ENERGY AND CLIMATE PROGRAM

In 2022, the Energy and Climate Program focused on the following topics:

- **Energy and climate security.** CSD is mapping the patterns of the Kremlin's weaponisation of energy supply and has advocated for better energy sector governance to decouple from the Kremlin's malign economic and political influence. CSD developed the Energy and Climate Security Risk Index (ECSRI) – a data-driven policy instrument that allows for objective comparison of the countries' progress towards the achievement of common strategic goals.

- **Developing Bulgaria's offshore wind energy potential.** CSD has pioneered the work on unlocking Bulgaria's Black Sea offshore wind energy potential by developing a new regulatory framework that could attract the most experienced European companies to the nascent Bulgarian sector. The Energy and Climate Program proposed the adoption of a special *Law on Offshore Renewable Energy* that aims to streamline the investment process by eliminating potential conflicts with other existing legislative acts and secondary legislation.

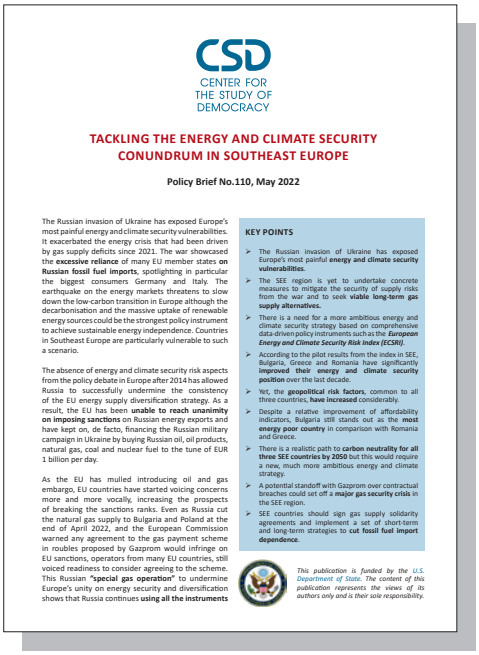
- **Long-term decarbonisation and energy efficiency.** The Energy and Climate team focused on capacity building by providing technical assistance to the Bulgarian government on developing its National Recovery and Resilience Plan (NECP) and the National Roadmap to Climate Neutrality until 2050. CSD was heavily involved in the Energy Transition Committee (ETC) by providing evidence-based modelling assessments of the transition process. The Center also engaged in a Europe-wide study to measure energy efficiency investments' contribution to achieving carbon neutrality. The analysis places specific emphasis on the profound effects of energy efficiency on socio-economic indicators that go beyond the reduction of energy consumption.

- **Energy poverty and social acceptance of the just transition.** The team also developed a detailed assessment of the draft version of Bulgaria's Territorial Just Transition Plans (TJTPs). It underlined the need for a much more ambitious low-carbon transition strategy that focuses on the green transformation of the coal regions, incentivising the uptake of cutting-edge technologies and innovations, and the strengthening of the role of SMEs for the restructuring of the foundations for economic growth. In addition, CSD worked on combating energy poverty by assessing the effects of increasing carbon costs and providing recommendations for the effective distribution of the tax revenues with the aim of shielding the most vulnerable communities.

I. Energy and climate security measurement

The European Union is facing one of the most difficult energy and climate security challenges in its history. The surge in energy prices that began before the Russian invasion of Ukraine has starkly revealed the need for a new global strategy for solving the energy policy trilemma of security of supply, affordability and sustainability, all the while minimising geopolitical risks. Political and business leaders need a data-driven policy instrument such as the Energy and Climate Security Risk Index (ECSRI).

CSD piloted the Index in five of the most vulnerable European countries, including Germany, Italy and three South East European states – Bulgaria, Romania and Greece, to monitor their progress,



CSD
CENTER FOR THE STUDY OF DEMOCRACY

TACKLING THE ENERGY AND CLIMATE SECURITY CONUNDRUM IN SOUTHEAST EUROPE

Policy Brief No.110, May 2022

The Russian invasion of Ukraine has exposed Europe's most painful energy and climate security vulnerabilities. It exacerbated the energy crisis that had been driven by gas supply deficits since 2021. The war showcased the **excessive reliance** of many EU member states **on Russian fossil fuel imports**, spotlighting in particular the biggest consumers Germany and Italy. The earthquake on the energy markets threatens to slow down the low-carbon transition in Europe although the decarbonisation and the massive uptake of renewable energy sources could be the strongest policy instrument to achieve sustainable energy independence. Countries in Southeast Europe are particularly vulnerable to such a scenario.

