

The Implications of the REPowerEU Plan in Accelerating the Implementation of the European Union's Hydrogen Strategy

Florin Bonciu¹

Abstract: *The paper analyses the context and implications of the adoption of the REPowerEU (May 2022), a European Union strategy for the reduction and elimination of dependency on fossil fuels imported from Russian Federation, and for the transition to a green economy. In this analysis, REPowerEU is placed within the context of EU's strategic planning during the past 22 years, the focus of this research being on the transition to a hydrogen economy. The research reviews some challenges that may affect the implementation of REPowerEU and proposes their classification into three categories depending on their nature. The conclusions provide some solutions for overcoming these challenges and a couple of recommendations for Romania as a member of the European Union.*

Keywords: REPowerEU, European Green Deal, green economy, hydrogen economy, net-zero greenhouse gas emissions.

JEL classification: F02, F53, F64, O33, O38.

The global context of the transition to green sources of energy

The climate change and the contribution of human activity to this represent key topics of current times leading to significant decisions both in the public and private areas. At the same time, these phenomena have led to more visible changes in economy and society, some of them quite substantial. From a symbolical perspective, the journey to today's situation has started 310 years ago when, in 1712, the British craftsman and inventor Thomas Newcomen designed the first functional steam engine, opening the era of the first Industrial Revolution (Black, 2013). Three centuries ago, water, soil and air were regarded as free of charge externalities, but three industrial revolutions later, in the second half of the 20th century, these natural inputs have become increasingly scarce resources which are not only expensive, but also pose visible risks for human existence.

The international interest for the transition to green sources of energy can be related to the emergence of official expressions of climate change concerns. Such preoccupations are not exactly new, as proven by the fact that the Intergovernmental Panel on Climate Change (IPCC) has been established by the United Nations Environment Programme and World Meteorological Organisation (IPCC, 2022) in 1988, with the mission to provide accurate scientific reports on the climate change.

An important observation regarding the past 310 years is that the market economy has not provided any warning signals related to the consequences of an ever-

¹ Florin Bonciu, PhD, is a University Professor within the Romanian American University in Bucharest and Senior Researcher within the Institute for World Economy in Bucharest. His academic activity was materialised in 16 books and over 100 papers on issues related to international economics, European integration, international investments, and international business.

E-mail: fbonciu@gmail.com.

growing increase in the use of fossil fuels, and as result the prices remained affordable, despite some fluctuations between 1971 and 2019. The reason for this situation is that the market, by definition, reacts to signals related to supply and demand, to scarcity and different conditions that affect these elements, and none of these market signals have manifested in a systematic way during the aforementioned period. It was therefore the role of scientists, civil society and organisations representing national and international governance to step in and manifest a responsible reaction.

The analytic nature of IPCC has been complemented by a more proactive organisational framework and a non-binding treaty – the United Nations Framework Convention on Climate Change (UNFCCC), established in 1992 (UNFCCC, 2022). The fact that, as of mid-2022, IPCC comprises 195 member countries, while UNFCCC has 198 parties underline the global interest and preoccupation for this matter.

The constant and proactive position of the European Union regarding the climate change adaptation and mitigation and the green transition

Considering the context presented in the previous section, the European Union has constantly been at the forefront of supporting concrete actions for environmental protection, limiting climate change effects and the adoption of new green technologies and sources of energy. A brief chronology of the past 22 years shows that the European Union has consistently designed and implemented programmatic strategies for each decade (2000 – 2010, 2010 – 2020 and 2021 – 2027/2030) in the fields of environment and climate change. These strategies provide a comprehensive image of the importance granted by the European Union to this subject:

