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SOLIDARITY AS A PRINCIPLE AND A VALUE: PROBLEMS OF PRACTICAL IMPLEMENTATION IN EU ENERGY POLICY

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Abstract

The article studies the problem of solidarity as a principle and a value in EU energy policy. It determines the content of the principle of solidarity, the characteristics of energy solidarity, the consolidation of this principle in the energy policy of the EU, and the problems of its implementation and characterizes the process of institutionalization of the principle of solidarity in the energy policy of the EU. It is proved that, although the principle of solidarity is positioned as a fundamental principle of the functioning of the EU, the weakness and uncertainty of its content and scope have been repeatedly demonstrated in crisis situations. Notably, until recently solidarity was primarily a political principle and not a legally established obligation of the EU Member States, and this reduced the EU's institutional capacity to respond to new challenges and risks. It is argued that the solidarity of the EU states in the field of energy is conditioned by the need to guarantee energy security, counteract the weaponization of energy resources, reduce dependence on energy-exporting countries, prevent unhealthy competition for energy resources, continue the implementation of climate policy, etc. It is emphasized that the energy solidarity of the EU under the conditions of current challenges (security, climate, etc.) becomes apparent in the coordination of tools that will be used by energy market participants to meet energy needs and guarantee energy security. The problem of the lack of a unified approach to energy policy in the EU states due to infrastructural features, national interests and other reasons is noted. It is stated that the situation in the energy sector of the EU indicates the frequent prevalence not of the principle of solidarity, but of short-term national (or even party or other) interests.

Keywords: EU, principle of solidarity, European solidarity, energy solidarity, energy policy, energy security, European unity, European integration, weaponization of energy resources, energy nationalism.

Introduction

In public discourse, EU institutions often use the concept of “solidarity” and appeal to this principle when justifying decisions on acute and controversial issues. Solidarity is positioned as a source of European unity, an important value of EU law, one of the fundamental principles of the EU. One of the initiators

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of European integration, R. Schuman, drew attention to the importance of the practical implementation of the principle of solidarity as early as 1950: “Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a *de facto* solidarity” (Schuman Declaration, 1950). The principle of solidarity became the basis of integration from the beginning of the unification processes of European states (Domurath, 2013). However, for decades it was related to the general functioning of the EU but was not enshrined in practice in the secondary legislation of the EU.

During the large-scale crises of recent decades, the EU has repeatedly demonstrated the insufficient cohesion of the member states around threats, the disinterest of individual EU states in sharing responsibility, the difficulty of reaching a consensus, etc. In crisis situations, EU member states have often shown a reflex of national sovereignty and thereby undermined the value of solidarity. It is obvious that the declared principle of solidarity faces many challenges in practical implementation within the European community. The energy sector is an example of this.

In a situation where EU energy policy is increasingly determined by geopolitics, climate change and numerous other issues, the role of energy solidarity between member states is growing. The need for solidarity is due, first of all, to the fact that the EU is not an autonomous, independent entity in the field of energy, but imports more than 50% of energy resources. The fight for energy resources (both fossil fuels and critical metals and minerals necessary for the implementation of clean technologies) and prevention of energy shortages is one of the priorities for EU governments. The role that energy resources play today requires, in modern realities, the active cooperation of states, the coordination of energy strategies, and the prevention of unhealthy competition for energy resources.

This draws attention to the study of the question of how much the principle of solidarity characterizes the interaction of the EU states in the energy sphere, and what achievements and problems in the energy sphere are due to the manifested or not manifested solidarity of the EU member states.

The purpose of the study is to find out the specifics of the practical implementation of the principle of solidarity in the energy policy of the EU (energy solidarity). To achieve this goal, the following tasks were set: to determine the content of the principle of solidarity, the characteristics of energy solidarity; to identify the main problems of implementing the principle of solidarity in the EU, where the interests of the member states in the energy sector differ in many respects; to characterize the processes of institutionalization of the principle of solidarity within the common energy policy of the EU; to determine the main achievements and problems regarding the solidarity of the EU states on issues of common energy policy, guaranteeing energy security, etc.

Materials and Methods

The research methodology is neo-institutionalism and an axiological approach. With the help of neo-institutionalism, the policy of the EU institutions and the governments of the EU member states, which expresses the principle of energy solidarity or contradicts it, is investigated. The legal acts of the EU on energy policy issues, which are aimed at implementing the principle of solidarity, are analysed. The axiological approach made it possible to reveal how significant energy solidarity is as a value for EU member states under current security, climate and other challenges. Particular attention is paid to the study of the position of states that demonstrate energy nationalism, which violates the principle of solidarity.

