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**The New Direction of the EU:
the Creation of a Digital Europe**

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Abstract

In the latest years, at the European Union level, a new concern has been representing the new direction for development not only for environmentalists, but also for the political and business world. As such, more and more budget is allocated by the EU itself, member states, companies and even private individuals towards the protection of the environment, to speed up the process of digitalization and the creation of a green climate.

The European Union presents yearly reports upon the situation of the environment and climate change and the conclusion is that there is a need of developing new partnerships and funding the transition to a new digital era.

The present paper, therefore, aims at presenting the current situation of climate concerns at the level of the EU, the proposed solutions towards a digital Europe, the methods and their particularities, both from a theoretical and practical point of view and their expected short-term and long-term results.

Keywords: climate change, European Green Deal, ecosystem degradation, digitalization.

JEL Classification: K19, K24, K30, K32.

1. Introduction

One of the top priorities of the European Union so far, with a promise that until 2050 the European Member states will become climate neutral, is the focus on climate change and digitalization of the EU.

Despite its continuous efforts, the European Union has not yet been able to be at the forefront of the global action in its battle with climate change. Thus, the policies adopted by it to reduce greenhouse gas emissions and provide energy from other clean sources did not manage to be as effective as intended, as gas emissions in

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certain areas are, on the contrary, rising, while in the electricity field, coal still happens to be an important element (Claeys et al., 2019).

As such, the climate policy has quickly become one of EU's most least approachable policies, as it still brings divisions of opinions among its leaders, with the fossil-fuel price continuing to rise, while some member states make considerable effort to become climate neutral (Laurent, 2020).

Therefore, in the latest years, at the European Union level, a new concern has been representing the new direction for development not only for environmentalists, but also for the political and business world. More and more budget is allocated by the EU itself, member states, companies and even private individuals towards the protection of the environment, to speed up the process of digitalization and the creation of a green climate (Stern, 2006).

As a consequence, the European Union presents yearly reports upon the situation of the environment and climate change and the conclusion is that there is a need of developing new partnerships and funding the transition to a new digital era.

At the extraordinary meeting of the European Council on 1-2 October 2020, EU leaders called on the Commission to present a Comprehensive Digital Compass, setting out the EU's concrete digital ambitions for 2030, finalized with the Commission presenting its proposal in March 2021.

Digitization has the potential to provide solutions to many of the challenges faced by Europe and Europeans, as the digital technologies are not only changing the way people communicate, but also, more generally, the way they live and work and the situation created by the COVID-19 pandemic has given the EU a new impetus to work to accelerate the technological transition. Digital solutions contribute to job creation, the advancement of education, boosting competitiveness and innovation and can improve citizens' lives (Colli, 2020).

Therefore, protecting EU values, as well as fundamental rights and the security of citizens, is a key element of the digital transition, with the digital technology playing a key role in transforming the European economy and society, in order to achieve a climate-neutral EU by 2050, a goal agreed by EU leaders.

The EU aims for a human-centred approach that respects social differences across the Union and the digitization has been a key component of the EU's response to the economic crisis caused by COVID-19. As such, the COVID-19 pandemic has made the need to accelerate the digital transition in Europe even more pressing.

In the post-COVID-19 environment, the EU aims to protect and strengthen its digital sovereignty and leadership in strategic international digital value chains, as key elements in ensuring strategic autonomy in the digital field, while promoting the common values of respecting fundamental freedoms, including data protection and privacy, security and safety.

The Council adopted the Regulation for the Recovery and Resilience Mechanism, at the beginning of 2021. The mechanism, valued at EUR 672.5 billion, is the core of the EU's extraordinary recovery efforts, represented by Next Generation EU (NGEU) - the EUR 750 billion plan on which the EU leaders have agreed in July 2020.

The funds are allocated to the Member States for the coping with the social and economic effects of the COVID-19 pandemic, while ensuring that their economies make the green and digital transition, thus, aiming at more sustainable and resilient economies.

As such, in order to participate in the Recovery and Resilience Mechanism, EU countries are called upon to set forth their propositions for reasoned schemes, reforms and expenditure in six policy areas (i.e., green transition, digital transformation, smart, sustainable and inclusive growth and employment, social and territorial cohesion, health and resilience), as well as projects for the future generations, comprising education and skills, where EU Member States must come up with national recovery and resilience plans, in which they will present their agendas for reforms and investments no later than 2026 (McMichael et. al., 2004).

