16th SEE Energy Dialogue

Background Note

South East Europe (SEE) is entering a decisive phase in its energy transition, shaped by geopolitical instability, market volatility, and the continuing push toward decarbonisation. IENE's latest "*SEE Energy Outlook 2025/2026"* highlights that, despite notable progress in infrastructure development and supply diversification, the region continues to face structural weaknesses and persistent vulnerabilities. The 16th SEE Energy Dialogue takes place at a time when global energy markets are being reshaped by ongoing geopolitical tensions, including instability in the Middle East, the war in Unkraine and the broader reconfiguration of trade routes, while European energy policy continues to evolve in response to both security concerns and climate goals.

Energy security remains at the forefront of policy priorities across SEE, having been profoundly influenced by the disruption of traditional supply patterns in recent years. Although dependence on Russian natural gas has been reduced over the last two to three years, the region remains exposed to external shocks due to its high import dependency and limited domestic production. The concept of energy security is now broader and more complex, encompassing not only the diversification of supply sources and routes but also the resilience of infrastructure, the reliability of electricity systems, and the capacity to withstand hybrid threats such as cyberattacks. IENE's "*SEE Energy Outlook 2025/2026"* underlines that ensuring security of supply in such an environment requires a systemic approach, combining physical infrastructure investments with regulatory preparedness and regional cooperation.

At the same time, global and regional energy demand patterns are undergoing significant change. While global demand continues to grow, driven largely by emerging economies, Europe's energy transition is unfolding in a more complex manner, with policy-driven decisions to reduce fossil fuel use in certain sectors accompanied by increasing electrification and the continued expansion of renewable energy sources. In SEE, this transition is uneven. EU member states are advancing more rapidly toward decarbonisation, while Western Balkan countries still rely heavily on lignite and imported hydrocarbons. Natural gas is expected to retain a central role as a transition fuel, particularly in electricity generation and industry, even as its long-term outlook remains uncertain under increasingly stringent climate policies. On the supply side, the growing availability of liquefied natural gas (LNG) has significantly enhanced flexibility, allowing countries in the region to access global markets, although competition for LNG cargoes and price volatility continue to pose challenges.

The Regional Energy Mix

The composition of the energy mix is a critical determinant of both energy security and economic resilience, particularly in a region as diverse as SEE. A balanced mix of

energy sources reduces overdependence on any single fuel or supplier, thereby limiting exposure to price volatility, geopolitical risks, and supply disruptions. In recent years, the shift toward cleaner energy has elevated the role of renewables, yet maintaining a diversified portfolio that includes natural gas, hydropower, and, where applicable, nuclear energy remains essential for ensuring system stability. Each energy source contributes distinct advantages—renewables offer low-carbon generation, gas provides flexibility and dispatchability, while hydropower and nuclear can supply reliable baseload capacity. The challenge for policymakers lies in optimising this mix in a way that supports decarbonisation without compromising security of supply or affordability.

