

# Romania's Energy Sector Overview

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## Executive summary

This report provides an in-depth analysis of Romania's current energy legislation as of August 2024, covering key sectors including renewable energy, electricity, natural gas, oil, hydrogen, nuclear energy, biofuels, LNG, and geothermal energy.

Romania's energy framework is robust and aligned with European Union directives, emphasizing sustainability, energy security, and market liberalization. Over the years, the government has implemented a comprehensive set of laws and regulations that foster investment, encourage infrastructure development, and support the transition to a low-carbon economy.

### Key Highlights:

- **Renewable Energy:** Governed by Law No. 123/2012, Romania has made significant strides in integrating renewable sources into its energy mix, supported by mechanisms like green certificates and Contracts for Difference.
- **Electricity and Natural Gas:** These sectors are also regulated under Law No. 123/2012, focusing on market competition, grid modernization, and integrating renewable sources.
- **Oil and Hydrogen:** The oil sector remains vital under the Petroleum Law No. 238/2004, while the newly emerging hydrogen sector is supported by the Hydrogen Law (2023), positioning Romania as a future leader in green hydrogen production.
- **Other Energy Types:** Nuclear energy, biofuels, LNG, and geothermal energy are all integral to Romania's diversified energy strategy.

Romania's energy sector is characterized by opportunities in emerging areas such as hydrogen and LNG, alongside ongoing investments in renewable energy and nuclear power. The regulatory environment is evolving to support these developments, making Romania a promising market for energy investments. However, businesses must remain vigilant and adaptive to navigate this dynamic landscape successfully.

## Renewable energy

Romania's journey toward integrating renewable energy into its national energy mix is deeply rooted in a legislative and regulatory framework designed to support sustainable growth and align with European Union mandates. Central to this effort is the **Electricity and Natural Gas Law No. 123/2012**, which governs the production, transmission, and distribution of electricity, including that generated from renewable sources like wind, solar, hydro, and biomass.

**Over the years, this law has undergone several amendments**, primarily to incorporate EU directives aimed at meeting renewable energy targets and facilitating the integration of renewable sources into the national grid. One of the critical elements of this framework is the establishment of the green certificate system, a market-based mechanism that incentivizes renewable energy production by

allowing producers to earn certificates for the electricity they generate, which can then be sold to suppliers who are required to meet specific renewable energy quotas.

**The National Energy Regulatory Authority (ANRE) plays a crucial role in implementing these legislative provisions.** For instance, [ANRE Order No. 59/2013](#) originally set the rules for grid connection, which have since been updated by [ANRE Order No. 81/2022](#) to streamline the process for renewable energy projects, particularly smaller-scale installations. This update was necessary to address the growing interest in renewable energy and to reduce one of the key barriers to its deployment.

Another significant regulatory development in Romania's renewable energy landscape is the **introduction of the Contracts for Difference (CfD) mechanism.** [Government Decision No. 318/2024](#) established the general framework for this support mechanism, which is designed to provide financial stability for renewable energy producers, particularly those in onshore wind and solar photovoltaic sectors. The CfD scheme is expected to play a vital role in Romania's energy transition by supporting the development of up to 5 GW of renewable energy capacity through competitive auctions held in 2024 and 2025.

Under the CfD mechanism, producers are guaranteed a fixed "strike price" for the electricity they generate. If market prices fall below this strike price, the CfD counterparty (OPCOM, the operator of the centralized power exchange) compensates the producers for the difference. Conversely, if market prices exceed the strike price, the producers must pay back the difference. This mechanism not only provides a stable revenue stream for renewable energy projects but also encourages investment by reducing market risks. The CfD scheme is financed through a combination of end-consumer levies and non-reimbursable EU funds, including the Modernisation Fund, which has allocated €3 billion to support these initiatives

A significant and rapidly growing segment within Romania's renewable energy sector is the emergence of **prosumers**—individuals or entities that both produce and consume electricity. By the end of 2023, the number of prosumers in Romania had exceeded 100,000, with a cumulative installed capacity surpassing 1,500 MW. This growth is largely fueled by government incentives like the Green House PV subsidies scheme, which has made it easier for households and small businesses to invest in photovoltaic (PV) systems.

