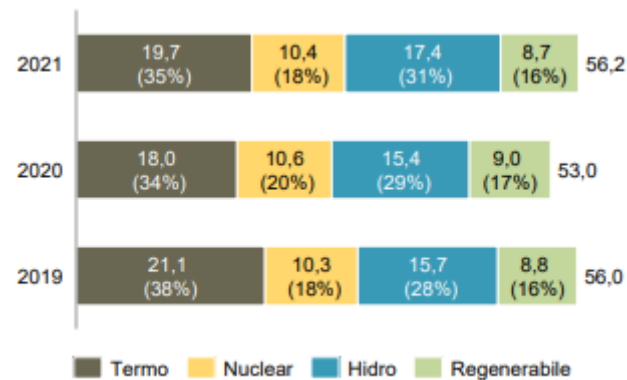
Source: <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240627-1>

The war in Ukraine in 2022 had therefore the increase in the share of renewable energy which was the main source of electricity in the EU in 2023. This accounted for 44.7% of the entire electricity production registering a 12.4% increase compared to 2022, while fossil fuels decreased in significance, contributing with only 32.5% of the total electricity production (Eurostat 2024). In 2023, the EU built 56 gigawatts of new solar energy capacities, being the most successful year in this regard so far, and 16 gigawatts of new wind turbine capacities.

In the first half of 2024, half of the EU's electricity production came from renewable sources. Wind power has overtaken gas to become the EU's second largest source of electricity, after nuclear power. The share of Russian gas in EU imports decreased from 45% in 2021 to 18% by June 2024. At the same time, it managed to fill gas deposits to 90% (EC, 2024).

Romania has aligned itself with the EU requirements regarding the production of renewable energy in the context of the European Green Pact. In 2019, Romania reached the requirements of the Europe 2020 Strategy, i.e. 24% of the total energy consumption should come from renewable sources, which places us above the average level of the European Union. In Romania, the evolution of the energy production mix did not register spectacular changes.

Figure 3: Production mix 2019 – 2021 (TWh) in Romania



Source: Translectrica - Annual Report 2021

As per Figure 3, it appears that in the period 2019-2021, Romania's efforts to raise the production of energy from renewable sources, as numbers remained relatively constant, remained steady. Analyzing the weights of the components of the net production mix for 2023, we notice that the largest percentage, i.e. 33%, consists of hydro energy, followed by thermal energy (30%), while energy produced from renewable and nuclear sources have a weight of 17% and 19%, respectively (Transelectrica - Annual Report 2023).

At the end of 2024, Romania inaugurated the first investment in the energy sector in recent decades - the 5 Rovinari Group, which will deliver 230MW to the national energy system, respecting the latest standards of efficiency and environmental protection. (<https://www.ceoltenia.ro/en/>)

For 2030, Romania has proposed to increase the energy from renewable sources to 30.7%, compared to a share of 24.4% in 2020. Significant increases in electricity production from solar and wind sources are expected. (Panton, 2023)

EGD's implementation on energy efficiency start from the necessity to increase it. Thus, in 2023, (EU, 2023) a new directive, was adopted. It aims to reduce primary and final energy consumption at EU level by 11.7% by 2030, as compared to 2020 projections. Member states must achieve average annual savings of 1.49% over 2024-2030.

Energy efficiency is one of the least expensive paths toward reducing GHG emissions, reducing energy poverty and increasing energy security. The EU's energy efficiency target for 2020 was to reduce primary energy consumption by 20% compared to the established reference level of 2007. This objective was partially achieved. Decreases in consumption at the European level were recorded in 2019, even if the 2020 target was exceeded. For Romania, the target was 19%, corresponding to a primary energy demand of 500 TWh in 2020. However, Romania's report is considered incomplete by the European institutions (EU, 2022).

Buildings accounted for 40% of energy consumption at an EU level and were responsible for 36% of GHG emissions related to the said consumed energy. Over 75% of the existing buildings are energy inefficient and should be renovated (EC, 2024).

