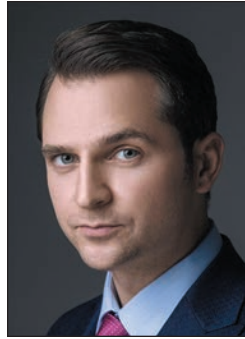


Energy Security

An Interview with His Excellency Sebastian-Ioan Burduja, PhD, Minister of Energy, Romania

EDITORS' NOTE Dr. Sebastian-Ioan Burduja is the Romanian Minister of Energy, appointed in June 2023. He has previously served as the Minister of Research, Innovation and Digitalization between May 2022 and June 2023. Since December 2020, he has been elected to the Romanian Parliament and is also the President of the Sector 1 branch of the National Liberal Party and was elected President of the Bucharest branch of the National Liberal Party. Before starting his political career, Burduja acted as the Founding President of the League of Romanian Students Abroad (LSRS), now the largest Romanian nonprofit network in the world, and the co-founder of the CAESAR Foundation, a think tank connecting 500 top Romanian and international policy experts. Previously, he served as a Regional Development Specialist for the World Bank in Washington, DC, focusing on Europe and Central Asia. Burduja has also worked for Dalberg Global Development Advisors, the United Nations Economic Commission for Europe, McKinsey & Co., and the National Endowment for Democracy. He graduated from Stanford University as a member of the Phi Beta Kappa Society with a major in Politics and sub-specializations in Economy and Sociology. From 2008 to 2011, he continued his studies at Harvard University, being a David Rubenstein fellow and graduating with an MBA from Harvard Business School and an MPP from Harvard Kennedy School of Government. He was honored in 2009 and 2010 with outstanding academic achievement, including the "First Year Honors" and "Second Year Honors" awards given to the best students at Harvard Business School. Burduja graduated summa cum laude with a PhD in economics and international affairs from the Romanian Academy of Economic Studies.



H.E. Sebastian-Ioan Burduja

What is the Romanian government's strategy for achieving energy security and reducing dependence on fossil fuels in the coming years?

First of all, I would like to point out that Romania is one of the most energy-independent countries in the EU. We are a net exporter of electricity and cover most of our gas consumption from internal production.

To achieve energy security and reduce dependence on fossil fuels, the Romanian government is pursuing a strategy of diversifying energy sources,

improving energy efficiency, and developing a smart energy grid. Romania has significant potential for renewable energy development, including solar, wind, hydroelectric, and biomass energy, as we already are a leader in hydro and solar energy development in the region. The government is supporting the development of renewable energy projects through a variety of incentives, while at the same time we are investing in the development of transmission and distribution infrastructure to support the integration of more renewable energy into the grid. Legislation for offshore wind will be finalized within the next months, which will significantly boost wind electricity production.

At the same time, we are also working to expand natural gas production and nuclear energy capacity, two sources of energy that play a crucial role in our future energy mix. The Neptun Deep offshore gas production project will practically double our production as of 2027, while the new nuclear reactor units at Cernavodă and the envisioned SMR will also significantly raise our nuclear energy production.

Romania's strategy for achieving energy security and reducing dependence on fossil fuels is ambitious, but achievable. And that will not be only in the benefit of Romania, but of the whole region.

How is Romania planning to transition to a more sustainable and environmentally friendly energy mix, such as increasing the share of renewable energy sources?

Currently, Romania is among the top EU countries by the share of energy from renewable sources. We set a target of increasing the share of renewable energy to 30.7 percent by 2030, by adding 10 GW of capacity to the grid and we are currently evaluating raising this ambition.

The country has significant potential in solar (with over 210 sunny days per year), wind (particularly in the Dobrogea region), hydro (benefiting from its mountainous terrain), and biomass. Government support schemes, like Contract-for-Difference (CfD) and feed-in tariffs, aim to bolster investment in renewables. Additionally, Romania is updating legislation to streamline the permitting process for renewable installations, reducing bureaucratic hurdles that previously hampered the development of new projects.

Currently, the level of funding available is at unprecedented levels, with over €18 billion over the following period for investments in new

renewable energy generation capacities. This is a historic chance that will transform our energy system deeply.

What measures are being taken to improve energy efficiency in Romania, both in the residential and industrial sectors?