The role of prosumers is not only significant in terms of capacity but also in the context of Romania's energy transition goals. These small-scale producers contribute directly to the decentralization and decarbonization of the energy system, aligning with Romania's broader objectives of increasing the share of renewables in the energy mix. Looking ahead, Romania expects the number of prosumers to rise to 200,000 by the end of 2024, with the total installed capacity expected to reach 2 GW.

However, the rapid increase in prosumer capacity presents challenges, particularly for the electricity grid, which must adapt to accommodate the variable nature of solar power. A [draft bill](#) sought to address these challenges by mandating energy storage requirements for prosumers with PV systems between 10.8 kW and 400 kW. This bill, however, has not yet come into force as it was returned to

Parliament for reexamination in summer 2024 by the President of Romania. The President's concerns revolved around the law's potential to hinder the development of prosumers and the inadequacy of its support for energy storage infrastructure. The law is scheduled for reevaluation in September 2024, and its future remains uncertain, making this a critical issue to follow in Romania's ongoing energy transition.

The Romanian government has recognized the importance of supporting prosumers not only through regulatory measures but also through strategic planning. The National Energy Regulatory Authority (ANRE) continues to refine the regulatory environment to facilitate the integration of prosumers into the national grid, ensuring that their contributions support the overall stability and sustainability of Romania's energy system.

Despite these advancements, Romania's renewable energy sector, including the prosumer segment, still faces significant challenges. The aging grid infrastructure struggles to accommodate the increasing amount of electricity generated from intermittent renewable sources like wind and solar. Moreover, regulatory uncertainty continues to pose a risk for investors, with frequent changes in legislation and delays in implementing new policies like the transition to the CfD mechanism.

In addition to supporting individual prosumers, Romania is also laying the groundwork for the development of **energy communities**, a concept that is gaining traction across Europe. Energy communities are groups of local consumers and producers who collectively manage and utilize renewable energy resources, such as solar or wind power, within their community. These communities enable participants to generate, consume, share, and even sell renewable energy, fostering local energy independence and contributing to the national grid's stability.

The Romanian Ministry of Energy is actively working to create a legislative framework that will facilitate the establishment and operation of energy communities. In 2024, the ministry [initiated](#) a working group to develop specific regulations that would allow Romanians to consume locally produced renewable energy, whether from their own installations or those within their vicinity. This initiative is part of a broader strategy to decentralize the energy system and empower local communities to take control of their energy needs.

The National Energy Regulatory Authority (ANRE) is also playing a crucial role in this process. ANRE has been developing [models and guidelines](#) for the creation of energy communities, ensuring that these new entities can operate within the existing legal and regulatory framework. The aim is to provide a clear path for the establishment of energy communities, including rules on governance, energy sharing, and financial management.

Energy communities represent a significant opportunity for Romania to enhance its renewable energy capacity while also promoting social and economic benefits at the local level. They allow for the efficient use of renewable resources, reduce energy costs for community members, and increase resilience against energy price fluctuations. Moreover, energy communities align with the European Union's goals of increasing citizen participation in the energy transition and achieving climate neutrality by 2050.

**Power Purchase Agreements (PPAs)** have become essential in Romania's renewable energy transition, especially after the phase-out of traditional support schemes like the green certificate system. Recent amendments to the Electricity and Natural Gas Law No. 123/2012, particularly the removal of the ban on PPAs for projects without grid connection agreements, have unlocked new opportunities for renewable energy developers. This change, alongside regulatory oversight by the National Energy Regulatory Authority (ANRE), has strengthened the market for PPAs, offering a stable revenue stream for projects and facilitating financing.

Despite the benefits, the PPA market faces challenges due to market volatility and regulatory uncertainties. However, the demand for PPAs is expected to grow as more corporate entities seek green energy to meet sustainability goals. Romania's alignment with EU directives further emphasizes the role of PPAs in achieving its renewable energy targets, making them a crucial tool in the country's energy transition.

As Romania continues to support the development of prosumers and energy communities, these initiatives will play a key role in the country's broader energy transition strategy. By fostering local renewable energy production and consumption, Romania is not only advancing its national energy goals but also contributing to the broader European objectives of decentralization, decarbonization, and digitalization of the energy sector.

Nevertheless, the Romanian government remains committed to its renewable energy goals, driven by both national interests and EU directives such as the Renewable Energy Directive (RED II). These directives set binding targets for the integration of renewable energy into the national grid, ensuring that Romania continues to move towards a more sustainable and secure energy future.

