CODE OF GOOD PRACTICE

FOR RENEWABLE ENERGY ROMANIA

3RD EDITION



RPIA
Romanian Photovoltaic Industry Association

rwea
Romanian Wind Energy Association

The market has moved forward.

So has the conversation.

Since the previous edition of this Code, Romania's renewable energy sector has grown in both scale and complexity. Today, the discussion extends well beyond developing new capacity to the realities of grids, storage, flexibility, financing, communities and long-term operation.

Written by the industry, for the industry,
this third edition brings together the experience and perspectives of those directly involved in this transformation: what has worked, what still needs to change, and what good practice means for a market that is no longer at the beginning of its journey.

Foreword







ANDREI MANEA
Executive Director RPIA

LIVIU GAVRILĂ
Vice President RWEA

While a few years ago the discussion on energy focused on the ability to meet consumption needs, recent geopolitical tensions and the volatility of fossil fuel-dependent markets have redefined priorities around security of supply at predictable and affordable costs. In this new international context, where local energy production is becoming a strategic advantage, the role of renewable energy sources has evolved from a marginal component to a fundamental element for system resilience and economic competitiveness.

Romania has already taken important steps to strengthen its solar and wind sectors, supported by rising investment, a regulatory framework that continues to evolve, and new support mechanisms. As a result, the national energy mix has changed at a remarkable pace in less than four years, with more than 7 GW of new renewable capacity completed and connected to the grid, now accounting for more than half of daytime electricity generation.

However, while the progress is significant, building additional generation capacity is no longer enough; the system must also be able to integrate, store and make efficient use of the electricity produced. Industry, transport, heating and emerging sectors of the economy must be able to capture the benefits of renewable power. This requires modern, digital and flexible grids, capable of supporting an increasingly decentralised energy system. The more the economy is electrified using clean energy, the faster investment in renewables can translate into stronger competitiveness, new jobs and greater energy security.

As the sector matures, the debate must evolve at the same pace, from how much we can build to how we integrate and make the most of the capacity we build. The third edition of the Code of Good Practice reflects this shift in perspective and seeks to identify the conditions needed for the continued development of solar and wind energy in a coherent and sustainable manner.

Romania has already demonstrated its ability to deploy new capacity at speed. The challenge now is to turn that momentum into a lasting competitive advantage.

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ONE INSURANCE PARTNER ACROSS THE PROJECT LIFECYCLE

Foreword

The new European reality is clear: more renewables, higher competitiveness, and a resilient homegrown power system. Solar is at the forefront of this transformation, helping deliver clean, affordable and reliable energy. And Romania is helping shape the new chapter of European solar. As the sector grows, shared expertise and closer cooperation between developers, public authorities and local communities are fundamental to long-term success. The Code of Good Practice contributes to this effort by offering practical guidance and a common reference for everyone involved in renewable energy.

At SolarPower Europe, we welcome the ambition driving the Romanian solar market forward and stand alongside the community building a thriving market that creates lasting opportunities for businesses and citizens. Together, we must make this Europe's last fossil-fuel crisis.



DRIES ACKE,
Deputy CEO,
SolarPower Europe



PIERRE TARDIEU
Chief Policy Officer
WindEurope

Romania is entering a new growth phase. With a strong wind project pipeline advancing, the country has a timely opportunity to reinforce energy security, boost industrial competitiveness and support economic development through locally produced clean power.

The fundamentals are in place for Romania to become a regional renewable energy leader. Realising this potential, however, will depend not only on adding new generation capacity, but also on modernising and expanding the electricity grid and accelerating electrification across the economy.

These challenges are shared across Europe. The priority now is less about setting new ambitions and more about turning existing European rules and policies into action, creating the conditions needed to unlock investment in renewables, grids and the wider energy transition. This is where the Code of Good Practice comes into play - a common reference point for all those involved in renewable energy, helping align expectations, strengthen cooperation and support responsible project development.

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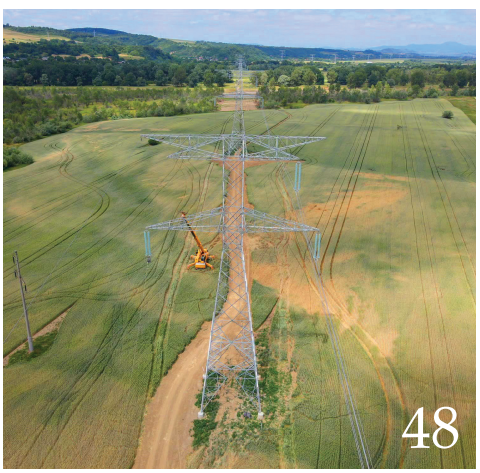
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Romania in a European context: strategy, opportunities, challenges

Ministry of Energy: Romania is moving from installing renewables to integrating them into the system



CRISTIAN SILVIU BUȘOI,
State Secretary at the Ministry of Energy

The energy transition is one of the most important economic and technological transformations of our time, and for Romania it represents a strategic opportunity to strengthen energy security, increase the competitiveness of the economy and capitalise on the advantages of being part of the European Union's internal energy market. From the Ministry of Energy's perspective, the sustainable integration of renewable energy sources must be approached systemically, with the development of new generation capacity accompanied by investment in infrastructure, digitalisation, flexibility and modern market mechanisms.

Romania has significant renewable energy potential, in wind and solar as well as hydropower, biomass and other low-carbon technologies. At the same time, Romania benefits from one of the most diversified and balanced energy mixes in the European Union and, in 2025, became the EU's largest natural gas producer, giving it a strategic advantage in ensuring energy security and managing the energy transition flexibly. This potential must be developed while maintaining the secure operation of the National Power System and ensuring a balance between decarbonisation, competitiveness and energy security.

The strategic directions promoted by the Ministry of Energy are aligned with the objectives set out in the National Integrated Energy and Climate Plan and Romania's Energy Strategy 2025-2035, with a perspective to 2050, and aim to develop a modern, flexible and resilient energy system. The focus is gradually shifting from simply installing new generation capacity towards integrating it efficiently into the system through the development of energy infrastructure, greater operational flexibility and stronger market mechanisms capable of supporting the efficient operation of an increasingly diversified energy mix.

An essential element of this process is a stable, coherent and predictable regulatory framework. Simplifying administrative procedures, shortening permitting processes, digitalising the relationship between authorities and investors, and aligning legislation with technological developments all contribute to accelerating project



implementation and strengthening investor confidence. Regulatory predictability remains one of the fundamental conditions for the development of a mature energy market and for ensuring the bankability of investment projects.

Integrating an increasing volume of renewable energy, however, requires substantial investment in transmission and distribution grids. Their modernisation and expansion are indispensable for connecting new investments and increasing the system's capacity to accommodate the energy produced. Equally, grid digitalisation, the deployment of smart technologies and the use of advanced monitoring and operational solutions make it possible to manage safely an energy system characterised by an increasingly high share of variable renewable generation.

The flexibility of the National Power System is therefore becoming one of the fundamental pillars of the energy transition. The development of energy storage capacity, through both battery systems and pumped-storage hydropower projects, together with the promotion of demand-response mechanisms and the participation of aggregators in energy markets, will contribute to balancing the system and improving its efficiency. Energy storage is no longer merely a complementary technology, but strategic infrastructure that is indispensable for the sustainable integration of renewable energy sources and for reducing the costs generated by grid congestion and fluctuations in generation.

> ***The strategic directions promoted by the Ministry of Energy are aligned with the objectives set out in the National Integrated Energy and Climate Plan and Romania's Energy Strategy 2025-2035, with a perspective to 2050, and aim to develop a modern, flexible and resilient energy system.***

Unlocking Romania's next wave of wind energy growth



GUY WILLEMS,
Senior Advisor for Environment & Community Engagement, WindEurope

The Romanian wind energy market has truly awakened. A strong pipeline of new projects is now moving forward, creating a unique opportunity to strengthen Romania's energy security, industrial competitiveness and economic growth through homegrown renewable electricity. Wind energy already covers around 11% of Romania's electricity demand, and the next wave of investment could double that contribution.

Romania is well positioned to become a regional leader in renewable energy. But leadership will require more than building new wind farms. It will also require expanding electricity grids and accelerating the electrification of the wider economy. These are challenges that many European countries are facing today. The debate is no longer just about new targets. It is about implementing the rules and policies that Europe has already agreed in order to unlock investments in renewables and grids.

A good example is the Renewable Energy Directive. Romania has successfully transposed its permitting provisions and is already among the fastest countries when it comes to processing renewable energy permits. But there is still room for improvement. The priority now should be effective implementation rather than new administrative requirements that risk slowing projects down.

The single most important next step is the creation of a comprehensive digital one-stop shop for permitting. This is a genuine game changer. By allowing authorities, developers and communities to manage and monitor procedures through a single platform, digitalisation increases transparency, reduces administrative burdens and significantly improves the efficiency of permitting processes.