Conceptual ambiguity of the principle of solidarity as the basis of EU functioning

Although the principle of solidarity has been repeatedly analysed from the standpoint of various sciences (political, economic, legal, sociological, psychological, etc.), it currently needs theoretical and methodological clarity. Let us agree with A. Bartenstein (2021a) that the concept of solidarity remains quite vague and unclear. A. Grimm and S. My Giang (2017, p. 2) rightly point out that solidarity is a value that must be “created”, otherwise it will remain an “empty word”. K. Huhta and L. Reins (2023, p. 776) drew attention to the fact that the “spirit of solidarity” was for a long time only an expression of political desire, and not a legally established obligation. R. Fleming (2019) believes that the appeal to solidarity is rather a program statement that does not have a specific definition. Polish scholar M. Ryś (2022, p. 152) argues that solidarity is often considered a declaration of goodwill, but not an obligation. It can be observed how the scientific discourse emphasises the problematic nature of the principle of solidarity. This is particularly relevant when it concerns the community of EU states.

According to P. Hipold (2015, p. 261), the basis of solidarity is formed by the concept of mutual benefit or reciprocity. J. Monar (2015) in the definition of solidarity points to mutual support of the actors of certain

relations. So, solidarity is reduced to acting in common interests and supporting other states as opposed to acting to protect national interests. Due to this characteristic, the principle of solidarity within the EU acquires a European transnational value (Ross, 2007, p. 1070).

The voicing and formalisation of common interests and values by states have the potential to translate into solidarity relations, but may remain a declaration of intent. At the same time, each of the parties to relations based on solidarity has a certain self-interest. Therefore, solidarity is not some unilateral moral obligation to help those who find themselves in a vulnerable position. In order for solidarity to truly become a characteristic of the relations between the actors of international relations, it goes beyond a mere moral obligation and acquires an institutionalized form, expressing structured, formalized and usually long-term cooperation between partners based on trust.

Formally, all EU member states agree on the importance of the principle of solidarity for the effective functioning of their integration association. However, when it comes to applying this principle to solve a specific problem, all the ambiguity of the content and scope of solidarity is revealed (Grimmel & My Giang, 2017, p. 162). The solidarity of the EU states, which was postulated as a guideline for action, was often not accepted and is not accepted by all states now as a practical guide for action. Thus, there is a difference between declarative solidarity (as a purely political concept) and institutionalized solidarity. Solidarity becomes institutionalized only when there is group cohesion, reciprocity and self-responsibility (Bartenstein, 2021a).

Difficulties in the practical implementation of the principle of solidarity concern various spheres of EU functioning. Over the past decades, there were many examples of this:

- *the crisis of public debts in the Eurozone*. When Greece, Spain, Portugal, and Cyprus asked for solidarity at the most acute stage of the crisis (2009–2011), Germany and the states of Northern Europe, first of all, voiced accusations of extravagance, excessive loans, etc.;

- *migration crisis* (Agustín & Jørgensen, 2019), especially in 2015–2016. More than a million refugees from Syria, Iraq, Afghanistan, Libya and other countries came primarily to Greece, Italy and Malta. Some of the EU states assisted in this situation, but there were also states (Hungary, Poland, the Czech Republic, Slovakia) that refused for certain reasons, denied the introduction of quotas for accepting refugees (Visegrad Group, 2016) and advocated “flexible solidarity”. This type of solidarity assumes that the EU states must independently determine their contribution to solving the problem, and any distribution mechanism is voluntary;

- *lack of consensus under the conditions of the coronavirus pandemic* (Joppe, 2021). In the first months of this pandemic, EU states imposed restrictions on the export of certain medical products to other EU states. Later, there was a counterproductive struggle for vaccines among the EU states. This reduced the effectiveness of the EU’s response to the coronavirus pandemic.

Hence, the vulnerability of solidarity manifests itself precisely in crisis and emergency situations (Casolari, 2019, p. 70), and the EU states situationally “form their vision of solidarity that is based on a national idea, which complicates the creation of a European concept of solidarity” (Manayenko & Symonenko, 2023, p. 107). The reasons for this, in our opinion, include the fact that the EU’s founding documents mention the concept of “solidarity”, its limits, areas of potential spread, etc. but do not clearly define it. The EU treaties contain very vague wording, for example, “member states must act in the spirit of solidarity”, “show mutual solidarity”, “strengthen and develop solidarity”, etc. High-ranking EU officials also resorted to vagueness and imagery in their speeches. For example, the ex-president of the European Commission J.-C. Juncker spoke of solidarity as the “glue that keeps our Union together” (European Commission, 2016).

