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Table of Contents

Introduction.....	5
Theoretical Framework.....	8
Understanding Energy Security	8
Intergovernmentalist Theory	12
Literature Review.....	14
The European Union’s Security of Supply	14
Dynamics between the European Union and Candidate States.....	16
Multilateral Institutionalism in Southeastern Europe.....	18
Positioning of Energy Security in the Republic of Serbia	20
Methodology.....	23
Research Design.....	23
Data Collection and Presentation	25
Limitations	26
The Energy Security Profile of the Republic of Serbia	28
Research Findings and Analysis	35
Foreign Interference in the Serbian Oil and Gas Sector.....	35
The Role of Coal and Greenhouse Gas Emissions.....	43
Transition to the Clean Energy Production	49
European Energy Crisis and the Way Forward	57
Discussion	62
Conclusion	71
References.....	74
Mentioned Legislation	100

List of Abbreviations

AERS – Energy Agency of the Republic of Serbia

CBAM – Carbon Border Adjustment Mechanism

CEE – Central and Eastern Europe

EBRD – European Bank for Reconstruction and Development

EC – European Commission

EIB – European Investment Bank

EnC – Energy Community

EPS – Elektroprivreda Srbije

EU – European Union

EU ETS – European Union Emissions Trading Scheme

FGD – flue gas desulphurisation

GHG – greenhouse gas

IBS – Bulgaria-Serbia interconnector

INECP – Integrated National Energy and Climate Plan

IPA – Instrument for Pre-Accession

ISO – independent system operator

MoME – Ministry of Mining and Energy

NERP – National Emissions Reduction Plan

NIS – Naftna Industrija Srbije

NREAP – National Renewable Action Plan

NREAP – National Renewable Energy Action Plan of the Republic of Serbia

RES – renewable energy sources

SHPP – small hydro power plant

SOS – security of supply

TEP – Third Energy Package

UGS – underground gas storage

WBIF – Western Balkans Investment Framework

Introduction

Energy is a vital feature of human activity. The surge in resource consumption, as a result of population growth and technological advancements, has positioned the preservation of energy security as a fundamental pillar of any modern society. Oil shocks during the 1970s in the Western world and natural gas cut-offs in Europe in 2006 and 2009 caused stagnations in economic and industrial growth, further exemplifying the volatile and unpredictable nature of the energy markets. Consequently, the probability of severe ramifications stemming from an unstable energy supply ranks energy security exponentially high within the realm of national politics of every country across the world.

The European continent is a resource-deficient territory which constitutes a series of challenges to its security of supply. The situation aggravates its reliance on hydrocarbons and growing dependence on unstable imports from abroad. The foundations of the European Union (EU) as a supranational organisation can be traced back to the European Coal and Steel Community which attempted to alleviate some of the risks to the European energy security through the establishment of the Pan-European market. However, due to the diverse set of circumstances within the energy sectors of its Member States, the EU's efforts to evolve further past the internal energy market and create a common energy policy were largely unsuccessful.

The question of preserving energy security became even more pertinent in political debates following the Russian invasion of Ukraine in February 2022. The EU, which historically relied on Russian oil and gas imports, was now seeking alternative supplies. Albeit the principle of supplier diversification was on the EU agenda well before the recent changes in the European security landscape, the Ukrainian war heightened the sense of urgency in this regard. The organisation was quick to react and impose sanctions against Russia in

order to obstruct further efforts by Kremlin to destabilise Ukraine and showcase European solidarity. The Republic of Serbia remains the only country in Europe – aside from Belarus – which did not introduce sanctions against the Russian Federation (Associated Press, 2023).

Given the exacerbation of the energy crisis following an onset of the invasion, EU officials started urging the country's authorities to make a choice. Vladimir Bilčík, a Slovak member of the European Parliament, noted that Serbia cannot continue “sitting on several chairs” (FoNet, 2023). The country's multi-vector foreign policy – as inherited from Yugoslavia – allowed this Western Balkans state to play a “balancing act” between the East and the West (Ponomareva, 2020). However, as the EU is focusing on cutting bilateral ties and isolating Moscow on the international scene, Serbia is placed in a difficult position. As an EU Candidate State since 2012, the country is expected to harmonise its policy with Brussels and undergo political, economic, and social integration into the Union. This includes adherence to energy provisions and meeting the EU-set energy targets.

Considering the rising importance of strengthening the security of supply and the call for cooperation from the EU, it is critical to pay attention to national energy security levels across the continent. Previous research focuses on the energy security performance of the European Union and the measures implemented to mitigate the risk from the EU perspective, while the non-EU regions in Europe are often overlooked. This study will seek to investigate the Serbian course of action within the energy sector and its attempts to strengthen national energy security. With the country being at a political crossroads, the paper will evaluate energy security measures in the context of Serbia's obligations under the EU. It is essential to understand how does Serbia navigate between the commitments made towards the organisation and the preservation of its energy security, as well as whether the country possesses the capacities and the incentive to align its energy strategy with the Union's. Thereby, this

thesis will seek to answer the following questions: *How does Serbia respond to the developments in national and international energy sectors in the context of European integrations? How is the performance of energy security in the Republic of Serbia affected by the EU's energy strategy?* In order to adequately assess the trends and patterns in the Serbian energy sector and the manner in which they correlate with the EU energy-related obligations, the paper will cover the time period between 2006 and 2023, taking the accession to the Energy Community for South East Europe (ECSEE, EnC for short) as a starting point.

To answer the research question and meet the study objectives, this thesis will consist of six chapters. The paper begins with theoretical framework which discusses the key theories underpinning the dissertation: energy security and intergovernmentalism. The second chapter, which is a literature review, engages with the existing academic corpus on the characteristics of energy security in the European Union, the dynamics between the EU and Candidate States for the purpose of integration, region-specific mechanisms for facilitated *acquis* transpositioning within the energy sector, and concludes with Serbia's perspectives on energy security in reference to its relationship with the EU. It is followed by the methodology section which outlines the research design and provides a rationale for the selected research method and data collection technique. The fourth chapter provides a brief overview of the status of energy security in the Republic of Serbia. The fifth chapter is an empirical analysis which is divided into four main subsections, discussing: Russian interference in Serbian oil and gas sectors, the role of coal for energy security, integration of renewables, and it finishes with an assessment of Serbia's energy strategy during the European energy crisis. The final chapter discusses the results of empirical analysis and links the study to existing theory and literature and provides concluding remarks.

Theoretical Framework

Understanding Energy Security

Energy security has been a widely contested topic in academic circles due to its ambiguous and elusive nature. Bohi and Toman (1996) attempt to define it through an economic lens, stating that energy insecurity represents an erosion of economic welfare which occurs as a consequence of energy price fluctuations and changes in resource availability. The same sentiment is shared by the Asia Pacific Energy Research Centre which expanded the definition further by formulating the 4As framework (availability, affordability, accessibility, and acceptability) that outlines the factors impacting the security of supply (Asia Pacific Energy Research Centre, 2007). Alternatively, Parag (2014) emphasises the role of end-users and takes a socio-technological approach, redefining energy security as “security of energy services”. While there is no universally accepted qualitative definition, there are numerous attempts at understanding what energy security actually entails. Sovacool compiled a list of 45 prevalent definitions of energy security, stating that the concept became incoherent but convenient for policymakers to justify their decisions on energy grounds (Sovacool, 2011). In sum, the scholarship persistently characterises energy security as a complex and multidimensional notion whose understanding depends on the context and the stakeholders involved.

Yergin (2006) reinforces this idea and further clarifies that energy security will be conveyed differently given the resource conditions of each individual state. It follows that energy-importing and energy-exporting countries will have disparate perceptions of energy security. His argument that energy security describes affordability and availability of adequate supplies is predominantly applicable to countries which are energy deficient and reliant on

imports. This is referred to as security of supply (SOS) and represents a default understanding of energy security, considering that energy security has historically and traditionally been associated with SOS. For instance, when addressing the security of the energy supply of the European Union, Chevalier (2006) described energy security as a reliable supply, transportation, and distribution of energy at a reasonable price over a continuous period of time. Similarly, supply-side-centred energy security can also be understood as a “condition in which a nation perceives a high probability that it will have adequate energy supplies [...] at affordable prices”, taking into account that affordability indicates the absence of disruptions in economic activities (Deese, 1979). However, the understanding of energy security cannot be concentrated on energy-importing states. Following the oil shocks in the 1970s, it became necessary to look past the SOS dimension. This resulted in the acknowledgement that, for energy-exporting states, energy security is linked to the security of demand. Thus, to be energy-secure, resource-abundant countries will aim for uninterrupted access to global energy markets. While importing states seek to maintain a stable energy supply at an affordable price, countries that are exporters aim to sell their energy surplus and establish a consistent flow of income from energy trading (Aydin & Azhgaliyeva, 2019). The security of demand cannot be achieved if the capital investment in production is not recovered and the energy industry fails to account for a significant amount of the country’s gross domestic product (GDP). Thus, the stability of the energy sector is dependent on the quantity and quality of production and export (Yoon, 2022). There is an evident interplay between energy-deficient and energy-abundant countries where exporting state is capable of utilising energy as a foreign policy tool and the importing state has the ability to diversify its supply from abroad. Thereby, it can be observed that energy security of either category is inherently linked to geopolitics and bilateral or multilateral relations.

The third category involved in energy trade that emerged in contemporary energy security literature is the so-called transit states. Having

control over pipeline security, they represent a vital connection between exporters and importers, producers and consumers. Intermediaries are simultaneously enjoying a position as a geopolitical priority of both sides of the energy market while being able to aim for more independence and economic autonomy (Milina, 2007). This configuration on the global energy market allows third-party states to realise a significant economic and political profit from the energy sector in terms of gaining access to hydrocarbons for domestic demands, charging considerable transit fees, attracting foreign investment, as well as gaining political leverage over oil and gas delivery (Bahgat, 2006).

It is evident that the manner in which countries perceive and define energy security is heavily influenced by their unique energy circumstances and their perception of the potential consequences posed by disruptions in energy supply. Energy politics is placed on the nexus between security and economy and it is recently receiving an environmental dimension as well (Matlary, 1997). However, what seems common across all its definitions and viewpoints is the aim to achieve a state of freedom from threats which correlates with the basic understanding of security. Chester argues that the fundamental characteristic of energy security is risk management, whether the state is aiming to mitigate the risks associated with unsustainable supply or insufficient capacities to meet the demand (2010). If security is the “absence of threats to acquired values” (Wolfers, 1952), then energy security would constitute low exposure to potential risks and the resilience of energy systems. Cherp and Jewell (2014) suggest a classification of energy systems into sectoral (primary resources, infrastructure, end-consumers) and geographical (national, regional, global). Thus, the vulnerabilities may arise from a wide range of factors, from political to technological. A similar notion is explored by Kleber (2009) who argues that energy security is the capability to evade the negative consequences of natural or man-made disturbances to energy supply, distribution systems, and end-user devices. His account is based on 5 characteristics which constitute the state of

energy security: surety, survivability, supply, sufficiency, and sustainability (Kleber, 2009).

A multitude of risk analysis frameworks were developed to address what constitutes “security” in the concept of energy security. The typology formulated by Checchi et al. (2009), principally concentrating on the SOS, identifies five categories of risks to the energy sector: geological (availability of resources and probability of exhaustion of hydrocarbon reserves), technical (deficiencies and shortages of the energy system infrastructure), economic (severity of price fluctuations), geopolitical (possibility of political instability interfering with levels of supply), and environmental (degree of pollution and greenhouse gas emissions). A similar framework was presented by Chevalier, who introduces four broad groups of risks, labelling them as “uncertainties”. The identified categories include environmental, geopolitical, and regulatory risks (2006). The fourth group describes unexpected uncertainties (Chevalier, 2006) and it derives from the United States Energy Association report on national energy security, presenting three kinds of energy threats: attacks upon energy systems, attacks by an energy system, and attacks through an energy system (United States Energy Association, 2002). Thus, while frameworks such as 4As gained traction within energy security and are often cited in the literature, they are more descriptive rather than analytical. The explanations of the concept of energy security they provide are broad and subject to interpretation. Further, the specifications regarding the referent objects of protection or threats to energy security are severely lacking (Cherp & Jewell, 2014). While it is important to create a comprehensive and non-exclusionary definition of energy security to capture the complexity of the term, the practice obstructs the approach to the concept of energy security as a security phenomenon. Adhering to the observation that the term can only be defined on a case-to-case basis, the meaning and scope of energy security can be determined by answering the following three questions: “Security for whom?”, “Security for which values?”, and “Security from what threats?” (Cherp & Jewell, 2014). Given energy

security's multidimensional nature and the importance of risk mitigation in providing adequate protection from system disruptions, it follows that energy security and national security are intrinsically linked.

Intergovernmentalist Theory

Similar to the principal understanding of energy security, intergovernmentalism adopts a state-centric model of analysis. Formulated to challenge the dominant neo-functionalist approach, intergovernmentalists emphasise the role of the nation-state in European integration processes. Hoffmann introduces the theory stating that national governments shape the structure and functioning of the EU institutions as the key international actors (1964). The rate and effectiveness of the integration procedure are thereby determined by the national interests of each individual member state. The more vital those interests are to national sovereignty, the less states are likely to transfer those competencies to the supranational level. This is reflected in Hoffmann's distinction between the so-called "low politics" and "high politics" where low politics comprise all policy areas that do not overly diminish the autonomy of the nation-state and high politics represent fundamental capacities of the state. From this perspective, low politics would include social and market policies while high politics would describe matters of foreign policy or security.