The story of renewable energy in Romania is one of both progress and ongoing challenges. It reflects a broader global shift towards cleaner energy sources, underpinned by legislative frameworks that seek to balance the need for environmental sustainability with the realities of existing infrastructure and market conditions. As Romania continues to refine its approach to renewable energy, the coming years will be crucial in determining how successfully these ambitions can be realized.

## Electric energy

Romania's electric energy sector is one of evolution, characterized by a continuous effort to align with European Union directives while modernizing its national grid and liberalizing the market. At the heart of this transformation is the Electricity and Natural Gas Law No. 123/2012, a foundational piece of legislation that governs every aspect of electricity production, transmission, distribution, and supply within the country. This law is not static; it has been amended multiple times to stay in sync with the EU's evolving energy policies, particularly those promoting competition and integrating renewable energy sources.

The law outlines the operational framework for **Romania's electricity market**, detailing the roles and responsibilities of market participants, from producers to suppliers to consumers. It also sets the rules for tariff setting and the fees associated with transmission and distribution services, ensuring that

these processes are transparent and equitable. Importantly, the law mandates non-discriminatory access to the grid, a crucial factor in fostering a competitive market environment.

To effectively implement the provisions of Law No. 123/2012, the National Energy Regulatory Authority (ANRE) has issued several key regulations that have significantly shaped the sector. For instance, [ANRE Order No. 197/2020](#) played a crucial role in refining the **licensing process for electricity market participants**. By amending earlier regulations, this order ensures that only qualified entities operate within the market, thereby maintaining its integrity and competitiveness. This is particularly important as Romania continues to open its energy market to new participants, increasing the diversity of energy sources available.

Another significant development came with [ANRE Order No. 198/2020](#), which updated the general conditions associated with licenses for electricity generation and cogeneration facilities. This update was essential for aligning operational standards with the current market demands, ensuring that these facilities contribute reliably to Romania's electricity supply. The importance of these updates becomes clear when considering the rapid integration of renewable energy sources, which require more flexible and responsive operational conditions.

A particularly transformative regulation is [ANRE Order No. 53/2024](#). This order introduces a new **methodology for grid capacity allocation**, marking a departure from the previous first-come, first-served approach. Starting January 2026, grid capacity for projects with an installed capacity of at least 5 MW will be allocated through a competitive auction-based mechanism. This change is designed to optimize grid utilization and ensure that capacity is distributed fairly and efficiently among competing projects. The order also brings significant amendments to grid connection regulations, including stricter requirements for securing land rights and updates to the technical connection endorsement (ATR) process. These changes are expected to enhance the overall efficiency of Romania's national grid as it accommodates increasing amounts of renewable energy.

In response to the volatile energy prices and the economic challenges posed by the global energy crisis, the Romanian government introduced a **price capping mechanism for electricity** in late 2021. This measure was implemented to protect consumers from the sharp increases in energy costs and to stabilize the electricity market during a period of unprecedented fluctuations. The price cap applies to both households and certain categories of non-household consumers, including small and medium-sized enterprises (SMEs) and public institutions.

The price capping scheme has been extended several times, reflecting the ongoing challenges in the energy market. Initially intended as a temporary measure, it has now been extended through 2025. Under this scheme, the government set maximum prices that electricity suppliers can charge consumers, with the difference between the market price and the capped price being compensated by the state. This has provided much-needed relief to consumers, especially during the winter months when energy demand peaks.

However, the price capping policy has not been without its challenges. It has put significant financial pressure on electricity suppliers, who are required to sell electricity at below-market rates while

awaiting compensation from the government. Additionally, there have been concerns about the long-term sustainability of the price capping mechanism, particularly as the global energy market remains volatile. The Romanian government has been working to address these issues, ensuring that the compensation mechanism is efficient and that suppliers are able to maintain their financial stability.

At the European level, Romania's electricity sector is influenced by directives aimed at creating a fully integrated and competitive electricity market across Europe. The country has implemented the **EU's Internal Market for Electricity Directive (EU 2019/944)**, which requires member states to ensure consumer protection, promote competition, and facilitate the integration of renewable energy sources. This directive is central to Romania's efforts to liberalize its electricity market and align with broader EU energy policies.