In the residential sector, the government is implementing building codes that require new buildings to be energy efficient. These include requirements for insulation, windows, and heating and cooling systems. The government is also providing financial incentives to homeowners to invest in energy efficiency upgrades. In addition, we are carrying public awareness campaigns to educate consumers about the benefits of energy efficiency and how to reduce their energy consumption.

As far as the industrial sector is concerned, the government is requiring large industrial companies to conduct energy audits on a regular basis. Energy audits identify areas where companies can improve their energy efficiency. We are also developing energy efficiency standards for industrial products and processes, ensuring that new industrial products and processes are more energy efficient. Additionally, we are providing financial incentives to businesses in order to invest in energy efficiency upgrades.

Will you provide insights into Romania's plans for nuclear energy development and the expansion or modernization of existing nuclear power plants?

Nuclear energy already plays a significant role in meeting climate goals and must play an even larger role to accelerate the achievement of net zero emissions by 2050, consistent with a 1.5°C scenario and with the Paris Agreement.

In Romania, we already have a strong industrial basis as one of the privileged countries with a fully-integrated nuclear cycle. Nuclear power currently represents 18 percent of Romania's energy mix with two units in operation, it creates more than 12,600 jobs in the economy and is a factor of stability for our energy grid.

Romania plans to expand its nuclear sector by completing Units 3 and 4 of the Cernavodă plant, potentially doubling its nuclear capacity in the following decade. We are also currently in advanced stages of exploring the deployment of small modular reactors (SMRs), with initial works having already begun.

Romania is part of the European Union, which has set ambitious targets for reducing greenhouse gas emissions. What is the country's plan to contribute to these targets and address climate change?

Through its Integrated National Energy and Climate Plan (PNIESC), Romania has set an ambitious goal for renewables to make up 30.7 percent of its total energy consumption by 2030. However, Romania is revising its PNIESC to set a higher target for renewable energy. An initial step in this direction, as outlined in the National Recovery and Resilience Plan (NRRP), is to exceed the PNIESC's target, aiming for renewables to constitute 34 percent of the energy mix.

The country's strategy includes a mix of policies, such as promoting renewable energy adoption, improving energy efficiency across sectors, and transitioning to cleaner transportation. Romania plans to phase out coal-fired power plants and replace them with low-carbon sources over the next years, thus significantly contributing to emission reductions. On the electrifying transportation front, in order to reduce greenhouse gas emissions from the transportation sector, we are providing financial incentives for the purchase of electric vehicles and are investing in the development of charging infrastructure.

Additionally, the production and utilization of hydrogen play a critical role in reinforcing energy security and advancing the decarbonization of sectors with significant greenhouse gas emissions, like transportation and industry.

Will you discuss the current state and future of Romania's energy infrastructure, including transmission and distribution networks, and any plans for grid modernization and expansion?

Grid modernization and upgrade is crucial to accommodate new energy generation capacities, optimize energy flows and enhance system reliability. Works to upgrade transmission and distribution lines, build new substations, integrate renewable energy into the grid, and develop a smart grid management system are carried across the country. A significant milestone was reached in October 2022 with the signing of the first nine financing contracts from the Modernization Fund. These contracts, inked between the Ministry of Energy and Transelectrica, are for the construction of new overhead power lines and their integration into the National Energy System, establishing or refurbishing power stations, optimizing existing overhead power lines with online monitoring systems (Smart Grid), and digitizing the electricity transmission grid.

These projects, supported by the Modernization Fund, are set to bolster interconnectivity with the European energy system and advance the development of Romania's electricity transmission grid, thereby enhancing the national energy system's security, flexibility, and adequacy. This will pave the way for new renewable energy generation capacities.

The anticipated benefits of these investments are substantial. They include an increase in the RET transmission capacity by approximately 1,700 MW, the construction of nearly 480 kilometers of new overhead power lines, the expansion of five 400 kV stations, a pioneering digital transformation of the Alba Iulia station, an enhancement of interconnection capacity by 600 MW (combined at the borders with Serbia and Hungary), the implementation of electricity quality monitoring systems in 15 stations, and the optimization and digital monitoring of overhead power lines.

I would also like to point out that we are preparing the beginning of works for a high-voltage direct current infrastructure that will connect the energy-rich southeast of the country to the energy-intensive northwest. At the same time, we are quickly enhancing our interconnectivity and interoperability of our network to neighboring countries, improving the reliability of our energy flows and perfecting the transport of energy across the region.