- **In 2000**, the European Union adopted the **Lisbon Strategy** aimed at transforming the EU into “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion” (European Parliament, 2000). Although in the initial document only two pillars were mentioned (the economic and the social pillar), one year later, in 2001, the Gothenburg European Council added a third one, the environmental pillar which called for a “decoupling of economic growth from resources use” (European Council, 2001). Further on, in 2005, the revised Lisbon Strategy included specific references to the sustainable use of resources, climate change and energy efficiency (Commission of the European Communities, 2005).
- **In 2010**, the European Union adopted the **Europe 2020 strategy for smart, sustainable and inclusive growth** that had among the key objectives not only to continue the implementation of the climate and energy strategy by the member states, but also to support other parts of the world tackling the climate change issues. Within the EU, the Europe 2020 strategy specified five headline targets, the one labelled 20-20-20 aiming at the reduction of greenhouse gas emissions by at least 20% compared to 1990 levels, the increase of the use of renewable energy to 20% from the total energy consumption, and the increase by 20% of energy efficiency (European Commission, 2010).
- **In 2020**, under the specific circumstances of the COVID-19 pandemic, the European Union adopted a comprehensive and bold vision, **the**

NextGenerationEU (NGEU), which provided the synergy of two goals: the post-pandemic recovery and the successful transition to a greener, more digital and more resilient Europe, together with a revised budget for the period 2021 – 2027 (European Commission, 2020a).

The whole scale of EU's efforts during 2020 for creating a comprehensive framework for the transition to green sources of energy can be better understood through listing the strategic documents adopted that year. These documents demonstrate the significant role attributed by the EU to the production and use of hydrogen, particularly of green hydrogen, in the context of the transition to a green economy:

- **The European Green Deal** with the aim of achieving net-zero greenhouse gas emissions in the member states' economies by 2050 (European Commission, 2020b). This comprehensive framework was initially presented in December 2019 and was based on the ambitious philosophy of transforming Europe until 2050 into the first "climate neutral continent". The proposal started from the realities that climate change and the pollution of environment represent real threats to human existence and that immediate action was required. The European Green Deal includes several initiatives, such as: **Fit for 55** (which provides for the reduction of emissions by at least 55% in 2030 compared to 1990), the EU Strategy on Adaptation to Climate Change, the EU Biodiversity Strategy for 2030, the "Farm to Fork" Strategy (Council of the European Union, 2022).
- **The EU Strategy for Energy System Integration** which is based on a holistic approach to the energy system of all EU member states (European Commission, 2020c).
- **The EU New Industrial Strategy for Europe** which has three objectives for 2050: competitiveness, carbon neutrality and digital leadership (European Commission, 2020d). This document is of particular importance for the European hydrogen sector because it provides for the creation of a **Clean Hydrogen Alliance** (ECH2A) bringing together the supply and demand of clean hydrogen and integrating hydrogen transmission and distribution (European Commission, 2020e).
- **EU Hydrogen Strategy – A hydrogen strategy for a climate-neutral Europe**. The document's importance lies in the fact that the EU views hydrogen as essential for achieving net-zero greenhouse gas emissions in 2050, and recognises that hydrogen can help in the reduction and elimination of carbon emissions in industrial domains otherwise difficult to decarbonise (such as constructions, metallurgy, transports, chemical). At the same time, the green hydrogen production is fully compatible and can rely on the fast-growing sector of renewable electrical energy (European Commission, 2020f).

Several conclusions can be drawn from the presentation above:

- **The European Union has been consistent during the past 22 years** in its preoccupation for environment protection, the impact of climate change on economy and society and the need to achieve a transition to green energies and technologies.
- **The European Union positions itself as a pioneer of a net-zero greenhouse gas emissions** economy and society, while attempting to support and involve the rest of the world in this process.
- **The drafting and adoption of the above-mentioned documents have been the result of an interactive and democratic process.** During the drafting of documents and strategies related to a green Europe, numerous public consultations and negotiations took place among the European Union institutions, private sector, academia and civil society (Climate Action Network Europe, 2022). As result, numerous amendments have been adopted. At the same time, the need to consider new developments (such as geopolitical challenges, climate evolution, the emergence of new technologies, etc.) have led in many cases to updates and reformulations of the initial positions.