Solidarity, as a core value of the EU, is referred to in Article 2 of the Treaty on European Union: “The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail” (European Union, 2012). That is, the rule of solidarity is already established.

Solidarity is a socially approved value, as it evokes a sense of involvement in rallying against something unjust. Members of the community of states share the right to demand and undertake to provide solidarity that is based on reciprocity. This reciprocity means that solidarity is not, figuratively speaking, a one-way street. Consequently, solidarity cannot be equated with charity. It is based on horizontal relations, which actually distinguishes it from charity. The members of the group themselves set the standards of who deserves solidarity. Group members who do not act responsibly (are directly to blame for the situation, did

not implement common standards, etc.) usually receive solidarity support only under certain conditions. Hence, responsibility for one's actions/inactions is essential for the institutionalization of solidarity.

Although solidarity is the basis of the value paradigm of the EU, its content and scope are not explained in the treaties. As a result, its legal meaning suffers from the ambiguity of the definition (Ross & Borgmann-Prebil, 2010). It is not clearly determined which areas the principle of solidarity applies to.

Institutionalization of the principle of energy solidarity in the EU

Energy solidarity is a system of tools, initiatives, and models of behaviour of energy market participants for the harmonious functioning of the fuel and energy sector and ensuring energy security. Norwegian researcher C. Banet (2024) believes that "energy solidarity is an expression of mutual assistance between states when one of them faces a critical disruption of energy supply; it extends to deeper energy cooperation, when states decide to pool their energy resources and integrate their energy systems". Let us agree with the mentioned scholar that energy solidarity has three dimensions: 1) symbolic – verbal declarations of support; 2) factual – specific assistance 3) legal – consolidation of norms of solidarity in legal agreements, and mechanisms of their provision.

Energy solidarity has become increasingly important over the past two decades. This testifies to both the rising global interdependence of states in the energy sphere and new geopolitical realities (Banet, 2024, p. 399). The need for energy solidarity is caused primarily by threats to energy security for several reasons. These include, for example, deliberate actions of people (terrorism, wars, etc.); technological failures (in production, transportation, supply of energy resources); natural phenomena affecting production, transportation of energy resources (extreme heat, drought, hurricane, floods, etc.) and other causes.

The establishment of the European Coal and Steel Community in 1951 was one of the first steps towards both European integration and the implementation of the principle of solidarity in the energy sector. The preamble of the Treaty Establishing the European Coal and Steel Community (2017) states: "Europe can be built only through practical achievements which will first of all create real solidarity, and through the establishment of common bases for economic development". But, for example, when due to the warm winter of 1954-1955 there was a surplus of coal on the common market, the member states of the European Coal and Steel Community (Belgium, West Germany, Italy, Luxembourg, the Netherlands and France) primarily protected their own producers and did not follow common rules of the Community.

The next step in the institutionalization of energy solidarity was the Treaty of Rome of 1957, which provided for the establishment of the European Atomic Energy Community. This laid the foundation for cooperation between European states in the field of peaceful use of nuclear energy. However, if at that time nuclear energy was considered one of the pillars of European integration, it has recently become the most controversial topic of the energy transition in Europe. For the time being, in the EU, the topic of nuclear energy is a sensitive one in the energy dialogue of the EU states. Yet, under the conditions of current challenges to energy security, the probability that the EU states may conclude a new agreement on the EU's nuclear energy policy is increasing. This may become a manifestation of the principle of solidarity.

The principle of energy solidarity was established in 2009 after the entry into force of the new basic agreement on the principles of EU functioning (the Treaty of Lisbon). EU member states are therefore obliged to help other EU states that experience an energy crisis. Articles 122 and 194 of the Treaty on the Functioning of the European Union became the legal basis for the adoption of legally binding legislation in the energy sector. Thus, Article 122 of the Treaty provides that "the Council, on a proposal from the Commission, may decide, in a spirit of solidarity between Member States, upon the measures appropriate to the economic situation, in particular if severe difficulties arise in the supply of certain products, notably in the area of energy" (European Union, 2012).