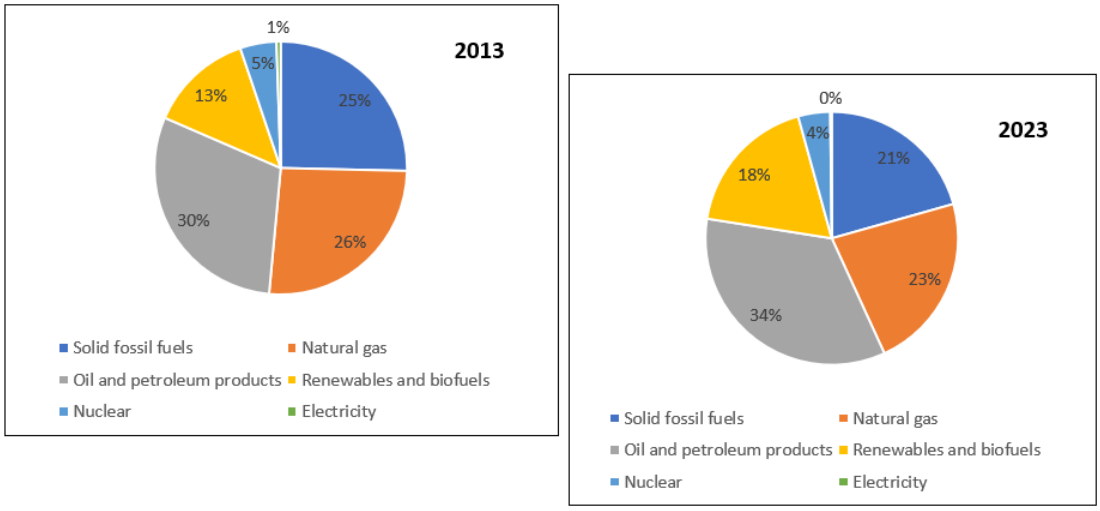

Figure 1: SE Europe's Energy Mix (2013-2023), with Turkey (Source: IENE "SE Europe Energy Outlook 2025/2026).

At the same time, the energy mix plays a central role in shaping the efficiency and adaptability of the overall energy system. As the share of variable renewable energy increases, the need for complementary technologies becomes more pronounced, including flexible generation, interconnections, and storage solutions. A well-structured energy mix can facilitate smoother integration of renewables, reduce system imbalances, and mitigate the risk of extreme price fluctuations. In the SEE context, where infrastructure constraints and market fragmentation persist, achieving such balance is particularly important. Strategic planning of the energy mix must therefore consider not only environmental targets but also technical, economic, and regional factors, ensuring that the transition proceeds in a pragmatic and sustainable manner.

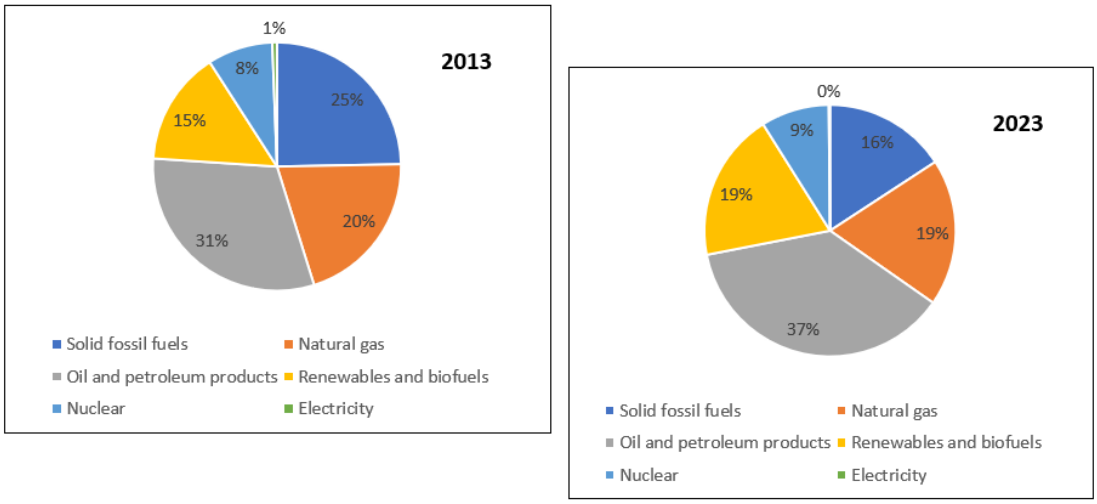

Figure 2: SE Europe's Energy Mix (2013-2023), without Turkey (Source: IENE "SE Europe Energy Outlook 2025/2026).

Oil and Gas Supply and Transmission Routes

Securing adequate oil and gas supply remains a central concern for almost all the countries in SEE, particularly in light of recent disruptions to established trade routes. The development of new infrastructure has been critical in this regard, with projects such as the Trans Adriatic Pipeline playing a pivotal role in bringing Caspian gas to European markets. Interconnections between national systems have also improved, enabling greater regional integration and reverse flow capabilities. Nonetheless, oil supply security continues to depend on access to diverse sources of crude and the maintenance of strategic reserves, as domestic production across SEE remains limited. The importance of route diversification is therefore widely recognised as a key element of long-term resilience.