A key focus area within Romania's electricity sector is the **modernization of the national grid**, particularly through the implementation of smart grid technologies. These technologies are essential for improving grid reliability, reducing losses, and enabling better integration of renewable energy sources. Additionally, there is a concerted effort to expand the grid to meet the growing demand for electricity and to facilitate the connection of new generation capacities, especially from renewable sources.

Despite these efforts, the electricity sector in Romania faces significant challenges. Navigating the complex regulatory landscape can be daunting for market participants, particularly new entrants. The frequent amendments to legislation require continuous monitoring to ensure compliance, adding a layer of complexity to operating in this sector. Furthermore, significant investments are needed to upgrade the aging grid infrastructure and implement smart grid technologies. The government has been encouraging private sector participation in these areas through public-private partnerships and incentives, recognizing that these investments are crucial for the country's energy future.

In summary, the electric energy sector in Romania is at a crossroad, balancing the need for modernization with the demands of market liberalization and integration into the broader European energy market. The success of this sector will hinge on the ability to navigate the regulatory landscape, secure the necessary investments, and continue aligning with EU directives, all while ensuring that the grid remains stable and capable of supporting a growing share of renewable energy.

## Natural gas

The natural gas sector in Romania is a critical component of the country's energy landscape, deeply intertwined with its broader goals of energy security, market liberalization, and alignment with European Union standards. Governed by the comprehensive Electricity and Natural Gas Law No. 123/2012, this sector covers the entire value chain from extraction and production to transportation, distribution, and supply. The law has been meticulously updated over the years to comply with EU directives aimed at fostering competition and ensuring the security of supply, reflecting Romania's commitment to both national interests and broader European energy policies.

A significant aspect of Romania's natural gas legislation is the emphasis on creating a competitive market environment. The law delineates the roles and responsibilities of various market participants,

including producers, suppliers, and consumers, and establishes guidelines for setting tariffs and fees for transportation and distribution services. This framework is crucial for ensuring that the natural gas market operates efficiently and transparently, benefiting both consumers and industry stakeholders.

One of the key developments in Romania's natural gas sector is the [Offshore Law No. 256/2018](#), which specifically regulates **offshore oil and gas operations**, particularly in the Black Sea. This law is vital for tapping into Romania's significant offshore resources, which hold the promise of enhancing the country's energy independence. The Offshore Law outlines the fiscal regime for offshore projects, ensuring that they are both attractive to investors and aligned with Romania's energy security objectives. It includes provisions for safeguarding national interests, such as mandating that a portion of the gas produced offshore be sold on the domestic market.

Recent legislative updates have introduced [Law No. 228/2024](#), which has brought significant changes to the **fiscal framework governing offshore oil and gas operations**. This law has increased the tax rates applied to windfall revenues from offshore gas sales, with rates now reaching up to 70% depending on the market price of natural gas. This represents a substantial increase from previous tax caps, designed to ensure that the state benefits more significantly from the extraction of its natural resources during periods of high market prices.

Additionally, Law No. 228/2024 has removed the previous requirement for investors to sell 50% of their gas production on the Romanian market, a restriction that had been a major concern for investors. Now, investors have the freedom to trade hydrocarbons produced from offshore blocks at market prices and in quantities determined by their commercial strategies. However, the law retains a provision allowing the Romanian government to prioritize domestic gas supply in the event of an energy crisis or significant disruptions to the national gas supply.

The law also maintains stability in the royalty and tax regimes throughout the duration of petroleum agreements, providing much-needed predictability for investors. This stability is expected to encourage further investment in Romania's offshore projects, with the government anticipating that these changes will accelerate the development of significant reserves in the Black Sea, such as the Neptun Deep project

The implementation of these laws is overseen by the National Energy Regulatory Authority (ANRE), which issues specific regulations to operationalize the legislative framework. [ANRE Order No. 34/2013](#) governs the **licensing of natural gas market participants**, ensuring that only qualified entities can operate within the sector. This order is essential for maintaining the integrity and competitiveness of the market, as it sets out the criteria and procedures for obtaining and maintaining licenses.

Another critical regulation, [ANRE Order No. 32/2017](#), focuses on **access to the natural gas transmission and distribution networks**. This order, which has been updated periodically, includes provisions for capacity allocation, congestion management, and balancing rules, all designed to maintain the stability and reliability of the natural gas system. These regulations are crucial as Romania works to integrate its natural gas market with regional and European markets, in line with the EU's Third Energy Package and other related directives.