How does Romania intend to attract investment in the energy sector, particularly in renewable energy projects, and what incentives and policies are in place to encourage private investment?

The national energy strategy is geared towards substantial new investments to boost the proportion of renewable energy within the energy mix. This includes tapping into offshore renewable energy prospects in the Black Sea, investing in large-scale electricity storage, and employing hydrogen to decarbonize sectors that are challenging to electrify. Romania provides various incentives for investment in the renewable energy sector, such as state aid schemes, green certificates, and tax exemptions.



Former Secretary of State Sen. John Kerry, U.S. Special Presidential Envoy for Climate, meets Minister Sebastian Burduja at the Three Seas Initiative Summit (3SI) and Business Forum in Bucharest, Romania in September 2023

As mentioned, through the NRRP and the Modernization Fund, there is an unprecedented level of funding available for new generation facilities and necessary infrastructure of up to €18 billion. We have also introduced "Contracts for Difference" (CfD) as a primary incentive for investment in new, clean technology-based energy capacities. This mechanism is designed to provide revenue predictability for investors in low-emission technologies by guaranteeing a certain level of income, thus ensuring a return on their initial investment. CfDs aim to support the establishment of 10 GW of renewable electricity from onshore wind and photovoltaic sources, funded through the Modernization Fund.

The government is also building a more favorable legislative framework to attract both domestic and foreign investment. For instance, the Offshore Law, which governs the exploitation of offshore oil and gas resources, has been amended to encourage investment in the Black Sea gas projects. By the end of the year, we will have finished the Offshore Wind legislation, thus allowing significant investments in the Black Sea Region.

What role do you see for innovation and emerging technologies such as energy storage in Romania's energy sector?

Emerging technologies like energy storage, smart grids, and digitalization are crucial in

transforming the energy sector. The country's strategy involves integrating these technologies to enhance the stability and efficiency of the energy system. For example, Romania is exploring battery storage solutions to manage the intermittent nature of renewable energy sources and we have a target of developing 1 GW of energy storage capacity by 2030. As mentioned, we are also investing in smart grid technologies to improve demand response and reduce energy wastage. Not the least, the government encourages research and development (R&D) in these areas through funding and partnerships with academic institutions and the private sector.

Will you elaborate on the challenges and opportunities related to interconnections with neighboring countries in terms of energy trading and security, and what initiatives are in place to enhance these connections?

Interconnectivity with neighboring countries is crucial for Romania's energy security and market integration. We are investing in enhancing our connections with Moldova, Hungary, Bulgaria, Ukraine, and Serbia, facilitating energy trading and security. These projects not only contribute to energy security, but also allow Romania to engage more actively in the regional energy market, providing opportunities for both importing when necessary and exporting surplus energy.

A recent project that is highly important for us is the Green Corridor between the Republic of Azerbaijan, Georgia, Hungary, and Romania, which marks a pivotal advancement for the energy security of both Romania and Europe. The project aims to facilitate the transmission of renewable energy-sourced electricity from Romania to Azerbaijan, traversing Georgia and the Black Sea. It further aims to enable the subsequent distribution of this energy to Hungary and the wider European region via the European transmission network.

What is the government's plan in the area of hydrogen production and transportation?

The Romanian government's plan for hydrogen production and transportation is outlined in the National Hydrogen Strategy for 2023-2030. The strategy aims to develop a sustainable and competitive hydrogen sector in Romania, while also supporting the country's energy transition goals. Some of our measures include financial incentives and a favorable legislative framework. Our scheme for supporting hydrogen production has already been launched, with 19 contracts for hydrogen production plants currently being evaluated.

Are there any plans to promote electric vehicles and charging infrastructure to reduce reliance on fossil fuels in the transportation sector?

To reduce reliance on fossil fuels in transportation, Romania is promoting the adoption of electric vehicles (EVs). The government offers purchase incentives under the Rabla Plus program, providing subsidies for both electric and hybrid vehicles. Romania is also investing in expanding the EV charging infrastructure, aiming to have a nationwide network of fast-charging stations. We are currently exploring partnerships with private companies to accelerate the deployment of charging infrastructure. ●