Article 122 of the Treaty on the Functioning of the European Union was used as the basis for three special legal instruments in the field of energy – one directive on the security of natural gas supply (2004) and two directives on minimum stocks of crude oil and/or petroleum products (2006, 2009). All these legal instruments contain references to solidarity, because since 2005, due to the Russian-Ukrainian gas conflicts, crisis situations in the energy sector of the EU countries have been often recorded. Consequently, against the background of crisis situations with the supply of energy resources, the EU institutions started the development of a common energy policy, the priority of which was precisely the security of the supply of energy resources. The internal market directive of 2009 (Council of the European Union, 2009) and the EU regulation on the security of gas supply of 2010 (Regulation (EU) 994/2010, 2010) provided that in the event of supply disruptions, regionally connected EU states would support each other with energy

resources. This was supposed to be a response to some selfishness in the behaviour of those EU states that prevented the flow of gas to other states.

Several EU documents are based on Article 122 of the Treaty on the Functioning of the European Union. In particular, these are Council Regulation (EU) 2022/1369 of 5 August 2022 on coordinated demand-reduction measures for gas (Council of the European Union, 2022a); Council Regulation (EU) 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices (Council of the European Union, 2022b); Council Regulation (EU) 2022/2576 of 19 December 2022 enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders (Council of the European Union, 2022c); Council Regulation (EU) 2022/2577 of 22 December 2022 laying down a framework to accelerate the deployment of renewable energy (Council of the European Union, 2022d); Council Regulation (EU) 2022/2578 of 22 December 2022 establishing a market correction mechanism to protect Union citizens and the economy against excessively high prices (Council of the European Union, 2022e), etc.

Whereas Article 122 of the Treaty on the Functioning of the European Union applies only to cases where there are serious difficulties in the supply of energy resources, Article 194 is the general legal basis for all energy policy measures. This legal norm is aimed at ensuring the functioning of the energy market and the security of energy supply to the EU, promoting the efficient use of energy and energy saving, developing new and renewable forms of energy, and promoting the interconnection of energy networks.

EU documents refer to energy solidarity in different contexts. Let us point out the most important ones.

1. *Solidarity as an expression of the EU member states' approach to the internal market* (Huhta & Reins, 2023, p. 785). It refers to pooling the energy resources of all member states by creating a zone without trade restrictions so that these resources can be used most cost-effectively. Solidarity therefore plays a key role in the functioning of the internal market. Strengthening interdependence through shared resources requires mutual trust and confidence of the member states that the functioning of the internal market will lead to a sufficient amount of energy resources necessary for the energy security of the EU member states.

Article 194 of the Treaty on the Functioning of the European Union provides that the EU's energy policy should be implemented in the context of the formation of the internal market. The connection between the internal market and solidarity is further developed in secondary EU legislation (directives, regulations, etc.). For example, Council Regulation (EU) 2022/1369 of 5 August 2022 on coordinated demand-reduction measures for gas states that "in view of the significant distortions of the internal market which are likely to occur if Member States react in an uncoordinated manner to a potential or actual further disruption of Russian gas supply, it is crucial that all Member States reduce their gas demand in a spirit of solidarity. All Member States should therefore achieve the voluntary and mandatory demand-reduction targets" (Council of the European Union, 2022a).

Accordingly, the concept of solidarity demonstrates that: 1) the internal market is the principal tool for ensuring solidarity; 2) solidarity is the basis and a necessary prerequisite for achieving and functioning of the internal market (Sokol, 2020). "As a consequence of the internal market approach, Member States are expected to share not only the benefits of the internal market, but also the potential risks of increased interdependence" (Huhta & Reins, 2023, p. 786).

2. *Solidarity as a description of risk sharing between Member States*. It is implied that in practice solidarity as risk sharing is "an agreement between states to intervene on a reciprocal basis if one encounters unforeseen difficulties – one for all and all for one" (Huhta & Reins, 2023, p. 786). The concept of solidarity is used to explain why and how EU member states should share the dangers and threats faced by other member states. Consequently, the emphasis is on the distribution of risks. The focus is on ensuring the security of supply, not on the functioning of the energy market. Solidarity as an effort to share risks between member states is used to explain the legislative measures taken by the EU. Solidarity serves as an argument for taking these extraordinary measures.

3. *Solidarity as a tool to protect those most affected by the energy crisis*, etc. The principle of solidarity is aimed at mitigating the impact of high energy prices or energy shortages. Although the EU's approach to energy price regulation has always been flawed, the legislative instruments currently in use to address the energy crisis are changing this approach and justifying intervention in market pricing processes on the basis of solidarity as a fair redistribution of the burden caused by the energy crisis.

Hence, the concept of energy solidarity lacks semantic clarity for the time being. Its practical implementation, even under the present challenges to energy security, continues to be hindered by divergent interests and expectations regarding the energy sector and energy policy, both in national and international dimensions.