Romania's natural gas sector is also supported by significant infrastructure projects, which are central to the country's energy strategy. The **Neptun Deep project** in the Black Sea stands out as a cornerstone of Romania's future energy supply. This offshore natural gas development is expected to substantially increase domestic gas production, reducing the country's reliance on imports and enhancing its energy security. Governed by the Offshore Law and supported by various government decisions, the Neptun Deep project exemplifies Romania's commitment to harnessing its natural resources.

Another major infrastructure project is the BRUA (Bulgaria-Romania-Hungary-Austria) pipeline, which is designed to diversify natural gas supply routes and enhance regional energy security. This pipeline, partly funded by the European Union, is a strategic project for Romania, providing a critical link between the Black Sea gas fields and Central Europe. The BRUA pipeline is not just a national asset; it plays a vital role in the broader European energy landscape, contributing to the EU's goals of supply diversification and market integration.

In response to the global energy crisis and the volatility in natural gas prices, Romania, like many other European countries, introduced a [price capping mechanism for natural gas](#) in 2022. This measure, initially intended to protect consumers from soaring energy prices, was implemented as part of a broader strategy to stabilize the energy market during a period of unprecedented fluctuations. The price cap applies to both households and certain categories of non-household consumers, including small and medium-sized enterprises (SMEs) and public institutions.

The price capping mechanism has been extended through 2025, reflecting the ongoing challenges in the energy market. Under this scheme, the government set maximum prices that natural gas suppliers can charge consumers, with the difference between the market price and the capped price being compensated by the state. While this has provided essential relief to consumers, it has also put financial pressure on natural gas suppliers, who are required to sell gas at below-market rates while awaiting compensation from the government. This situation underscores the complexities of balancing market stability with consumer protection during periods of energy market disruption.

However, the natural gas sector in Romania is not without its challenges. Regulatory stability remains a key concern, as frequent changes in regulations and delays in implementing key projects have created uncertainty for investors. Ensuring a stable and predictable regulatory environment is crucial for attracting further investment, particularly in large-scale offshore projects that require significant upfront capital and long-term commitments.

Moreover, substantial investments are needed to expand and modernize the natural gas infrastructure. This includes not only the development of new production facilities but also the upgrading of existing transmission and distribution networks to accommodate increased production from offshore fields and integrate with regional markets. The Romanian government has recognized these needs and has been proactive in encouraging private sector participation through incentives and public-private partnerships.

In conclusion, the natural gas sector in Romania is at a pivotal moment, balancing the opportunities presented by its vast offshore resources with the challenges of regulatory complexity and

infrastructure development. The success of this sector will depend on Romania's ability to maintain a stable regulatory environment, secure the necessary investments, and continue aligning with European Union directives. As Romania looks to the future, its natural gas sector will play a crucial role in ensuring the country's energy security and contributing to the broader European energy market.

## Oil

Romania's oil sector, a longstanding pillar of the country's energy industry, is governed by a comprehensive legal framework designed to balance the needs of economic development, environmental protection, and national security. The cornerstone of this framework is **the Petroleum Law No. 238/2004, which provides the legal basis for all petroleum operations**, from exploration and development to extraction and commercialization. This law has been essential in defining the rights and obligations of license holders, setting the stage for both onshore and offshore oil activities in Romania.

The Petroleum Law establishes a structured process for awarding exploration and production licenses, ensuring that these valuable resources are managed transparently and competitively. Licenses are awarded through a bidding process managed by the National Agency for Mineral Resources (NAMR), which oversees the entire licensing regime. This process not only ensures that Romania's oil resources are developed efficiently but also that they contribute to the country's economic growth through royalties and taxes.

One of the significant aspects of the Petroleum Law is its provisions on environmental and safety regulations, which align with European Union directives on environmental protection and operational safety. These regulations are critical for ensuring that oil exploration and production activities are conducted in a manner that minimizes environmental impact and ensures the safety of both workers and local communities. The law mandates strict adherence to environmental standards, particularly in sensitive areas like the Black Sea, where offshore oil activities are subject to rigorous oversight.