At the same time, Europe is negotiating the European Grids Package, which aims to support the large-scale expansion and modernisation of electricity networks. This is essential. Europe cannot electrify its economy without stronger grids. The same is true for Romania.

Several elements of the current proposal deserve strong support. Grid planning should be based on a central scenario aligned with European and national energy, security, and industrial objectives, providing greater visibility for investors and system operators. Grid connection queues should prioritise mature and strategic projects while removing speculative projects that block available capacity. This can be done already by moving away from the first come, first served to a first ready, most needed, first connected principle. More investments in grids and grid equipment will be essential to connect



new renewable generation and to electrify households, businesses and industry. Romania is already heading in the right direction domestically. It can share this approach at EU level and support it during the ongoing negotiations.

The Grids Package also contains important provisions on permitting. Digitalisation remains at the heart of the proposal, but there is a risk that some of the existing requirements for Member States could be weakened during the negotiations. This would not serve the interests of renewable energy developers, grid operators or infrastructure investors. The final agreement should preserve the progress already achieved under REDIII and build upon it. The package should also maintain the proposed simplifications for repowering, making it easier to replace older wind farms with modern, more efficient turbines. At the same time, new community benefit requirements should remain proportionate and flexible, allowing solutions to be tailored to local circumstances rather than creating additional bureaucracy.

Looking ahead, Romania's energy transition does not end with building more renewable generation. The next challenge is electrifying the economy. Today, electricity accounts for only around 15% of Romania's total energy consumption. Industry, transport and heating must become key drivers of the electrification agenda. This is an economic and security imperative, not just a climate objective. A renewables-based energy system could save Europe up to €1.6 trillion by 2050 while reducing dependence on imported fossil fuels and strengthening Europe's strategic autonomy through affordable, homegrown electricity.

As negotiations on the European Grids Package enter their final phase, Romania has an opportunity to champion a pragmatic and implementation-focused approach. Europe already has many of the right policies in place. What is needed now is political leadership to ensure that permitting is accelerated, grids are expanded, electrification is encouraged and investments are unlocked.

A competitive, secure and electrified Europe will be built through faster deployment of renewable energy and stronger electricity networks. The final outcome of the Grids Package should help deliver exactly that: fewer barriers, smarter regulation and a clear path from policy ambitions to projects on the ground.

European Union energy and climate policies

Two Complementary Perspectives on Security, Prosperity and Resilience



MARA ROMAN,
Acting Head of the European Commission Representation to Romania



OANA NICULESCU,
Political Reporter, European Commission Representation to Romania

High energy prices regularly return to the public agenda against the backdrop of Russia's war against Ukraine, the conflict in the Gulf and the accelerating effects of climate change. The pressure is simultaneously felt on citizens' purchasing power, economic competitiveness, energy security and climate adaptation. The success of the Union and its Member States, including Romania, will depend on their ability to anticipate, prevent and manage all these challenges in a coherent and coordinated manner.

The overlapping crises show us that the transition towards climate neutrality by 2050, as undertaken by the European Union, is no longer exclusively an environmental policy. Access to clean, abundant and affordable energy for all Europeans, produced in Europe, has become an essential condition for the Union's competitiveness and economic resilience, as well as a factor of geopolitical security in a new context marked by transactionalism, in which dependencies can at any time turn into vulnerabilities. The European Union has recognised the strategic role of energy and climate security and integrated them into its economic and industrial policies through the Clean Industrial Deal launched in 2025.

The Deal promotes structural transformations that foster innovation, decarbonisation, competitiveness and



the creation of skills and jobs in industries of the future. Looking towards 2030–2040, it aims to integrate and interconnect energy markets, accelerate renewable energy production and stimulate demand for low-carbon technologies and products manufactured in Europe. It includes rules for market-based financing, as well as financial instruments and direct support to help stabilise emerging markets and cover the development risks of clean technologies. Public resources are intended to act as leverage for unlocking private investment, because attracting private finance is a sine qua non condition for strengthening the competitiveness, resilience and sustainability of the European economy.

In this context, the EU Emissions Trading System (EU ETS) remains the cornerstone of the European Climate Policy. The carbon price creates an economic incentive for electrification, renewable energy and low-emission production technologies. Since the system was established in 2005, the sectors covered by the EU ETS have reduced their emissions by more than 50%, while the European economy has continued to grow.

The proposal to revise the EU ETS in the summer of 2026 seeks to ensure the stability of the price signal, which is essential for guiding capital investment with long payback periods. At the same time, the proposal aims to strengthen the funds that strategically direct revenues from emissions trading, namely the Innovation Fund, the Modernisation Fund and the Industrial Decarbonisation Bank, so that they can support the pace of decarbonisation across EU markets while also reducing investment risk. Romania is one

of the major beneficiaries of the Modernisation Fund. For the modernisation of the country's energy infrastructure alone, Romania has already received 2.5 billion euros from this fund.

Energy infrastructure must keep pace with the transformation of the economy, and investment in integrating renewables into the grid is a fundamental condition for this. Without renewables, we would lose the advantage of cheap energy produced domestically, but also an insurance policy of sorts, because investment in domestic renewable energy is also investment in our energy security.

The TEN-E Regulation on the planning and construction of cross-border energy networks, together with European funding, has facilitated the interconnection of Member States since 2014. This has enabled EU countries to cope with Russia's deliberate gas supply disruptions, support one another and manage the impact of extreme weather events on the energy system during the summer of this year, while maintaining system security and energy supply to consumers. Europe's electricity grids have become an expression of European solidarity and the backbone of the future clean-energy system.

Europe needs approximately 1.2 trillion euros by 2040 for electricity grids, while the growth of renewable generation also requires investment in storage capacity, digitalisation and demand-side management solutions. These substantial investments, however, risk making energy unaffordable for consumers. To prevent this, the European Grids Package adopted by the Commission in 2025 proposes new financing approaches, including a fair sharing of the costs of cross-border projects among their major beneficiaries.

The fair distribution of benefits and the reduction of energy bills borne by households, communities and industries will determine the success of the transition towards a prosperous and climate-neutral society just as much as the creation of quality jobs and support for those affected by profound economic and industrial transformations. These elements are also addressed as priorities through the social and energy policies proposed by the European Commission.

Romania's public agenda shows the importance of these issues more clearly than ever. Despite impressive capacity, delays in the systemic integration of renewable energy generation limit Romania's ability to cover peak demand, against the backdrop of drought affecting the operation of hydropower plants and nuclear reactors and delays in commissioning new gas-fired capacity.

The European legislative framework gives Romania the opportunity to calibrate its diverse energy mix in order to support economic growth while successfully advancing the energy transition. Renewable energy is part of the solution. A predictable legislative framework and cooperation with the private sector open the way for Romania to succeed in providing secure, clean and affordable energy for citizens and businesses, while also making a consistent competitive contribution to the European value chains in which Romanian companies are already deeply integrated.

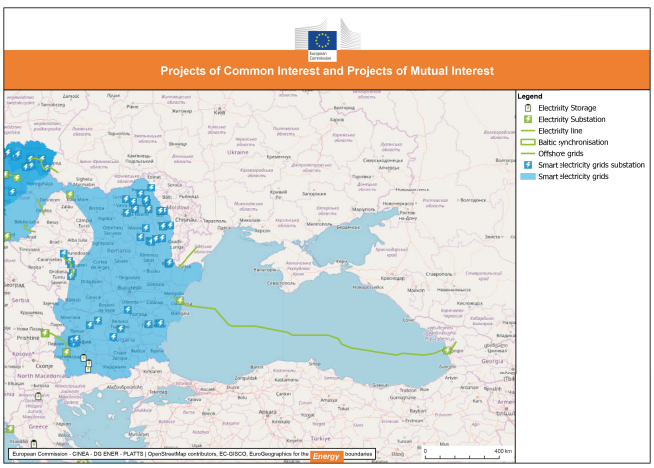
Energy infrastructure must keep pace with the transformation of the economy, and investment in integrating renewables into the grid is a fundamental condition for this. Without renewables, we would lose the advantage of cheap energy produced domestically, but also an insurance policy of sorts, because investment in domestic renewable energy is also investment in our energy security.

The new European interconnection map extends to the Black Sea

Since April 2026, the second European list of Projects of Common Interest and Projects of Mutual Interest has been in force, comprising 235 cross-border energy infrastructure projects. Almost half (113) relate to electricity, offshore grids and smart grids, which are essential for integrating larger volumes of renewable energy.

Of particular relevance to Romania, the list includes two projects with a direct link to the Black Sea: the Anaklia, Georgia-Constanța Sud undersea interconnector, known as the Black Sea interconnection cable, and a new Artsyz, Ukraine-Isaccea interconnector. PCI/PMI status brings with it simplified authorisation procedures, regulatory support and eligibility for funding through the Connecting Europe Facility.