A new vision of energy solidarity under the conditions of aggravation of security challenges

Despite the validity of Articles 122 and 194 of the Treaty on the Functioning of the European Union, the concept of solidarity was still characterized by conceptual vagueness (Grimmel & My Giang, 2017), and mutual support of member states was mostly nominal for a long time (Mišík & Nosko, 2023). The EC faced significant challenges in its efforts to develop and implement a common energy policy. Individual EU states pursued policies that prioritized national interests in the energy sector, rather than the desire for European solidarity. At the same time, there was a growing understanding that without shared responsibility for common European interests, it was impossible to guarantee energy security within the EU.

The European Commission systematically set tasks before the EU states in the energy field, which had to be solved on the basis of the principle of solidarity. A series of EU regulations (Security of Supply (SOS) Regulation, Enhancing Solidarity (ES) Regulation, Gas Demand Reduction (GDR) Regulation, etc.) were aimed at helping, in the spirit of solidarity, the states that suffered the most from the growing energy security challenges. Nevertheless, the implementation of the provisions of these regulations was accompanied by a set of problems. At the level of public discourse, ideas about solidarity were mainly supported by the governments of the EU states, but in practice specific initiatives taken by the EU institutions “divide the Member States into opposing camps instead of building a sense of the European energy community” (Tomaszewski, 2018, p. 5). For example, this concerned investments in the gas sector (such as Nord Stream I, Nord Stream II), and the position on the choice of countries supplying energy raw materials to the EU (primarily Russia). Different views regarding specific issues of the functioning of the energy sphere complicated the interaction of the member states in the spirit of energy solidarity. Polish researcher K. Tomaszewski believes that “the energy problem becomes another reason for the weakening of European unity” (Tomaszewski, 2018, p. 5).

When Russia annexed Crimea and started a war against Ukraine, the EU states confirmed their European Network of Transmission System Operators for Gas (ENTSO-G) presented a situational scenario (Lebois, 2014) that modelled the likely termination of Russian gas supplies and the actions of EU governments in the winter of 2014-2015. In this scenario, the role of cooperation of the EU states was decisive.

Under the conditions of new security challenges in the EU, institutional reforms were initiated. In particular, the position of EU Commissioner for Energy and Climate Action, and the position of the Vice-President in charge of Energy Union were introduced to the European Commission. In 2015, the Energy Union was founded to, first of all, create a single energy market. Until now, the national separation of energy markets led not only to high energy prices, but also to a high degree of dependence on suppliers, especially Russia. When the Energy Union was created, the main tasks were the diversification of energy suppliers, and the connection of national gas transportation systems, which would allow the transfer of energy resources within the single market. It should be noted that in 2015, when the Energy Union was created, there was no question of joint gas procurement; this issue was actualized in 2022 against the background of full-scale Russian aggression against Ukraine.

In 2021, the Court of Justice of the EU in the case C-848/19 P – Germany v Poland, which concerned the gas market, established that energy solidarity is a legally binding principle of EU energy legislation. In the decision regarding the case of the OPAL gas pipeline at the request of Poland, the EU Court defined the principle of energy solidarity, but did not define its clear characteristics. Before this court decision, there was an extremely limited understanding of solidarity as a legal norm in EU energy legislation. The decision of the EU Court changed the interpretation of energy solidarity from a political concept (“the spirit of solidarity”) to a legally binding principle. As a result, the EU Court decided that energy solidarity should not be limited to emergency situations. The scope of the principle of energy solidarity was also expanded. It went beyond only energy security and covered other objectives established by Article 194 of the Treaty on the Functioning of the European Union. These included ensuring the functioning of the energy market, promotion of energy efficiency and energy saving, development of new and renewable forms of energy, interconnection of energy networks, etc.

The year following the decision in the OPAL case was characterized by significant challenges for the stability of the energy sector functioning. Problems in the supply of energy sources, caused by the Russian invasion of Ukraine, resulted in a sharp increase in energy prices, and thus destabilized energy security (Osička & Černoch, 2022). This crisis entailed the highest inflation rate in decades, a cost of living crisis, macroeconomic instability, etc. As a response, in a very short period, the EU adopted several legal instruments to mitigate the energy crisis. These extraordinary instruments rely heavily on the idea of solidarity

and emphasize its role in the EU's reaction to energy security threats. As the Executive Director of the International Energy Agency Dr. Fatih Birol rightly noted, "Unity and solidarity need to be the hallmarks of our response to today's crisis" (International Energy Agency, 2022, p. 3).