2. The Climate Change Policy

The changes that are currently affecting the planet's climate are altering the world. In the prior 20 years, 18 have been among the warmest years ever recorded, and extreme weather incidents, such as forest fires, heat waves and floods, are becoming more common everywhere in the world (Stern, 2008).

Experts have surmised that unless urgent action is taken, global warming is likely to exceed pre-industrial levels by 2 °C by 2060, and this exceedance could even reach 5 °C by the end of the century. Such an increase in temperature will certainly lead to ruinous effects on the environment, leading to irreversible changes throughout various parts of the global ecosystem and, as such, a decline in biodiversity. Rising temperatures that will lead to weathertight occurrences will undoubtedly affect EU's economy and its ability to produce food.

At the extraordinary meeting of the European Council on 24-25 May 2021, EU leaders reaffirmed the conclusions adopted at their December 2020 meeting. They called on the Commission to swiftly present its "Ready for 55" legislative package, together with an in-depth analysis of the economic, social and environmental impact at Member States level and they agreed to return to this issue after the Commission proposal was presented.

In conclusion, the EU leaders welcomed the recent agreement reached by the Council and Parliament on the proposed European climate laws. The European Union has set out legislation fixing ambitious goals in several sectors, in order to achieve its international commitments referring to climate change. In this respect, EU Member States have set in different sectors of the economy, targets for greenhouse gas emissions, whilst also aiming towards policies in order to reduce greenhouse gas emissions.

Among the results obtained so far, it can be said that even by 2017, the EU reduced its emissions by almost 22% compared to 1990, reaching its 2020 emissions reduction target three years ahead of schedule. In December 2020, given the EU's dedication to raising its level of climate ambition under the Paris Agreement, the leaders of the EU approved a mandatory target of at least 55% net domestic greenhouse gas emissions by 2030 compared to 1990.

Due to the recent results in the matter and proposed targets, in April 2021, the leading legislative institutions of the EU, Council and Parliament, reached an interim accord on the European Climate Law that focuses on transposing the 2030 emission reduction target into legislation. The agreement was approved by the EU ambassadors in May 2021.

This more ambitious climate goal will imply the transformation of EU's industry. However, it will stimulate sustainable economic growth, create jobs, brings health and environmental benefits to EU citizens and contribute to the long-term competitiveness of the global EU economy by promoting innovation in green technologies.

Regarding the 2030 target, the negotiators agreed on the need to give priority to reducing emissions over absorption. To ensure that sufficient efforts are made to reduce and prevent emissions by 2030, they have introduced a limit of 225 million tons of CO₂, equivalent to the contribution of emissions to the net target. They also agreed that the Union should aim for a higher volume of net carbon absorbers by 2030.

Other elements of the provisional agreement include the establishment of a European Scientific Advisory Board on Climate Change, composed of 15 high-level scientific experts of different nationalities, of which a maximum of 2 members may be nationals of the same Member State for a term of four years. This independent council will be responsible, inter alia, for providing scientific advice and reporting on EU measures, climate targets and indicative budgets for greenhouse gases, as well as their coherence with European climate law and the EU's international commitments under the Paris Agreement.

As already mentioned, the European Parliament voted on October 7th 2020 on the Climate Law, which can make Europe the first emission-neutral continent. In order to adapt to these new European plans, some member states, such as Romania and Bulgaria, will have to radically alter their programs for the energy sector, transport and other areas that have an impact on its carbon footprint.

Also, all EU-funded projects will need to be in line with combating the effects of climate change (Jordan, 2012).

An important step will be to reduce emissions by 60% by 2030, a target above the 50-55% proposed by the European Commission, but slightly below the 65% required by scientists. The target set in previous years was only 40%, but the 2018 Intergovernmental Panel on Climate Change (IPCC) report exposed the climate urgency and the need for more ambitious targets, which can maintain global warming around the 1.5 degree Celsius target set by the Paris Agreement. At an average global warming of over 1.5 degrees, climate catastrophes increase exponentially, as does the difficulty, or even the impossibility of humanity to manage them.

Romania, for example, is already facing the effects of climate change: desertification in the south continues at an accelerated pace, with an unprecedented drought in the southeast of the country and heavy floods in the west. If effective approaches to alter the consequences of climate change are hindered, the European Parliament's decision will force Romania to take action that will result in radical

changes. The current national strategies cannot ensure the achievement of the objectives – not even those assumed in previous years, such as greater energy efficiency or more renewable energy, where Romania has significant potential.