The transition of the EU economy and society to a net-zero greenhouse gas emissions status is a very complex process, which is impacted by the different starting positions of the member countries regarding technological capabilities, and financial and human resources. This situation is further complicated by the EU's functioning on the basis of an interaction between community decisions and member states decisions, reflecting the tension between federalism and inter-governmentalism principles. These two complex and complicated characteristics of the transition become even more difficult to mitigate because of the international framework within which the European Union functions, a framework where competition is often accompanied by confrontation, where short and medium-term goals may clash with long-term ones, and where public and private interests may not always be aligned.

The 2022 geopolitical context and EU's response for transitioning to a green economy and green sources of energy – the importance of REPowerEU

Besides the strategies and plans for the transition to a green economy already adopted by the European Union during 2020 – 2021 period, 2022 brought about a new geopolitical situation generated by the Russian invasion of Ukraine, on 24 February. After the war broke out, the European Union immediately reacted and adopted decisions with significant long-term implications. From the energy point of view, these reactions and decisions had serious consequences, resulting mainly from the implementation by Western countries (including the EU member states) of several packages of extremely comprehensive sanctions against the Russian Federation, together with actions for reducing and eliminating imports of fossil fuels from that country. As a result, the European Union had to look for alternative sources of energy to those originating from the Russian Federation. In this context, on 8 March 2022, the European Commission announced REPowerEU, a strategy for significantly reducing the dependency on energy

sources from Russian Federation until 2027. After a short time, on 18 May 2022, the European Commission presented the roadmap for this strategy (European Commission, 2022a).

An important characteristic of REPowerEU strategy is that, although it has been designed and presented in the context of the implications of the war in Ukraine, it has nonetheless two related goals:

- **To end the European Union dependence** on the imports of fossil fuels from the Russian Federation.
- **To take concrete steps to fight climate change** by transitioning to a green economy and green fuels.

To contextualise these goals and better understand their dimensions, suffices to say that in 2021 the Russian Federation supplied 40% of the natural gas, 27% of the oil (Fisher, 2022) and 46% of the coal imported in the European Union (European Commission, 2022b). The visual representation of REPowerEU is presented in *Figure 1*.

Figure 1. REPowerEU – three main directions + financing



Source: European Commission,
available at: https://social.network.europa.eu/@EU_Commission/108395184892920470

The difficulty of achieving these goals until 2027 stems not only from the necessary quantities involved, particularly in the short term (IMF, Di Bella et al., 2022) but also from the fact that entire industry sectors in the European Union member states (such as the chemical industry) were calibrated based on the characteristics of pipeline transported natural gas which are different from liquefied natural gas. As a Report of the Joint Research Centre of the European Commission pointed out in 2009: "...the superior quality of LNG...is actually a problem in Europe today. This is because the vast majority of the end use facilities are tuned to "leaner" pipeline gas that dominates the overall EU gas mix." (Kavalov, Petric, Georgakaki, 2009)

At the same time all industries were designed to optimise profitability and output based on a certain range of prices. The simultaneous change of characteristics (as result of imports from other sources and in other forms such as LNG – liquefied natural gas) and price cannot be absorbed overnight and constitutes a challenge of the highest order.

As presented in *Figure 1*, REPowerEU provides for sustained action towards three main directions:

- **The diversification of energy suppliers** for natural gas and oil from different parts of the world, other than the Russian Federation.
- **The substantial increase of production and use of renewable energy.**
- **The systematic pursuit of energy savings** in the sense of both by a large-scale elimination of energy waste and by an increased efficiency in energy use (through new technologies, the development of new products and services with less material and energy consumption, more durable and repairable goods etc.).