For Romania, these connections can increase regional trading capacity and support the integration of future renewable energy volumes from the Black Sea region.



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Renewable energy pathways in Central and Eastern Europe



JAMES SPELLING
Project Manager, Baringa

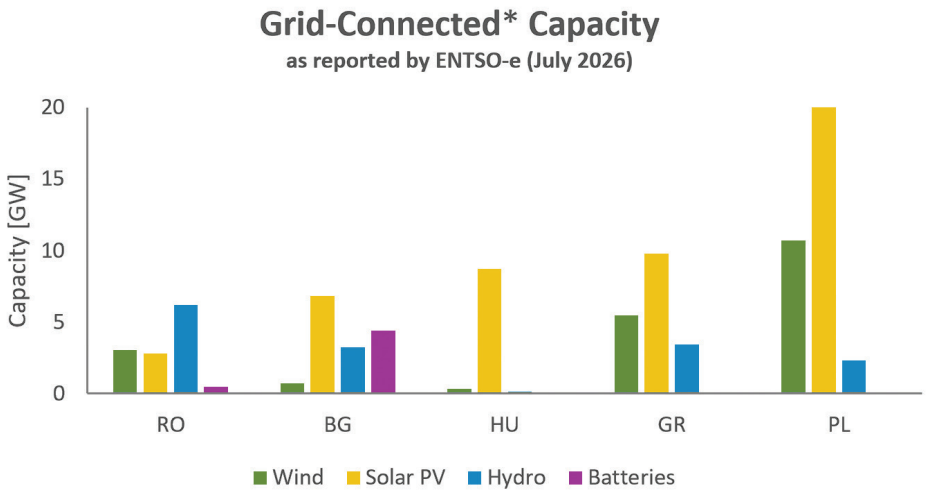
Renewable energy has become a central pillar of energy security, economic competitiveness and decarbonization across Central and Eastern Europe (CEE). Yet as the region accelerates its transition, a growing body of experience is also emerging on the challenges associated with integrating large volumes of variable renewable generation.

Romania enters this next phase of the transition from a position of relative strength. Compared with many of its regional peers, it benefits from one of the most diversified generation mixes in CEE, combining hydro, nuclear, wind, solar and gas-fired generation. This diversity provides an important source of system flexibility and resilience, reducing both integration risks and reliance on any single technology pathway as the country seeks to significantly expand renewable capacity over the coming decade.

Across the CEE region, countries have pursued markedly different renewable development pathways in recent years. Poland and Greece have emerged as regional leaders in renewable deployment, supported by substantial additions of both wind and solar capacity. Hungary's transition has been dominated by rapid solar growth, while Bulgaria has also seen significant solar deployment in recent years and is increasingly becoming one of Europe's most active battery storage markets. Romania sits somewhere between these markets: no longer the early mover it was during the green certificate era, but increasingly well positioned as a second-wave renewables market with strong growth prospects across both solar and wind.

Perhaps most importantly, Romania has the advantage of timing. Unlike the first movers in the region, it can draw on lessons from neighboring markets that are already grappling with issues such as curtailment, grid congestion, declining capture rates and the growing need for flexibility resources. As a result, Romania's opportunity extends beyond simply building more renewables. The real prize is creating an integrated energy system where renewable generation, storage, network infrastructure and electricity demand evolve together, supporting a more resilient, flexible and competitive power system while strengthening long-term economic growth.

Poland In Poland, renewable deployment has been driven by the dual objective of decarbonizing one of Europe's most coal-intensive power systems while maintaining security of supply in a fast-growing economy, and a large and rapidly evolving electricity market. The country has gradually



*Does not include a range of behind-the-meter connected capacities such as Romania's prosumers.

transitioned from its legacy green certificate regime to competitive renewable auctions, while the capacity market has played a key role in supporting generation adequacy by remunerating dispatchable and flexible capacity, including significant investment in battery energy storage systems.

Renewable deployment has accelerated substantially over the past decade. Solar PV has experienced particularly rapid growth, complementing an established onshore wind fleet that remains a cornerstone of the renewable mix. Poland's offshore wind sector has also entered a new phase of development, with the first projects in the Baltic Sea entering operation and a second wave of projects securing long-term support through competitive allocation mechanisms.

Hungary In Hungary, nuclear generation remains the backbone of the country's low-carbon electricity system, accounting for around half of domestic generation and providing a stable source of baseload supply. By contrast, renewable deployment over the past decade has been overwhelmingly concentrated in solar PV. Supported by the KÁT and METÁR schemes, solar capacity expanded rapidly during the early 2020s, surpassing 8 GW by 2025 and becoming the dominant source of renewable electricity growth. Wind development, however, remained effectively frozen for more than a decade and only began to reopen following regulatory reforms introduced in 2024.

Hungary's experience highlights how quickly integration challenges can emerge when renewable growth is heavily concentrated in a single technology. Network infrastructure development often struggles to keep pace with rapid renewable deployment, leading to connection delays, congestion, increasing curtailment risk and declining capture prices. It also underscores the value of maintaining a balanced renewable mix: while solar has delivered significant capacity additions, the limited contribution from wind has reduced seasonal and intraday diversification benefits that could otherwise help lower system costs and improve overall system flexibility.

Bulgaria In Bulgaria, the power system has historically been anchored by lignite generation, nuclear power and hydroelectric resources, with the first wave of renewable development driven by generous feed-in tariffs introduced between 2010 and 2014. Following a relatively subdued period of deployment, renewable investment accelerated significantly between 2023 and 2025, with almost 3 GW of new solar PV capacity added in just three years, predominantly through utility-scale projects.

More recently, Bulgaria has emerged as one of the most dynamic flexibility markets in Europe. Through CAPEX subsidies under the Recovery and Resilience Plan, the country facilitated the rapid deployment of battery energy storage systems, with operational battery capacity exceeding 4 GW by mid-2026. As a result, Bulgaria is increasingly establishing itself as a regional



leader in storage deployment and flexibility investment.

The Bulgarian experience highlights the important role that storage can play in supporting large-scale renewable integration. Battery assets are increasingly helping to absorb surplus renewable generation, reduce curtailment risk, improve balancing performance and increase the utilization of both renewable and network infrastructure. Importantly, the benefits extend beyond Bulgaria itself. Given the country's strategic position within the interconnected Southeast European power market, growing storage capacity is increasingly supporting regional system flexibility, cross-border trading and overall system stability.

Greece In Greece, the energy transition has entered a new phase. Following more than a decade of strong renewable deployment supported by feed-in tariffs, auctions and other support mechanisms, the principal challenge is no longer building renewable capacity but integrating it efficiently into the wider power system. By 2025, wind and solar generation accounted for close to half of annual electricity production, positioning Greece among the European leaders in renewable penetration.

This success, however, has created a new set of challenges. As renewable generation has grown more rapidly than grid infrastructure, storage capacity and flexible demand, curtailment has emerged as an increasingly important feature of the market. Approximately 2 TWh of renewable generation was curtailed in 2025, with curtailment volumes expected to increase further as additional renewable capacity comes online. These effects are currently most visible in solar PV, where periods of strong daytime generation increasingly coincide with lower system demand and network constraints.

Greece's experience illustrates how quickly integration challenges can intensify once renewable penetration reaches scale. It also highlights that renewable deployment alone is not sufficient to deliver a successful energy transition. Long-term system efficiency increasingly depends on parallel investment in storage, network infrastructure, interconnection, demand-side flexibility and electrification.

Lessons for Romania

To deliver a resilient and cost-effective transition, Romania should pursue a coordinated approach in which renewable generation, storage, network infrastructure

and flexibility resources are developed in parallel. Bulgaria's experience demonstrates the benefits of deploying large-scale storage early, while Greece and Hungary highlight how quickly congestion, curtailment and declining capture prices can emerge when network reinforcement and flexibility investment lag behind renewable growth. Transmission and distribution infrastructure should therefore be strengthened proactively, particularly in high-resource regions where access to grid capacity is increasingly becoming as important a determinant of project value as resource quality itself.

Equally important will be the development of market mechanisms that reward flexibility alongside energy production. As renewable penetration increases, long-term system efficiency will depend not only on installed capacity but also on the ability of market participants to provide balancing, storage and other system services. Romania's existing hydro and nuclear fleets provide a strong foundation in this regard and represent a strategic advantage that few neighboring markets possess. Building on this foundation through a balanced mix of solar, wind and storage investments can support a more resilient and efficient pathway to decarbonization.

Stable and predictable investment frameworks will remain critical. Long-term support mechanisms such as Contracts for Difference (CfDs), transparent curtailment arrangements and clear regulatory signals can help maintain investor confidence and attract the scale of capital required to achieve Romania's renewable ambitions. Planning should increasingly take place at a regional level, recognizing the growing importance of interconnection, cross-border power flows and coordinated infrastructure development across Central and South-Eastern Europe.