The negotiation processes concerning common European foreign policy from the 1970s illustrate the importance of national interests in the context of EU integrations and the insistence of some states – namely the United Kingdom and France – to maintain a large degree of control in the coordination of foreign strategy (Taylor, 1982). Understanding the multidimensional nature of energy security, and the persistent security element in its definition, it can be concluded that energy concerns have transformed into the high politics concern. It became

commonplace to identify energy security as a notable feature of national interest which is evident in the EU's inability to formulate a common energy policy. It is also not surprising that certain aspects of energy security, such as the regulations of the internal market, were able to be transferred to the supranational level but the external dimension remains a competency of the Member States (Maltby, 2013). However, the theoretical debate fails to elucidate whether the same approach can be applicable to the political behaviour of EU candidate states. It is also challenged by the events in the EU politics that followed, such as the formation of the European Common Foreign and Security Policy.

Barring the impact of policy importance for EU integration, Schimmelfennig further argues that the inclination for regional integration depends on the power of the state in question (2018). The author argues that smaller and less powerful countries would be more likely to engage in regional integration for the purpose of alliance formation against external threats, compared to their larger counterparts. Considering the assumption that the integration is relative to the size and field of interest of national governments, it brings into question where energy security is positioned in this debate. While membership in the EU may be perceived as an opportunity for further politico-economic advancements in the so-called developing countries, energy security predominantly remains an issue linked to national security. It is expected that surrendering control over matters crucial for national autonomy will be perceived unfavourably among government officials.

Here Moravcsik contributes to the theoretical debate by asserting that the pooling of sovereignty actually safeguards national interests instead of compromising them. Building on the assumption that states are rational and unitary actors, the author explains that international cooperation is a product of three levels of negotiations: national preference formation, interstate bargaining, and institutional choice (Moravcsik, 1998). While Moravcsik does

not entirely discredit Hoffmann's presumption that vital national interests are fashioned in accordance with historical, political, and cultural concerns, he departs from the traditional understanding of intergovernmentalism and adopts a more socio-economic approach. Devising the concept of liberal intergovernmentalism, the author emphasises the role of domestic societal groups and their interaction in the formulation of national preferences. This reinforces the idea that supranational institutions – namely the institutions of the European Union – are a result of the convergence of such national preferences and subsequent bargaining between the states (Rosamond, 2000). Following the postulation that governments are rational actors which make informed and calculated decisions, it is implied that states will pursue regional integrations under the condition that membership within one such supranational organisation will maximise the state's utilities. Thereby, according to liberal intergovernmentalism, the international institutions will be designed to promote their common preferences, instead of putting them at risk.

Literature Review

The European Union's Security of Supply

Tracing its roots to the founding triad – European Coal and Steel Community, European Atomic Agency, and European Economic Community – it is evident that energy matters have always been a centrepiece of European Union politics. While energy was initially perceived as an instrument to enhance solidarity and build cooperation between European states, the organisation was unsuccessful in developing comprehensive and effective measures on the EU level. This is a consequence of the Member State's reluctance to transfer a part of their sovereignty to a supranational level that is deemed of great strategic

importance to their national interests (Tagliapietra, 2014). Moreover, differences in production and consumption levels, as well as import trends, pose a challenge to making collective decisions in the energy sector (Stefanova, 2012). Understanding energy security as a state-centric affair, it can be concluded that the EU's strategy for energy threat mitigation does not perfectly nor accurately reflect the interests and capacities of all Member States. Firstly, the energy outlook is not the same across all EU states. Reliance on Russian gas has been identified as one of the main threats to the organisation's energy security but the concern is primarily acute among the countries of Central and Eastern Europe given their geographical and historical positioning which makes them susceptible to Russian intervention (Ostrowski, 2022). While entering the alliance represented an opportunity to reduce vulnerabilities of the CEE energy systems, it also posed a serious challenge taking into account regional energy infrastructure and resource abundance. Second, the Union itself adopts conflicting energy politics, sending an unclear message. This is exemplified in the case of Nord Stream and Nabucco pipelines which have contradictory aims (increasing reliance on Russian supplies vs. diversification of supply away from Russia) (Stefanova, 2012). While the Member States have committed to the EU-level binding targets for the use of renewables and the reduction of carbon emissions, energy security still remains under notable national control. Nonetheless, the organisation managed to identify several key areas that are considered priorities for the European energy sector, such as: establishing an internal market for electricity and gas, promoting interstate solidarity, creating a more sustainable and diverse energy mix, encouraging action to address climate change, developing a strategic energy technology plan, and formulating a comprehensible external energy programme (Bahgat, 2006).

The EU countries experience low energy production capacities due to deficient hydrocarbon reserves, a considerable gap between domestic supply and demand, dependency on imports from a small number of suppliers, and high levels of pollution owing to the use of fossil fuels (Elbassoussy, 2019). The

energy demands of the international organisation are rapidly increasing while the supply is dominated by fossil fuels and unstable exporters. Hence, the governance and safety of external energy sectors, both the exporting and transit states, are of crucial importance for the organisation's security of supply. Due to the EU's energy-deficient character, the supranational institution is unable to weaponise its resources for foreign policy purposes. Its leverage within the energy sector is sourced in enlargement policy and accession procedures instead. With Southeastern Europe being located at the energy crossroads, it is of utmost importance to the Union to ensure its compliance with the EU energy objectives.

Dynamics between the European Union and Candidate States

One major strategy the EU relies on concerning the promotion of its energy norms and interests is conditionality. Traditionally, the approach was exclusively political in nature and aimed at the adoption of liberal democracy, the rule of law, and human rights standards by third countries (Schimmelfennig, Engert, & Knobel, 2005). The method outlines non-negotiable requirements which need to be met by the non-EU states in order to obtain offered benefits, usually consisting of financial aid or membership within the EU. Stokke (1995) defines conditionality as "the use of pressure, by the donor, in terms of threatening to terminate aid, or actually terminating or reducing it, if conditions are not met by the recipient". Whereas the author's delineation aligns more with the idea of negative conditionality (reduction or cessation of aid due to a failure to implement necessary reforms), positive conditionality characterises the expansion of benefits as an encouragement once the situation improves (Waller, 1995). Put simply, conditionality is a form of reward provided to support political, economic, or social reforms which are promoted by the European Union. The approach is a prominent feature of the European Union's foreign

politics and predominantly follows the strategy of positive reinforcement. For candidate and aspirant states, it aims to ensure their suitability for EU membership through political and economic transitioning and alignment with EU norms and values (Szarek-Mason, 2010). The approach is inherently linked to the EU's enlargement politics given that the prospect of membership in the organisation (a form of reward) is dependent on the effectiveness of European integrations (required reforms) of the aspirant states. This consists of meeting the so-called Copenhagen Criteria and aligning their national legislation with the Union's body of law, including the policies concerning the energy sector. In the case of candidates in Southeastern Europe, the special Stabilisation and Accession Process was developed to address region-specific circumstances. Other, more detailed, demands can be made as an additional condition for accession. This is illustrated in the case of decommissioning of the unsafe nuclear reactors in Central and Eastern European states following the collapse of the Soviet Union. Initially, financial aid was offered in exchange for the closure of nuclear plants but it was the prospect of membership in the EU that proved to be an example of successful conditionality (van Oudenaren, 2001).

European Eastern Enlargement amplified some concerns about the EU's energy sector, such as the security of external supply (Oklešťková & Karásek, 2008). Soaring oil prices in the early 2000s and gas supply disruptions during the Russo-Ukrainian gas disputes prompted the European Union to further its intervention in foreign energy sectors. The supranational organisation decided to focus its efforts on the promotion of common market regulations in both exporting and transit states, aiming to manage the consequences of the EU's energy dependency on an external level (Herranz-Surrallés, 2016). Abbasov (2014) argues that the spillover of Europeanisation was an important measure in order to avoid non-market interventions and supply disruptions concerning the flow of gas to the Union. It became necessary to incorporate the transit countries into a common regulatory framework which would strengthen the Union's security of supply. Thus, the EU focused on the exportation of the

acquis communautaire to its immediate neighbourhood for the purpose of meeting its energy security objectives.

Multilateral Institutionalism in Southeastern Europe

The European Union penetrates external energy affairs through the extension of the regulatory state and the outreach of its international economic policy (Goldthau & Sitter, 2014). In the case of Southeastern Europe and the wider Eastern neighbourhood, this is largely accomplished through multilateral institutionalisation where the Energy Community of Southeastern Europe (ECSEE) serves as an instrument of the EU's externalisation in the energy sphere. It acts as an extension of the European single market and a liberalisation tool for the energy sectors in the region. EnC is arguably one of the most relevant steps taken towards strengthening the energy cooperation with strategic partners outside the EU borders and exporting the EU's *acquis* to the immediate neighbourhood. While the European Commission claims the aim of the organisation is not the extension of an entire *acquis* beyond the EU borders, the official records still demand the adaption of the common rules wherever possible (Lavenex, 2004). This includes restructuring of national energy sectors in the EU's immediate neighbourhood, particularly focusing on the implementation of the market economy's standards, modernisation of energy infrastructure and facilities, implementation of regulatory reforms, and advancements in the private sector (Lavenex, 2004). Being comprised of both the EU member states and non-EU countries in Southeastern and Eastern Europe, the international organisation aspires to the establishment of a stable Pan-European energy market for the purpose of ensuring the security of the energy supply. The agreement is mutually beneficial. The alliance represents an opportunity for the EU to access energy capacities outside its territory, primarily focusing on the Caspian Sea, North African, and the Middle Eastern gas reserves

(Dašić, 2014). It further promotes the diversification of European energy supplies, potentially lowering their reliance on Russian imports, and enables the supranational organisation to pursue alternative routes and sources of energy.

For the region, however, the benefit is illustrated in the mitigation of the risk of resource shortages and the facilitation of regional energy infrastructure investments (Jović-Lazić, 2014). Taking into account that the majority of the energy infrastructure was inherited from the Socialist Federal Republic of Yugoslavia and was subsequently destroyed during the conflicts in the 1990s, the mentioned investments are particularly important for strengthening fragile and aged energy systems (Simurdić, 2009). Further, it can be argued that the organisation acts as a peacebuilding instrument in the region. The EU anticipates that cooperation in the energy sector and the establishment of a liberal market will contribute towards the stability in the region in a similar manner European Coal and Steel Community was formed to prevent future conflicts by managing strategic resources under a common authority. Ensuring peace is principal considering that the Union's diversification of supply imports – whose urgency increased following the Russian invasion of Ukraine – is dependent on the functioning of the gas corridors in the region (Renner, 2009). Basing their findings on the evaluation of cooperation processes in cases of the declaration of Kosovo's independence in 2008 and the gas crisis in 2009, Göler and Kurze (2011) reaffirm that the Energy Community aided trust-building procedures and continuing cooperation in the region. Finally, under the condition of adequate compliance with the regulations prescribed by the EC, the candidate states are making a crucial step towards membership within the Union. Opening the negotiation process is an incentive for third countries to participate in multilateral institutional agreements such as the EnC. It is also a motivation for energy sector reforms and transposing of the *acquis* (Simurdić, 2009). Thus, the Energy Community Treaty represents a comprehensive pre-accession instrument, assisting its parties to align the energy regulations to the one of the EU.

Positioning of Energy Security in the Republic of Serbia

While the mechanisms for energy transition are operational, the progress of the current EU candidate states in Southeastern Europe is rather slow. This is due to the unique circumstances in the region which are particularly evident in areas such as democracy, economic development, and state capacity, which have been affected by the legacies of the violent break-up of Yugoslavia (Sedelmeier, 2014). The *acquis* has also significantly expanded since the EU inception as did the capacities that got transferred to the supranational level. Grabbe suggests that since no existing EU Member State is implementing more than 80 per cent of the EU regulations, it seems unfair to require acceding nations to adhere to 95 per cent of the same regulations (2002).

The information above raises a question of whether Serbia as a candidate country a) has its outlook on energy security aligned with EU visions and b) is capable, as well as inclined, to undergo energy sector reforms for the purpose of EU integrations. Reforming the energy sector in particular has been proven rather challenging, even to current EU members. For instance, none of the EU countries transposed the Third Energy Package by the set deadline and the incorporation of the EU directives into the national law was delayed by three years (Dutton, 2015). Developing states, such as Serbia, are likely to find the procedure substantially demanding and complex.

These inter-organisational challenges impacted the academic and political debates in the country, questioning the efficiency of the framework for non-EU energy sectors. Đurić and Jegeš (2011) state that Serbia's energy potential and energy independency – and thereby energy security – are deteriorating as a result of measures imposed by international organisations. These “conditional economic politics” that were directed towards Serbia are believed to have made the country's energy sector vulnerable and brought into

question its sovereignty. The position that Southeastern European states are under pressure by the Western actors is also shared by Perišić and Talović (2016) who, referring to the failed Nabucco project, clarified that the US and EU-backed energy politics are “unprofitable” and “uneconomical” while Russian pipeline diplomacy is labelled as a saviour of the Balkan states. The authors further claim that by capitulating to the EU demands, Serbia jeopardised its energy stability (Perišić & Talović, 2016). Such narratives indicate that Serbia is finding itself in a delicate situation between meeting the energy requirements for accession to the European Union and relying on other sources – particularly fossil fuels and imports from Russian Federation – for its energy security (Jović-Lazić, 2014). Simurdić states that while the case of the EU’s multilateral institutionalism has a notable impact on Serbia’s energy sector, the country’s individual policy-making concerning the security of supply is still heavily influenced by other foreign actors, namely the Russian Federation (2009). This is particularly pertinent concerning large infrastructural projects whose implementation is commonly subjected to external geopolitical and economic interests (Centre for the Study of Democracy, 2015). Piletić proceeded to discuss that the EU external energy strategy – particularly in the field of renewables – legitimised authoritarian practices in Serbia. The author illustrated this in the case of the Union’s investments in small hydro power plants (SHPP) where the allocation of subsidies and apathy of the authorities towards the contestation of the local population over SHPPs construction was a product of domestic corruption (2023). In a similar manner, although the EU supports the realisation of numerous energy projects, it is not uncommon for its results to be inadequate or even non-compliant with the EU objectives (Centre for the Study of Democracy, 2015). This is an indicator of greater structural problems which could lead to impediments in the implementation of the EU-aligned energy strategy. The observations conclude that the export of the EU *acquis* within the energy sector could prove to be a rather difficult task for Serbian energy security. For these reasons, it is important to question whether

the energy sector of the Republic of Serbia has the capacity to undergo the necessary reforms for integration without weakening its energy security and examine what are the prospects and challenges for the country's continued alignment with the EU energy policy. While the literature discusses the ramifications of specific infrastructural projects, few studies are concerned with the wider process of European integrations and the effect of energy restructurings on the state of energy security in the country. Thus, this study seeks to contribute to this knowledge gap by assessing the degree of alignment of Serbia's energy policy with the *acquis* and the impact of the implementation of the EU's strategy on the energy security performance in Serbia.