It is expected that the successful achievement of the two goals regarding the diversification of suppliers and the production and use of renewables will translate into three inter-related positive consequences:

- a more secure and durable economic growth in the new geostrategic context.
- an increase of the security and stability of the European Union as a whole and of its member states.
- a more significant contribution to the reduction of the effects of climate change in Europe and at a global level.

In the context of the third direction mentioned above, the Council of the European Union adopted in early August 2022 a regulation providing for 15% voluntary reduction of natural gas consumption compared to the average of the past 5 years during the period 1 August 2022 – 31 March 2023. It is worth mentioning that the regulation also states that in case the Council declares a Union alert on security of supply, the reduction becomes mandatory (Official Journal of the European Union, 2022).

It is noteworthy that REPowerEU attempts to integrate in a systemic way with the rest of the vast package of EU strategies, directives, norms and plans for different time horizons: 2027, 2030 and 2050. In our view, the requirement of a systemic integration of a huge number of normative acts, together with the existing interaction between the federalist and intergovernmental principles may represent both a strength and a weakness. The strength stems from the largely existent regulatory pieces which are correlated and may provide a synergetic result. The weakness may be represented by the very complexity of this system of regulations, one similar to a very intricate mechanism that could work perfectly only if all the pieces are working in a synchronised way. Any delays in implementation, any miscorrelation of strategies with plans and projects, of launching projects and allocating funds, any lack of synchronisation between economic sectors within and among the member states can affect the optimal functioning of the mechanism.

The role of hydrogen in the context of REPowerEU strategy

While within the European Green Deal and REPowerEU, hydrogen is not the only solution, it is nonetheless a critical component for decarbonizing the economy and society, for eliminating the dependence on fossil fuels from Russian Federation and for contributing to the reduction of climate change effects. The European Commission explicitly stated that “The use of innovative energy carriers such as hydrogen, particularly coming from renewable electricity, will play a key role in the European Green Deal” (European Commission, 2021). After the adoption of REPowerEU strategy, the European Commission has further clarified that “hydrogen can help improve the flexibility of energy systems by balancing out supply and demand when there is either too much or not enough power being generated, helping to boost energy efficiency throughout the EU” (European Commission, 2022c). As an indirect proof of its importance within REPowerEU, we can add that hydrogen is mentioned 71 times in the strategy, while biomethane only 13 times, heat pumps – 12 times, wind – 16 times, and solar – 22 times (EUR-Lex, 2022).

The critical role played by hydrogen is determined by:

- **its capacity to contribute to the decarbonisation of activities that are otherwise difficult to electrify**, such as construction materials, metallurgy, chemical industry. including production of agricultural fertilisers, heavy transport by road, rails and sea etc.
- **the flexibility in hydrogen uses** since it can be stored in a variety of locations, transported in a timely manner and used for a large number of industrial and home settings.
- **its compatibility with a number of existing technologies and equipment** which means hydrogen can be implemented (once available) in an expedited way, in transport (for example in case of electrical locomotives, trucks, busses or cars that can be easily adapted), in metallurgy or production of construction materials (like cement) where fossil fuels (like coke coal or natural gas) can be replaced by clean hydrogen, or in the production of agricultural fertilisers (by using ammonia obtained with hydrogen).

Given this critical role of hydrogen, REPowerEU provides for 4 times increase of the existing 2030 targets for green hydrogen supplies. In this respect, the European Union envisages building until 2030 a supplementary capacity of 80 GW of green energy to be used in electrolyzers for green hydrogen production.

The overall objective of REPowerEU is to make available an extra 15 million tons of green hydrogen, in addition to the 5.6 million tons to be produced within the EU, as already envisioned by the hydrogen strategy, thus aiming for 20 million tons of hydrogen for the EU. Out of this supplementary quantity of 15 million tons of green hydrogen, around 5 million tons will be produced in the EU, and 10 million tons will be obtained from other sources, such as Australia, the Democratic Republic of Congo, Brazil and others (Lee, 2022).