Romania needs to adapt its Integrated National Plan for Energy and Climate Change (PNIESC), the National Energy Strategy and work on a new National Strategy on Climate Change, together with the training of civil servants in public institutions. It also needs to launch strategies to give up coal and install new renewable energy capacities.

Also, at the EU level, the transport sector is one of the largest contributors to emissions, as it generated 27% of EU greenhouse gas emissions in 2017.

The decision taken by EU's Parliament to lower greenhouse gas emissions by 60% will also have a strong impact on many member states' transport sector, with the implication that they must prioritize the creation of networks for public transportation using renewable energy, pressingly update existing railway infrastructure, improve and promptly expand integration for bicycles and pedestrians and motivate the growth of micro-mobility services. It is a resolution for some of the European cities to close roads for road traffic and set low-emission areas; there is also the obligation for the acceleration of drafting legislation that will encourage the abandonment of petrol and diesel cars, whilst replacing them with electrical ones.

Also, according to the recent climate legislation, by July 2021, the Commission will revise and, when deemed appropriate, propose a review of the relevant provisions in order to achieve further emission reductions in the perspective of 2030. The Commission proposes to set an EU-wide trajectory for the period 2030-2050 in reducing greenhouse gas emissions, in order to evaluate the development and ensure predictability for both the public and private sectors.

The Commission will evaluate in 2023, and then every five years, the coherence of European measures as well as national ones, so that they may be in accordance with the targets set by the climate neutrality 2030-2050 trajectory.

The Commission, in its role to implement EU policies, will still be able to make recommendations to Member States who fail to align with the goal of climate neutrality, while the latter remain obligated to comply with the recommendations or, justify their failure to comply. In addition, Member States will need to come up with and accomplish plans that are meant to build up resilience and decrease the exposure to climate change consequences.

Last, but definitely not least, the development of the climate strategy and its new legislation requires important finances not only at the level of the European Union, but also for the member states.

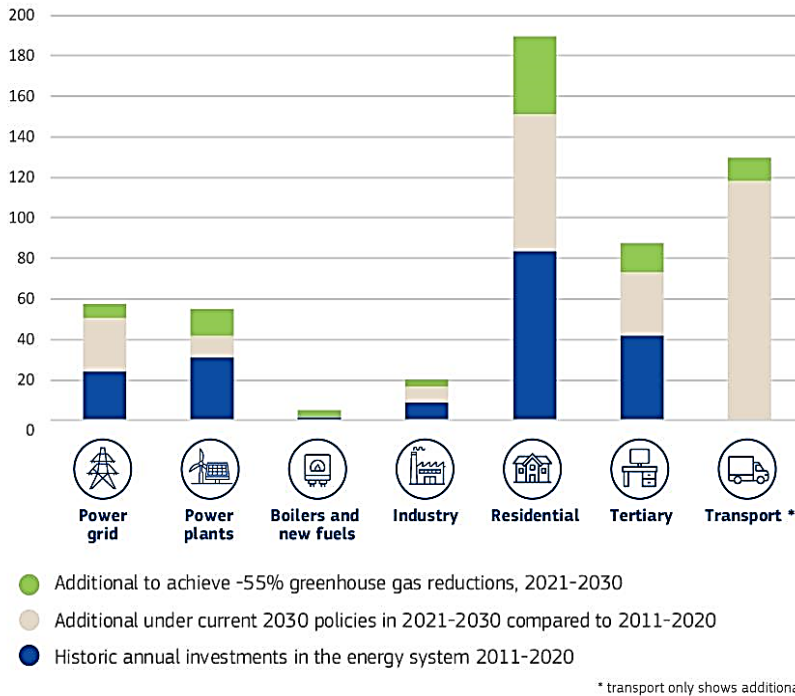
As such, from a financial point of view, the full implementation of the National Energy and Climate Plans over the coming years will require important new investments from both the public and private fields.

Based on the European Commission's report, to achieve the current EU 2030 climate and energy targets, annual investments related to energy production and use will need to increase in 2021-2030 by almost €260 billion per year, while for an

increased greenhouse gas emissions reduction target of 55% this figure would increase to around €350 billion.

However, statistically, most member states reported important needs and investments in the energy-related field, industrial and transport sectors, while few reported expected investment needs in the agricultural sector (see image below).

Average annual investments 2011-2020 and additional investments 2021-30
under existing policies and to achieve -55% greenhouse gas emission reductions
(in billion EUR 2015)



Source: European Commission – Communication from the Commission to the European Parliament, the Council, the European Social and Economic Committee and the Committee of the Regions (2020), p. 12.