Methodology

This chapter provides an overview of the research design and the methods used for answering the research question and meeting the objectives of the study. It discusses the reasoning behind the selected methodology and traces the processes of data collection, as well as outlines the limitations of the research.

Research Design

The purpose of this study is to assess the effects of European integrations on the performance of energy security in the Republic of Serbia and evaluate Serbia's response to the developments in the EU's energy strategy. In order to answer the research question, a case study was selected as a method of analysis. Yin (2014) defines a case study as "an empirical inquiry that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident". Similar perception is held by Creswell (2007) who argues the method "explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audio-visual material, and documents and reports), and reports a case description and case-based themes". The possibility to conduct a rigorous investigation and generate in-depth results made the technique gain prominence within the field of international relations, including its academic subfields such as international security or strategic studies. Thereby, the case study method was selected for this research due to its holistic approach which would provide a comprehensive examination of complex security elements within the energy sector and facilitate

the analysis of the relationship between energy security and the EU integrations in the case of the Republic of Serbia. The reasons for choosing Serbia as a subject of the study are threefold. Firstly, the country is located at a strategic geographical location, representing a transit hub between the EU and Africa, the Middle East, and Asia. There are several energy corridors passing through Serbia which are of particular importance to the Union, given the EU's resource-deficient character and its dependence on hydrocarbon imports from the regions mentioned above. Second, the country is considered a front-runner for EU accession and possesses sufficient political leverage compared to other candidates and aspiring states from the region. It also occupies the largest territory and is the most populated country in the Western Balkans. Finally, the country nurtures its traditional alliance with the Russian Federation. Taking into consideration the EU's persistent efforts to reduce reliance on Russian energy imports – which were particularly exemplified in the aftermath of the Russian invasion of Ukraine – it becomes principal to evaluate the degree of Russian involvement in the Serbian energy sector and the country's capacity to follow the EU's regulations concerning this matter.

The time period this study covers is from August 2006, marking the accession of Serbia to the Energy Community (EnC), until the present day. The starting point was selected as it signifies Serbia's commitment to adopting and implementing energy-related EU regulatory framework, including energy objectives, and represents a noteworthy step towards the EU integrations and energy transition pursuant to the Union's code. To illustrate this, it is worth to mention that the Serbian government considers becoming a Contracting Party to the EnC, to a certain extent, as a form of Serbia's accession to the European Union (mei.gov.rs, n.d.). Thus, the research benefits from this time delimitation as it allows for the assessment of trends and developments in the Serbian energy sector and the manner in which they correlate with the EU's energy reforms.

Data Collection and Presentation

A case study can consist of quantitative, qualitative, or mixed-method data analysis. The thesis *An Assessment of Energy Security Performance in the Context of European Integrations: the Case of the Republic of Serbia* is based on qualitative research. Content analysis is applied as the study technique for this dissertation. This method of data analysis is utilised to provide a systemic evaluation of recorded communication (Kolbe & Burnett, 1991). It is also the tool for the analysis of documents (Elo & Kyngäs, 2008), which is beneficial for the study of developments in energy policy as it allows for the examination of governmental reports and national and international regulatory frameworks. Understanding that the content analysis is guided by the research question and wider objectives of the study (Robson, 1993), this thesis will evaluate the characteristics of Serbia's energy sector and the evolution of its energy strategy in the context of transposing the Union's *acquis*. Thereby, the study will primarily concentrate on primary sources which will include governmental and intergovernmental documents, government reports, communications from relevant ministries and government agencies (i.e. Ministry of Mining and Energy of the Republic of Serbia, Energy Agency), records from energy companies (such as Gazprom, Elektroprivreda Srbije, Gastrans), and documentation from financial and investment institutions (i.e. Exim Bank, EBRD, EIB). Where available, statistical data will also be derived from the Statistical Office of the Republic of Serbia. As a result of technological evolutions and inadequate digitalisation in the country, in cases where primary sources are unobtainable, the data was accessed through the Internet Archive or supplementary secondary sources. This incorporates reliable and verifiable newspaper articles and prominent local and international news agencies, such as N1 as a local CNN affiliate or Serbia's public broadcaster Radio Television of Serbia (RTS). Finally, qualitative data was also sourced from digital libraries to include academic literature and analysis on energy-related matters, such as

the research on levels of coal pollution. Mentioned data corpus will be evaluated in reference to the goals and objectives of the European Union for energy security and the *acquis communautaire* Serbia has committed to transpose to its national legislation. Here, predominantly primary sources were analysed, including the regulatory frameworks, reports, and legal cases from Energy Community and the European Union.

The report of the empirical analysis will consist of two chapters, followed by a discussion of the results in a broader context. The first chapter will provide a contextual background of the energy sector in the Republic of Serbia and outline fundamental challenges based on geological, geopolitical, and environmental factors. The second chapter will present the most pertinent developments in the Serbian energy sector between 2006 and 2023 and the evolution of its energy strategy pursuant to the obligations under the EnC and the EU. Finally, the discussion will link the empirical findings to the theoretical framework and the existing literature on the topic.

Limitations

While the research design allows a certain degree of flexibility and adaptability, it is important to acknowledge several limitations that can influence the results of the thesis. First and foremost, broader application and generalisability may be restricted. As previously noted, energy security is a state-centric concept and its features are dependent on each country's resource capacities and government policies undertaken concerning the security of supply. However, albeit its generalisability is limited, the Serbian case can provide valuable insight into the effects of energy transitioning for the EU candidate states in the Western Balkans or other carbon-intensive regions. Further, data availability was constricted during this research, which may have

impacted the depth of the analysis. The information provided by governmental institutions or academic sources was occasionally conflicting or inadequately updated but the concerns were mitigated through data verification and additional accuracy checks. It is also worth to note that some information, particularly statistical data, was not available for all years within the research time period. The final limitation concerns researcher bias as a common weakness of the content analysis method (Kolbe & Burnett, 1991). Given the limited temporal and spatial frame, only the most relevant phenomena relating to Serbian energy status were examined which could have prevented the exploration of additional factors that may have an impact on the energy security performance in the country.

The Energy Security Profile of the Republic of Serbia

Assessing the status of energy security in Serbia in the context of European integrations necessitates an analysis of the national energy sector and the politico-economic circumstances that are affecting it. The goal of this chapter is to provide a general overview of the energy situation in the Republic of Serbia. It focuses on the sources of energy production, integration of renewable energy sources (RES) into the national energy mix, the state of infrastructure, and the profile of the oil and gas sector in the country. Taking these priority categories into consideration will facilitate the identification of the key characteristics of Serbia's energy outlook and the projected changes in the process of European integrations.

The Republic of Serbia is situated in the centre of the Balkan peninsula, on the Pannonian Basin's southern rim. Following the collapse of the Socialist Federal Republic of Yugoslavia in the 1990s and the final dissolution of the federal union of Serbia and Montenegro in 2006, the independent Serbian state became a landlocked country with approximately 6.69 million inhabitants, according to the 2022 census on population (Statistical Office of RS, 2022). Following the transition to a market-based economy in the aftermath of the removal of Slobodan Milošević in 2000, Serbia has undergone a relatively steady economic development. The country's GDP in 2023 amounted to USD 73.96 billion which demonstrates a growth of 2.3 per cent (IMF, 2023). The EU remains Serbia's key trading partner which accounted for approximately 65 per cent of the country's total imports and exports in 2019 (EEAS, 2021). As an independent country, Serbia embarked on its European path in December 2009 when Belgrade officially submitted the application for membership to the EU. The candidate status was granted in March 2012 (neighbourhood-enlargement.ec.europa.eu, n.d.). In the ongoing procedure for accession, Serbia is currently negotiating on 22 out of 35 chapters. Cluster four on the Green agenda and sustainable connectivity – which includes chapter 15 on energy –

was only recently opened in December 2021 (European Commission, 2022). The country is also a party to various international acts and legal frameworks concerning climate change, including Paris Agreement, Sofia Declaration on the Green Agenda for the Western Balkans, and Podgorica Joint Statement on the transition to clean energy (MoME, 2022). According to the latest Annual Implementation Report, the state of energy sector reforms is moderate while Serbia is the most advanced Contracting Party at transpositioning of the Clean Energy Package (EnC Secretariat, 2022).

Serbia's energy resources and potentials are comprised of both non-renewable and renewable energy sources. Similar to the rest of the Southeastern European region, fossil fuels – namely coal, gas, and oil – are dominant components of Serbia's energy mix. According to the data from Energy Balance (2021), Serbia's total energy supply is consisted of coal at 42.6 per cent, followed by oil at 23.8 per cent and natural gas at 16.2 per cent. Renewable sources of energy comprise 18.5 per cent of the overall supply, where the most prominent are wood resources at 10 per cent and hydropower at 6.3 per cent. Other forms of renewable energy utilised in Serbia are also solar power, wind power, geothermal energy, biogas and biodiesel, and partially renewable waste resources (Statistical Office of RS, 2021). The expansion of RES capacities was slow throughout the years with notable developments recorded in 2019 (IEA, 2020). Serbia's Ministry of Energy and Mining reported that renewable energy sources accounted for 26.3 per cent of total final energy consumption in 2020 which was 0.7 per cent under the target set by the Energy Community for the mentioned period (MoME, 2022). Concerning electricity needs, most of Serbia's demand is being satisfied through domestic power generation. Elektroprivreda Srbije (EPS), a state-owned electric utility company, has a monopoly over the electricity market in the country despite the market liberalisation. According to the Security of the Supply Statement, it is estimated that 92 per cent of the capacities for the production of electricity are owned by EPS (RS GOV, 2021). EPS is also in possession of numerous thermal power

plants and hydro facilities, where their total production of electric energy comes from coal at approximately 70 per cent while the other 30 per cent is comprised of hydropower (EPS, 2022).

More than 91 per cent of the energy produced through coal combustion is derived from low-grade lignite coal (Statistical Office of RS, 2021). This is executed predominantly through surface mining in basins Kolubara and Kostolac, with Kolubara producing sufficient amounts of lignite to satisfy 75 per cent of Serbia's total coal needs and Kostolac supplying the remaining 25 per cent (eps.rs, n.d.). As EPS does not operate its plants in Kosovo since June 1999, the data from Kosovo is excluded from final energy reports (eps.rs, n.d.). However, the National Renewable Energy Action Plan of the RS (NREAP) estimates that the Kosovo region, as one of the largest lignite reserves in Europe, holds more than 76 per cent of total Serbia's capacities. Albeit coal is undeniably a backbone of the Serbian energy system, its use has recurrently been proven an unreliable practice. Firstly, coal-powered thermal plants in Serbia are entering their retirement stage or have already exceeded their lifespan. The thermal power stations are between 30 and 70 years old, with an estimated average age of the facilities of 49 years (Jovanović, Popović, & Berishaj, 2021). The oldest thermal plant is Kolubara A and the youngest is Kostolac B, built in 1956. and 1987., respectively. Since then, Serbia has not built any additional thermal capacities (Jovanović, Popović, & Berishaj, 2021). Moreover, the country struggles with poor coal quality and insufficient reserves, despite coal being the resource with the greatest share in the production of electricity as well as overall capacities for its generation (EPS, 2022). Considering that fossil fuels are a non-renewable source of energy, through the assessments of the intensity of coal exploitation and energy demand levels, it is estimated that Serbia's coal reserves would last approximately 57 years, as of 2023 (Young & Macura, 2020). Further, electricity distribution network losses are estimated over 13 per cent (MoME, 2022). Outdated power plants, inadequate resource reserves, and poor system infrastructure represent a

significant risk for supply interruptions and increased urgency for energy imports. However, it is worth to mention that Serbia, akin to its neighbours in the region, has a high potential for energy production from renewable energy sources. According to the Energy Balance (2023), the two main resources that constitute the majority of the domestically produced primary renewable energy are solid biomass (including firewood and wood pellet fuel) at 62 per cent and hydro power at 32 per cent. Wind energy accounts for 4 per cent of the total while solar power, landfill gas, renewable waste, and geothermal energy compose only 2 per cent. It is estimated that the construction of RES power plants operating either on hydro, solar, or wind power with an approximate capacity of 21-22 GW is required in order to achieve net-zero greenhouse gas emissions by 2050. Serbia's total RES capacities in 2022 were roughly 2.91 GW (MoME, 2022). Greater integration of RES into the national electricity grid is necessary for the diversification of Serbia's energy market and the affirmation of compliance with EU legislation as a part of the commitments made through membership in the Energy Community.