Due to the full-scale Russian aggression against Ukraine and Russia's weaponization of fossil fuels, the prices of energy resources in the EU countries increased sharply, raising concerns about the sustainability of European households and economies (Osička & Černoch, 2022). In short order, the EU adopted a political strategy to address the energy crisis and several energy-related legal instruments to provide member states with a coordinated toolkit to minimize the adverse effects of the war on the energy sector and the economy (Huhta & Reins, 2023, p. 782). This refers to the REPowerEU Plan (European Commission, 2022), the development of a new strategy for an EU external energy engagement, the launch of the European Hydrogen Bank, the adoption of new approaches to energy efficiency (Directive (EU) 2023/1791), the launch of the AggregateEU platform for joint purchases of energy resources, etc. The implementation of these and other initiatives in the energy sector requires the solidarity of EU member states. However, it is currently impossible to state a sufficient level of solidarity among the EU member states in the implementation of a common energy policy, even given the existing numerous threats and challenges.

Problems of practical implementation of the principle of energy solidarity in the EU

Differences in the national energy policies of the member states influence the effectiveness of the implementation of EU energy policy tasks. The European Commission has frequently highlighted the problems of practical implementation of the common energy policy due to the inconsistency and sometimes incompatibility of the national energy policies implemented by the EU member states. Not all EU states demonstrated and still demonstrate interest in implementing a common energy policy and understanding of its importance. Clearly, the decision-making process on a wide range of energy policy issues required a gradual shift of decision-making from the national to the supranational level.

EU states often approach energy policy with a focus on national, rather than pan-European, interests. This is especially evident in the issues of the reduction of dependence on external energy sources, the pace of development of green energy, the introduction of energy-saving technologies, the choice of energy-importing countries, the attitude towards nuclear energy, etc. Formally, the governments of the EU countries declare their support for the goals of sustainable development in the energy sector, approve the EU policy on greening the energy, but in practice, for various reasons, they are not sufficiently active in the implementation of various EU initiatives.

Some EU states (Malta, Poland, Romania, Hungary, the Czech Republic, etc.) pursue policies that today do not contribute to increasing the share of renewable energy in the energy balance (Bersalli, Menanteau & El-Methni, 2020; Fleck & Annatolitis, 2023; Márquez-Sobrinho, Díaz-Cuevas, Pérez-Pérez & Gálvez-Ruiz, 2023; Tavares, 2023). For instance, the Polish government postponed a plan to reduce dependence on coal due to pressure from miners' unions. Hungary unsatisfactorily fulfils EU programs for the reconstruction of buildings to improve energy efficiency, and has intensified coal mining, etc. It is evident that all EU states should accelerate the implementation of policies to phase out fossil fuels, stop the expansion of fossil fuel infrastructure, establish support schemes for renewable energy sources, motivate the population to energy-saving behaviour, etc.

The governments of the EU member states develop their strategies for responding to energy security challenges. Here are several arguments: (1) at the beginning of the current energy crisis in the EU, certain EU states (Austria, Germany, Italy, etc.) resumed the operation of mothballed coal and fuel oil power plants. The EU institutions did not support such a policy of national governments and called on the governments of EU countries to focus on massive investments in renewable energy sources; (2) Austria started importing gas from Norway, but simultaneously fulfils long-term (until 2040) gas supply contracts with Russia; (3) Poland issued an environmental permit for the construction of the first nuclear power plant (from 2026); (4) Hungary not only did not support the tightening of restrictions against the Russian oil and gas sector and nuclear energy, but also concluded (April 2023) an agreement with Russia to increase gas supplies, renewed the agreement on the financing and construction of two new reactors of the Paks Nuclear Power Plant. Such examples prove that, despite the common European energy strategy, EU member states actively ensure the implementation of national energy policy, which in some places is not synchronized with the EU energy strategy.

EU member states find it difficult to agree on new rules that determine the specifics of reforming the electricity market. An example of contradictions is the continuation of subsidies for coal-fired power plants,

the operation of which is important for many EU states. For example, Poland receives about 70% of its electricity from coal and is interested in long-term subsidization of such power plants. Meanwhile, Austria, Belgium, Luxembourg and others have opposed the extension of subsidies for coal-fired power plants, as they are contrary to the EU's climate change goals.