The absence of energy and climate security risk aspects from the policy debate in Europe after 2014 has allowed Russia to successfully undermine the consistency of the EU energy supply diversification strategy. As a result, the EU has been **unable to reach unanimity on imposing sanctions** on Russian energy exports and have kept on, de facto, financing the Russian military campaign in Ukraine by buying Russian oil, oil products, natural gas, coal and nuclear fuel to the tune of EUR 1 billion per day.

As the EU has mulled introducing oil and gas embargo, EU countries have started voicing concerns more and more vocally, increasing the prospects of breaking the sanctions ranks. Even as Russia cut the natural gas supply to Bulgaria and Poland at the end of April 2022, and the European Commission warned any agreement to the gas payment scheme in roubles proposed by Gazprom would infringe on EU sanctions, operators from many EU countries, still voiced readiness to consider agreeing to the scheme. This Russian **"special gas operation"** to undermine Europe's unity on energy security and diversification shows that Russia continues **using all the instruments**

KEY POINTS

- The Russian invasion of Ukraine has exposed Europe's most painful **energy and climate security vulnerabilities**.
- The SEE region is yet to undertake concrete measures to mitigate the security of supply risks from the war and to seek **viable long-term gas supply alternatives.**
- There is a need for a more ambitious energy and climate security strategy based on comprehensive data-driven policy instruments such as the ***European Energy and Climate Security Risk Index (ECSRI)***.
- According to the pilot results from the index in SEE, Bulgaria, Greece and Romania have significantly **improved their energy and climate security position** over the last decade.
- Yet, the **geopolitical risk factors**, common to all three countries, **have increased** considerably.
- Despite a relative improvement of affordability indicators, Bulgaria still stands out as the **most energy poor country** in comparison with Romania and Greece.
- There is a realistic path to **carbon neutrality for all three SEE countries by 2050** but this would require a new, much more ambitious energy and climate strategy.
- A potential standoff with Gazprom over contractual breaches could set off a **major gas security crisis** in the SEE region.
- SEE countries should sign gas supply solidarity agreements and implement a set of short-term and long-term strategies to **cut fossil fuel import dependence**.

This publication is funded by the U.S. Department of State. The content of this publication represents the views of its authors only and is their sole responsibility.

Energy and Climate Security Risk Index

Geopolitics	Affordability	Reliability	Sustainability
• Security of World Oil Reserves	• Oil & Natural Gas Import Expenditures	• World Oil Refinery Utilization	• Energy Intensity
• Security of World Oil Production	• Oil & Natural Gas Import Expenditures per GDP	• Petroleum Stock Levels	• Fossil Energy Intensity
• Security of World Natural Gas Reserves	• Energy Expenditures per GDP	• Energy Consumption per Capita	• Transportation Non-Petroleum Fuels
• Security of World Natural Gas Production	• Energy Expenditures per Capita	• Household Energy Efficiency	• Energy-Related CO_2 Emissions
• Security of World Coal Reserves	• Retail Electricity Prices - HH	• Commercial Energy Efficiency	• Energy-Related CO_2 Emissions per Capita
• Security of World Coal Production	• Crude Oil Prices	• Industrial Energy Efficiency	• Energy-Related CO_2 Emissions Intensity
• Security of Petroleum Imports	• Energy Expenditure Volatility	• Electricity Capacity Diversity	• Electricity Non-CO_2 Generation Share
• Security of Natural Gas Imports	• Science & Engineering Degrees	• Electricity Capacity Margins	• Land Cover
• Crude Oil Price Volatility		• Electricity Transmission Line Mileage	• Waste per Capita
		• Transmission and Distribution Losses	• Waste Recovery
		• Transportation Energy Use per Capita	
		• Transportation Energy Use per $ GDP	

Sector Overview

options and possible actions in tackling the wide spectrum of geopolitical, economic and climate transition challenges emerging from the Kremlin Playbook for undermining the European unity. This has demonstrated the need for a **data-driven platform** that allows for objective comparison of the real progress of all EU Member States towards common strategic goals.