While Serbia's electricity demands are predominantly satisfied by domestic production, the needs for natural gas are almost entirely met through imports. The sole supplier is the Russian Federation whose exports account for approximately 90 per cent of the country's total natural gas capacities (MoME, 2022). The remaining 10 per cent of natural gas that is derived from domestic generation is exclusively explored by Naftna Industrija Srbije (NIS) as the only enterprise in the country which handles gas production and refining (MoME, 2022). Gazprom Neft, as a subsidiary of Gazprom, is a majority stakeholder of NIS and owns 50 per cent of the enterprise while the Government of the Republic of Serbia owns less than 30 per cent (NIS, 2021). The Russian state-owned energy corporation is further associated with two out of three natural gas distributors and transportation companies in the country, YugoRosGaz and Gastrans. YugoRosGaz was established in 1996 through an intergovernmental agreement between Serbia and Russia, aiming to facilitate the gasification of the

country and construct gas pipelines in southern Serbia (Gazprom Export, 2020). Gazprom holds 50 per cent of its shares while Srbijagas – which is fully owned by the Serbian government – holds 25 per cent, with the remaining 25 per cent being in possession of Vienna-based Central ME Energy & Gas AG (Gazprom, 2009). Similarly, Gazprom also owns 51 per cent of shares in Gastrans, a subsidiary of South Stream Serbia AG which began gas transmission operations in 2021, whereas Srbijagas holds 49 per cent (Energy Community, 2019). While the extent of the involvement of Gazprom in Serbia's oil and gas sector fluctuated over the years, its presence was unequivocally consistent. Serbia – as the legal successor of Yugoslavia – has been importing gas from Russia since 1978 (gazpromexport.ru, n.d.). Domestically, natural gas is produced from 78 gas wells with the largest deposits being located in the Autonomous Province of Vojvodina in northern Serbia (MoME, 2022). According to the reports published by the Statistical Office of the Republic of Serbia between 2008 and 2021, the country's total natural gas capacities are 2.38 billion standard cubic meters on average. In 2021, the total capacity exceeded 3 billion cubic meters, representing an above 20 per cent increase compared to the previous year (Statistical Office of RS, 2021). The natural gas reserves are stockpiled in the underground gas storage facility Banatski Dvor in Vojvodina with a capacity of 450 million cubic meters (Regulation on the Determination of a Preventive Action Plan to Ensure Security of Natural Gas Supply, 2018). Serbia is also operating two pipelines which import natural gas reserves from Russian territory. Previously, the country exclusively relied on gas being supplied through Ukraine and Hungary until the Balkan Stream pipeline became operational in January 2021 when Serbia acquired additional gas inflow via Bulgaria (MoME, 2022). However, despite the diversification of supply routes, the country still relies solely on Russia for its gas reserves. Taking into consideration the share Gazprom owns in NIS, it is evident that Kremlin exercises significant control over the entire gas sector, including domestic production. The overall safety of the sector is rather poor, resulting in frequent

unplanned interruptions within the distribution systems. Data between 2015 and 2020 shows that there were no disruptions as a result of inadequate network capacity but dozens of interruptions occur due to gas leaks and hundreds as a result of third party mismanagement every year (RS GOV, 2021). Serbia is undergoing rising consumption of natural gas, particularly in households where an increase of 21 per cent was recorded in 2021 in comparison to the previous year (RS GOV, 2021), which signals the need for system interferences to be reduced to the minimal EU levels.

Concerning crude oil reserves and energy derived from oil derivatives, Serbia is predominantly depending on imports which account for 80 per cent of its total capacities while the remaining 20 per cent is being produced from 64 oil fields with 796 wells in exploitation in 2022 (MoME, 2022). NIS is a dominant player in the market as it is tasked with the exploration and refinery processing of crude oil but other international enterprises are also present in the sphere of retail such as Russian Lukoil and Austrian OMV along with several local distributors (AERS, 2021). According to the report from the Agency for Energy of the Republic of Serbia, the country is importing crude oil predominantly from Iraq as 64 per cent of total capacities come from Kirkuk, followed by Russia at 23 per cent, and Kazakhstan imports constituting 10 per cent. In 2021, Serbia also started importing from Norway's Johan Sverdrup oil field which accounts for the remaining 3 per cent (AERS, 2021). Crude oil and petroleum products are the most imported resources, accounting for more than half of total imports, followed by natural gas which constitutes one-third of energy purchases (RS GOV, 2021). While Serbia was successful in developing an efficient import network, the country is not rich in oil reserves. Taking into account current oil and gas exploitation rates, it is estimated that the inland reserves will be depleted by 2030 (RS GOV, 2021). Ministry of Mining and Energy, on the other hand, projects the reserves can last for 15 more years (2022). However, albeit Serbia is importing a significant amount of its energy capacities, it is worth mentioning that Serbia's overall dependence on imports

is not exponentially high. The country's net import dependence in 2020 was 30.2 per cent, in comparison to the EU's import dependence at 57.5 per cent (AERS, 2021). Serbia is also among the less Russia-dependent countries in Central and Eastern Europe, due to vast reserves of brown coal and significant use of the available hydropower (Centre for the Study of Democracy, 2015).

Research Findings and Analysis

This chapter presents the research findings of the study, consisting of four sections. The sections are organised thematically and present Serbian energy strategies, implementation efficiency, and energy security trends with respect to their commitment to European integrations. In the first section, the Serbian oil and gas sector is reviewed, primarily focusing on the terminated South Stream project and the role of the Russian Federation in the country's security of supply. The second section reviews the EU's approach to climate change and evaluates how it affects the coal industry in Serbia, as a critical element of national energy security. It is followed by the third section which assesses the developments in the field of renewable energy sources (RES) and the effectiveness of its alignment with the EU *acquis*. Finally, the fourth section analyses the changes in the EU energy policies following the eruption of war in Ukraine and examines the tactics Serbia adopted to mitigate the risks of the energy crisis in the country.

Foreign Interference in the Serbian Oil and Gas Sector

The Russia-Ukraine gas dispute from 2006, which resulted in drastic reductions in the flow of natural gas across the European continent, exemplified the importance of energy security in general and the security of supply in particular. For Serbia, this necessitated the expansion of the gas infrastructure in the country and ensuring stable gas reserves. Less than a year after Belgrade joined the EnC, a major gas pipeline project was announced. In June 2007, a Memorandum of Understanding was signed between Italian and Russian energy companies, Eni and Gazprom, on construction of South Stream (Gazprom, 2007). The pipeline was intended to transport natural gas from Russian

Federation, through the Black Sea, and split into northern and southern branches in Bulgaria before finally terminating in Italy and Austria. Its purpose was to reduce Russian reliance on Ukrainian transit following the crisis and diversify Russian supply routes to Europe. The South Stream enterprise was formed for the purpose of pipeline construction where Gazprom held the majority of share at 50 per cent, followed by Italian Eni at 20 per cent, while Germany's Wintershall Holding and French EDF shared the remaining 15 per cent of ownership (Gazprom, 2012). The project was viewed as a crucial step towards enhancing European energy security and further expanding of the European market for Russian resource exports.

A Memorandum of Understanding was signed between Gazprom, the Government of the Republic of Serbia, and Srbijagas with the intention to study the possibility of building a natural gas pipeline in December 2006 (Gazprom, 2007). South Stream officially commenced in Serbia with a signing of the Umbrella Intergovernmental Agreement for the South Stream project on the 25th of January 2008 between the Republic of Serbia and the Russian Federation (Gazprom, 2011). The bilateral agreement planned the construction of 422 kilometres long pipeline through Serbian territory, two gas branches to Croatia and Bosnia and Herzegovina, as well as underground gas storage (UGS) facility at Banatski Dvor in Vojvodina Province (Gazprom, 2013). Shortly after, Basic Terms of the Basic Cooperation Agreement and the Basic Cooperation Agreement on Implementation of the South Stream project on the territory of the Republic of Serbia were signed between Gazprom and Srbijagas in December 2008 and May 2009, respectively (Gazprom, 2009). The mentioned documents outline the conditions and guidelines for project execution and establish operation mechanisms for a planned joint venture company South Stream Serbia AG which was expected to operate the pipeline (Gazprom, 2009). The majority owner of the enterprise was Gazprom with 51 per cent of the shares, while Srbijagas owned 49 per cent of the firm's assets (Gazprom, 2012). The first facility commissioned as part of the South Stream project was, in fact,

launched in Serbia (Gazprom, 2011) and the country became the first South Stream member state to adopt the final investment decision on the project (Gazprom, 2012). In the meantime, Serbia also signed a long-term Intergovernmental Agreement on natural gas supply for the period between 2012 and 2021 (Gazprom Export, 2020). Becoming a signatory to the mentioned set of agreements, Serbia became increasingly dependent on Russia for the security of its supply.

Banatski Dvor UGS became operational in November 2011 and the pipeline construction ceremonially began in November 2013 (Gazprom, 2013). In February 2013, the Serbian Parliament granted South Stream the status of a “project of national interest” (Gazprom, 2013). The award was given as the South Stream was strategically important for Serbia and its construction would position the country as a vital energy hub in the wider Eastern European region. It was estimated that building of South Stream would create around 2,200 new jobs and attract approximately EUR 1.5 billion in direct investments (Gazprom, 2011). Moreover, annual revenue from the project’s transit fees was expected to be more than EUR 182 million (Mirović, Andrašić, & Zakić, 2016). The first gas supplies, delivered through South Stream, were anticipated to reach Serbia in 2016 (TANJUG, 2013). However, Serbia’s commitment to EU accession hindered the delivery of the benefits the country intended to enjoy once the pipeline became operational.

The major obstacle to the South Stream appeared already in 2007 – in the very initial phases of the project – with the proposition of the EU’s Third Energy Package (TEP) and its subsequent entry into force in 2009 (European Commission, 2009). The EU Member States had until March 2011 to transposition two directives, one Concerning Common Rules for the Internal Market in Electricity and the other Concerning Common Rules for the Internal Market in Natural Gas, as well as three regulations on Conditions for Access to the Network for Cross-border Exchanges in Electricity, Conditions for Access

to the Natural Gas Transmission Networks, and Regulation Establishing an Agency for the Cooperation of Energy Regulators. Its primary element, however, has been the so-called process of ownership unbundling. The mentioned directives define unbundling as an act of splitting the generation of energy from the transmission of energy, preventing a single enterprise from being in ownership of both steps of energy provision. In simpler terms, the enterprise that supplies the gas (or electricity) cannot be in ownership of the transmission network. The purpose is to ensure fair competition and maintain an affordable energy supply by preventing one company from having a monopoly and allowing third-party access to the market (energy.ec.europa.eu, n.d.). The Directive allows states to elect between the three options for unbundling, either through ownership unbundling (OU), the establishment of an independent system operator (ISO) or the foundation of the independent transmission system operator (ITO).

The required structural separation has had an enormous effect on South Stream considering that Gazprom exerts significant control over the pipeline – including its local sections – and manages both the supply and the transport of natural gas. Moreover, the transpositioning of the legislation did not merely impact the energy status in the EU Member States but indirectly exported the regulation to third countries as well. The EnC Decision on the Implementation of the TEP (2011) obliged the Contracting Parties to adopt the mentioned programme for energy reforms by the 1st of January 2015, while the unbundling needs to be implemented by the 1st of June 2016. The European Commission (EC) urged Serbia to halt the construction of the South Stream until the intergovernmental agreement with Russia is not aligned with the Union's *acquis* (European Commission, 2014). The project was already contended within the Union itself, as the EC requested Bulgaria to suspend work on South Stream due to its non-compliance with the EU law (Lewis, 2014). Moreover, taking into account that the Gas Directive (2009) mandates Member States to conduct a security risk assessment prior to certifying transmission system owners or

operators from third countries and refuse the certification shall the supplier's actions threaten the security of energy supply to the Union, it is questionable whether Gazprom would meet the requirements for execution of South Stream considering the history of gas cut-offs, weaponisation of energy resources, and turbulent political history with the West. In April 2014, Russia proceeded to file a complaint against the EU, arguing the violation of the international trade rules made under TEP (WTO, 2014).

Serbia was instructed by the EC to prioritise the unbundling and reconstruction of their transmission system operations from the gas supply activities (European Commission, 2014). The vertically integrated Srbijagas and Yugorosgaz were found to be in violation of the TEP and the EnC sent an Opening Letter to the Serbian Government in October 2013 (Energy Community, 2013). Albeit Yugorosgaz founded the subsidiary Yugorosgaz – Transport in December 2012 (transport.yugorosgaz.rs, n.d.), the Energy Community reopened the case against Serbia establishing that the company failed to meet the requirements to be certified under the ISO model given the insufficient system separation. The EnC further found that Yugorosgaz is unable to adequately comply with the TEP regulation and it failed to demonstrate that its certification “will not put at risk the security of supply of Serbia and the Energy Community” (Energy Community, 2018). Since Serbia certified Yugorosgaz – Transport in August 2013 despite the ineffective compliance with the EU regulation, the EnC concluded that the country is in active breach of its obligations under TEP (Energy Community, 2018). Reconstruction of Srbijagas was all the more delayed with the agreement on transferring the ownership of the transporting company “Transportgas” from Srbijagas to the Republic of Serbia being signed in June 2021 (MoME, 2021). The European Union financially supported Serbia in this process through the national Instrument for Pre-Accession Assistance (IPA) – a monetary and technical support scheme for the enlargement region – which included projects directly related to the maintenance of Srbijagas (Energy Community, 2017). However, according to

EnC's Annual Implementation Report, neither Srbijagas nor Yugorosgaz were certified in line with the EU's regulatory framework on natural gas and neither did they undergo efficient unbundling (2022). Despite the accelerated efforts after the delays in reforming the country's gas structure, Serbia failed to meet the contractual obligations in the natural gas sector.