An important observation made by the European private sector is that the adoption and implementation of REPowerEU (in the larger context of NextGenerationEU, Fit for 55 and other programmatic documents) can lead to the emergence of a globally

competitive European industrial champion, namely the electrolysis sector, including also the production of electrolysers and their use for production of hydrogen. This positive industrial development will result from building and operating 120 GW of electrolysers in the European Union between 2022 and 2030 (Zipf, 2022).

In 2022, the European private sector interested in the development of hydrogen was represented by 350 companies, 20 European regions and 30 national organisations, reunited under the umbrella of **Hydrogen Europe**. They fully support the larger context of moving towards a circular carbon neutral economy and the REPowerEU (Hydrogen Europe, 2022a), within which the organisation proposed the so-called **3R solution** (Hydrogen Europe, 2022b), meaning:

- **Replacing polluting, inefficient and outdated technologies** by taking advantage of the fact that 6 out of the 10 largest manufacturers of electrolysers in the world are located in the EU.
- **Repurposing** some of the existing gas infrastructure, gas pipelines and storage facilities by retrofitting them for hydrogen.
- **Reinvesting** the funds obtained from the EU Emission Trading System (ETS), from carbon contracts and from state aid for complementing the private funds, in view of achieving the ambitious goals of REPowerEU in general, and of the hydrogen sector in particular.

In a position paper presented in May 2022, Hydrogen Europe made a comprehensive list of proposals necessary for achieving the REPowerEU targets by fostering the development of a strong European hydrogen industry (Hydrogen Europe, 2022c). The provisions of this document are based on:

- the existing industrial and scientific capabilities of the European companies,
- the concrete steps necessary for securing the production, transportation and storage of hydrogen.
- the necessary equipment and facilities for the import of hydrogen from non-EU countries.
- the need for building all new gas transport and storage facilities compatible with hydrogen use.

The REPowerEU strategy in general and its hydrogen component in particular cannot be successful without a strong international dimension, involving friendly and secure countries that have large potential for renewable sources of energy. Considering these new geopolitical circumstances and the frameworks provided by the European Green Deal and REPowerEU, it would be logical for European Union to redefine the list of priority countries that may be instrumental in solving the triple energy challenge of sustainability, security and competitiveness through affordable prices (Jones, Borchardt, 2022).

Some challenges facing the successful implementation of REPowerEU as of mid-2022

Given its complex and broad content and the implications for existing legislation, the REPowerEU strategy present numerous challenges that must be solved in a continuous and expedited manner. Based on the analysis of the feedback provided until mid-2022 by the EU bodies, private sector and civil society the following challenges have been identified:

- **systemic or structural challenges** related to the existing functioning mechanisms of the European Union.
- **technical/engineering and financial challenges.**
- **geopolitical and competitive challenges.**

Several systemic or structural challenges have been identified, among others, by the European Court of Auditors (European Court of Auditors, 2022), which highlighted in July 2022 their potential to affect the successful implementation of REPowerEU. The main structural inconsistency stems from the EU-level objectives of the REPowerEU and its main financial instrument, which is the Recovery and Resilience Facility (RRF) is implemented by the member states. At a more concrete level, the current provisions of the REPowerEU require funds of about 210 billion euro until 2027 for eliminating fossil fuels imports from the Russian Federation, while the additional funds provided are of only 20 billion euro. The substantial difference is envisioned to be allocated at the member states' level from different European and other funds, as well as from other unspecified sources, which contributes to a higher level of uncertainty.

The reliance on the Recovery and Resilience Facility for funding most of the REPowerEU creates a further problem because there is already an allocation of funds by member country and the amount provided for each state in the initial RRF may be different in comparison with the actual needs related to REPowerEU objectives. At the same time, the lack of some priority criteria in relation to the REPowerEU objectives makes it difficult for the European Commission and the member states to prioritise the projects in order to maximise the results.