Finally, the most successful energy transitions are likely to be those that grow electricity demand alongside renewable supply. Romania therefore has an opportunity not only to expand renewable generation, but also to accelerate electrification across transport, heating, industry and digital infrastructure. By pairing abundant low-cost renewable electricity with supportive industrial and economic policies, the country can attract energy-intensive investment, including



advanced manufacturing, industrial electrification, data centers and emerging sectors such as low-carbon hydrogen. Demand-side flexibility, smart charging, industrial demand response and other flexible consumption models can further help improve the integration of renewable generation while enhancing overall system efficiency.

Ultimately, the experience of neighboring markets suggests that the success of the energy transition should not be measured solely by renewable capacity additions. The true measure of success is the ability to integrate these resources into a reliable, flexible, competitive and increasingly electrified economy. Romania's opportunity extends beyond simply building more renewables; the real prize is creating an integrated energy system where generation, storage, networks, flexibility and demand evolve together, supporting decarbonization, energy security and long-term economic competitiveness.

The trilemma points in one direction



DRIES ACKE,
Deputy CEO, SolarPower Europe

Amid high energy prices, the EU debate is shifting, through the Clean Industrial Deal, toward a more competitiveness-focused approach to the green transition. Yet, as Brussels' new political season begins after a summer of heatwaves and devastating wildfires, it starkly reminds us that climate change is not going away. EU energy policy must therefore solve the trilemma: energy must be affordable, reliable and clean. The good news is that solar, combined with storage, grids and flexibility, delivers on all three.

We saw the proof this summer. As heatwaves increased electricity demand and put conventional power plants under pressure, solar supplied more than 20% of EU electricity for three consecutive months, reaching a record 25% in June, and becoming the EU's largest source of power that month.

The affordability benefits are equally clear. In the first half of 2026, wholesale electricity averaged about €50/MWh in Spain, which has a renewable-dominant mix, compared with €127/MWh in more gas-dependent Italy. Across the EU, SolarPower Europe estimates that solar avoided over 30 billion EUR in gas imports in the six months since the March 2026 Hormuz crisis, protecting consumers from volatile fossil-fuel markets.

Building on this progress means doubling down on storage and flexibility. Romania, Europe's new renewable energy champion according to The Economist, shows what is possible. In less than five years, it deployed more than 7 GW of solar, adding storage early in its solar build-out, rather than trying to catch up later. This is the integrated approach Europe needs.

EU policy is beginning to respond to this growing need for flexibility. The Grids Package supports faster permitting, while the Tripartite Agreement on Energy Storage brings an estimated 200 GW of storage required by 2030, up from around 55 GW in early 2026.

The priority is now implementation. Flexible connection agreements, grid-hosting maps, national flexibility assessments and tariffs that avoid double-charging storage are already embedded in EU rules. Regulatory stability starts with doing what Europe has agreed.

Industrial policy must also remain proportionate. While diversified supply chains and innovative European manufacturing are essential, imported equipment does not create the same vulnerability as continuous fossil fuel imports. Once installed, solar panels and batteries produce and store electricity in Europe, using sunlight, a renewable source that cannot be subject to an embargo or disrupted by geopolitical supply constraints.

The overriding interest must be to make this its last fossil-fuel crisis. That is our vision, and what SolarPower Europe stands for.

„Made in the EU" becomes part of industrial policy for solar energy

This spring, the European Commission proposed the Industrial Accelerator Act, a regulation that shifts policy on clean technologies from stimulating demand to explicitly supporting European production. The proposal introduces 'Made in the EU' and/or low-carbon footprint requirements in public procurement and support schemes for strategic sectors, including solar energy.

For foreign direct investment exceeding 100 million euros from countries that account for more than 40 per cent of global production capacity in a targeted sector, the draft provides for explicit approval and conditions designed to create value within the EU: transfer of technology and know-how, local content and European jobs. For the photovoltaic sector, this change may influence both the criteria for future support schemes and public procurement, as well as the selection of suppliers of



modules and other equipment. In September 2026, the regulation had not yet been adopted: the Council is, however, working on compromise texts, and the final version will be determined by the European legislative process.

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WE DEVELOP
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WE OFFER STABILITY
A safe place to build a long-term career.

Our technicians teams grew from 70 FTE* to 232 FTE in installation, service and blades activities, between 2020 up to 2026, an increase of 331%.

*FTE = full time equivalent

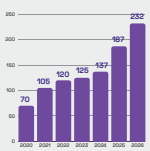
We train the next generation of wind technicians by sharing our know-how, investing in professional training and providing real hands-on experience. Through continuous learning and guidance, we build the skills and confidence to grow in the industry.

Our technicians have indefinite-term employment contracts, offering the stability and continuity required to grow and build a long-term career in the wind industry.

TEAM GROWTH 2020–2026
70 → 232
technicians
+331%
growth

PEOPLE WHO JOINED OUR TEAM
162 FTE
new colleagues in 2020–2026

GROWTH OVER THE YEARS





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Electrification must become a national project



CORNELIU BODEA
CEO of Adrem and President of the Romanian Energy Center

A decade ago, the main challenge of the energy transition was to build as much renewable generation capacity as possible. Today, that phase has largely been completed. Technologies have matured, costs have fallen, investment continues, and Romania is well placed to become one of the leading producers of low-emission energy in Central and Eastern Europe.

The fundamental question, however, is no longer how much renewable energy capacity we can install, but how we integrate it into an energy system that remains secure, flexible, competitive and affordable.

That is where the real challenge begins.

Too often, we measure the success of the energy transition in installed gigawatts. It is an important indicator, but an incomplete one. The economy does not run on installed megawatts. It runs on energy that is available when needed, at a competitive price and within a system resilient enough to support investment and industrial development.

Energy does not create prosperity simply by being produced. It creates prosperity when it is used intelligently.

That is the difference between the first and second stages of the energy transition.

The first stage was about decarbonisation. The next stage is about competitiveness.

In recent months, discussions at international forums, both at the Three Seas Initiative Summit in Dubrovnik and at the Eurelectric Power Summit in Helsinki, have naturally shifted from climate targets towards the infrastructure needed to support Europe's new economy. The message has been very clear: Europe does not need another strategy. Europe needs faster implementation.

The same is true for Romania.

We have one of the most balanced generation mixes in the European Union, combining nuclear power, hydropower, natural gas and renewable energy. Major investments are set to follow in the revival of nuclear development, the Neptune Deep project, new renewable energy plants and storage capacity. All of these represent extraordinary opportunities.

But the real test will not be whether we build them. It will be whether the economy and the energy system can operate coherently once they are in place.

From this perspective, electricity grids are becoming the most important economic infrastructure of the next decade. We are no longer talking only about cables and substations, but about the platform on which the competitiveness of Romanian industry will be built.

Industrial electrification, electric mobility, heat pumps, hydrogen production, data centres and artificial intelligence will drive an unprecedented increase in electricity demand. The International Energy Agency estimates that global electricity consumption by data centres will double by the end of this decade and triple by 2035. The trend is not only a challenge for energy systems, but also a major economic opportunity for countries capable of providing secure, competitive and readily available energy.

From this perspective, electrification must become a national project.

Not because it is a European requirement, but because it represents Romania's most important economic development opportunity in the years ahead. We do not produce energy simply to supply the energy system. We produce energy to power the economy, attract investment, develop industry and create high-value-added jobs.

It is equally important to understand that system flexibility is no longer a technical concept reserved for grid operators. Batteries, digitalisation, demand response, consumer aggregation, artificial intelligence and flexibility services will become essential components of the energy market. They will determine how efficiently we can integrate new renewable capacity and how competitive European economies will remain.

At the same time, energy has long ceased to be simply a public utility. It has become critical infrastructure for competitiveness, security and economic resilience. Regional interconnections, grid investment and market integration are no longer merely energy projects. They are strategic projects with direct implications for Europe's ability to remain competitive in a world where energy, technology and geopolitics are increasingly intertwined.

Romania has an advantage that few European countries still possess: diversified energy resources, a balanced generation mix, technical expertise, a strategic geographical position and strong investment prospects. In addition, the country is at an important stage of institutional maturation.

> ***The next energy revolution will not be decided in power plants, but in grids, flexibility and the ability to turn energy into economic development***

More than a foreign policy objective, the process of joining the Organisation for Economic Co-operation and Development (OECD) sends investors a strong signal about stability, predictability and the quality of economic governance. For the energy sector, the opportunity is essential. The energy transition will require investments amounting to tens of billions of euros in generation, grids, storage, digitalisation and new technologies. Capital is available, but it flows towards markets that offer stable rules, strong institutions and a predictable regulatory framework. From this perspective, OECD accession complements Romania's natural advantages and could become one of the country's strongest arguments in the regional competition to attract strategic investment.

The next decade will belong to the countries that build the smartest energy systems, inspire investor confidence and turn energy into a competitive advantage for the entire economy.