Incompatibility with the EU's regulations is what led to the South Stream's cancellation in December 2014 (BBC, 2014). This prompted Serbian political officials to raise concerns over the EU's double standards in the energy sector, with the First Deputy Prime Minister Ivica Dačić questioning the legitimacy of the Nord Stream following South Stream's discontinuation (RTS, 2018). Alternatively, Gazprom representatives reaffirmed that Serbia will remain an important market for the mentioned Russian company and will not face obstructions in upcoming gas delivery (N1, 2014). As a consequence of the project's termination, Serbia suffered losses amounting to EUR 30 million which were invested in pipeline construction (TANJUG, 2014). Considering that there is no clause concerning reimbursement in case of non-realisation of the planned pipeline in the Intergovernmental Agreement (2008), former Serbian President Tomislav Nikolić argued that Russia is under no obligation to compensate Serbia for the project's termination and that Serbia will not ask for any refunds (Čongradin, 2014). Fortunately for Serbia, South Stream was not entirely abandoned. On the 1st of December 2014, a Memorandum of Understanding was signed between Gazprom and Turkish Botaş Petroleum on the construction of an offshore gas pipeline titled Turk Stream (Gazprom, 2014). Turk Stream was envisioned to serve as a replacement for the South Stream and follows almost the same route as the terminated pipeline. Its capacity, however, is significantly reduced as the pipeline operates with 31 billion cubic meters, compared to the South Stream offshore section amounting to 63 billion cubic meters per annum (Gazprom, 2012). The estimated 402 kilometres long route that is constructed within Serbian territory – also called Balkan Stream – starts from the Bulgarian border near Zaječar to the border with Hungary near Horgoš

and is operated by Gastrans (gastrans.rs, n.d.). According to the Serbian Business Registers Agency, South Stream AG has a 100 per cent share in Gastrans, indicating that the pipeline is again co-owned by Gazprom and Srbijagas (SBRA, 2023). Taking into account the state of affairs surrounding the project, the issues that arose concerning the construction of South Stream persisted in the case of Turk Stream as well. Effectively attempting to bypass the European regulatory framework, the Energy Agency of the Republic of Serbia (AERS) granted an exemption to the Turk Stream relating to the provisions of the Third Energy Package. This is allowed under the EU's Gas Directive (2009) which conditionally permits the new major gas infrastructure to not be subject to certain provisions for a defined period of time. However, the Energy Community Secretariat responded to Serbian authorities in February 2019, stating that the project is breaching unbundling, third-party access, and tariff regulations and thereby not meeting the requirements for exemption (Energy Community, 2019). The EnC expressed concerns over Gazprom's monopoly in the region and urged Serbia to offer non-discriminatory access to all participants in the natural gas market (Energy Community, 2019). Gastrans attempted to make concessions, namely regarding gas capacity allocations, but the efforts were insufficient and the project remained in violation of the TEP (EnC Secretariat, 2019). Despite the objections from the EnC, AERS proceeded to confirm the exception for the new interconnector (Energy Community, 2019) and Russia began supplying natural gas to Serbia through Turk Stream on the 1st of January 2021 (Gazprom, 2021). Refusal to practically transpose the *acquis* and align the energy security efforts with the Union risks opening of the dispute settlements processes and potential freezing of a part of the pre-accession funds. However, considering that Serbia is entirely dependent on Russian gas imports, the construction of this pipeline was crucial to the country's security of supply given the instability of the Ukrainian transit. It is further worth to mention that TEP was transposed into the country's Energy Law in 2014, suggesting that South Stream would likely be incompatible with the national regulatory

framework if the project was not discontinued. While the EU suggests that natural gas could be seen as a temporary alternative on the path towards gradual decarbonisation (Guidelines for the Implementation of the Green Agenda for the Western Balkans, 2020), its use could further jeopardise Serbia's energy independence and would prove incompatible with the EU's external energy politics as a result of the country's heavy reliance on Russian imports and insufficient domestic reserves.

Albeit the initial South Stream project had the opportunity to position Serbia as a key energy hub in Eastern Europe, the pact came with certain stipulations. As a part of the Intergovernmental Agreement signed between the Russian Federation and the Republic of Serbia in January (2008), Serbia agreed to sell Naftna Industrija Srbije (NIS) to Gazprom Neft, a subsidiary of Gazprom. As a result, Gazprom acquired a 51 per cent stake in the state-owned NIS, while 49 per cent remained in the ownership of the Government of Serbia. Here, it has to be noted that NIS did not undergo traditional privatisation but, as Gazprom is also owned by its respective government, the enterprise was placed under the ownership of two countries, Serbia and Russia. The Serbian government was thereby made the minority shareholder in the company based on its own territory and conceded a significant degree of control over its vital resources to a foreign government. NIS was sold for EUR 400 million whereas Russia committed to investing EUR 550 million into oil production and environmental protection (RS GOV, 2008). In September 2008, the Serbian government published a report made by auditing company Deloitte & Touche which assessed the NIS's value to be at EUR 2.5 billion (RTS, 2008), indicating that the enterprise was sold for a price that was significantly under its market value.

The Role of Coal and Greenhouse Gas Emissions

In recent years, the EU has become a pioneer in addressing energy instabilities and, consequently, tackling climate change. This development is a result of the correlated and synchronous nature of the mentioned concerns since European energy (in)security is a consequence of heavy dependence on hydrocarbons whose usage propels climate change through greenhouse gas (GHG) emissions. Thereby, one of the priorities of the Union is phasing out the utilisation of coal in power production. European Green Deal was presented in December 2019, defining a set of policy initiatives with the main objective of achieving at least a 55 per cent reduction of net GHG emissions by 2030, with respect to emission levels from 1990, and realising climate neutrality by 2050 (European Commission, 2023). The latest energy package, titled Clean Energy for All Europeans, launched an initiative The Coal Regions in Transitions which has a goal to assist coal-dependent regions with economic and technological revolution (European Union, 2019). As a part of the strategy, the Initiative for Coal Regions in the Western Balkans and Ukraine was founded to support just transition in the EU's neighbouring states (energy.ec.europa.eu, n.d.). The Energy Community adopted the five key legislative acts of the mentioned package in November 2021, consisting of Directives on Renewables, Energy Efficiency, and Electricity, as well as Energy Union Governance Regulation and Risk Preparedness Regulation (Energy Community, 2021). Through this regulatory framework, the Contracting Parties were introduced new guidelines on support schemes for integration of renewable energy sources (RES), targets for increasing energy efficiency in buildings of central governments, and mandatory submission of National Energy and Climate Plans (Energy Community, 2021). The EnC also adopted the Decarbonisation Roadmap for the Contracting Parties of the Energy Community which aims to assist the EnC states in meeting the 2030 decarbonisation targets, facilitate the dialogue

between the EnC and EU, and support the EnC Contracting Parties in the process of transposing decarbonisation-related EU legislation. The organisation further calls for the EU to provide financial support in order to facilitate the implementation of the Decarbonisation Roadmap (Energy Community, 2021). Finally, as a signatory to the Sofia Declaration on the Green Agenda for the Western Balkans, and under the Guidelines for the Implementation of the Green Agenda (2020), Serbia is obliged to work towards the 2030 and 2050 energy and climate targets in line with their commitments to the EnC and the EU *acquis* (ROC, 2020). For states with high reliance on fossil fuels and considerable carbon-intensive industries, such as the Republic of Serbia, the EU also launched the Just Transition Mechanism which aims to mitigate negative socio-economic effects of clean transition. The programme is supported by the European Investment Bank (EIB) through financial advisory, technical assistance, and investments in order to achieve a net zero economy (EIB, 2022).

Serbia sources the vast majority of its electricity needs from coal and it remains the most used form of fossil fuel in the country. In 2018, Serbia was the highest coal producer in the Western Balkans (Ruiz, Medarch, Somers, & Mandras, 2021). While the commitment towards decarbonisation was made, the country is in possession of readily available and notable lignite resources which prompts the authorities to continue with its exploitation. Serbia is currently executing the expansion of the coal-based thermal power plant capacities with the assistance from Chinese government. The agreements with China's Exim Bank were signed in 2011 and 2014, consisting of the planned modernisation of Kostolac blocks B1 and B2, the construction of new lignite power unit Kostolac B3, and the expansion of capacities of Drmno coal mine in Kostolac basin for the operation of new thermal power units (MoME, 2014). 85 per cent of the project is being realised through the EUR 965 million loan from the Exim Bank while the remaining sum is being covered by the EPS (MoME, 2014). Kostolac Power Station also includes a new flue gas desulphurisation (FGD) system in order to lower the emissions of sulphites, nitrides, and dust, making the thermal

plant compatible with the EU standards (Exim Bank, 2016). The plant for flue-gas desulphurisation was completed in July 2017 (RS GOV, 2017). However, the equipment is not consistently utilised (HEAL, 2019). Analysing the EPS Environmental Report from 2018, it is evident that the amount of sulphur dioxide emitted from Kostolac B blocks was still 25 times higher than the limit guaranteed by the manufacturer while the levels of nitrides and dust also exceeded the promised values (EPS, 2019) (Exim Bank, 2016). In October 2020, Japanese enterprise Mitsubishi Power confirmed that Serbia has placed two orders for FGDs for Nikola Tesla A and B coal-fired power units which will be entirely financed by the EPS. According to the producer, sulphite emissions are expected to decrease by 96 per cent once the units are decommissioned in 2024 (Mitsubishi Power, 2020).

Furthermore, both the construction of the new block B3 and the expansion of Drmno started prior to the issuing of the construction permit and completion of an environmental impact assessment respectively (HEAL, 2019). It is also important to note that the coal mining sector employs a substantial portion of the Serbian population. More than 15 000 workers are direct employees in coal power plants and mines, while almost 38 000 are in indirect employment in the coal mining sector across Serbia (Ruiz, Medarch, Somers, & Mandras, 2021). That Serbia is planning to continue with coal use for electricity production was also confirmed by President Aleksandar Vučić in his statement that the country will not renounce its coal capacities and promised miners will be allowed to keep their jobs given that the coal mining industry is continuing to expand in Serbia (EPS, 2021).

Taking into account this heavy reliance on coal production, the transition to other, cleaner energy generation methods is significantly more difficult to achieve as it invokes unfavourable socio-economic challenges. While the energy transition is still in its early stages, the risk prospects of coal production could be the driving force towards its discontinuation. In the spring of 2014, the

region was hit by massive floods which resulted in enormous material damage. As a result of the severe weather conditions, EPS reported that coal production was cut in half which necessitated Serbia to intensify coal imports (RTS, 2014). Kolubara, the largest coal basin in the country and the largest supplier to the EPS, had all four mine basins flooded which severely impacted electricity generation and coal export (RTS, 2015). Moreover, excessive reliance on thermal power plants substantially contributes to air pollution which is one of the highest in Europe. According to the data from 2016, an average coal-fired plant in Western Balkans emits 20 times more sulphur dioxide and particulate matter than the plant from the EU while the emissions of mentioned air pollutants from 16 regional coal power plants were almost as high as emissions from 250 coal plants in the EU (European Commission, 2020) (HEAL, 2019). To reduce GHG emissions, the EnC adopted the Decision (2013) to implement the Directive on the Limitation of Emissions of Certain Pollutants into the Air from Large Combustion Plants which officially took effect on 1st of January 2018. The Directive allows for two methods of implementation, either by issuing licences for existing plants which will calculate their acceptable emission limits or by guaranteeing that existing plants are in compliance with the National Emissions Reduction Plan (NERP). Serbia committed to formulating NERP but failed to deliver the plan by the deadline set by the EnC. In January 2020, the EnC Secretariat opened a dispute settlement against Serbia over the non-compliance with the Large Combustion Plants Directive (Energy Community, 2020). Albeit the NERP draft was approved in 2016, the country was ineffective in adopting the regulatory framework even after repeated warnings from the EnC. In the absence of NERP's adoption, Serbian large combustion plants are required to be in compliance with the emission limits set by the EU Directive. According to the EnC, nine out of 16 plants were found to be in violation of the regulatory framework (Energy Community, 2021). Serbian authorities officially adopted the updated version of NERP two weeks after the dispute settlement was opened, rectifying the breach (RS GOV, 2020).

However, Serbia received another Opening Letter from the EnC in 2021 for infringement of emission limits set in the NERP for reporting years 2018 and 2019 (Energy Community, 2021). Prior to the adoption of NERP, Serbian authorities approved of a Regulation on Limit Values for Emissions of Pollutants into the Air from Combustion Plants in 2016 which sets the limit to maximum value of allowed emissions produced by small, medium and large combustion plants. The country also passed the Law on Climate Change in 2021 which allows for GHG emissions monitoring (RS GOV, 2021), bringing Serbia more in line with the Paris Agreement and the EU *acquis*. In order to facilitate the green transition – and effectively implement the Monitoring, Reporting, and Verification (MRV) of the GHG emissions system – the World Bank approved two loans in the total amount of EUR 219.2 million which will enable the country to regulate the level of air pollutants (World Bank, 2023a) (World Bank, 2023b).