The second category refers to technical/engineering and financial challenges. In this context, the technical/engineering aspects entail the existence of several elements: applicable technologies, production capacity, skilled labour, and the technical possibility to deploy on a large-scale certain technology, while replacing the existing ones. As such, the technical/engineering challenges include two dimensions which can be determined in an objective manner:

- the theoretical and physical existence of technical/engineering inputs of any nature.
- the deployment / implementation timeframe between the plans' adoption and the putting into operation of the equipment. Even if there are enough financial resources and suppliers, as well as unanimity in the adoption of a certain action path, there is an objective time necessary for putting into operation the new technologies and shifting from the old ones.

The financial challenges refer to the timely provision of funds for research, production, deployment, putting into operation and replacement of the old technologies. Both the EU officials and representatives of the business sector stated that the goals proposed by REPowerEU are very difficult to reach but still possible (Lee, 2022). As of mid-2022, this aspect is not yet fully clarified in what regards the sources and distribution to the member states of all the necessary funds, the correlation with cross-border cooperation at the level of the member states etc., as pointed out by the European Court of Auditors in their position paper.

Finally, the geopolitical challenges result from phenomena outside the range of action of the European Union. They refer mainly to the existence of other global economic actors making decisions based on their own interests, leading to an increased competition for material, technical, financial and human resources related to the transition to a green economy and society.

Based on the analysis of the international context, three types of geopolitical challenges have been identified, the list being non-exhaustive, since new ones may arise as a result of new international circumstances. These three types of geopolitical challenges identified in this research are:

- challenges of a competitive nature.
- challenges potentially leading to vulnerability and dependency on certain suppliers.
- challenges resulting from the interaction with non-European Union actors envisaged as potential suppliers of hydrogen.

For the competitive challenges, a case in point is the adoption, in early August 2022, by the Congress of the United States of the Inflation Reduction Act, which allocates until 2030 a substantial amount (369 billion US dollars) for countering climate change through the adoption of green technologies and sources of energy and the reduction by 40% of the carbon emission (Breuninger, 2022). The Inflation Reduction Act provides for tax credits that can make the production and sale of hydrogen competitive with fossil fuels (such as natural gas), which can determine international investment funds to target the United States instead of European Union (News Post – US Zero, 2022). In an internationally competitive environment, the large investors are directing their funds to the places where the incentives are most generous, and profitability is higher.

In the field of hydrogen production, at present, the US provisions already in place are more attractive than the EU ones, because they are clearer and more flexible, and are based on market economy principles. This US flexibility allows for production of hydrogen by electrolysis using different sources to generate the necessary electricity (including fossil fuels), but with different tax credits depending on the amount of carbon emissions for each kilogram of hydrogen produced. The tax credit varies from 0.60 US dollars for one kilogram of hydrogen in case of the use of fossil fuels to 3 US dollars for one kilogram of green hydrogen.

The provision of these tax credits makes the production of green hydrogen in the United States immediately competitive with grey hydrogen (obtained from fossil fuels) and even with natural gas. The importance of the of the Inflation Reduction Act for the

business sector in United States and globally is reflected in the statement of Standard & Poor's which views this as "the single most important piece of legislation in the world for green hydrogen so far" (Hume, 2022).

Challenges potentially leading to vulnerability and dependency. In order to achieve the goals of REPowerEU as well as the whole Green Deal strategy, the EU needs, besides adequate funding, large quantities of raw materials and equipment, such as solar panels, batteries, wind energy generators, electrolyzers etc., which at present are originating up to 90% in China. The question here is whether alternative supplies can be identified in sufficient quantities and within in a short period so that the goals of REPowerEU can be achieved (Krecké, 2022).

Challenges that result from the interaction with non-European Union actors that are envisaged as potential suppliers of hydrogen. As presented above, REPowerEU provides that 50% of the hydrogen to be used by 2030 will come from non-European Union sources. Beyond the direct challenge of transporting large quantities of hydrogen at a distance, another issue remains the identification of suppliers, for instance in Africa, particularly in the Southern Mediterranean area. They should be willing to deliver green hydrogen to the European Union in addition to using it for their domestic needs.