The future will not be measured only in installed gigawatts. It will be measured in the competitiveness, investment and prosperity those gigawatts generate.

The role of the market in the sustainable integration of renewable energy



LAURENȚIU URLUESCU,
President Romanian Energy Suppliers Association (AFEER)

The energy transition is often associated with the rapid development of renewable energy generation capacity. In reality, the success of this transformation depends just as much on the functioning of an efficient, liquid and predictable energy market. Integrating renewables is not only about new investment in generation, but also about robust commercial mechanisms, accurate price signals and a regulatory framework that allows all market participants to manage the risks and opportunities of the energy transition effectively.

Following a period marked by administrative interventions and price-cap schemes, Romania's energy market is entering a new stage of maturity. Long-term bilateral contracts, including power purchase agreements (PPAs), the digitalisation of the relationship with consumers, aggregation and flexibility services will become increasingly important in the years ahead. At the same time, the growing share of renewable energy will lead to greater price volatility, with periods of very low electricity prices due to high solar and wind generation, followed by periods when a lack of wind and/or sunshine results in significantly higher prices.

Flexibility and storage are changing the market model

In this context, the discussion is no longer only about integrating renewable energy into the power system, but also about integrating flexibility into the market. Storage capacity, aggregation, demand response and balancing markets are becoming essential elements for the efficient operation of the energy system. Suppliers and traders have an increasingly important role in managing complex portfolios that include renewable generators, prosumers, active consumers and storage capacity, turning variable generation into energy delivered securely and predictably.

Liquidity and predictability support renewable integration

A key condition for this evolution is the existence of a liquid and competitive wholesale market. Experience in recent years has shown that fiscal interventions and repeated changes to the legislative framework can reduce liquidity and weaken the interest of major market participants, including international traders. A market with fewer participants means fewer risk-management



From AFEER's perspective, only by aligning the development of renewable generation with investment in flexibility, infrastructure and market mechanisms can we turn the energy transition into a competitive advantage for the Romanian economy and a tangible benefit for consumers.

instruments, less competition and a reduced ability to efficiently integrate growing volumes of renewable energy. Legislative and fiscal predictability is therefore one of the most important conditions for attracting investment and developing robust market mechanisms.

Prosumers require a new regulatory framework

A relevant example of the market's transformation is the remarkable growth in the number of prosumers. By the beginning of 2026, Romania had reached almost 300,000 prosumers, with approximately 3,400 MW of installed capacity. This development contributes to decarbonisation targets and accelerates the digitalisation of the energy sector, but it also requires the regulatory framework to adapt.

The study conducted for AFEER on the impact of prosumers on the energy system highlights that the current model generates additional costs for suppliers and distribution system operators, which are transferred, directly or indirectly, to other consumers. At the same time, distribution grids, originally designed for one-way electricity flows, need to be modernised to address the new challenges created by distributed generation. From this perspective, renewable energy development must be accompanied by investment in smart grids, storage, digitalisation and flexibility mechanisms.

AFEER supports the continued development of prosumers and distributed generation, but considers that a consistent and balanced regulatory framework is needed, one that distinguishes between self-consumption and generation intended for sale and ensures a fair allocation of system costs. The objective should be to encourage investment without transferring disproportionate costs to other consumers and without undermining the competitive functioning of the market.

Romania has the resources, interested investors and the opportunity to become one of the region's leading clean energy hubs. Unlocking this potential, however, requires a mature, liquid and predictable market capable of supporting long-term investment and providing accurate economic signals. From AFEER's perspective, only by aligning the development of renewable generation with investment in flexibility, infrastructure and market mechanisms can we turn the energy transition into a competitive advantage for the Romanian economy and a tangible benefit for consumers.





2

Policies and regulations in the renewable energy sector

From rules to investment mechanisms



SORIN ELISEI,
Secretary General at the Ministry of Energy

Romania's renewable energy sector has moved beyond the stage where progress could be measured only by the number of installed MW or the size of the portfolio of announced projects. The next objective is to integrate new capacities into a system capable of absorbing the electricity they generate, transmitting and distributing it safely, and facilitating its effective market use. The development of renewables must be accompanied by grid expansion and modernisation, storage capacity and mechanisms that ensure system flexibility.

Romania transposed the new European requirements on renewable energy at the end of 2025. The priority now is their consistent implementation, so that streamlined permitting and statutory deadlines are also reflected in the actual development of projects. Accelerating permitting requires not only shorter timelines, but also better coordination between authorities, clearer stages and greater digitalisation. Investors need clear procedures, well-defined responsibilities between authorities and legislative stability.

Changes to the regulatory framework must be developed through consultation, with their potential impact on investment in the energy sector carefully assessed.

From rules to investment mechanisms

Contracts for difference (CfDs) play a central role in supporting new investment. The first auctions confirmed investor interest in wind and solar capacity and provided greater visibility over long-term revenues. Through its two-way structure, the mechanism reduces exposure to price volatility: when the reference price is below the strike price, the difference is covered through the CfD mechanism, while when the reference price exceeds the strike price, the beneficiary pays back the corresponding difference.

The Black Sea offers Romania significant offshore wind potential, with around 3 GW of capacity envisaged. The legislative framework already adopted provides the basis for preparing future investments.

Romania has established the legislative framework required for the guarantees of origin system, and the current objective is to make it fully operational. A fully functioning system that is interoperable at European level will help remove existing barriers, unlock cross-border transfers of guarantees of origin and facilitate the conclusion of long-term bilateral contracts.



Storage becomes part of the market architecture

Storage is an essential component for integrating renewables and ensuring the secure operation of the system. Batteries and pumped-storage hydropower plants can shift electricity to periods of higher demand, while demand response can help adjust consumption and reduce imbalances.

Funding programmes have provided important momentum for storage investment. This momentum must be sustained through market rules that recognise the services storage provides to the system and enable effective participation in the balancing market and the provision of system services.

Another important direction is the development of hybrid projects combining renewable generation with storage capacity. Such projects can contribute to more efficient use of grid connection capacity, reduce fluctuations in electricity delivered to the grid and allow more flexible market participation. Integrating storage from the design stage can become an important factor in the viability of new investments.

At this new stage, sector performance will be reflected not only in installed capacity, but also in the amount of renewable electricity effectively integrated into and monetised within the economy. Achieving this objective requires continued dialogue between public authorities, investors and sector operators, so that project development is supported by clear rules and functioning market mechanisms.

The Ministry of Energy will support the development of renewables and storage capacity as part of a diversified energy system. Our objective is for new capacities to be connected, integrated and used efficiently. Romania has resources, investor interest and access to sources of financing. The outcome will depend on our ability to coordinate the development of generation with the development of grids, storage and market mechanisms.

Romania's renewables framework: A decisive regulatory summer, with wind and offshore wind center stage



VARINIA RADU,
Partner, Head of Energy & Projects Romania, Deputy Head of EPC Sector Group in CEE, CMS

Few markets in Central and Eastern Europe have compressed as much regulatory change into a single season as Romania has in 2026. Within a few months, the country replaced its grid access philosophy, tightened its permitting regime around financial commitment, adopted a completely new codification of urbanism and construction law, operationalised the secondary framework for offshore wind concessions in the Black Sea, and authorised its first central counterparty for the energy market. The market is being deliberately re-engineered around execution, just as the first wave of CfD-backed projects approaches commissioning in 2026–2027.

1 Energy regulation and permitting

The auction-based grid access regime

The headline change is the shift, as of 1 July 2026, from the historical "first come, first served" principle to an auction-based mechanism for allocating grid connection capacity, administered by Transelectrica through a dedicated platform for generation and storage projects of 5 MW and above. The regime – built on ANRE's capacity allocation methodology – is still in its testing phase: Transelectrica finalised a global grid study identifying available capacity per network zone, allocation requests were submitted in July against a participation guarantee of EUR 20,000/MW, and daily auction sessions are scheduled to begin on 30 October 2026.

The first allocation round attracted 12 projects totalling ca. 491 MW – photovoltaic, wind, hybrid and battery storage installations – with participants including Romgaz alongside



international investors. The mechanism's significance is systemic: connection capacity has become a scarce, priced resource, in a context where ANRE data indicated over 1,400 renewable projects holding valid technical connection approvals (ATRs) for a combined capacity in excess of 81,000 MW – against system needs estimated at around 9,000 MW. The corollary rule is equally consequential: ATR holders with signed connection contracts must obtain the setting-up authorisation within 12 months or forfeit their grid slot – and the two measures combined are actively repricing the development pipeline.

Tougher permitting, built around financial guarantees

Financial guarantees now condition the issuance, modification and extension of setting-up authorisations across technologies (ANRE Orders 6/2025 and 15–16/2026). Set by reference to installed capacity, the guarantee is designed as a viability filter – adopted in the context of the state of alert declared in the national power system in the summer of 2026. Storage benefits from a deliberate carve-out: ANRE has proposed exempting both storage installations added to generation capacities at the same site and projects already providing a performance guarantee under a CfD.