According to the energy efficiency directive adopted in 2023, buildings in the EU must become more energy efficient by 2030 and the newly built ones must have zero emissions. This direction provides a target to reduce energy consumption by 32.5% in 2030 according to the provisions of Article 7 of the Directive but leaves full flexibility to each member state in choosing the measures by which these obligations are met.

The report (EC, 2023) refers to the situation regarding energy consumption and GHG emission and renovation regarding the entire real estate park in the EU and the individual targets for each country. The situation results in quite large differences between the member countries regarding 2020 and the estimates for 2030, 2040, and 2050. Everything shows a great diversity at the European level, including the provided information.

To meet the 2030 objective, double-digit rates of renovation are required in the coming years, along with measures to internally increase the energy efficiency of buildings but also the efficient use of energy resources with positive effects on the quality of life of people who live in these respective buildings.

In National Energy and Climate Progress Reporting (NECPR) member countries have the obligation to update the targets, objectives, and to draw up reports concerning the buildings and the information referring to: energy use, GHG emissions, renovation, and contribution to global energy efficiency targets. This information supports the evaluations that the European institutions make regarding the fulfilment of the objectives by the member countries (EC, 2023).

Romania is making efforts to increase energy efficiency starting with the energy sector followed by the residential sector. Energy efficiency improvement measures are proposed in the country's Long-Term Renovation Strategy (SRTL), such as the renovation of the national buildings stock. The renovation of buildings is at the discretion of the mayors and bureaucracy is omnipresent.

The implementation of the EGD on energy poverty start from the fact that the reduction of GHG emission and the war in Ukraine with all its consequences generated problems regarding the energy supply in member countries that led to the increase in prices and hence to the increase in energy poverty. Energy poverty is a combination of factors such as low-income, high-energy expenditure and the low energy efficiency of buildings. In this regard, many countries have limited studies and policies on energy poverty (Teixeira et.al., 2024; Widuto, 2023).

One of the indicators that measure energy poverty is the inability to keep a home adequately warm and is considered the most relevant for the realities of energy poverty (EC, 2023). Part of the population in member countries cannot afford to pay the costs of paying for energy, which are quite high, meaning many houses cannot be properly heated.

The Clean Energy for All Europeans package (adopted in 2019) introduced explicit obligations to identify, monitor and address energy poverty through National Energy and Climate Plans (NECPs). Since then, several EU countries have integrated specific measures and are developing their own definitions, measurement, and monitoring methods, along with solutions for energy poverty, but the situation remains quite complicated at the level of the member states.

Table 3: The inability to keep a home adequately warm

Time	2014	2019	2020	2021	2022	2023
Geo						
European Union -27 countries (from 2020)	19.4 (e)	6.9 (e)	7.5	6.9	9.3	10.6
Belgium	5.4	3.9 (b)	4.1	3.5	5.1	6
Bulgaria	40.5 (b)	30.1	27.5	23.7	22.5	20.7
Czechia	6.1	2.8	2.2	2.2	2.9	6.1
Denmark	2.9	2.8	3	2.8	5.1	6.9
Germany	4.9	2.5	7.8 (b)	3.3	6.7	8.2
Estonia	1.7 (b)	2.5	2.7	2	3.4	4.1
Ireland	8.9	5.1 (b)	3.6 (b)	3.4	6.8	7.2
Greece	32.9	17.9	17.1	17.5	18.7	19.2
Spain	11.1	7.5	10.9	14.2	17.1	20.8
France	5.9	6.2	6.7 (b)	6	10.7 (b)	12.1
Croatia	9.7	6.6	5.7	5.7	7	6.2
Italy	18	11.1	8.3	8.1	8.8	9.5
Cyprus	27.5	21	20.9	19.4	19.2	16.9
Latvia	16.8	8	6	4.9	7.1	6.6