There are significant differences in the measures taken by EU countries to reduce demand for gas and electricity. By the end of 2023, only 14 of the 27 EU member states (Poland, Lithuania, Cyprus, the Netherlands, etc.) had introduced mandatory measures to reduce gas and electricity consumption. The most stringent economic measures were implemented in countries that imported large volumes of Russian gas (Italy, Germany). Luxembourg, Austria, Malta, the Nordic countries and most of the Eastern European countries have relatively weak measures to reduce energy consumption. Bulgaria, Romania and Latvia had not introduced national measures to reduce gas and electricity consumption by the end of 2023. Portugal is the only EU country that transparently reports on the implementation and progress in the field of energy saving, has established a monitoring committee, and analyses particular measures.

Nuclear energy has been one of the pillars of European integration since the signing of the agreement on the establishment of the European Atomic Energy Community in 1957. But nowadays it is the most controversial topic of the energy transition in Europe. France and Germany lead competitive blocs on the future of nuclear energy:

- *the first block* is the states of the Nuclear Alliance under the informal leadership of France, which today receives about 70% of the produced energy from nuclear power plants. Nuclear energy is supported by Belgium, Bulgaria, Croatia, the Czech Republic, Finland, the Netherlands, Romania, Slovakia, Slovenia, Sweden, Hungary, Estonia, Italy and Poland. These EU states, as well as Great Britain, in 2023 began working on a roadmap for the development of an integrated European nuclear industry. Nowadays, 12 of the 27 EU states have nuclear power plants;

- *the second block* is the states that are opponents or sceptics of nuclear energy (primarily – Germany, Austria, Denmark, Portugal). They do not deny that nuclear power produces less carbon than fossil fuels. However, their arguments against this type of energy include security risks, for example, becoming dependent on external suppliers of nuclear fuel and uranium (primarily Russia).

Today, the main line of debate between EU states is whether nuclear energy should be considered clean, or whether projects using nuclear energy should be given a similar status to those based on renewable energy sources. A political struggle has arisen over the form of EU rules related to the implementation of the European Green Deal. The Alliance of pro-nuclear countries has so far achieved some successes, such as the inclusion of nuclear power in the taxonomy, a list of technologies that investors can market as helping to combat climate change. These states are actively lobbying for the EU to recognize the contribution of low-carbon nuclear power (particularly for hydrogen production) as a clean fuel. On July 6, 2022, the European Parliament, despite the protests of environmental organizations, supported the decision to recognize nuclear energy investments as consistent with the concept of sustainable development, subject to certain conditions. Even the difficulty of making this decision (328 in favour, 278 against, 33 MEPs abstained out of 639 present) indicates disagreements between the positions of EU states.

It is evident that there is an urgent need for the EU member states to conclude an agreement on the EU nuclear energy policy. It could consolidate the right of each state to freely choose its own energy balance. In the coming years, this topic is likely to bring intensity to the dialogue between the EU member states.

In 2017, Regulation (EU) 2017/1938 was adopted as part of the reform of gas supply security regulation in EU countries (Regulation (EU) 2017/1938, 2017). In the event of an extreme gas shortage, solidarity supplies should be implemented as an exceptional measure to ensure gas supply to households, district heating systems and basic social service institutions in the affected EU state. All member states whose gas networks are connected directly or indirectly through third countries must conclude bilateral agreements on joint gas supplies. Nevertheless, few EU states have signed such agreements with each other. Germany is currently the most active in seeking solidarity agreements: an agreement was signed with Denmark in 2020, and with Austria in 2021. Agreements were also concluded between Estonia and Latvia, Lithuania and Latvia, Italy and Slovenia, Finland and Estonia. Also in 2022, France concluded an agreement with Germany to supply gas in exchange for electricity, because the production of nuclear energy in France decreased due to prolonged heat and drought.

On July 12, 2022, Germany and the Czech Republic signed a declaration (Joint statement regarding energy security, 2022) on energy security and thus opened the prospect of signing a bilateral agreement on solidarity measures to ensure the security of gas supply. Still, such an agreement has not yet been signed.

Instead, the Czech Republic, together with Austria, Slovakia, Hungary and Poland, filed a protest with the European Commission against the fee for gas transit from Germany. According to these Central European states, Germany's introduction of unilateral fees for gas transit (a tax on cross-border agreements) does not comply with EU solidarity agreements. These agreements assume that energy security is a common interest. From the point of view of these states, unilateral fees imposed by Germany undermine market integration and cross-border flows.