**Complementing the Petroleum Law is the Offshore Law No. 256/2018, which specifically addresses the regulatory framework for offshore oil and gas operations in Romania.** The Offshore Law is crucial for tapping into Romania's offshore oil potential, particularly in the deep waters of the Black Sea, where significant reserves have been discovered. This law introduces a special fiscal regime for offshore operations, designed to attract investment while ensuring that the state captures a fair share of the economic benefits. It includes provisions for reduced tax rates and exemptions for certain types of equipment and technology used in offshore exploration and production, making it an attractive proposition for international oil companies.

The **National Agency for Mineral Resources (NAMR)** in Romania plays a crucial role in regulating oil exploration and production. It acts as both a regulatory authority and a contractual party in concession agreements. NAMR manages petroleum resources owned by the state, issues mandatory norms, and approves various aspects of petroleum operations, such as exploration, drilling, and production plans. It also certifies the technical competence of operators and ensures compliance with laws and regulations. Concessions for oil and gas exploration and production are granted through competitive

tenders, and NAMR oversees the transfer and management of petroleum data. Additionally, NAMR handles the extension of work phases, changes in work programs, and stabilization clauses in petroleum agreements to ensure legal and operational stability for investors.

**The National Agency for Mineral Resources (NAMR) has been officially renamed to the National Authority for Regulation in the Field of Mining, Petroleum, and Geological Storage of Carbon Dioxide (ANRMPSG)** through [Government Emergency Ordinance No. 81/2024](#). This renaming reflects the agency's expanded mandate, which now includes the regulation of carbon dioxide geological storage in addition to its existing responsibilities in the mining and petroleum sectors. The change is part of Romania's efforts to align its regulatory framework with contemporary environmental and climate change initiatives, particularly in the area of carbon capture and storage.

Romania's oil sector also plays a crucial role in the broader European energy landscape, particularly in terms of energy security. The country's oil legislation is aligned with EU directives, such as the Hydrocarbon Directive (94/22/EC) and the Offshore Safety Directive (2013/30/EU), which have been transposed into national law. These directives ensure that Romania's oil exploration and production activities meet the highest safety and environmental standards, providing a secure and sustainable supply of oil for both domestic consumption and export.

However, the oil sector in Romania faces several challenges, particularly in maintaining a stable regulatory and fiscal environment that is conducive to investment. The Offshore Law, while offering a favorable fiscal regime, must be implemented consistently to attract the necessary investments for deepwater exploration and production. Moreover, there is increasing scrutiny on environmental protection as offshore operations expand, particularly in the Black Sea, an area known for its ecological sensitivity.

To address these challenges, the Romanian government has committed to maintaining a favorable investment climate while ensuring strict compliance with environmental and safety standards. This balance is crucial for the sustainable development of Romania's oil resources, particularly as the country seeks to increase its oil production to meet both domestic needs and export opportunities.

In summary, Romania's oil sector is a vital component of the country's energy strategy, underpinned by a robust legal framework and supported by strategic infrastructure projects. The sector's future success will depend on Romania's ability to attract investment, maintain regulatory stability, and adhere to the highest environmental and safety standards. As Romania continues to develop its oil resources, particularly in the offshore arena, the sector will remain a key contributor to the country's economic growth and energy security.

## Hydrogen

As the global energy landscape shifts toward low-carbon solutions, **hydrogen has emerged as a key player in Romania's energy strategy**. Recognizing its potential to revolutionize both the energy and industrial sectors, Romania has been laying the groundwork for a hydrogen economy through a blend of legislative initiatives and strategic projects. The legal framework governing hydrogen in Romania is anchored in the Electricity and Natural Gas Law No. 123/2012, which, although originally designed to

regulate traditional energy sectors, now includes provisions that accommodate emerging energy sources like hydrogen.

In 2023, Romania took a significant step forward by enacting the [Hydrogen Law](#), a dedicated piece of legislation aimed at fostering the development of hydrogen as a critical component of the country's energy mix. This law sets out mandatory targets for hydrogen use in various sectors, especially transportation and industry, and promotes the development of the necessary infrastructure to support hydrogen production, storage, and utilization. The Hydrogen Law is central to Romania's ambitions of positioning itself as a leader in green hydrogen production, leveraging the country's abundant renewable energy resources to produce hydrogen in a sustainable manner.