Lithuania	26.5	26.7	23.1	22.5	17.5	20.0 (b)
Luxembourg	0.6	2.4	3.6 (b)	2.5 (b)	2.1 (b)	2.1
Hungary	11.6	5.4	4.2	5.4	4.7	7.2
Malta	22.3	7.8	7.2	7.8	7.6	6.8
Netherlands	2.6	3	2.4	2.4	5.3	7.1
Austria	3.2	1.8	1.5	1.7	2.7	3.9
Poland	9	4.2	3.2	3.2	4.9	4.7
Portugal	28.3	18.9	17.5	16.4 (b)	17.5	20.8
Romania	12.9	9.3	10	10.1	15.2	12.5
Slovenia	5.6	2.3	2.8	1.7	2.6	3.6
Slovakia	6.1	7.8	5.7	5.8	7.1	8.1
Finland	1.5	1.8	1.8	1.3	1.4	2.6
Sweden	1.1	1.9	2.7	1.7	3.3	5.9

Source: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdcs01/default/table?lang=en (online data code: ilc_mdcs01)

We have an average of about 10% of the EU population who had problems with keeping the house warm enough during 2014-2023. By comparison, in 2022, 9.3% of the EU population, about 42 million people, declared that they could not keep the house warm enough. Compared to 2020, this share increased by 3.7 percentage points (Eurostat, 2023).

According to the table 3., the situation improved in 2020 and 2021, when energy poverty affected 7.5% and 6.9%, respectively, i.e. 29.9 million people. Russia's invasion of Ukraine at the start of 2022 led to an increase in gas prices that made the situation difficult for even more people.

Many European countries had problems starting from 2022 regarding the inability of their citizens to keep their homes adequately warm. This responsibility falls mainly on member countries where many households have low incomes and cannot afford to pay high energy prices while also struggling to complement renewable and conventional energy sources. Thus, Bulgaria, Croatia, Hungary, Lithuania, Romania, and Slovakia are in a situation where over 70% of people with low incomes report heating accessibility problems. In Belgium (over 75%), France, Germany, and the Netherlands, over two-thirds of those with low incomes who report problems related to the accessibility of heating are renters (OECD, 2024).

Romania also lacks the ability to keep homes adequately warm. One of the causes is the energy inefficiency of buildings, especially in rural areas where few houses are thermally insulated and over 80% of rural residents are heated strictly with wood. This heat source has large energy losses and that is why a program is being prepared to increase the energy efficiency of heating sources. Another reason is the low income of the population in these areas, leading to situations where the bill for electricity consumption cannot be paid on time for 21.0% of households in rural areas and 16.5% in urban areas. Furthermore, in rural areas this percentage increased to 24.8% in 2022 alone (INS, 2023). The third reason resides in the high price of energy due to an insufficiently developed energy system that is not adapted to the rising energy needs of Romania, which is an important importer of energy at low prices.

5. Conclusions

In sum, the European Green Deal is built upon the presupposition that Europeans value their natural resources, diversity of natural environment and social well-being of citizens and are unified in planning to safeguard these values into their future. The European Green Deal underestimates the citizens will act; it calls citizens to cooperate under the leadership of the EU to protect their values rather than to call for a radical change in habits and resetting of behavioral norms. (Eckert & Kovalevska, 2021)

The materialization of the EGD must consider a rather large dissatisfaction of the population of member countries who have lost quite a lot of their standard of living and do not want to pay for the EGD's implementation going forward and embrace a vision for a less restrictive Green Deal.

We embrace the opinion that the European Commission must adjust the objectives based on the evaluations made over time and not only on politically established objectives, but also on objectives that reflect the importance and interests of the political groups present in the European Parliament.

Achieving net zero requires operationalization in varied social, political, and economic spheres. There are numerous ethical judgements, social concerns, political interests, fairness dimensions, economic considerations and technology transitions that need to be navigated and several political, economic, legal, and behavioral pitfalls that could derail a successful implementation of net zero. (Frankhauser et.al.,2022)

This is why climate policies are likely to come under further pressure if the economic downturn continues and adequate solutions are not found.