Another example of problems in the field of energy solidarity is the special position of Hungary. On August 1, 2022, V. Orbán's government introduced a state of emergency in the energy sector. It was forbidden to export gas to other EU member states in order to support them in conditions of shortage. Thus, the Hungarian government placed the energy security of its state above the energy security of the community of European states. This position of Hungary violated the principle of solidarity. It contradicts the EU's position that gas solidarity between member states should be backed by solidarity agreements. So far, Hungary has not concluded any agreement on the joint supply of gas with the EU countries. The Hungarian case is notable for its radicalism due to the challenges to European energy security.

In addition to solidarity agreements regarding the supply of gas by the EU states, solidarity agreements regarding electricity support are concluded. There is broad consensus among EU states that a fully interconnected European energy network is a prerequisite for ensuring secure, affordable and sustainable energy throughout the EU. Here are some examples of EU countries' solidarity regarding electricity:

- six EU states (Germany, Austria, the Czech Republic, Hungary, Poland and Slovakia) signed a Memorandum of Understanding on June 27, 2022, in accordance with Regulation (EU) 2019/941 on risk-preparedness in the electricity sector (Regulation (EU) 2019/941, 2019). In the event of a crisis in the electricity sector, the signatory states will resort to cross-border use of reserve capacities, provide support with electrical equipment, etc. There is no provision for free humanitarian aid, as the parties must reach a financial agreement on the rules of fair and adequate compensation;

- a Memorandum of Understanding (European Commission, 2023) was signed between the European Commission, France, Portugal and Spain on December 19, 2023, regarding cross-border energy interconnections in South-Western Europe. It is a tool for placing more renewable energy sources in the EU energy system and better integrating the Iberian Peninsula into the EU energy market as a whole.

Despite the existence of examples of effective cooperation between states under the conditions of the energy crisis, the implementation of the principle of energy solidarity appears to be a difficult process these days. As long as the coverage of bilateral agreements on the solidarity supply of energy resources is insufficient and there is no additional European legislation to fill this gap, the energy solidarity, especially in relation to gas, will face problems of both political nature and practical implementation.

Conclusions

Although the principle of solidarity has been positioned as a fundamental principle of the EU since the 1950s, in times of crisis it has repeatedly revealed weakness, uncertainty of content and scope, and even some depreciation by individual EU member states. Despite being the historical core of the EU, solidarity remains a rather vague concept. For a long time, solidarity was primarily a political principle, and not a legally established obligation of the EU member states. This reduced the overall sustainability of the EU and its ability to effectively and promptly respond to new challenges and risks.

In the context of current security challenges (Khoma & Nikolaieva, 2023a; Khoma & Nikolaieva, 2023b), the solidarity of the EU states is conditioned by the need to guarantee energy security, reduce dependence on energy-exporting states, prevent unhealthy competition for energy resources, continue the implementation of climate policy, etc. Energy solidarity of the EU provides for the coordination of those tools that will be used by energy market participants to meet energy needs and guarantee energy security. Energy solidarity now goes beyond the mutual assistance of states in cases of critical disruption of energy supply. The EU is taking steps to extend energy solidarity to deeper energy cooperation, which is based on trust, common interests, as well as legal establishment of solidarity norms among EU member states.

Despite the differences and divergent interests of the EU states in the energy sphere, the principle of solidarity is being implemented in the context of the EU's response to the energy crisis. The EU institutions used the principle of solidarity as a basis for legislative measures aimed at solving the acute energy crisis. This has consequences for EU legislation and the functioning of the internal market. Meanwhile, there is no unity in the content of the concept of "solidarity" when it comes to the energy sphere. The scope of application of this principle is also constantly changing (expanding).

The complexity of implementing the principle of solidarity in the field of energy is caused by the fact that, despite the initiatives of the EU institutions, many EU states maintain rather different national approaches to energy resources. EU countries have diverse approaches to solving/mitigating problems that arise in the energy sector. Their different positions are noticeable regarding: the introduction of sanctions in the energy sector and the attitude towards energy cooperation with Russia as an aggressor state; diversification of energy sources and sources of supply of imported energy; interest in the functioning of a fully integrated EU internal energy market with adequate infrastructure and without barriers (technical, regulatory); involvement in the financing of research and innovation for the energy transition; attitude to nuclear energy, development of renewable energy sources, etc.

Although the solidarity of the EU states in the energy sphere is defined as a guideline for action, it would be hasty to conclude that it has already been accepted by everyone as an unconditional guideline for action. The situation in the EU energy (and not only) sector indicates that it is often not the principle of solidarity for the sake of the European future that prevails, but the national interests of the EU member states. It is obvious that the failure of solidarity will lead to a decrease in the sustainability of the EU, will have a destructive effect on the economies of many EU states, and given the interdependence of EU member states, losses will be caused to each state.

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