Offshore wind: from statute to execution

Offshore wind moved decisively from primary legislation to execution. Under Law 121/2024, which designated the Ministry of Energy as the competent concession authority, the Government approved at the end of August the list of offshore wind perimeters that may be concessioned in the Romanian sector of the Black Sea (GD 664/2026), defined by topogeodesic coordinates and grounded in a specialist study prepared with IFC and EBRD support. Days later, the Executive adopted the Specific Norms governing the concession procedures – award documentation, participation conditions, evaluation and award rules, guarantees and concessionaires' obligations – together with the level of

royalties and fees, and a separate decision on the reception of works, covering both offshore works and onshore works up to the transmission grid connection point.

Market infrastructure: the central counterparty and the CfD commissioning wave

Equally structural is the completion of Romania's post-trade infrastructure. CCP.RO Bucharest was authorised on 1 July 2026 under EMIR 3, with a dual mandate covering the capital market and, for the first time, standardised electricity contracts traded on the markets administered by OPCOM and the Bucharest Stock Exchange – eliminating bilateral counterparty risk just as the CfD commissioning wave of 2026–2027 will need a deep, well-collateralised offtake market. In parallel, Romania is preparing to become a full member of the Association of Issuing Bodies (AIB) as of January 2027, when its guarantees-of-origin market fully opens – materially facilitating cross-border PPAs involving Romanian generation.

2. Land: the new Urbanism Code

The Territorial Planning, Urbanism and Construction Code entered into force on 25 August 2026, consolidating into a single instrument the regime historically split between Urbanism Law 350/2001 and Construction Law 50/1991, and integrating the construction quality framework of Law 10/1995. For renewables, the Code broadly preserves the favourable trajectory built since 2022–2023, including the removal of the zonal urban plan (PUZ) requirement for RES projects. The critical open issue is land title: the Code currently omits a workable solution for securing project land under superficies arrangements, the structure through which most wind and solar projects hold long-term rights over private land.

3. M&A: newcomers still arriving, but consolidation is the story

The broader Romanian M&A market provides a supportive backdrop: in H1 2026, Romania recorded 148 transactions with an aggregate disclosed value of EUR



3.57bn, up 9.6% in volume and 104.6% in value compared with H1 2025, with Energy & Utilities accounting for 16 transactions, up from ten.

Within renewables, the market continues to attract newcomers, but the defining trend is portfolio consolidation. The landmark transaction is Premier Energy's EUR 700 million acquisition of Evryo Group from Macquarie-managed funds – the fourth-largest energy transaction in Romania on record, completing Macquarie's staged exit from the former CEZ Romania platform. Wind is at the centre of the consolidation wave: Scatec entered European onshore wind through the 77 MW Urleasca project acquired from OX2, supported by a CfD at EUR 71.3/MWh, while Helleniq Renewables acquired two ready-to-build wind projects totalling 282 MW, including a 186 MW wind plus 186 MW/186 MWh BESS hybrid. Established players continue to build out positions across solar, wind and storage, while international IPPs and traders enter storage through



greenfield BESS and offtake structures.

Two dynamics drive the deal flow: the first is the clean-up of speculative development, with holders of non-bankable ATRs channeling projects – at corrected valuations – towards committed builders as the 12-month use-it-or-lose-it rule bites; the second is a marked tightening of valuation discipline, with buyers differentiating severely between "ready to build" projects and pipelines without a credible path to commissioning. CfD awards have added value to the M&A currency: across three auction rounds since late 2024, some 4.5 GW of solar and wind capacity has secured 15-year CfDs – solar clearing around EUR 40/MWh and wind broadly in the EUR 60–75/MWh range – under a scheme backed by ca. EUR 3 billion from the Modernisation Fund and NRRP. Execution practice is adapting: in CMS's recent transaction experience, consideration is increasingly staged against regulatory milestones, with milestone-based earn-outs and warranty & indemnity insurance now familiar features, and early engagement on FDI screening a gating item for inbound transactions.

4. Financing: banks, IFIs and the BESS bankability question

The project finance market is growing in depth and sophistication, with the largest commercial banks lending alongside the IFIs (EBRD, EIB, IFC) in club structures that have become the template for utility-scale deals – and 2026 brought the market's first hybrid (generation-plus-storage) project financings. Across recent financings, three structural features stand out: CfDs functioning as the bankability anchor, with lenders sizing debt against the contracted tranche while treating merchant volumes conservatively; InvestEU first-loss guarantees crowding private debt into merchant exposure; and hybridisation emerging as the preferred configuration.

Lenders discount merchant revenue for good reason: Romania added ca. 2.2 GW of solar in 2025, and record midday output pushed day-ahead prices into negative territory on several occasions in 2026. Corporate PPAs are the natural complement – roughly 500 MW was contracted in 2025, with pricing generally in the EUR 65–85/MWh range – and lenders routinely accept well-structured PPAs with investment-grade offtakers as debt-sizing collateral.

For battery storage, the emerging bankability answers are contractual: 2026 brought both the market's first non-recourse standalone BESS project financing and its first cap-and-floor tolling structure, with a commodity trader guaranteeing a revenue floor – a template many expect to be replicated.

Outlook

Taken together, the reforms of 2026 establish a coherent legal architecture for the Romanian renewables market. CMS Romania has been involved in all of these market developments, from shaping the legislation – through various roles providing technical support to the Romanian authorities – to acting as the artisan of some of the largest and most complex transactions and financings in the market.

How Romania's Legislative Overhaul Is Reshaping the Energy Investment Landscape

After a decade of stagnation, Romania's renewable energy sector surged in recent years, driven by simplified construction permitting and a first-come-first-served grid connection regime that stood at the heart of Romanian energy investment. This led to grid capacity saturation reaching 113.5 GW in August 2026. In response, the Romanian Energy Regulatory Authority (ANRE) introduced legislative reforms that are reshaping the dynamics of the investment landscape.



MIHAELA NYERGES,
Managing Partner,
Nyerges & Partners

I. Grid Capacity Auctions: A Barrier to Greenfield Development

As of July 2026, the first-come-first-served system was replaced by an auction-based grid capacity allocation mechanism. The new framework marks a fundamental shift towards upfront financial commitment: applicants must post a financial guarantee of EUR 20,000 per MW at the initial stage of submitting an expression of interest. This significantly changes the landscape of stakeholders who can initiate the grid connection process compared to the previous system, given the substantial financial resources required. In addition, it increases the investment risk considering that such guarantee is requested at an early stage when there is no visibility on auction parameters (starting price, available capacity, commissioning year).

In the first application window, only five applicants submitted expressions of interest for 12 projects totalling 491 MW (279 MW generation/hybrid and 212 MW standalone storage). The modest level of participation reflects the uncertainties inherent in the new framework, which have made 2026 an experimental year for grid capacity allocation and effectively put a brake on new project development. This has shifted investors' attention towards acquiring existing projects.



II. New Permitting Deadlines: The Pressure to Divest

A second layer of reform to address the grid overload has been imposing a mandatory deadline for obtaining the setting-up authorisation. This authorisation has traditionally been deferred until late in the development process — typically after onboarding a final investor - since it requires evidence of sufficient funds to implement the project.

On top of the new deadline, ANRE has introduced a financial guarantee of EUR 30/kW of the project's installed capacity as a condition for obtaining the authorisation.

The combined pressure of strict deadlines and substantial financial guarantees is driving developers to divest to well-capitalised investors, further fuelling M&A activity across the sector. Investor interest is particularly concentrated in wind energy projects, standalone battery energy storage systems (BESS), and hybrid projects combining photovoltaic installations with battery storage. The focus is on highly advanced projects as project value is closely linked to achieving an early COD to capture the current market premium, particularly in case of standalone BESS projects.

III. Structuring the M&A Deals: An Investor's Checklist

With M&A activity accelerating across the sector, the following highlights key considerations for structuring and negotiating energy M&A transactions under the current regulatory framework.

1. Defining „ready-to-build" Scope. Romanian law does not define „ready-to-build" (RTB), making it one of the most important matters to address from the outset of negotiations. Sellers tend to adopt a narrow interpretation, while investors need certainty that no additional permitting is required before starting construction works. Important project milestones often contested by developers include (i) the building permit for the connection installation (due to such installation being owned by and permitted in the name of grid operators); (ii) a signed grid connection agreement (given the implementation decisions it entails, e.g. selecting the designer/contractor); and (iii) the setting-up authorisation (due to the source of funds and financial guarantee being borne by investors).



2. Price Structures. Deferring milestone payments after closing, contingent on specific milestones including the commercial operation date (COD) has become more common as it serves a dual purpose: it aligns the seller's incentive for a swift closing and provides the investor with protection against missing RTB actions and managing repermitting or construction delays.