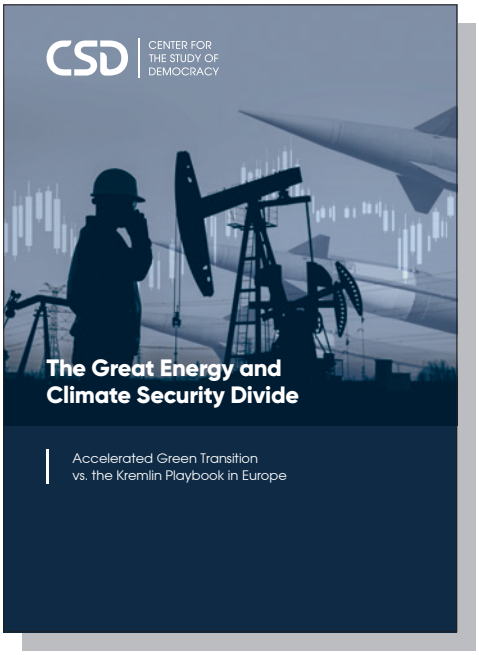
The Index has four pillars, reflecting the four dimensions of energy and climate security risks: geopolitics, affordability, reliability, and sustainability. It covers 42 individual risk indicators, based on thousands of data points, and allows both policy-makers and experts to fully reflect on a wide spectrum of risks associated with the excessive reliance on fossil fuels, as well as the risk mitigation potential of decarbonisation policies. In addition, the reliability dimension captures the risks associated with the structure of the energy system and its ability to absorb potential shocks.

CSD presented the key findings from the Index during a series of policy roundtables in Berlin, Brussels, and Milan. The discussions, which featured some of the most experienced U.S. and EU energy and climate security experts, aimed to define a new long-term policy strategy for improving energy and climate security risks.

(L-R): CSD Senior Energy Analyst Kostantsa Rangelova, Melanie Kenderdine, Principal, Energy Futures Initiative, Can Ogutcu, Analyst for Energy Security, NATO Supreme Headquarters Allied Powers Europe and Radan Kanev, MEP, ENVI Committee, European Parliament at the policy roundtable "Europe's Energy and Climate Security: Lessons from the Kremlin Playbook", Brussels, 28 June 2022

Based on the detailed assessment of the Index' findings, CSD developed *The Great Energy and Climate Security Divide: Accelerated Green Transition vs. the Kremlin Playbook in Europe*, an analysis focusing on energy and climate security risks in the EU. CSD presented the assessment at a luncheon in Washington, D.C. and a policy roundtable in Brussels entitled "Democratic Resilience in the EU's Neighborhood: The Role of Good Governance and Constructive Capital". The two events gathered around 60 of the most relevant U.S. and European policy-makers, experts and business representatives.

CSD experts also conducted a series of policy consultations on the Index at the Department of State and the U.S. Senate Foreign Relations Committee, as well as non-governmental institutions and think-tanks. The discussions focused on the existing sanctions regime on Russian crude oil imports and the governance loopholes that prevent their enforcement.



The analysis of energy and climate security risks is part of the broader CSD work on the **Kremlin Playbook in the European energy sector.** In 2022, CSD experts

(L-R): Ambassador Ilian Vassilev, Chairman of the Board, Alternatives and Analyses, CSD Energy and Climate Program Director Martin Vladimirov and Radoslav Ribarski, Chairman, Parliamentary Committee on Energy at the international conference "Energy Security and Climate Change: Emerging Dimensions after the Invasion in Ukraine", Sofia, 28 March 2022

expanded the assessment of Europe's vulnerability to the Russian economic influence, focusing on Russian energy and economic influence and mapping the informal networks of influence.

The main findings fed into the policy briefs *Europe Will Make Do Without Russian Oil* and *How to Deal with Kremlin's Desire to Starve Europe of Energy*. They feature an overview of the different aspects of the Russian influence in the European energy sector, including: 1) energy trade and investment interdependence; 2) Russian direct and indirect corporate footprint in the European energy sector, and 3) the enablers of Russian influence in Europe.

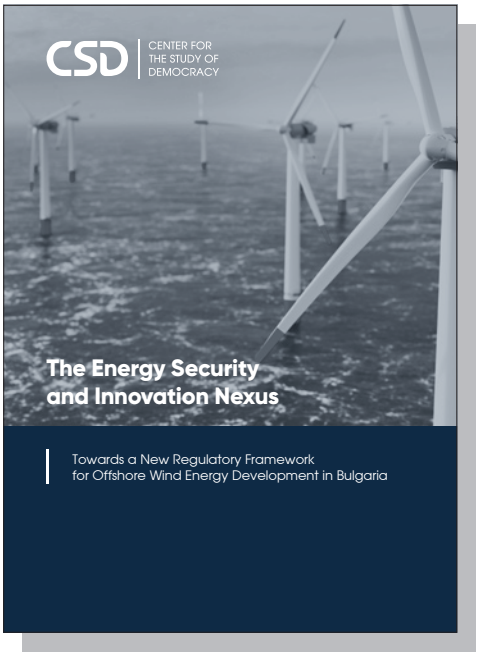
CSD experts also developed targeted policy recommendations for U.S. and European policy-makers on how to implement sanctions against Russia more effectively, which were summarised in the policy brief *Countering the Kremlin Playbook in Europe after Russia's Invasion of Ukraine*. The analysis maps the key mechanisms of the Kremlin Playbook in Europe and provides a policy pathway to completing Europe's economic and political decoupling from Russia.