The National Energy Regulatory Authority (ANRE) plays a pivotal role in the implementation of the Hydrogen Law, issuing orders and decisions that translate the law's provisions into actionable regulations. For instance, [ANRE Order No. 63/2023](#) established the technical and safety standards necessary for **integrating hydrogen into Romania's natural gas distribution system**. This order was instrumental in developing the Hydrogen Code, a comprehensive set of regulations governing the blending of hydrogen with natural gas—a process that could significantly reduce carbon emissions from the existing gas infrastructure.

Romania's approach to hydrogen is not just about regulatory measures; it also involves strategic planning and infrastructure development. The Romanian government, under its [National Hydrogen Strategy, which is yet to be approved](#), is focusing on creating hydrogen production hubs that utilize the country's renewable energy resources. These hubs are designed to serve both domestic needs and potential export opportunities, positioning Romania as a key player in the European hydrogen market. The strategy also includes plans for repurposing existing natural gas pipelines for hydrogen transport, which is a critical step in creating a European hydrogen corridor that would link Romania with other markets across the continent.

Despite the clear opportunities, the development of a hydrogen economy in Romania is not without its challenges. The regulatory framework for hydrogen is still evolving, and ongoing updates will be necessary to keep pace with technological advancements and market needs. Moreover, significant investments are required to build and expand the infrastructure needed for hydrogen production, storage, and distribution. The Romanian government has been proactive in encouraging private sector investment through incentives and public-private partnerships, recognizing that such investments are crucial for the success of the hydrogen sector.

Romania's hydrogen strategy is also closely aligned with European Union directives, particularly the EU Hydrogen Strategy, which aims to achieve climate neutrality by 2050. The Romanian government has been active in transposing these directives into national law, ensuring that the country's hydrogen policies support broader EU goals. The alignment with EU regulations is not just a compliance exercise; it also opens up opportunities for Romania to access EU funding and technical support for hydrogen projects.

As Romania moves forward with its hydrogen ambitions, the sector is poised to become a cornerstone of the country's energy transition. The successful development of a hydrogen economy will depend on Romania's ability to maintain a stable and supportive regulatory environment, attract significant investments, and integrate hydrogen into its broader energy and industrial strategies. With the right mix of policies, investments, and strategic planning, Romania has the potential to become a leader in **green hydrogen production**, contributing to both national energy security and the global fight against climate change.

In conclusion, Romania's hydrogen sector represents a new frontier in the country's energy landscape. It is a sector characterized by significant potential and equally significant challenges, requiring a concerted effort from both the public and private sectors to realize its full potential. As Romania continues to develop its hydrogen infrastructure and regulatory framework, the country is well-positioned to become a key player in the European hydrogen market, driving innovation and sustainability in the years to come.

## Other types of energy

Romania's energy landscape is as diverse as it is dynamic, encompassing a range of energy sources beyond the traditional fossil fuels and emerging technologies like hydrogen. Among these, nuclear energy, biofuels, liquefied natural gas (LNG), and geothermal energy play pivotal roles in ensuring the country's energy security, sustainability, and alignment with European Union directives. Each of these energy types is governed by a specific legislative framework designed to foster development while maintaining high standards of safety and environmental protection.

**Nuclear Energy** has long been a cornerstone of Romania's energy strategy, providing a significant portion of the country's electricity needs through its Cernavodă Nuclear Power Plant. The regulatory framework for nuclear energy in Romania is robust, centered around the [Law No. 111/1996](#) on the Safe Deployment of Nuclear Activities. This law governs all aspects of nuclear energy, including the construction, operation, and decommissioning of nuclear facilities, ensuring that these activities are conducted safely and in line with international standards.

Further strengthening the regulatory environment, [Law No. 378/2013](#) aligns Romania's nuclear safety protocols with the European Union's Nuclear Safety Directive (2009/71/Euratom). The National Commission for Nuclear Activities Control (CNCAN) plays a crucial role in overseeing the nuclear industry, issuing regulations that cover everything from nuclear safety management systems to the transport of radioactive materials. Recent [laws](#) have outlined strategic plans for expanding Romania's nuclear capacity, including the construction of additional reactors at the Cernavodă plant. These developments are vital for Romania as it seeks to meet its climate goals under the European Green Deal while ensuring a stable and reliable energy supply.

**Biofuels** represent another key component of Romania's diversified energy strategy, particularly in the context of reducing greenhouse gas emissions from the transport sector. The legislative framework for biofuels is established under [Law No. 220/2008](#) on the Promotion of Renewable Energy, which includes

provisions for the production and use of biofuels. This law sets mandatory blending targets for biofuels in conventional fuels, driving demand for these renewable energy sources.