This aspect does not represent a speculation, but a fact resulting from the official positions of the African states, members of the African Union, shared in preparing their participation to COP27 (The 2022 United Nations Climate Change Conference) organised between 6 – 18 November in Egypt, at Sharm El Sheikh (Fox, 2022). The future participation of African states in the hydrogen supply design of the European Union may require generous financial contributions for green technologies and carbon credit schemes which are not yet envisioned.

Conclusions

The adoption of the REPowerEU plan in May 2022 represents an important moment in the long-term response of the European Union to its goals related to climate change and environment protection, but also in its immediate response to the new geopolitical circumstances determined by the war in Ukraine and by the decision to reduce and finally eliminate dependency on fossil fuel imports from the Russian Federation. Concerning the latter aspect, the EU's rapid reaction should be appreciated, since the REPowerEU was announced on 8 March 2022, only two weeks after the beginning of the invasion of Ukraine.

While REPowerEU is not entirely dedicated to the hydrogen production and utilisation, it provides anyway an important political and regulatory support for the transition to a hydrogen economy, by offering long-term stability and predictability to the investors, both public and private. The business sector has been favourable to the plan and open to actively cooperate with the EU bodies and member states' governments.

Anyway, as of mid-2022, REPowerEU appears as a work in progress. The European Commission is still working for the completion of the regulatory framework mainly related to the so-called "renewable fuels of non-biological origin (RFNBO)", which include hydrogen. In this respect, two important draft documents are still to be finalised and adopted, namely the Additionality Delegation Act (which specifies the types of fuel produced from electricity considered renewable) and the Methodology

Delegated Act (which will measure the greenhouse gas emissions savings of renewable fuels of nonbiological origin and recycled carbon fuels). Although such documents are of a technical nature, they are essential for investors and governments in deciding the future allocation of funds (Jones, Kettlewell, 2022).

Based on the analysis of the reactions from different stakeholders, we identified a number of challenges that should be addressed swiftly. These challenges have been classified into three categories, depending on their nature: a) systemic or structural; b) technical and financial; c) geopolitical (with three sub-categories: competitive, potentially leading to dependency, and resulting from the interaction with potential suppliers).

Failure or delay in addressing these challenges may affect the effectiveness and efficiency of REPowerEU in relation to its goals of reducing and eliminating the dependency on fossil fuels imported from the Russian Federation until 2027, and of achieving net-zero carbon status until 2050. As the European Union can be efficient, competitive and significant in the global context only as a single market, these challenges require collective effort, with participation of all relevant European Union bodies and member states.

In our view, attention should be given to European Union wide solutions, at the level of the single market, for the creation of production, storage, transport and distribution infrastructure for the hydrogen economy. A country-based approach, depending on the different degrees of preparedness to act, may lead to differentiation among European Union member states, to a limited development of cross-border projects and to the unequal adaptation, and development of member states and their regions to the new circumstances. In our view, it is essential for the European Union to avoid fragmentation in the responses of the members states to hardships of different natures, particularly in relation to energy.

The fact that other major players from the world economy, even if they are close partners (such as the United States), compete for financial and technological resources needed for the transition to new and green sources of energy adds a new dimension to the challenges to be addressed for achieving the goals of REPowerEU. At the same time, as 50% of the hydrogen supplies considered in the REPowerEU context originate with non-European Union states, the role of the European Union diplomacy and foreign policy is of paramount importance for achieving the desired results.

In this context, we appreciate that Romania should concentrate on understanding the characteristics and opportunities of the new global and European environment, capitalise on its status as a European Union member state, and identify all areas where it can creatively contribute with its resources (scientific, technological, natural and financial) for the mutual Romanian and European Union benefit.

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