3. Digital Trends in the European Union

It is no longer a surprise for anyone that the European Union is one of the biggest actors worldwide that encourage and invest in digitalisation. Starting with the Digital Single Market initiative and going further into public, joint and private investments into digitalisation, the European Union aims to become the biggest player on the market when it comes to the new digital. There is not one year that goes by that the Commission does not issue a plan, recommendations or opinions pertaining to climate change and the necessity of the adaption of our entire perspective of everything that we do, alongside its Annual Sustainable Growth Strategy. Especially the new president of the Commission has submitted several proposals in order to

implement the concept of European Green Deal, among which drafting a sustainable Europe investment plan, the partial transformation of the European investment bank into a climate bank, as well as the development of a new industrial policy for Europe.

Just last year, the Commission issued recommendations adapted specifically to each country that refer to both the climate changes that have occurred as well as to the adaptation and control measures for the COVID-19 pandemic: it has once more underlined “the four dimensions of environmental sustainability, productivity, fairness and macroeconomic stability” that were first enunciated in the 2020 Annual Sustainable Growth Strategy. Furthermore, the commission stated that these principles were to become guidelines for the Member States’ recovery and resilience plans. In accordance to the European policy, the four principles stated above must be “the heart of the European Semester” and are the ones that are going to lead to the best outcome for both the population and the planet (European Commission, 2021).

In the same report, the Commission underlined that digitalisation is the key to strengthening the social and economic resilience of the European Union, in its whole as well as the Member States’. Although the pandemic has touched and tested the entire world, it has also brought a desire to invest into digitalisation of the social and economic culture: online courses and schooling globally, small and medium businesses that have also extended or created their market digitally, creation of new services that provide for new needs of the customers, evolution of online finance, administration and much more. However, there is still room for improvement this area, as this pandemic has also shown the fragility of the system and most of its flaws: uneven access to infrastructure or means of communication, lack of training, the dependence on larger structures in order to provide a specific service. One might add, that in the context of the fast-forwarded digitalisation, an issue pertaining to the safety of the users should be stressed out: this lack of training as well as the lack of transition will cause problems in the operation of the data, as well as raise a number of issues for the users who might in the process waive their rights or their protection.

In order to help the digitalisation of European member states, public authorities alongside attracting European funds will also have to invest their own resources – given the weight of the European budget in the funds that circulate throughout the old continent, the investments should be backed up by both Member States as well as private companies of all sectors. Some authors (Claeys et al., 2019) have pointed out that in order to make a difference on the climate change impact, the investments in digitalisation cannot happen without investing in research and development of new technologies, especially those that concern capture and storage of carbon. In their view, public authorities need to show commitment to this goal in order to increase credibility among the private sector: first by increasing the reliability of climate change and mitigation implementation instruments, and second, maybe more importantly, reducing the regulatory risk. Moreover, we rally to the opinion that the public sector should also stand for the potential losses that might occur in case of economic sideslip caused by regulations pertaining to climate change. In other words, we consider that for this project to be successful, the European Union as well as the Member States need to involve private investors in the digitalisation process,

as well as make them invest in this strategy – but how may one be convinced if the resources allocated by their own state will not be sufficient, or, the policies would not be sufficiently concretely drafted or sent for implementation?

The guidelines that the European Union provided in its rapport include the spending of funds, improvement of connectivity, development of digital skills and innovation. Therefore, in the matter of funding, the Commission underlines that through the recovery and resilience facility granted to all Member States, the latter should use these funds in order to encourage digital transformation in all economic and social sectors, including public service; thus, each plan should include a minimum the level of 20% of expenditure related to digital. In relation to improving the connectivity, the European Union points out that it needs to be done on all levels: facilitating the incrementation of 5G and Gigabit technologies, in both urban and rural communities, thus providing the necessary infrastructure for all sectors including agriculture, transportation, health and education. Concerning the development of digital skills, it should be done at all levels in order to ensure that all the citizens can benefit and take advantage of the digital transition; this may be done by ensuring equal access to all parties, including those already in the labour market, to basic and higher education trainings, to digital infrastructure and skills, the aim being to digitalise administration and justice and thus improve the communication between state institutions and persons. Finally, yet importantly, the innovation sector is one that one must pay regard to: while the European Union has the ambition to become competitive in all areas pertaining to technology as well as digitalisation, it is also aware that it needs reform as well as investment in all areas linked to the security both online and off-line, electronics manufacturing of the components, new means of stocking information, and overall increasing the productivity in addition to increasing the means to produce and the intellectual property linked thereto (European Commission, 2021).