The plan to implement the ban on the sale of new vehicles with internal combustion engines from 2035 could also be renegotiated, according to the statements of several members of a parliamentary group in the European Parliament. (EPP Group in the European Parliament, 2024). The European car industry will still face competitiveness problems from Chinese electric vehicle manufacturers. The former are still looking for solutions to counter this threat. New customs tariffs of 45% are unlikely solutions. Moreover, the European Commission requires European car manufacturing companies to increase their share of electric cars sold annually, otherwise they will pay quite large sums to the EU's budget. This increase cannot be achieved by forcing it on clients. These problems show that a compromise solution regarding the car manufacturing industry is still far from being reached.

The production of energy from renewable sources continues to be a difficult process regarding the production costs, due to high investments that new production capacities require, in the modernization of existing energy systems, to which an additional challenge consists of adequate storage capabilities, and the increasingly erratic weather. The question is whether households will be able to pay the costs invoked by producers. This is a challenge despite support instruments that have been created or the more convenient alternative of a cheaper energy supply, i.e. nuclear energy. Whether or not this energy type will be a solution remains to be seen.

Energy efficiency remains an objective at the discretion of each member country, depending on their particularities and we believe that bureaucracy and administration will make the difference in terms of achievements.

The solution to solving energy poverty must be developed by the EU. People affected by energy poverty will have to be enrolled in energy efficiency improvement programs.

The European Commission is moving forward with the EGD, and asked member countries in September 2024 to present their new final versions of their energy and climate plans drafted to reach the GHG emissions reduction target set for 2030. This is because it seems that the national ambitions of member countries are insufficient in achieving the objectives.

Former European Central Bank chief and Italian Prime Minister Mario Draghi claims in his report (European Commission, 2024) that the EU is facing the effects of higher energy prices, after no longer having access to cheap gas from Russia. Moreover, the EU depends on foreign markets. The EU bloc must stimulate innovation and reduce energy prices, while continuing to decarbonize, and must reduce its dependence on other countries.

Romania must accelerate its energy transition to ensure the development and growth of the economy. A priority should be to increase the production capacity of renewable energy, along with the diversification of clean energy sources and the expansion of its energy infrastructure. Extremely high prices paid by Romanian citizens for energy imports, particularly at peak hours, requires a diversification of the country's energy supply.

References

- Alanazi, F., Electric Vehicles: Benefits, Challenges and Potential Solutions for Widespread Adaptation, Applied Sciences, Nr.13, pp.1-23
- Charveriat, C. (2023). The Green Deal: Origins and Evolutions, Green Geopolitique, reseaux, energie, environment, nature, Nr.3, pp.14-17
- Claeys, G., Tagliapietra, S., Zachmann, G. (2019). How to make the European Green Deal work, Brussels Policy Contribution, Nr.13, pp.1-19
- Crippa, M., Guizzardi, D., Pagani, F., Banja, M., Muntean, M., Schaaf E., Becker, W., Monforti-Ferrario, F., Quadrelli, R., Riskey Martin, A., Taghavi-Moharamli, P., Köykkä, J., Grassi, G., Rossi, S., Brandao De Melo, J., Oom, D., Branco, A., San-Miguel, J., Vignati, E. (2023). GHG emissions of all world countries, Publications Office of the European Union, Luxembourg, pp.1-263
- Duscha, V., Wachsmuth, J., Eckstein, J., Pfluger, B. (2019). GHG-neutral 2050 - a scenario of a European Union with net-zero greenhouse emissions and its implications, Climate Change Federal Environment Agency, pp.1-81
- Ehsan, F., Salamn, H., Gulzar, M., M., Guo, J., Muyeen, S., M., Kamwa, I. (2024) Assessing policy influence on electric vehicle adoption in China: An in depth study, Energy Strategy Reviews, vol.54, pp.1 - 25
- Ejdyś, J., Szpilko, D. (2022). European Green Deal – research directions. A systematic literature review, Economics and Environment, Nr.2, pp.8-38
- Eckert, E., Kovalevska, O. (2021). Sustainability in the European Union: Analyzing the Discourse of the European Green Deal, Journal of Risk and Financial Management, pp.1-22
- EPP Group in the European Parliament (2024), Revise the Combustion Engine Ban available at <https://www.eppgroup.eu/newsroom/revise-the-combustion-engine-ban>
- European Automobile Manufacturers Association (2023), EU- China vehicle trade available at <https://www.acea.auto/fact/fact-sheet-eu-china-vehicle-trade>
- European Commission (2019) Communication from the Commission to the European Parliament, The European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, Brussels
- European Commission (2024), EU makes progress in ensuring secure and affordable energy for all
- European Commission, (2021) Delivering the European Green Deal. On the path to a climate neutral Europe by 2050
- European Commission, (2022), Energy and the Green Deal
- European Commission, (2023), The inability to keep home adequately warm indicator: is it enough to measure energy poverty?
- European Commission, Report from the Commission to the European Parliament and the Council report on the achievement of the 2020 energy efficiency targets, Brussels, 15. 11.2022
- European Commission, Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, State of the Energy Union Report 2023 (pursuant to Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action), Brussels 2023
- European Commission, Report on Renovation of the national stock of residential and non residential buildings and on nearly zero energy buildings, Annex to the Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, State of the Energy Report 2023, Brussels 2023
- European Commission (2024).
- The future of European competitiveness