Mentioned quantity of GHG emissions and the consequential transboundary pollution are the key concerns surrounding the use of coal for the process of European integrations and they are also likely to have an effect on national economic output. The previously mentioned Sofia Declaration also addresses the potential inclusion of Serbia in the EU Emissions Trading Scheme (EU ETS). EU ETS was launched through the 2003 Directive Establishing a Scheme for Greenhouse Gas Emissions Allowance Trading. It functions as a “cap and trade” mechanism, which sets a total amount of allowed GHG emissions produced by an operator and permits for the trading of such allowances between operators (climate.ec.europa.eu, n.d.). As the EU ETS is only operational in EEA-EFTA states, Serbia is at the moment excluded from the mechanism. However, Carbon Border Adjustment Mechanism (CBAM) is intended to prevent the so-called carbon leakage from third countries. According to the Proposal for Regulation on Establishing CBAM (2021), the system will seek to address emissions that occur outside the EU as a result of industries transferring production to states beyond the EU borders with less

rigorous climate policies. It will also apply in cases where cheaper carbon-intensive products are imported to the EU from third countries. It mirrors the EU ETS mechanism as the price of the carbon tax will be determined based on the weekly average auction price of the EU ETS allowance which is calculated in euros per tonne of CO₂ emitted (taxation-customs.ec.europa.eu, n.d.). For example, in early 2017, the price of a permit under EU ETS was approximately EUR 5 (Bankwatch, 2017) while in February 2023, emissions allowance cost reached their record high at EUR 100 (Twidale, Abnett, & Chestney, 2023). This exceeded the predictions made for phase four of EU ETS – applicable for the period between 2021 and 2030 – which estimated that the cost of the permits will average EUR 25 (Bankwatch, 2017). Once CBAM becomes operational, the surging carbon tax could increase the prices of goods, subsequently lowering the exports to the EU, and become economically unfeasible to operate. On the contrary, higher prices of permits could result in greater incentives to invest in low-carbon technologies or facilitate regional cooperation to avoid CBAM taxes.

The regulations on environmental protection have significantly tightened in the past few decades. Taking into account the date of commissioning of Serbian thermal plants and insufficient funds for its modernisation, the continuation of electricity production will necessitate ecological reconstruction in order to harmonise its operation with current and upcoming environmental standards. Taking into account recent expansions of coal capacities, it is unlikely that Serbia will decarbonise by the EU-set deadline or it will manage to be successful right before the final date. While Serbia will not be able to eliminate coal from its energy mix immediately, the gradual reduction of its use is attainable but the transition will require significant financial assistance from the Union.

Transition to the Clean Energy Production

Serbia has a long history of utilising renewable energy as the country's first hydroelectric power plant was commissioned in 1955 (eps.rs, n.d.). EPS is the primary producer of electricity from hydro power which accounts for almost 40 per cent of the enterprise's total energy capacities (eps.rs, n.d.). Throughout the years, state-owned EPS consistently aimed for the expansion of hydro capacities but the realisation of their projects was minimal. Between 2010 and 2011, EPS founded several joint ventures with international companies for the construction of hydroelectric plants across the country. These investments included the establishment of hydro facilities with Italian company SECI Energia SpA on the Ibar River worth 285 million euros (EPS, 2010), with Canadian Reservoir Capital Corp (REV) on Lim River valued at 120 million euros (Prodanović, Pudar-Dražko, & Velinov, 2019), as well as German RWE Innogy GmbH on Great Morava worth 352 million euros (Filipović, 2011). None of the projects materialised and the announced expansions of Serbia's hydro capacities are not listed on EPS's official website (eps.rs, n.d.). More recently, however, EPS reported that the EU has approved grant development funds for the modernisation of the Vlasina Hydropower Plant and the construction of Kostolac Windfarm, as well as the preparation of investment-technical documentation for Photovoltaic Power Plants Morava and Kolubara A (EPS, 2023). Serbian government also confirmed plans to build pumped-storage hydro plants Bistrica and Đerdap III which are expected to strengthen the country's energy security (RS GOV, 2023).

As a result of insufficient commitment towards the development of hydro power, a substantial amount of Serbian capacities remains unused. According to the Energy Sector Development Strategy (2015), the country

possesses 25,000 GWh/year available hydro potential but only around 12,000 GWh/year has been utilised (Statistical Office of RS, 2021). Hydropower is an obtainable and accessible method of energy production across the country, as the short-term weather influences don't affect its output, compared to solar or wind energy. However, accelerated climate change and global warming are increasing the risk of droughts across the European continent, making resource availability unpredictable. For instance, Serbian hydroelectric plants were forced to operate at minimum capacity in August 2022 due to a prolonged shortage of rainfall. In this period, total electricity production was 28 per cent lower in comparison to the electrical generation in 2021 (Euronews Serbia, 2022). This also has the potential to affect the functioning of thermal power plants considering the importance of water availability for system cooling.

Albeit large facilities are dated and their further development is limited, small hydropower plants witnessed an expansion across the region. Perceived as a sustainable green alternative, European Commission encouraged their construction in favour of upgrading existing renewable capacities, providing funding through the IPA (MoME, 2022). However, SHPPs became a hotspot for economic and environmental controversies which resulted in an increased aversion of the Serbian population towards their erection. This is attributable to an upsurge in corruption across the energy sector (MoME, 2021) and the disregard for the environmental regulatory framework (EIB, 2023). SHPP risks to the environment were taken into consideration by the Serbian government which took the initiative towards warranting the safety of the protected areas. This includes the prohibition of their construction in conservation zones under the recently adopted Law on the Use of Renewable Energy Sources (2021) and a monetary fine for SHPPs without governmental authorisation.

Serbia's leadership recognised that the deployment of renewable energy for power production needs to be accelerated and the sources need to be diversified. In June 2013, the country's first National Renewable Action Plan

(NREAP) was adopted, setting the binding target of 27 per cent of RES in gross final energy consumption for 2020. The goal was determined in line with the mandatory target set by the EU in the Directive on the Promotion of the Use of Energy from Renewable Sources (2009) where all Member States were obliged to have renewable sources participating with at least 20 per cent in total energy consumption in 2020. For Energy Community's Contracting Parties, the EnC Ministerial Council Decision (2012) was adopted, committing Serbia to the established RES increase from 21.2 per cent to 27 per cent in the mentioned period. Serbia possesses vast renewable potential which is why such an ambitious target could be set although the majority of the capacities still remain under-exploited. Albeit significant progress has been made in the past decade, President Vučić estimates that Serbia will have to invest between 16 and 33 billion euros in its energy sector in the next 15 to 20 years, particularly for the modernisation of infrastructure and development of renewables technologies used for electricity generation (Cvetković, 2022).

With RES expansion being delayed, the country's political and legal framework is also lagging behind the EU Member States. The use of RES was initially coordinated by the new Law on Energy (2014) whose objective was to harmonise Serbia's energy legislation with the Union's Third Energy Package. Two years after its approval, Serbian parliament voted for the adoption of the so-called PPA Package, a collection of by-laws required for legislative implementation and comprehensive transpositioning of the Third Energy Package. The package included a Decree on Incentive Measures for Electricity Generation from Renewable Energy Sources and High-Efficiency Cogeneration of Electricity and Heat, Conditions of and Procedure for Obtaining the Status of a Privileged Power Producer, Decree on Preliminary Privileged Power Producer and Producer from Renewable Energy Sources, and the Decree on Power Purchase Agreement (2016). While the adoption of the 2014 Energy Law was a major breakthrough for Serbian energy security, the country required a more

comprehensive and detailed regulatory framework in order for Serbia to meet the commitments made towards EnC.

In April 2021, Serbian National Assembly adopted two additional laws concerning the energy sector and made notable amendments to the existing Energy Law. The new legislation, namely the Law on the Use of Renewable Energy Sources, can be seen as a breakthrough for the use of RES, as it officially legitimises the utilisation of renewables as a public interest of the Republic of Serbia and sets out long-term objectives for its use. The primary objective of this framework is to increase the share of renewable sources in Serbia's total energy production and stimulate investments in the RES sector (MoME, 2021). Two vital features of this regulation can be distinguished. Firstly, the Law on RES introduces the producer-consumer category to the electricity market in regard to renewables. This is the first time the Serbian government has legitimised the right of the end consumer to produce electricity for their own consumption with the ability to export excess capacities to the national grid. The Ministry of Mining and Energy announced that, as a result of the introduction of the Law on RES and amendments of the relevant by-laws, the procedure of granting the producer-consumer status was further simplified and thereby the waiting period was reduced from approximately a year to around 20 days (MoME, 2022), making the permission for electricity generation from renewables accessible and easily obtainable. The EU does not possess particular regulation on prosumer rights and status acquisition procedures but the current regulatory framework obliges the EU Members to make connections to the national grids widely available and to keep administrative affairs simplistic, as pursuant to the Directive on the Promotion of the Use of Energy from Renewable Sources (2018). In 2023, amendments to the Law on RES were passed, per appeal of the EPS, EMS, and AERS, to include the maximum generation capacity of the prosumer's RES installations and the ability of system operators to delay access to the grid should there be an insufficient reserve for balancing (MoME, 2023). The restrictions were introduced after EPS

and EMS expressed concerns about distribution and transmission grid overload which can threaten the stability of electrical infrastructure in the country and thereby the security of supply if proper balancing cannot be accomplished. This resulted in delays in the implementation of the Law on RES, as well as internal conflicts between the Ministry of Mining and Energy and the state-owned electricity utility companies where the EMS clarified that the enterprises are not against the use of renewables but their rapid expansion, combined with an inadequate regulatory framework, is representing a threat to the stability of the system (Beta, 2022).

The second important development for the use of renewables this legislation introduced was phasing out the feed-in tariffs. Feed-in tariffs, outlined in the Decree on Incentive Measures for Privileged Power Producers from 2013, are an existing RES incentive which warrants a fixed purchased price per sold KW/h of power for a given period. The market premium, alternatively, is paid to the privileged producer in addition to the compensation for sold electricity. The status of the privileged producer is acquired through auction which would enable a competitive bidding process and simultaneously limit the state aid. The aim of the mentioned financing mechanisms is to support and facilitate investments in renewable power technologies by guaranteeing the certain return on the expenditures, in accordance with the Guidelines on State Aid for Environmental Protection and Energy 2014-2020 (as well as the EnC Policy Guidelines on Reform of the Support Schemes for Promotion of Energy from Renewable Sources from 2015) and the Directive on the Promotion of the Use of Energy from Renewable Resources (2018). Pursuant to the Law on RES (2021), feed-in tariffs are effectively replaced with the market premium incentive, except in cases of small power plants or demonstrative projects (MoME, 2021). This transition from feed-in tariffs to feed-in premiums was further encouraged by the European Commission in order to respond to market developments (European Commission, 2022). The new system is expected to

increase competitiveness and make RES more affordable for citizens and the Serbian economy (MoME, 2021).

Albeit the guidelines for prices and capacities were set and the first auction was planned for the end of the year, the launch was hindered by a lack of relevant by-laws on the balance responsibility of RES (EnC Secretariat, 2022). In June 2023, decrees on balancing responsibility and feed-in premium were passed which allowed Belgrade to finally announce the launch of the first renewable energy auction for the allocation of market premiums the same month for 400 MW of wind and 50 MW of solar power (EBRD, 2023). The new initiatives mechanism, according to Serbia's Ministry of Mining and Energy, is expected to encourage an influx of foreign investments, stimulate GDP growth, expand the construction industry, and ensure a more stable supply (MoME, 2023). The support mechanisms for financing renewable energy production in Serbia are funded through tax revenues, pursuant to the Energy Law (2014) and the Law on the Use of RES (2021), which increases the electricity rates for citizens. In order to support the implementation of the RES technologies, the renewables incentive surcharge was amplified in 2023 from 0,437 RSD to 0,801 RSD per KW/h, according to the Decree on Special Fees for Incentives for Privileged Producers of Electricity (2023). This spike in fees was promulgated well after the market premiums were introduced but before the secondary legislation was passed. Understanding that the utilisation of the feed-in tariffs will remain for smaller RES projects, the current regulatory framework requires Serbian residents to continue paying the surcharge for renewables incentive. The introduced market premiums, as a form of state aid, are also expected to be covered by EPS customers albeit their cost is dependent on the auction price set by the AERS. At the moment, the Ministry of Mining and Energy expects electricity costs to be reduced (MoME, 2023) which would represent a significant development for energy affordability given that RES fees made the so-called green electricity more expensive compared to the power generated through conventional energy sources. Alternatively, EPS is reporting losses as

the monetary compensation paid to the privileged producers is greater than the amount collected from the customers. As a consequence of the financial deficit – as well as mandatory maintenance and modernisation of the power infrastructure – the enterprise is predicting an eventual increase in electricity prices (EPS, 2022).