One of the most effective ways to improve European energy and climate security is to accelerate the natural gas phase-out from the European energy sector. After the Russian invasion in Ukraine, CSD joined a Europe-wide modelling assessment of different natural gas phase-out scenarios, which aims to study how Europe can fully eliminate its dependence on Russian gas imports and gradually electrify and decarbonise the energy consumption in the industrial and construction sectors. On 12 December, CSD organised the webinar "The Future of Natural Gas in Southeast Europe: Diversification and Phase-Out" discussing the different policy measures that SEE governments must implement in order to achieve a complete diversification of the natural gas supply away from Russia and to gradually transform their energy sectors towards a new low-carbon future.

II. Offshore wind

In the aftermath of the Russian invasion in Ukraine, it is imperative that European countries embark on a new energy policy pathway towards independence from fossil fuel imports. Unlocking the full potential of the European seas for offshore wind energy would play a key role in achieving the EU's energy and climate security targets. It is only through the adoption of a specific and thorough legislative framework that Bulgarian authorities could ensure that offshore wind power becomes an attainable priority in the country's long-term strategic policy on energy security.

After pioneering the assessment of the offshore wind energy potential of the



Bulgarian section of the Black Sea in 2021, in 2022 CSD developed a roadmap for adopting specialised regulatory framework for unlocking this potential in Bulgaria's energy mix. The policy brief followed up on the consensus reached by Bulgarian political parties on supporting the adoption of an offshore wind energy law during meeting of the Energy Committee of the Bulgarian Parliament in the beginning of March.

The proposed framework has also been the result of a comparative analysis of the extensive regulatory experience of four EU offshore market leaders and recent legislative developments in emerging markets. On 30 August 2022, CSD organised the international policy conference "Laying the Regulatory Groundwork for Low Carbon Energy in the Black Sea Region" to present the narrative of the regulatory framework. The event gathered key European and local offshore wind experts and policy-makers who engaged in an in-depth discussion of the most appropriate ways of implementing offshore wind in Bulgaria's long-term energy strategy.

III. Long-term decarbonisation and energy efficiency

The Russian invasion in Ukraine has increased European energy and climate security risks and has added another major challenge to the survival of European energy-intensive industries in addition to the challenge of decarbonisation. CSD has been involved in the development of a common methodology for measuring the progress towards climate neutrality and for modelling long-term decarbonisation scenarios for Bulgaria. CSD experts fostered a facts-based dialogue on the different policy pathways for enhancing the 2030 energy transition and energy efficiency targets and raising the decarbonisation ambition for non-ETS sectors (buildings, transport, agriculture and LULUCF) where domestic policy

"Energy Transition and Energy Security in Europe: Offshore Wind Energy Development in the Black Sea", hearing at the Bulgarian Parliament, Sofia, 9 March 2022

action will have the greatest impact on the scope of low-carbon transformation.

On 15 July 2022 CSD, together with DG Research and Innovation of the European Commission and the Enterprise Europe Network Bulgaria, organised a policy roundtable on transitioning the ecosystem of energy-intensive industries toward climate neutrality in Eastern Europe. The experts from the European Commission presented the main findings and conclusions of the European Research Area (ERA) Roadmap, identifying key and innovative low-carbon technologies for energy-intensive industries, as well as tools to attract R&I investments to accelerate their deployment and uptake in energy-intensive industries.

To discuss green energy transition and the ways to unlock cutting-edge technological innovations, CSD and the Embassy of the Republic of Korea in Bulgaria organised the international conference "Unlocking Bulgaria's Energy Innovation Potential for a Low Carbon Transition" on 15 November 2022. The event brought together national and international experts who deliberated on the necessary policies for the uptake of Bulgaria's low-carbon transition and energy innovations.

CSD continued to work with the Bulgarian government on completing key milestones in the National Recovery and Resilience Plan by providing technical assistance to the Energy Transition Committee (ETC) part of the Consultative Council on the Implementation of the European Green Deal at the Council of Ministers. The Energy and Climate Program assisted the ETC with modelling assessments, more specifically updating existing scenarios for Bulgaria in the *Pathways Explorer* and integrating the new country's commitments for coal phase-out and a gradual low-carbon transition. The scenarios will be included in the report to be prepared by the

Policy discussion "Transition of the Energy-Intensive Industries' Ecosystem to Climate Neutrality in Eastern Europe" Sofia, 15 July 2022

ETC and submitted to the National Parliament.