3. Retaining the Developer During Construction. Successful implementation of energy projects depends on an intricate web of stakeholder relationships—landowners, authorities, grid operators. Rather than relying solely on a deferred purchase price, investors often consider retaining the original developer under a dedicated services agreement covering the period through COD. This preserves continuity, ensuring that institutional knowledge is not lost at closing.

4. Grid Connection Conditions. The multiple facets of the grid connection solution make it one of the key areas of focus in due diligence, e.g. the scope and cost of reinforcement works, the advantages and disadvantages of their inclusion in the TSO's development plan, the impact of operational limitation solutions on project output, and the allocation of timeline risk under the connection agreement.

5. W&I Insurance. Warranty and indemnity (W&I) insurance has become an increasingly common feature in Romanian energy M&A, driven in part by sellers seeking a clean



exit. However, investors should be aware that permitting risks during the construction period — the very risks that dominate pre-COD projects — are largely excluded from standard W&I policies. This gap makes it essential to negotiate tailored insurance terms and SPA protection for insurance carve-outs.

6. ESIA. A project fully permitted under Romanian environmental requirements may still require an Environmental and Social Impact Assessment (ESIA) to meet international lenders' standards.

7. FDI Screening. Foreign direct investment screening is mandatory for all investments in the Romanian energy sector exceeding EUR 5 million. The review process takes approximately two months, a timeline that must be built into the transaction calendar from the outset. Equally important, gun-jumping rules apply: no steps towards implementing the transaction should be taken before FDI clearance is obtained.

8. Lock-up Periods for Grants. Standalone battery energy storage systems (BESS) are currently eligible for state aid scheme. However, once the application is filed, no change in the project company's shareholding structure is allowed until the corresponding financing agreement is signed. This lock-up can introduce substantial delays into the transaction calendar and must be factored into deal structuring and timeline planning from the earliest stage.

9. Contracts for Difference (CfD). For projects that have secured a CfD, the regulatory framework does not require prior approval from the CfD counterparty or the Ministry of Energy for a change of control. Nevertheless, the substitution of the performance bonds (same as the grid connection guarantees) should be properly addressed in the transaction documentation.

As the regulatory landscape settles into its new shape, the differentiator will be the ability to deliver bankable projects — sound offtake arrangements, optimised asset configurations, and a financing structure that withstands regulatory recalibration. The investors who bring that discipline to the table will not merely adapt to Romania's new energy framework, they will set its pace.

The wind of change: Wind energy in Romania - between ambition and reality

With an installed wind capacity of approximately 3.5 GW and offshore potential in the Black Sea that is still untapped, Romania stands at the crossroads of strategic decisions. Between the objectives assumed under the NECP and the practical challenges of permitting, grid connection, and the sale of wind energy, Romania remains a jurisdiction full of opportunities—but only for investors prepared to navigate a continuously changing regulatory landscape and to most efficiently monetize the risks associated with a volatile production profile.





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TEODOR SABĂU
Senior Associate, DLA Piper Romania

I. Romania in the European Context

In Europe in 2026, the main obstacle to investment in wind energy is no longer technology, but the ability of states to authorize and connect new projects, both in terms of the duration of these procedures and in terms of their alignment with the parallel processes of financing and final investment approval. The competition to attract private capital is waged less around the natural resource and more around the speed and certainty of implementation, which depends on the legislative framework and on the ability to manage a supply chain under the pressure of exponentially growing demand.

The regional context accentuates this pressure. Poland has established itself as the most advanced wind energy market in Central and Eastern Europe, with over 11 GW of onshore capacity installed and the first Baltic offshore projects in development or at the construction stage, while, in the Baltic states, Lithuania has already taken concrete steps toward offshore wind. The Czech Republic and Hungary remain behind because of the regulatory framework but are trying to catch up; Hungary has just launched a new auction program for wind energy that provides access to significant grid connection capacity. By comparison, Romania has competitive wind resources, a mature onshore market, and direct access to the Black Sea, but is still at the stage of



operationalizing the offshore framework and preparing the first concessions.

In the onshore segment, the approximately 3.5 GW installed today largely originate from the 2010–2015 investment wave. After several years of stagnation, the market re-entered a new investment cycle after 2021, with the first results becoming visible from 2025 onward. The pace accelerated significantly in 2026, when Transelectrica reported in August that 496 MW of new wind capacity were connected during the year.

This recovery is also beginning to be observed at the European level. Recently, international publications have described Romania as Europe's new "surprise champion" in renewable energy, not because of the current size of the market, but because of its ability to develop renewable projects and storage solutions in parallel. Thus, one could say that the almost absolute standstill in the development of renewable projects recorded in Romania in the second half of the previous decade provided the opportunity to learn from the experiences of European markets that are far more advanced in this respect, which are currently trying to close the gap between renewable generation and flexibility infrastructure. Romania's Energy Strategy, adopted at the end of 2024, also sets out the more important diagnosis: the wind capacity already existing at that time was close to the technical limit for the safe operation of the National Power System (SEN).

In this context, given the inherent limitations of the national energy system, as well as the lessons learned from the experience of Western European countries, Romania is starting to be seen as an example of a more effectively synchronized implementation of the generation and flexibility components, with the potential to rebuild its energy system on a solid foundation while simultaneously scaling up renewable generation capacity.

II. Permitting and specific challenges

RED III imposes maximum time limits of two years for new projects (outside acceleration zones) and one year for

> ***The future of Romanian wind energy will be decided not by the wind resource, but by the speed with which projects move from permitting to operation.***

repowering. Domestic transposition, carried out principally at the level of primary legislation, further requires the reform of a complex procedural and administrative apparatus in order to achieve concrete effects at the level of the permitting procedures. Developers sequentially go through the urban planning certificate, the environmental impact assessment, the approvals of other competent authorities (such as the aviation authority and the Ministry of Defense), the building permit, and the technical connection approval, accumulating actual timeframes of three to five years.

The paradigm shift, however, has come from the grid connection process, where it could be said that the "first come, first served" system has reached its limits, leading, as of July 2026, to a total power approved for evacuation under Technical Connection Approvals (ATR) for renewable generation capacities of over 113 GW. ANRE's response was firm, but insufficiently coordinated from a predictability standpoint: the introduction of the mechanism for the competitive allocation of available capacity (introduced conceptually in August 2024 but effectively in force as of this summer), the front-loading of the financial guarantee to a stage preceding the issuance of the ATR and, more recently, the increase in the value of such guarantees and the imposition of strict deadlines for obtaining setting-up authorization (correlated with the already existing deadlines for the building permit).

Developers are thus obliged to demonstrate the financial and technical feasibility of their projects under a strict, accelerated timetable, for the purpose of eliminating speculative capacity reservations. Such a reform, although necessary at a theoretical level, inevitably brings about a difficult transition period for investors, adding new strict deadlines with drastic consequences for projects, to the risks already inherent in Romania's development procedures, particularly for wind projects. Pressures in the supply chain aggravate the equation: the cost of turbines has increased by 15–20% compared to 2021, blades exceed 80 meters, and the Port of Constanța requires investments for offshore logistics.

On the other hand, all these changes also have the real effect of accentuating the competitive advantage of integrated operators that hold the resources and capabilities to coordinate in a unified manner the processes of development, financing, offtake, procurement, and construction of projects, with or without attracting (co)investors.

Although it is too early to predict how the market will evolve under the new paradigm of allocating grid capacity through auctions, the strict deadlines imposed on projects that have already secured connection terms under the previous system create the conditions for an extremely active market in the short and medium term, both in terms of the consolidation of projects, as well as from the perspective of their financing and offtake.

"In addition to the challenges inherent in any transition period, the recent legislative changes may accentuate the competitive advantage of an integrated approach to the processes of development, financing, offtake, procurement, and construction of projects."

> ***"The current challenge is no longer the generation of energy, but the transformation of a volatile production profile into a bankable and predictable commercial product."***

III. Road to Market: Beyond production - who bears the risk?

Monetizing wind power generation has become much more sophisticated than in the first wave of renewable projects. The challenge is no longer merely the commissioning of power plants and the generation of energy, but the transformation of a volatile production profile into a bankable and predictable commercial product. In this context, the traditional pay-as-produced model, in which the offtaker assumed the profile risk in full, has gradually lost ground in favor of more sophisticated contractual structures. Thus, baseload-type contracts have emerged, which transform renewable energy into a product with constant delivery, as well as profiled or shaped contracts, which pursue a predefined delivery profile close to the buyer's

consumption profile. These structures are complemented by volume shaping services (adjusting the profile of the volumes delivered), sleeved arrangements (intermediation of delivery through a licensed supplier), price floor mechanisms, and imbalance management obligations, through which volume and profile risk is distributed more evenly between the producer and the offtaker.