Following the adoption of the mentioned legal framework and relevant by-laws, former Minister of Mining and Energy, Zorana Mihajlović, announced that Serbia will shortly begin drafting of the Integrated National Energy and Climate Plan (INECP) (MoME, 2021). The EU introduced INECPs through the Regulation on the Governance of Energy Union and Climate Action, which first came into effect in December 2018. The legislation is a part of the 2019 package Clean Energy for All Europeans (commission.europa.eu, n.d.). The purpose of the INECPs is to develop a strategy and define national objectives in spheres of energy security and climate change for the period between 2021 and 2030 and establish long-term targets for 2050. The Regulation (EU) 2018/1999 affirms that INECPs should particularly focus on decarbonisation, renewable energy sources, and electricity interconnection, with an emphasis on achieving the United Nations Sustainable Development Goals and delivering targets under the Paris Agreement. Similar to the EU decision, the EnC adopted a Recommendation 2018/01/MC-EnC which advises the Contracting Parties to deliver their own INECPs that would support the realisation of long-term energy and climate objectives, simplify the administrative and bureaucratic procedures, increase transparency, and promote investor security. While the mentioned EU Regulation obliged the Member States to draft the INECP already in 2018, Serbia's report is still in the process of being adopted. In May 2023, Minister Đedović asserted that Serbia's national objectives, under the INECP, will include an increase of RES capacities by threefold in the next few years, a 34 per cent reduction of GHG emissions by 2030 compared to the emission levels from 1990., and a decrease in average final energy consumption by 0,7 per cent on annual basis (RS GOV, 2023). It was further clarified that Serbia is expected

to adopt the INECP by the end of 2023 (RS GOV, 2023) although the adoption was already scheduled for late autumn in 2022 but the working group failed to deliver the most optimal scenario for meeting the energy objectives (MoME, 2022). In autumn 2022, Serbia reached four operative scenarios in the process of drafting the INECP, all of which include two versions – with and without nuclear energy – and an additional fifth “Fit for 55” which presented the situation where Serbia’s energy status resembled that of the EU (MoME, 2022). It is worth to mention that, while the EU Member States are obliged to draft INECP, the EnC has only issued a recommendation for the Contracting Parties as its adoption will bring their energy strategy closer to the European long-term agenda on clean energy. The drafting of Serbia’s INECP was part of the EU initiative for the advancement of the energy regulatory framework pertinent to its harmonisation with the *acquis* and broader energy objectives of the EnC, to which the EU allocated 900.000 EUR through the IPA 2017 project “Further Development of Energy Planning Capacities” (MoME, 2021). The project is imperative for the country’s clean energy transition and it is expected to accelerate the transpositioning of the EU *acquis*. With ongoing financial support from the Union, Serbia has the opportunity to diversify its energy resources and strengthen energy independence, while at the same time mitigating the risks associated with dependence on foreign imports and depleting fossil fuel reserves.

In regards to mentioned nuclear plants, Serbia currently does not have tangible plans to build nuclear capacities in the country. This is primarily attributable to the existing Law Prohibiting Construction of Nuclear Power Plants in the Socialist Federal Republic of Yugoslavia which has not been revoked since its adoption in 1989 despite Yugoslavia’s political transformations throughout the years (SRBATOM, 2022). Energy Sector Development Strategy (2015) for the Period up to 2025 with Projections up to 2030 also reports that the country does not possess a regulatory nor administrative framework for nuclear power plant operation. Against the

disadvantageous status of nuclear in the country, Serbia signed a package of intergovernmental agreements with the Russian Federation in 2019, creating a legislative groundwork for the execution of joint projects in the field of nuclear energy use for peaceful purposes (ROSATOM, 2019). In October 2021, President Vučić further affirmed that Serbia is interested in being a minority stakeholder of the Paks Nuclear Power Plant – the first and only nuclear power station in Hungary – whose capacity expansion will be managed by ROSATOM (Đurđević & Szalai, 2021). While Vučić drew a link between national energy security and the utilisation of nuclear energy, Minister Đedović argues that Serbia does not possess sufficient knowledge, experience, and workforce for the construction and operation of nuclear power plants (TANJUG, 2022).

European Energy Crisis and the Way Forward

The decision to strengthen RES regulatory framework and expand the capacities was made at the right time. The global energy crisis, further escalated by the Russian invasion of Ukraine, prompted the European Union to advance its efforts in import diversification and decarbonisation. In May 2022, European Commission put forward a proposal REPowerEU which seeks to structurally transform the Union's energy system through regulatory and infrastructural coordination, as well as by promoting national reforms. The document outlines five key measures to protect European energy security: increase energy efficiency, diversify supplier network, accelerate the utilisation of renewables, replace fossil fuels in industrial processes and transportation, and promote smart investment (European Commission, 2022). The Union has also committed to supporting Serbia – as part of the wider Western Balkans region – to facilitate a clean and just transition. According to the Joint Communication on EU External Energy Engagement in a Changing World (2022), the energy security of the

Western Balkans is closely related to the energy security of the EU, making it a central priority of the organisation's external agenda. The Union expressed concrete commitment towards the promotion of domestic reforms in the energy sector necessary for European integration, accelerated integration of renewables into national electric grids, and gradual discontinuation of the use of fossil fuels (EU External Energy Engagement in a Changing World, 2022). For this purpose, the Union ensured to offer financial support for the region. In December 2022, a support package was presented to Western Balkans, consisting of EUR 1 billion in EU grants, out of which EUR 500 million was given as an immediate measure to support vulnerable households and small and medium enterprises (SME), as well as provide assistance with energy transition and regional energy security (WBIF, 2022). Within this mechanism, the EU and Serbia signed an agreement on an allocation of EUR 165 million in budget support to tackle the energy crisis in the country in February 2023 (WBIF, 2023). This first payment will also consist of monetary support for bolstering Serbian energy security and the development of the government's energy roadmap, as well as the construction of the previously mentioned Kostolac Windfarm and the reconstruction of the Vlasina hydropower plant. The second part of the package funding will prioritise energy supply diversification, greater integration of renewables, strengthening energy efficiency, and reduction of dependency on Russian fossil fuels (WBIF, 2023). In sum, energy solidarity and international cooperation became the pinnacle of the European energy security agenda during the crisis.

While the Union is stressing the importance of reducing the dependence on resource imports from Russia, Serbia continued to foster its energy relationship with Moscow. President Vučić negotiated gas supplies with President Putin in May 2022, amid the Russian invasion of Ukraine. The meeting was scheduled upon the expiration of the extension of a previous bilateral agreement on natural gas imports which set the price of Russian gas for Serbia at USD 270 for 1,000 cubic meters of gas (TANJUG, 2022). The contract

was signed for a three-year period and, according to President Vučić, the purchase price would be three times lower compared to the rest of Europe (RS GOV, 2022). Former Minister of Mining and Energy, Zorana Mihajlović, later confirmed that the new price of gas was agreed to be USD 400 for 1,000 cubic meters of gas (BBC, 2022). Concerning the oil sector, NIS was previously in ownership of Gazprom Neft at 56.15 per cent, the Republic of Serbia at 29.87 per cent, and 13.98 per cent was owned by minority shareholders. Gazprom Neft reduced its stake in NIS to 50 per cent after selling 6.15 per cent of its shares to its parent company Gazprom in May 2022. President Vučić confirmed that Gazprom acquiring 10 million shares from its subsidiary was agreed upon in order to evade the EU sanctions (RFL, 2022) which prohibits its members to engage in any transactions with a body “established outside the Union whose proprietary rights are directly or indirectly owned for more than 50 per cent” by several entities including Gazprom Neft, according to Regulation Concerning Restrictive Measures in View of Russia’s Actions Destabilising the Situation in Ukraine (2014). The Serbian President previously clarified that Serbia is open to purchasing more shares in NIS with the purpose of ensuring the security of supply of the crude oil (SRNA, 2022).

Alternatively, Serbia followed the EU lead in expanding its gas supply network. The country did not continue to rely exclusively on Russian gas but started to actively seek other suppliers. Just a few days after the settlement was made with the Russian Federation, an Agreement on Cooperation in the Field of Energy was signed between Serbia and Azerbaijan. The contract was focused on strengthening the cooperation principally in the gas sector with regards to the Southern Gas Corridor (Government of Serbia, 2022). The following month, the EU finalised the new Memorandum of Understanding on a Strategic Partnership in the Field of Energy with Azerbaijan, replacing the previous contract from 2006 (European Union, 2006). Through this bilateral agreement, the EU seeks to find an alternative to fossil fuel imports from Russia and ensure a stable gas supply via Southern Gas Corridor to the Union (European Commission, 2022).

One of the crucial steps in accomplishing the supply diversification for Serbia is building of the Bulgaria – Serbia gas interconnector (IBS), which the EU defines as a “project of common interest” (PCI). According to the Regulation on Guidelines for Trans-European Energy Infrastructure (2013), a project of common interest is “a project necessary to implement the energy infrastructure priority corridors”. The IBS has been included in the Union list of PCIs, as pursuant to Regulation (EU) 2016/89. The Niš – Dimitrovgrad pipeline is a bidirectional gas interconnector, 108 kilometres in length across Serbian territory, and is promoted by Srbijagas (European Commission, 2023). For the project, Serbia has contributed more than EUR 15 million, European Investment Bank loaned an additional EUR 25 million, while the European Union, through an external IPA 2017 grant awarded almost EUR 50 million (WBIF, 2021). The pipeline, in fact, has been awaiting implementation since 2011 when the project pre-feasibility assessment started in Serbia (energy-community.org, n.d.). The construction works officially started on the Bulgarian section on the 1st of February 2023 and are expected to be completed by the end of the year (European Commission, 2023). While Serbia and Bulgaria already connected their natural gas networks as part of the Turk Stream project, this interconnector will allow Serbia to diversify its supplier options and import gas from the Southern Gas Corridor, including the potential purchases from Azerbaijan.

Since Serbia imports gas exclusively from Russia through the Turk Stream pipeline connection with Bulgaria – and given that national resource reserves are limited and continuously depleting – the country decided to temporarily ban the export of natural gas. The Resolution (2022) was put into force on the 17th of October 2022 “to prevent the threat of a critical shortage caused by the global disruption in the energy market, and in order to ensure a safe supply of the market of the Republic of Serbia”. The initial decision was to halt gas exports until the 31st of October but the deadline was extended several times, until its final termination on the 28th of February, 2023 (Resolution on the Temporary Ban on the Export and Taking Out of Natural Gas, 2023). The

EnC notified Serbian authorities that the ban is in violation of the Energy Community Treaty (Energy Community, 2023). The energy crisis also triggered the return of coal as an integral power resource in an attempt to tackle the surge of energy prices and ensure greater security of supply. In order to mitigate these risks, EPS reached an agreement with the Coal Mine Pljevlja from Montenegro to buy a total amount of 300.000 tonnes of coal at the tax-free rate of 28,8 euros per tonne which is more than 20 per cent of the price of the same coal being sold to the Pljevlja Thermal Power Plant (Coal Mine Pljevlja AD, 2023). Another agreement was made between EPS and brown coal mine Banovići from Bosnia and Herzegovina for 2023 (RMU Banovići, 2022). President Vučić has also offered to exchange electric power for lignite from Kosovo but his proposal was rejected by Prime Minister Albin Kurti on the grounds of Serbia's non-recognition of Kosovo as a sovereign state (Beta, 2022). According to the Energy Balance for 2023, the Government of Serbia is planning to import approximately 70 per cent more coal compared to the previous year.

Discussion

The presented empirical findings are further analysed in this chapter and its evaluation will be utilised to answer the research questions: *How does Serbia respond to the developments in national and international energy sectors in the context of European integrations? How is the performance of energy security in the Republic of Serbia affected by the EU's energy strategy?* The discussion of the results will refer to the theoretical framework outlined in this study, as well as the existing literature surrounding the impact of the European Union's external energy strategy and its effect on energy security.

Firstly, in order to answer the research questions and meet the objectives of the study, it is necessary to contextualise energy security in the case of the Republic of Serbia. Considering that the understanding of the concept of energy security is state-centric and dependent on the circumstances of individual countries, an assessment of the general characteristics of the Serbian energy sector is required. It follows that Serbia is an energy-importing state and, thereby, conforms to the traditional rationale of "security of supply". This observation also illustrates the existing overlap between import states and transit states. The country's hydrocarbon resources are rapidly depleting while the exploitation of non-renewable is not sufficiently utilised, prompting the authorities to rely on purchases from abroad. This places Serbia at a particularly high geopolitical risk for its energy sector as the security of supply is dependent on the efficiency of national foreign policy and the degree of political and economic stability in the country which resources are derived from. Serbia's net import dependence in 2020 was 30.2 per cent and is not expected to significantly decline in the foreseeable future. In contrast, Serbia predicts a 70 per cent increase in coal imports in 2023 and has already signed trade agreements with two neighbouring countries, Bosnia and Herzegovina and Montenegro, in order to ensure sufficient coal reserves.

Further, the country exclusively relies on Russian Federation for the supply of natural gas. The bilateral relationships between the two states dates back to the Yugoslavian political system and both long-term and short-term gas agreements were renewed several times between 2006 and 2023. Since Serbia does not have an alternative gas supplier – and the domestic resources are insufficient to meet the demands – the country decided not to comply with the EU directions to halt Russian gas imports following the war in Ukraine. Being an import-dependent country, it is of crucial importance for Serbia to maintain strong relations with their energy partners. This further led to the cost of imports from Moscow to Belgrade being four times lower compared to the purchases made by the EU (albeit it has to be considered that the price of natural gas in the energy market constantly fluctuates and this information is strictly applicable for the time period when President Vučić made the statement). Here, it is also worth to mention that the construction of the interconnector with Bulgaria contributed to the diversification of resources and is likely to reduce risks associated with the sole supplier. Taking into account the mentioned features of the Serbian energy sector, it can be concluded that Serbia's definition of energy security is compliant with the delineations provided by Yergin and Chevalier. The energy security of the Republic of Serbia represents an available, affordable, and adequate supply of energy resources over a continuous period of time. As another resource-deficient territory, the EU shares a similar perspective concerning its energy affairs.