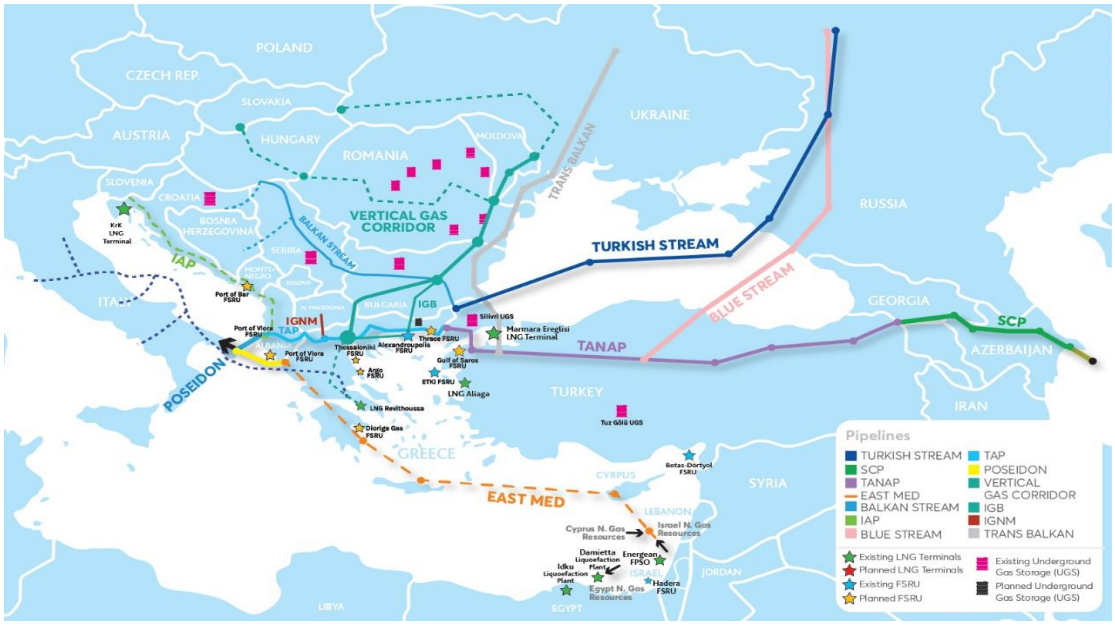

Figure 3: The Extended South Corridor Map (Source: IENE "SE Europe Energy Outlook 2025/2026)

The Role of LNG

Strategic oil reserves, gas storage facilities, and LNG infrastructure form the backbone of this resilience. While EU member states are subject to stockholding obligations, implementation across SEE is uneven, and storage capacity remains insufficient in several countries. LNG infrastructure has emerged as a particularly important component of diversification efforts, with facilities such as the Revithoussa LNG Terminal providing critical entry points for global gas supplies. The development of floating storage and regasification units (FSRUs), including the Alexandroupolis project, is further strengthening the region's capacity to respond to supply disruptions. However, the economic viability of LNG imports remains sensitive to global market conditions, underlining the need for balanced and flexible strategies.

The Vertical Corridor

Within this evolving landscape, the concept of the Vertical Gas Corridor has gained increasing attention as a strategic initiative capable of transforming regional gas flows. By linking Greece with Bulgaria, Romania, and further north toward Hungary, the corridor enables the north–south transmission of gas, facilitating access to LNG imports and alternative pipeline supplies. The Outlook describes the Vertical Corridor as a potential "game changer," capable of enhancing both security of supply and market integration. Its realisation, however, depends on the timely completion of interconnectors, the upgrading of existing infrastructure, and the harmonisation of regulatory frameworks across participating countries.

Electricity Markets

Electricity markets in SEE present a different but equally complex set of challenges. Despite progress in aligning with the EU Target Model, market fragmentation, limited interconnection capacity, and low liquidity continue to hinder efficient operation. Price volatility has become a defining feature of recent years, reflecting both global energy market dynamics and internal structural weaknesses. Digitalisation offers opportunities for improved system management and efficiency, but also introduces new risks, particularly in the area of cybersecurity. As electricity systems become more interconnected and reliant on digital technologies, the protection of critical infrastructure emerges as a key priority.