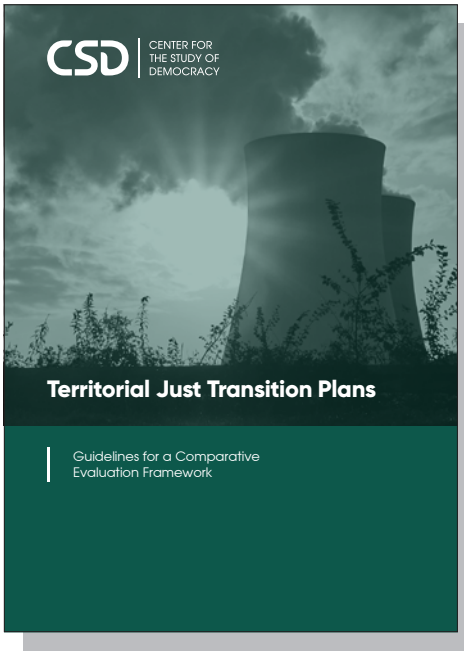
In light of Bulgaria's increased commitments to enhance its energy and climate governance, CSD is providing technical support to EU Member States to ensure the timely delivery of the revised versions of their National Energy and Climate Plans (NECP). In particular, CSD experts have been providing support to the energy ministries of six Member States by providing modelling assessments of different NECP scenarios. The experts also offered policy suggestions for improving the strategic documents and the implementation of best practices to tackle the key challenges for reaching EU's decarbonisation targets.

As energy efficiency measures are key for achieving the goals of the European Green Deal for climate neutrality by 2050, CSD conducted assessments to quantify the direct and indirect non-energy impacts of energy efficiency investments and worked on developing a Policy Support System that allows policy-makers and businesses to better understand energy efficiency policies and their cost effectiveness, and develop enhanced plans and measures for rolling out energy efficiency investments.

IV. Energy poverty and social acceptance of the just energy transition

Bulgaria's coal regions are facing considerable decarbonisation challenges, and are struggling to define the priorities for a just and green transition in line with the Bulgarian commitments under the European Green Deal. The fossil fuel dependence of the regions means that they need to accelerate low-carbon technological solutions while ensuring a fair and just transition for those affected. This was the focus of the policy roundtable "Towards a Just Transition in Bulgaria: Unlocking the Green Transforma-

International conference "Unlocking Bulgaria's Energy Innovation Potential for a Low Carbon Transition", Sofia, 15 November 2022



tion Potential of Stara Zagora, Pernik and Kyustendil", held on 14 November 2022 with key national and local policy-makers, independent experts, and business representatives, who discussed CSD's detailed assessment of the draft

Policy roundtable "Unleashing a Green Economic Diversification in the Coal Regions of Bulgaria", Sofia, 14 November 2022

TJTPs. During the event, CSD presented a comprehensive report of the draft Plans, based on a comparative methodology for evaluating the just transition process in Central and East European countries.

CSD also studied the effects of increasing carbon costs on the macroeconomic development of several Central and Eastern European countries, including Germany. The Center made quantitative assessments of the carbon cost impact by means of a dynamic general equilibrium model, with a micro-simulation based on household budget surveys. Examining three redistributive channels – price responses, consumer behaviour adjustment, and labour market impacts – CSD proposed policy recommendations on how to account for the effect of carbon pricing on energy poverty, distribute revenues, and improve involvement of civil society in the energy transition dialogue.

CSD also made an analysis of innovative financial schemes for incentivising the development of energy communities among vulnerable groups, *Consumer Stock Ownership Plans (CSOPs) – Financing Energy Communities*, which has mapped different policy options for promoting prosumership and RES communities, based on a comparative evaluation of the legal conditions and incentives.

The Center recognises the importance of women's participation and empowerment in a just transition, and has continued to work towards the decentralisation of the energy system and the wider participation of citizens in energy communities. To promote energy citizenship among women in Bulgaria, CSD, in partnership with the Association of Danube Municipalities and the Municipality of Belene, organised a Citizen Action Lab in the Context of Energy Transition held in Belene on 20 October 2022. Participants discussed the social acceptance of low-carbon technologies and their attitudes towards the creation of energy communities as a way to address energy poverty in their community and region.