So, how does Serbia respond to vital energy-related developments taking into consideration the commitments made to the EU (and, by default, to the EnC)? According to Hoffmann, high politics refers to matters which are pertinent to the survival of the state. Understanding that energy security is a multifaceted notion which also incorporates the matters of economy, foreign policy, and the environment, the notion is heavily associated with national security. Thereby, it follows that the country will prioritise the protection of its energy security, as a vital national interest, over anticipated integration and

cooperation on a supranational level. Serbia also perceives energy security as equivalent to national security. The country's response is dependent on prospects and challenges related to its security of supply. For instance, Serbia is inclined to comply with the EU-promoted integration of RES since the levels of compromising are low and the further expansion of renewable capacities will be beneficial for the energy security performance, as it provides a clean alternative to resources which currently dominate the consumption and effectively contributes to the diversification of the national energy mix. The energy transitioning also enjoys notable monetary support from the Union, both for the infrastructure – including reconstruction of the Vlasina Hydropower Plant and building of the Kostolac Windfarm – and for the purposes of strengthening the regulatory framework and meeting the climate targets, such as drafting of INECP which was funded through the IPA.

In contrast, the agreement on issues relating to natural gas is low. Serbia endured notable losses with the cancellation of the South Stream pipeline. Once the project was effectively renewed under the name Turk Stream, Serbia relied on an exemption clause in the transposed legislation, namely the Gas Directive 2009, to ensure the new pipeline is not subjected to the key provisions of EU regulation. The EnC warned that the Turk Stream is in violation of TEP but the authorities failed to undertake appropriate measures and ensure the project meets the criteria for exemption. The EnC opinion was eventually disregarded as Serbia proceeded to operate the pipeline without adequate allocation of third-party access and valid certification for Gastrans. The functioning of the Turk Stream was of vital importance to Serbia's security of supply following Gazprom's decision to abandon transit through Ukraine. A similar loophole was utilised once the EU implemented sanctions on Gazprom Neft. Since the EU itself cannot provide an alternative gas import for the needs of the Serbian population, the Balkan country's authorities refused to compromise on stable natural gas supplies. It concludes that different dimensions of the energy sector have different degrees of importance and contribution to the general state of

energy security. This allows Serbia to prioritise international cooperation and European integration in certain segments relating to their energy safety while others are strictly positioned within the domain of national control. The levels of compliance and integration are high where energy security is not challenged. If the developments in the energy sector can negatively impact Serbia's security of supply, the country seeks to benefit from escape clauses, inadequately implements the controversial regulatory framework, or explicitly goes against the EU's directions.

Here, it is necessary to assess what impact does the process of European integrations actually have on Serbia's energy security performance. The European Union does not have a coherent and common energy policy due to the diverse national interests and energy circumstances of its Member States. Meanwhile, the existing regulatory framework is a product of the indisputable benefits of its application. Measures such as promoting interstate solidarity, addressing climate change concerns, decarbonisation, and diversification of national energy mixes are required for sustainable energy generation and stable resource supply. However, states whose circumstances surrounding energy production are inherently incompatible with the EU objectives would find the reforms more challenging.

As late as in 2021, almost 83 per cent of total energy supplies were sourced from fossil fuels out of which more than 40 per cent came from coal. EPS, which holds the monopoly on the Serbian electricity market, reports that around 70 per cent of electricity is generated in coal-fired thermal power plants. Taking into account the absolute dominance of lignite in power production, and a lack of sufficiently developed alternatives, ceasing the use of coal is currently unattainable. While the infrastructure is dated, it is nevertheless operational and arguably the most developed in the country, considering that the notable expansion of solar and wind energy only began in 2019 and less than half of available hydro capacities are used annually. The EU officially adopted the

policy framework to achieve the GHG reductions and climate neutrality through the European Green Deal. Despite the climate targets set by the EU and outlined decarbonisation objectives in the Green Agenda for the Western Balkans, Serbia nevertheless continued with coal industry reconstruction and expansion. The project is predominantly financed by China, as a part of the Belt and Road Initiative, with a small contribution from the EPS, allowing greater foreign intervention in the Serbian energy sector. Considering that the Kostolac B3 plant is yet to come online, and Serbia's coal reserves are sufficient for at most the next 57 years, the incentive to continue the use of coal is not sustainable. However, coal is an affordable and readily available source. The quantity and quality of the supplies are inadequate but the electricity generated from coal is primarily sourced from domestically exploited resources which guarantees a certain degree of Serbian energy independence. Understanding the extent of its use, if the country abandons coal, it does not have a substitute source to adequately satisfy the domestic electricity demands nor a well-advanced power-producing infrastructure for the use of other resources (such as solar or wind). This is also the reason behind the expansion of the coal mining sector, especially during the energy crisis.

Further, Serbia adopted the first legislation on renewables in 2021 while the necessary by-laws were agreed upon in 2023. Without an adequate regulatory framework, investments cannot be properly implemented and the lack of political consensus on the issue delayed the country's progress in RES integration. With the implementation of CBAM, and considering the rise in the price of carbon permits at the EU ETS, carbon-intensive exports from Serbia could be unmarketable. Regarding the fact that the EU is Serbia's largest trading partner, this will have an adverse impact on the country's economic growth and industrial production, unless effective measures are undertaken. The carbon tax seeks to address carbon leakage but, aside from the economic repercussions, the system is not based on a concrete plan of action to minimise GHG emissions. Clean transition is a significantly more complex and lengthy procedure than

simply replacing fossil fuels with clean energy sources. Developing states, such as Serbia, will experience serious consequences for their economy if the alternative is not promptly operational. In sum, Serbia struggles with affordability, as well as availability, of the resources whose is a cornerstone of SOS. The resources which utilisation is comparatively affordable, such as coal, do not meet the EU energy objectives. Alternatively, the use of resources and methods of energy production as supported by the Union are unaffordable or inaccessible. The state subsidies are making green energy more expensive for customers and the expansion of RES still remains in the beginner stages.

Taking into account Serbia's economic prowess, it is evident that the necessitated energy reforms are unaffordable to be executed without grants and/or loans. Aside from the Union's assistance, such circumstances enable the intervention of foreign powers in the Serbian energy sector, including Russia, China, and Japan. The EU Member States – such as Italy and Germany – are also individually committed to strengthening of Serbia's energy security through the integration of renewables. Here, the Union relies on its policy of positive reinforcement and persistently provides monetary aid in order to support energy transitioning and the advancement of *acquis* compliance. Serbia is allocated funding for both the expansion of energy infrastructure and the improvement of regulatory framework. This assists Serbia in process of European integrations and subsequently serves as an incentive towards EU membership. There are no conspicuous withdrawals of financial reward in cases on non-compliance albeit legal proceedings are being opened in events of breaches of the EU legislation which is illustrated in the cases of Gastrans pipeline project in 2019 and the violation of emission limits in 2020. This is likely due to Serbia's compliance with the EU directives in other spheres of their energy strategy and the inherent geostrategic importance of the region, including the proximity to the Union. Taking also into account that energy insecurity is a problem on global level, the EU is not truly in the position to

adopt negative conditionality approach and terminate aid due to failed implementation of necessary reforms.

Serbia's balancing act ensures the substantial degree of integrations while simultaneously reserving compliance in areas where security and stability of energy systems might not be positively affected by adhering to the EU guidelines. There is slow progress towards membership but this cannot be attributed merely to the inadequate energy reforms under EU obligations. EU integrations encompass a wide range of political, economic, and cultural coordination with the Union and it is highly unlikely that lack of certain energy reforms are the sole reason for obstructions in Serbian accession process. However, while absolute compliance with the *acquis* is not necessary, it is required for national regulatory frameworks and political objectives to be as closely aligned to the EU's as possible. Concerning the energy sector in particular, Serbia does not possess the capacities at the moment to adequately implement the EU requirements without jeopardising certain segments of its energy security. It is undeniable that the world cannot continue relying on exhaustible and depleting hydrocarbons, cannot be isolated in the energy market, and cannot depend on undiversified energy imports. However, energy transitioning for a carbon-intensive and import-dependent state is a large-scale project which necessitates gradual implementation and external assistance. The ongoing energy crisis exacerbated the energy instabilities in the country and demonstrated that Serbia is not entirely able to promptly adapt to the state of energy emergency in accordance to the commitments made to the EU.

However, it cannot be argued that the energy insecurities are promulgated by the Serbia's commitments to the EU. The country is susceptible to threats to its energy systems given the pre-existing conditions of its energy sector. Serbia is less dependent on resource imports compared to the average of the European Union due to its vast hydro potential and coal abundance. Hydro power represents a unique opportunity for clean electricity production and

strengthened energy independence but requires notable investments in the expansion of infrastructure. Aside from adopted decarbonisation goals, coal use requires the operation of units for the mitigation of GHG emissions. The construction of GHG removal technologies (an example being the desulphurisation unit at the Kostolac power plant) is still scarce and reasonable doubt exists concerning its proper use. Inadequate implementation of existing measures was discussed by Piletić and outlined in a study conducted by the Centre for the Study of Democracy which suggests that Serbian energy security also suffers from a lack of transparency, lack of political will, and/or corruption. This is exemplified in cases of inadequate unbundling of gas transmission operators, delays in the adoption of RES legislation, late NERP approval, delays in pipeline and power plant constructions and modernisation, and a number of announced but unmaterialized energy projects. The structural concerns are also illustrated in the selling of NIS for a price under its market value where Gazprom acquired 51 per cent of the enterprise that has the monopoly over oil and gas exploration. While the Serbian oil sector is significantly diversified, the Russian state-owned company, as a majority shareholder, has significant authority over how the enterprise operates and thereby lowers Serbian energy stability and independence.

It is evident that Serbia is committed to the EU integrations just not at the expense of affordable, available, and accessible security of supply. However, maintaining the status quo would make the country susceptible to a number of risks to its energy security. Taking into account Chester's and Checchi et al. assertion that the pinnacle of energy security is risk management, it can be concluded that Serbia is facing geological, technical, economic, geopolitical, and environmental challenges. The perception of Serbian authorities towards the EU-supported transitioning and reconstruction in the field of energy is at times unfavourable but progress is being made. Every large-scale transition carries a number of challenges and difficulties as the system adapts to the new conditions. Albeit the energy security performance could

underperform in some aspects during the transition period, the durable benefits concerning the state of energy security are undeniable. By adhering to the EU instructions in the long-term, Serbia has the opportunity to meet two national objectives simultaneously: protect its energy security and demonstrate readiness to join the European Union.

Conclusion

In sum, this paper sought to answer two interrelated research questions. First research question aimed to establish how does Serbia respond to relevant developments in national and international energy sectors in the context of European integrations? The purpose of identifying the extent of Serbian compliance with the European Union's regulatory framework was to identify the vital energy concerns pertinent to the national security of supply and explore the relationship between the country's energy security and the obligations Serbia has under the accession procedure to the EU within the energy sector. Therefore, the second research question enquires how is the performance of energy security in the Republic of Serbia affected by the EU's energy strategy.

The empirical findings showed that Serbia's degree of adherence to the regulatory framework and energy objectives of the EU is dependent on the impact of mentioned measures on the country's security of supply. If the EU-supported measures do not substantially affect the affordability, accessibility, and availability of vital resources, the country is more likely to comply with the given guidelines. In contrast, if the course of action would destabilise the energy supply, Serbia decides to either rely on escape clauses or loopholes in legislation, incomplete and fragmented implementation of the contested framework, or direct non-acceptance of the instructions provided by the Union. Serbia perceives energy security to be correlative to national security. The country is ready to compromise as long as the key national interests are not questioned. Thus, Serbia is inclined to observe the measures which enhance its energy security or otherwise do not necessitate large-scale infrastructural changes at the expense of an already stable resource supply. Once the EU measures go against what Serbia perceives as a vital matter to energy security, the country prefers the national approach and seeks to preserve the competencies over the issue. Finally, it is worth mentioning that the country

cannot adequately respond to the global energy crisis while simultaneously meeting its commitments to the Union. This is a result of some of the fundamental characteristics of the Serbian energy sector going against the EU energy strategy or being incompatible with existing EU objectives in general. Concessions are made only while the security of supply is maintained.

As a result of the application of an extensive case study analysis, it can be concluded that the process of European integrations in the field of energy significantly affects the energy security performance in the Republic of Serbia. For the purpose of answering this question more efficiently, two scenarios can be considered: the short-term impact of energy integrations and the long-term impact of energy integrations. In regard to the short-term effects, it needs to be noted that Serbia currently does not possess the capacities to implement the energy reforms necessary for European integration. Considering the incompatibilities of the Serbian energy balance and the state of affairs with the EU strategy, the country is required to undergo radical structural adaptations in order to be adequately aligned with the Union's approach. Abrupt transformations within the energy sector, as necessitated by the onset of the energy crisis and the Russian invasion of Ukraine, would destabilise the security of supply and put Serbia's energy security at risk. The impact of the complete transposition of the EU's *acquis* – including its proper and adequate implementation – in this case, would generate volatility. Given the economic circumstances, current energy positioning, and the progress that has been made until the present day, energy reforms as part of the European integrations would have a negative impact in short-term.

However, preserving the status quo is not feasible for the country. Serbia's current approach to energy matters, even if the potential EU accession is taken out of the equation, is unsustainable. This is particularly pertinent to Serbia's energy dependence on foreign actors, reliance on hydrocarbons, and late interconnectedness. It is also worth to note that political and administrative

processes contributing to delays in the adoption of necessary legislation, as well as the realisation of infrastructural projects, are negatively impacting the country's energy security. Thereby, compliance with the EU regulatory framework and adequate implementation of energy-related acts – including meeting wider EU objectives – is currently the only feasible option for Serbia. Energy transition for carbon-intensive, developing states is a lengthy and challenging process which requires external support. Serbia already guaranteed a diverse set of foreign assistance while continuing to demonstrate commitment towards EU integrations. Thereby, it is important for global policy-makers to take into account the potential risks to energy security of countries in transition and provide financial and technical support. Energy insecurity is a global problem which requires region-sensitive but global solutions. Cooperation and joint effort are required moving forward.

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