To ensure that biofuels contribute effectively to sustainability goals, the [Government Decision No. 935/2011](#) establishes the gradual increase of blending targets, in line with the Renewable Energy Directive (RED II). This directive, transposed into Romanian law, mandates the inclusion of biofuels in the national energy mix, making them a critical part of Romania's strategy to reduce its carbon footprint.

**Liquefied Natural Gas (LNG)** is gaining prominence in Romania as the country seeks to diversify its energy sources and reduce dependency on pipeline gas imports. Governed by the same [Law No. 123/2012](#) that regulates electricity and natural gas, the LNG sector is integral to Romania's energy security. The law covers the entire LNG supply chain, from importation and regasification to distribution, providing a comprehensive legal framework for the development of LNG infrastructure.

Recent legislative updates include [Law No. 239/2024](#), which amends and completes the Government's Emergency Ordinance No. 80/2018. This law establishes the conditions for introducing gasoline and diesel on the market, introduces a mechanism for monitoring and reducing greenhouse gas emissions, and sets out methods for calculating and reporting these reductions. Additionally, it amends Law No. 220/2008, which focuses on promoting energy production from renewable sources, further integrating renewable energy and environmental considerations into Romania's legal framework.

**Geothermal Energy** is another renewable resource that holds significant potential for Romania, particularly in regions with high geothermal activity. [Law No. 220/2008](#), which also governs biofuels, provides the legal framework for the development of geothermal resources, both for electricity generation and direct heating applications. Geothermal energy is particularly attractive for its ability to provide a stable, baseload power supply, making it a valuable addition to Romania's renewable energy portfolio.

## Conclusion

Romania's energy sector is navigating a period of profound transformation, driven by the dual imperatives of sustainability and energy security. The country is making significant strides in aligning its energy policies with European Union directives, particularly in the areas of renewable energy, market liberalization, and infrastructure modernization. This alignment is crucial not only for meeting Romania's national energy goals but also for contributing to the broader European objectives of climate neutrality and energy security.

The renewable energy sector, underpinned by the Electricity and Natural Gas Law No. 123/2012 and the evolving Contracts for Difference (CfD) mechanism, reflects Romania's commitment to increasing the share of renewables in its energy mix. Despite challenges related to grid infrastructure and regulatory uncertainty, the sector presents significant opportunities for investment and growth.

In the electric energy sector, the focus on grid modernization and smart grids, supported by both national legislation and EU directives, is critical for integrating renewable energy sources and ensuring

long-term grid stability. Similarly, the natural gas sector, with its strategic infrastructure projects like the Neptun Deep project and the BRUA pipeline, is central to Romania's energy security strategy, despite the need for regulatory stability and infrastructure investments.

The oil sector, governed by the Petroleum Law No. 238/2004 and the Offshore Law No. 256/2018, continues to play a vital role in Romania's economy, particularly as the country taps into its offshore resources in the Black Sea. However, the sector faces challenges related to environmental protection and the need for a stable investment climate.

Hydrogen represents a new frontier in Romania's energy landscape, with the Hydrogen Law (2023) laying the groundwork for the development of a hydrogen economy. The success of this sector will depend on the ability to create a supportive regulatory environment and attract the necessary investments for infrastructure development.

Other energy sources, including nuclear energy, biofuels, LNG, and geothermal energy, each contribute to Romania's diversified energy strategy. These sectors are governed by specific legal frameworks that ensure their development aligns with national and EU objectives, providing a stable and sustainable energy supply for the future.

As Romania moves forward, the energy sector will continue to evolve, driven by the need to meet ambitious climate goals, ensure energy security, and integrate into the broader European energy market. The challenges are significant, but so are the opportunities. With a clear regulatory framework, strategic investments, and a commitment to sustainability, Romania is well-positioned to navigate this dynamic landscape and achieve its long-term energy goals.

In conclusion, the energy sector in Romania is characterized by its diversity, complexity, and potential for growth. It is a sector that is deeply intertwined with both national and European ambitions, and its future success will depend on the ability to balance these interests while fostering innovation, investment, and sustainability. The journey ahead is challenging, but with the right strategies and partnerships, Romania's energy sector can emerge as a leader in the region and a key contributor to a sustainable and secure energy future.

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