- European Council, Council of the European Union, (2024) Fit for 55: making buildings in the EU greener
- European Green Deal Barometer (2024). Think 2030 Survey, Globe Scan
- European Environment Agency (2024), Trends and Projection in Europe 2024
- European Environment Agency (2024), Total net greenhouse gas emissions trends and projections in Europe
- European Environment Agency (2024), CO2 emissions performance of new passenger cars in Europe
- European Environment Agency (2024), Share of energy consumption from renewable sources in Europe
- European Parliament (2023), CO2 emissions from cars :facts and figures (infographics)
- European Parliament (2023), Reducing carbon emissions: EU targets and policies
- Eurostat (2023), 9% of EU Population unable to keep home warm in 2022
- Eurostat 2024, Renewables take the lead in power generation in 2023
- European Union, Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO2 emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011, Official Journal of the European Union L 111/13, 25.04.2019
- European Union, Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955, Official Journal of the European Union L 231 /1, 20.09.2023
- European Union, Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: State of the Energy Union Report 2023 (pursuant to Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action), COM (2023) 650 final
- European Union, Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955, , Official Journal of the European Union L 231 / 2023
- Fetting, C., (2020) The European Green Deal, European Sustainable Development Network (ESDN Office)Vienna, pp.5
- Filipaik, B.,Z., Wyszowska, D. (2022). Determinants of Reducing Greenhouse Gas Emissions in European Union Countries, Energies- Energy Policy, Regulation and Sustainable Development, pp.2-17
- Fleming, R., C., Mauger, R. (2021). Green and Just? An update on the “European Green Deal”, Journal for European Environment & Planning Law, Nr.18, pp.164-180
- Frankhauser, S., Smith S., M., Allen, M., Axelsson,K., Hale, T., Hepburn, C.,Kendall, J., M., Khosla, R., Lezaun, J., Mitchell- Larson, E., Obersteiner., M., Rajamani, L., Richaby, R., Seddon, N., Wetzler, T. (2022) The meaning of net zero and how to get it right, Nature Climate Change, Nr. 12, pp. 15-21
- Gajdzik, B., Wolniak, R., Nagaj, R., Zuromskaite- Nagaj, B., Grebski, W., W. (2024). The influence of the Global Energy Crisis on Energy Efficiency: A Comprehensive Analysis, vol.17, Energies, pp.2-49
- Gavurova, B., Rigelsky, M., Ivankova, V. (2021). Greenhouse Gas Emissions and Health in the Countries of The European Union, Frontiers in Public Health, pp.1-13
- Von der Leyen, U. (2019). Presentation of The European Green Deal, 11 December 2019
- Marotta, A., Porrás-Amores, C., Sanchez, A.R., Saez, P.V., Masera, G. (2023). Greenhouse Gas Emissions Forecasts in Countries of The European Union by Means of a Multifactor Algorithm, Applied Sciences, pp.1-18