In order to achieve the objective of a climate neutral Europe, the European Commission has come up at the beginning of this year with ten new European Partnerships, bringing the Union, the Members States as well as private or public investors together.

As far as we are concerned, out of the ten propositions, at least two of them involve the development of the digital world: key digital technologies and smart networks and services. Concerning the first one, one should point that it encompasses the manufacture and design of electronic components in systems, as well as the development of software that will define how they work. In our opinion, one of the main elements that needs to be taken into account when speaking about the digitalisation is the creation of adaptive and adapted software that will allow for a more universal and easy use. The second one aims to support smart networks and services, to promote the 5G technology and the Cybersecurity Strategy. The 5G technologies should enable the setting up of the connectivity infrastructure necessary for the digital transformation as of 2020 and comprehensive deployment in urban areas and major transport paths by 2025, setting the goal for access to mobile data connectivity also in rural and remote areas (European Commission, 2020). The

Commission is already investing in the development of a 6G network that would even more facilitate communications throughout the Union. Thus, they are proposing a joint undertaking on smart networks and services that would provide for Europe's status as a world leader in research and development as well as establish its position as a global player in cutting edge technology. The Cybersecurity Strategy, aims to reform the current NIS (Network of Information Systems) through a Directive that will lay out the foundation for more specific roles that will benefit to all sectors, but most of all to the ones that are of strategic importance such as the sectors of energy, transportation or health. The European Commission has also announced the will to reform previous legislation on the matter in order to be consistent with the Security Union Strategy 2020 to 2025, consequently announcing further changes in these sectors (at least) and giving major actors reasons of concern (European Commission, 2020). It was proven that several actors have had difficulties to adapt to the security measures imposed up to now, the major players in the industry being the ones that benefited overall from the changes, as they are able to allocate many more resources in order to fully and in due time comply, leaving the smaller actors no choice but to ask for supply agreements from the first. This might, on a medium or long term, pose problems towards oligopoly set on the market as well as competition clauses.

This being said, there are new steps to be made as well as new errors that will need correction, that shall be identified over time. The first steps were taken by the European Union in implementing joint undertakings in several sectors, in accordance with the provisions of article 187 of the Treaty of the Functioning of the European Union. Concerning the joint undertakings in the digital sector, we must first cite the already existing undertaking the European High Performance Computing (EuroHPC), created in 2018, which aims to help several sectors develop using supercomputers located throughout Europe. It is also worth mentioning that concerning the two undertakings mentioned above, the Key Digital Technologies Joint Undertaking and the Smart Networks and Services Joint Undertaking, the Commission has proposed a new Regulation this year, which aims to establish the Joint Undertakings under Horizon Europe, in its 3rd article. If voted, the undertakings will be set up until the 31st of December 2031.

4. Obstacles to Achieving a Digital and Green Europe

While the Commission is certainly aware of the fact that the digital era will touch all the sectors, from health to innovation, from public service to the private sector and will touch the entire population of the European Union, one should note that the transition will not be easy, nor smooth. The implementation will be even more difficult if the public sector fails to align with the private one. As the concept of e-governance has evolved, it is now difficult to provide a definition that would incorporate all of the elements that this concept entails. Literature has pointed out that it is common understanding that the concept of e-government incorporates the use of information and communication technologies, in order to allow from all points of view (economic, social, material), a more efficient access and delivery of public services and information to the general public, namely businesses, non-profit

organisations, governmental entities, or natural persons (Reddick, 2010). In the light of what was described above, we would like to add to this definition that it also provides for a much cleaner environment.

From our point of view, what authorities need to tackle with priority is investing in the infrastructure in order to allow for larger number of citizens to have access to these facilities as well as invest in training programs that will allow for nationals to understand how and why they should gain access to these facilities. A recent study has shown that a prerequisite for e-government to work is access to internet and devices linked to its use, is not yet a given – thus, 10% and 15% of the population in urban and rural areas, respectively, do not use or have access to the internet, while only almost 80% of the urban population uses internet daily (Lytras, Şerban, 2020). This just shows that the best intentions are not enough when it comes to modifying or altering someone's lifestyle – we point out that even though digitalisation is needed in order to achieve several of the European Union's goals it should not be taken for granted or considered easy. Furthermore, the same study aims to show that in 2018, persons mainly used the internet only to look for information on the public authorities' websites, which does not count for the efficiency of e-government services, which tend to focus on actually submitting or downloading state official forms off the websites. It further shows that the lowest interactions were recorded in the South-Eastern European Countries, as they link this to the lack of the digital skills of the population (Lytras, Şerban, 2020). We consider that even more important steps are left to be taken in order to achieve the objectives of the European Union. We could add, as a personal observation, that South-Eastern European countries also need to develop the skills of the public servants in order to enable them to facilitate the access to these technologies for persons who do not possess the skills needed in order to perform certain operations.