The limitations of the Target Model in the SEE context have become increasingly apparent. While the model aims to create an integrated and competitive electricity market, its implementation in smaller and less mature markets has exposed structural constraints. Inadequate cross-border capacity and insufficient market depth limit the effectiveness of price signals, while the absence of long-term investment incentives raises concerns about future adequacy. As a result, there is growing debate over the

need for market reform, including the introduction of capacity mechanisms and other instruments to ensure security of supply and to mitigate extreme price fluctuations.

Carbon Markets

Parallel to these developments, the extension of carbon pricing mechanisms to the Western Balkans represents a significant step toward integration with EU climate policy. The introduction of the Carbon Border Adjustment Mechanism (CBAM) is expected to have far-reaching implications for energy-intensive industries in the region, requiring substantial adjustments in both regulatory frameworks and industrial practices. Establishing functioning carbon markets in these countries is a complex task, involving not only technical and institutional capacity building but also the management of social and economic impacts. Transitional measures will be essential to ensure a fair and orderly transition.

Energy Efficiency

Energy efficiency remains one of the most effective tools for addressing both security and sustainability objectives, yet its potential in SEE is far from fully realised. Significant opportunities exist in the renovation of building stock and the modernisation of industrial processes. At the same time, energy poverty continues to affect a substantial portion of the population, exacerbated by high energy prices and relatively low income levels. Addressing this issue requires a combination of targeted social policies and structural measures aimed at reducing energy consumption and improving efficiency.

Renewable Energy Sources

The rapid deployment of renewable energy sources across SEE has introduced new dynamics into electricity systems. While the expansion of wind and solar capacity is essential for meeting climate targets, it also creates challenges related to variability and system balancing. Increasing instances of curtailment and negative pricing highlight the limitations of existing infrastructure and market arrangements. Grid congestion, insufficient storage capacity, and limited demand-side flexibility constrain the integration of renewables, pointing to the need for substantial investment in networks, storage technologies, and smart system solutions. In this context, the accelerated deployment of battery energy storage systems and pumped hydro storage facilities is becoming increasingly critical, as these technologies can provide much-needed flexibility, enhance grid stability, absorb excess renewable generation during periods of oversupply, and help reduce curtailments while supporting more efficient market operation across the region.

Nuclear Power

In this context, nuclear energy is re-emerging as a potential option for ensuring stable, low-carbon electricity generation. Countries such as Romania and Bulgaria are actively

exploring new nuclear projects, while interest in small modular reactors is growing. Nuclear power offers the advantage of providing baseload capacity without direct carbon emissions, but it also involves significant financial, regulatory, and societal challenges. Its future role in SEE will depend on the ability of governments and investors to address these challenges and to integrate nuclear within broader energy strategies.

Investments

The scale of investment required to support the energy transition in SEE is substantial, encompassing infrastructure, generation capacity, storage, and digital systems. However, financing conditions remain difficult, with high capital costs and regulatory uncertainty acting as deterrents to private investment. According to IENE's estimates, the total investment potential in regional energy infrastructure and market development exceeds €700 billion and is considerably higher compared to the 2021-2030 period as examined in the previous "SEE Energy Outlook 2021/2022". Access to European funding mechanisms and support from international financial institutions is therefore critical. Innovative financing models, including public–private partnerships, will be needed to mobilise the necessary resources and to share risks effectively.

Finally, regulatory and licensing issues continue to pose significant barriers to the development of cross-border energy projects. Complex and often inconsistent national procedures can lead to delays and increased costs, undermining the viability of investments. Enhancing coordination between countries, streamlining approval processes, and establishing common standards are essential steps toward creating a more integrated and efficient regional energy market.

Overall, SEE stands at a crossroads, facing the dual challenge of ensuring energy security while advancing the transition to a low-carbon economy. The findings of the *SEE Energy Outlook 2025/2026* make clear that progress will depend on a careful balancing of competing priorities, as well as on strengthened regional cooperation and pragmatic policy approaches. The 16th South East Europe Energy Dialogue provides a critical forum for addressing these issues, bringing together policymakers, industry stakeholders, and experts to chart a path forward in an increasingly complex and uncertain energy landscape.