- Martins, E., C., S., Lepine, J., Corbett, J. (2024). Assessing the effectiveness of financial incentives on electric vehicle adoption in Europe: Multi period difference in difference approach, *Transportation Research Part A: Policy and Practice*, vol.189, pp.20-30
- National Institute of Statistics, (2020). Coordinates of living standard in Romania. Population income and consumption in 2019 (Romanian)
- OECD (Organization for Economic Cooperation and Development), (2022). Affordable House Database – Indicator HC1.3.
- Panton, A., J. (2023). Making Romania Fit and Resilient for the Net – Zero Transition, *International Monetary Fund*, pp. 1- 19
- Regulation EU 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) Nr. 401/2009 and the (EU) 2018/1999
- Ruiz, J., Martin – Moreno, J., M., Perez, R. (2023). Mid term policy considerations of the EU Green Deal, *Energy Strategy Reviews*, vol. 50, pp. 1- 12
- Saraji, M.K., Streimikiene, D. (2023) Challenges to the low carbon energy transition: a systematic literature review and research agenda, *Energy Strategy Reviews*, vol. 49, pp. 1- 20
- Schlacke, S., Wentzien, H., Thierjung E.,M., Köster, M. (2022). Implementing the EU Climate Law via „Fit for 55” package, *Oxford Open Energy*, vol.1, pp.1 -20
- Siddi, M. (2020). The European Green Deal Assessing its current state and future implementations, *FIIA Finish Institute of International Affairs Working Paper*, pp. 4-13
- Sikora, A. (2021). European Green Deal – legal and financial challenges of the climate Change, *ERA Forum*, pp. 681- 697
- Smol, M. (2022). Is the Green Deal a Global Strategy. Revision of the Green Deal Definitions, Strategies and importance in post –COVID recovery plans in various regions of the world, *Energy Policy*, vol. 169, pp. 1-11
- Sotiriou, C., Zachariadis, T. (2019). Optimal Timing of Greenhouse Gas Emissions Abatement in Europe, *Energies*, pp.2-17
- Romania’ s Energy Strategy until 2035, with the perspective of 2050, Ministry of Energy, Romanian Government
- Texeira, I., Ferreira, A., C., Rodrigues, N., Texeira S. (2024). Energy poverty and its Indicators: A Multidimensional Framework form Literature, *Energies*, pp.1-30
- Timmermans, F. (2023). The Green Deal: Origins and Evolutions, *Green Geopolitique, reseaux, energie, environment, nature*, Nr. 3, pp. 18-21
- Transselectrica-Raport annual 2021
https://www.transelectrica.ro/documents/10179/13521744/Raport+anual+2021_RO.pdf/ea2f232a-3001-4f4a-bcf5-5f5720b2f66c
- Transselectrica – Raport annual 2023
https://www.transelectrica.ro/documents/10179/16896388/05_03+Raport+anual+consolidat+Transelectrica_2023.pdf/3f31d705-dcf0-4457-b34a-461660952d4c
- United Nations, Climate Change The Paris Agreement available at <https://www.un.org/en/climatechange/paris-agreement>
- United Nations, Transforming our world: The 2030 Agenda fost Sustainable Development available at <https://sdgs.un.org/2030agenda>
- Vela Almeida, D., Kolinjivadi,V., Ferrando, T., Roy, B., Herrera, H., Goncalves, M., V., Van Hecken, G. (2023). The “Greening” of Empire. The European Green Deal as the EU first Agenda, *Political Geography*, vol. 105, pp. 1-10
- Widuto, A. (2023). Energy poverty in the EU, *European Parliamentary Research Service*, pp.1-12

- Wolf, S., Teitge, J., Mielke, J., Schütze, F., Jaeger, C. (2021). The European Green Deal – More than Climate Neutrality, *Environmental Policy*, vol.56, pp. 99-107