Some remain reserved: in the light of the Commission's promise to explore and exploit digital technologies including artificial intelligence, 6G, cloud and edge technologies in order to maximise the impact of the above mentioned policies that aim for a greedy Europe, they point out that a number of studies show that the ecological footprint of digitalisation and its transition is even greater, providing for the acceleration of the consumption of materials and transport flows (Laurent, 2020).

Others consider that in order for this policy to be accepted by the Member States as well as the European population, it needs to bring a new era for the industry and ensure long term growth and jobs, for the entire internal market; the two solutions that need to be combined are greater and smarter investments that translate into shift from the sectors in which Europe already excels to sectors in which it is deficient: as such, Europe needs to focus less on sectors such as automobiles and pharma, and bring their attention to the electronics and digital sectors in which it is still deficient. Therefore, investments in research and development are needed in order to evolve and create clean energy, transportation and building (Claeys et al., 2019).

Literature has pointed out the dangers that digitalisation would bring for the labour market a while ago, stating that it would impact job creation, change, destruction in some case as well as shifting towards requirements and competences

that are different from the ones that we know today (Degryse, 2016). We add that in order to make these changes efficient, one should complete the university and scholar programs in accordance with the demands of employers that need to get a straight and clear guideline from the authorities. Other authors have pointed out that some sectors, such as the accounting one, might not benefit from a uniformized application of the rules, through digitalisation: in accordance with the standards imposed by the regulatory boards on the matter, practice allowed for different reporting in accordance to the tailored needs of the client, which would no longer be possible through digitalisation (Rowbottom et al., 2021).

It needs to be underlined that whilst doing everything in order to mitigate and minimise the effects of climate changes, the European Union reported in 2021 losses of €12 billion per year related to extreme weather changes losses. The Member States also need to prepare for the consequences of climate change, in parallel with the adoption of the rules and regulations that are aimed to fight it. As such, the objective of Europe to become climate neutral by 2050 is accompanied by the Commissions European climate law that aims to transform Member States government promises into legally binding obligations, which may seem to some as an unrealistic objective. However, given the current Commission's determination, we could actually foresee a good outcome.

5. Conclusions

Climate change is a global challenge that requires a responsible approach, taking concrete action at international, regional, national and local levels. A realistic approach to this phenomenon requires the cooperation of all international actors in order to identify the optimal courses of action, the necessary tools to stop the rise in global temperature. As such, the European Unions' approach was thus far to invest in new and developing technologies that would allow for the old continent to become not only climate neutral but also a global leader on the matter. The encouragement of the private sector to participate to this change is obvious and supported by the joint undertakings' initiatives.

The new package on the 2030 Framework for Energy and Climate Change launched by the European Commission in January 2014 is a continuation of the 2020 package, based on the experience gained from its provisions. The 2030 framework is also part of the long-term perspective of EU policy with a 2050 horizon, in line with the Commission's vision in the "Roadmap for the transition to a low-carbon economy by 2050", "The Roadmap for the 2050 energy on the horizon 2050" and the White Paper on transport. The Horizon policy also refers to the digitalisation of the Community, in as far as it aims to implement several projects that are linked to the digital transition.

The Commission's proposal for the first European climate law aimed to transpose into law the goal set out in the European Green Pact, namely to achieve climate neutrality by the European economy and society by 2050. In other words, all EU countries will have to aim for zero greenhouse gas emissions, mainly by reducing emissions, investing in green technologies and protecting the natural environment.

Therefore, the recently adopted law will ensure that all EU policies contribute to this goal and that all sectors of the economy and society are involved in this endeavour. The Commission aims to tackle the issue in a similar manner pertaining to the digitalisation of the Member States' economies and administrations.

However, doubts remain concerning the efficiency and final outcome of the policies followed by the Union: up until an analysis can be conducted pertaining to their efficiency, and as long as different sectors will have more or less difficulties adapting to the required changes, we may not affirm the success or failure of the actions.

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