This development is fueled by the phenomenon of price cannibalization. As significant volumes of wind and solar energy are injected simultaneously into the system, the merit order effect exerts downward pressure on prices in the hours of high generation. Because renewable energy has very low marginal costs, it enters the market first and reduces the marginal price set by more costly generation units. Consequently, the more abundant renewable generation is, the more its economic value tends to decline. The phenomenon is already well documented in Western Europe and is beginning to become relevant in Romania as well, where episodes of very low or even negative prices are altering traditional bankability assumptions.

In this context, optimization strategies become just as important as the wind resource itself. Hybridization with storage systems (BESS) allows energy to be monetized in the intervals with more attractive prices, while portfolio aggregation contributes to a more efficient management of imbalances and the profile risk. In parallel, the support mechanism through Contracts for Difference (CfD) offers an additional framework for stabilizing revenues and reducing the commercial risk of projects, contributing to improvements in their bankability.

To complete the picture, Guarantees of Origin (GO) are evolving from an ancillary attribute of green energy into a distinct commercial asset. The demand generated by the ESG and decarbonization objectives of large consumers creates additional monetization opportunities, but the Romanian market remains at a transitional stage. Although the legislative framework is in the process of being aligned with European standards, with ANRE becoming, for the time being, an observer member of the AIB (Association of Issuing Bodies) in November 2025, limitations still persist regarding the transfer and trading of GOs (including in domestic contracts), and Romania is not yet fully integrated into the European mechanisms for the cross-border transfer of certificates. Consequently, we cannot speak of a liquid market, and the economic potential associated with these green attributes is not yet being realized at the level observed in Western European markets.

> ***In addition to the challenges inherent in any transition period, the recent legislative changes may accentuate the competitive advantage of an integrated approach to the processes of development, financing, offtake, procurement, and construction of projects.***

Looking to the future, the competitive advantage will not necessarily belong to those who produce the most energy, but to those who succeed in managing and monetizing most efficiently the risks associated with it. The commercial success of wind projects will increasingly depend on the combination of sophisticated contractual structures with the appropriate allocation of risks to the party in a position to manage them most efficiently, operational flexibility, storage, and the realization of value from the green attributes associated with the energy produced.

We don't just advise the industry.

We're part of it.

DLA PIPER

Cybersecurity in renewable energy

NIS2 requirements, responsibilities and good practices



DAN CÎMPEAN
Director of the National Cyber Security Directorate (DNSC)

Key messages

- Government Emergency Ordinance (OUG) No. 155/2024 and the orders issued by the Director of the DNSC set out requirements for entity registration, risk-level assessment, cybersecurity risk-management measures, maturity self-assessment and supervision of compliance with the obligations.
- For renewable energy projects, the relevant risk is disruption to generation following the compromise of control systems or connected equipment, including through remote access by suppliers.

Role of the DNSC . Under Government Emergency Ordinance (OUG) No. 104/2021, the DNSC is the national competent authority for the national civilian cyberspace and for managing cybersecurity risks and incidents. Under Government Emergency Ordinance (OUG) No. 155/2024, the DNSC is designated as the competent authority responsible for cybersecurity and for supervisory and enforcement tasks aimed at ensuring a high common level of cybersecurity, as the single point of contact at national level and as the national cybersecurity incident response team. Supervision, verification and enforcement of compliance with the obligations are carried out under the rules approved by Order No. 3/2025 of the Director of the DNSC.

Who falls within the scope of the law. Government Emergency Ordinance (OUG) No. 155/2024, approved with amendments and additions by Law No. 124/2025 and transposing the NIS2 Directive, includes energy among the sectors of high criticality. In the electricity subsector, the rules cover producers, grid operators and market participants providing aggregation, demand response or storage services.

In addition to the sector criterion, another criterion for designating essential and important entities is size,



determined under Law No. 346/2004, which also takes partner and linked enterprises into account.

The notification to the DNSC for registration must be submitted within 30 days from the date on which the entity falls within the scope of the ordinance. The decision of the Director of the DNSC identifying the entity and entering it in the register of essential and important entities is issued within 60 days for essential entities and within 150 days for important entities.

What the law requires of a power generation facility. The cybersecurity risk-management measures approved by Order No. 1/2026 of the Director of the DNSC, together with the maturity self-assessment methodology, cover the entity's entire network and information systems.

For a power generation facility, this primarily means operational technology: SCADA, inverters, battery management systems, links to aggregation platforms and the grid operator. The most relevant cybersecurity measures include an asset inventory, separation of IT and OT networks, remote-access control, business continuity and incident response.

Responsibility lies with the management bodies, which approve the measures and oversee their implementation, while their members are required to undertake professional training.

Reporting deadlines for a significant incident. In the event of a significant incident, the entity must send the national cybersecurity incident response team an early

> ***Embedding cybersecurity from the design stage helps protect investments in renewable energy. Applying NIS2 requirements supports business continuity, operational maturity and operators' ability to prevent and manage incidents. I encourage operators and their technology partners to maintain an active dialogue with the DNSC. Through cooperation and consistently applied measures, we can strengthen the sector's resilience and investor confidence.***



warning within no more than 24 hours of becoming aware of the incident, an incident notification within no more than 72 hours, an intermediate report upon request, and a final report within no more than one month of submitting the incident notification.

The digital supply chain. Renewable energy installations are operated and updated by third parties with remote access: the turbine or inverter manufacturer, the SCADA integrator, the O&M contractor and the aggregation platform. The law requires supply-chain security to be managed, and the questions are straightforward: who can change the facility's operating settings, through which channel, with what logging, and who verifies the changes. Uncontrolled supplier access can create risks that affect operational continuity and project revenues, with implications for credit-risk assessment.

Cybersecurity requirements must be included in EPC, O&M and equipment-supply contracts, while cybersecurity assessment must form part of due diligence in acquisition or refinancing transactions.

Timelines for Compliance

- **30 days from the date the entity falls within the scope of the ordinance: notification to the DNSC for registration.**
- **30 days from notification of the decision of the Director of the DNSC: appointment of the persons responsible for the security of network and information systems.**
- **60 days from notification of the decision: submission of the risk-level assessment.**
- **60 days from submission of the risk level: self-assessment of the maturity level of cybersecurity risk-management measures, followed by annual self-assessment.**
- **30 days from completion of the self-assessment, for essential entities: preparation and submission of the remediation measures plan.**

What the energy sector assessment shows. The DNSC's assessment of the energy sector identifies risks to business continuity, amplified by digital dependencies and interdependencies with other sectors.

The findings underline the need to strengthen prevention, response and recovery capabilities in order to limit the impact of incidents and their cascading effects.

The benefits of compliance. Cyber resilience is part of energy security. Consistent application of cybersecurity requirements contributes to operational continuity, the protection of investments and stronger confidence among investors and financiers.

The DNSC welcomes this edition of the Code and remains a partner to the sector in implementing cybersecurity requirements and good practices.

SentryOT - A European Engineering Answer to NIS2 Compliance



MIRCEA STREMȚAN
Sales & Marketing Director, ENEVO Cybersec

NIS2 sets clear obligations for TSOs, DSOs, IPPs and industrial energy operators: governance, risk management, incident reporting timelines and continuous monitoring of operational systems. Meeting these obligations requires an understanding of how power plants, substations and control rooms actually operate.

Within ENEVO Group, the Cybersecurity division has built SentryOT on over a decade of European energy engineering experience. ENEVO has delivered gigawatts of generation, storage and transmission capacity, and built control systems and automation projects across 12 countries in Europe and the Middle East. This history runs through SentryOT: a strong team of automation specialists and HV-certified engineers works alongside SentryOT's cyber experts, giving every deployment insight from people who have designed, commissioned and operated the systems it protects.

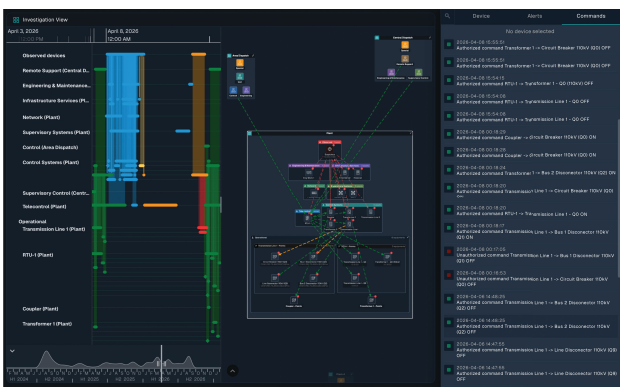
Fragmentation defines the current OT security market. Operators manage a stack of separate tools that never resolve into a complete view of their environment. SentryOT brings coherence to that landscape. It correlates operational and cybersecurity data into a single view, gives full visibility across the OT estate, and enables hybrid teams to contain threats before they reach operational impact. Backed by native support for NIS2 compliance, SentryOT turns fragmented complexity into actionable insight and a faster engineering-led response.

For energy operators building a path to NIS2 compliance, this heritage translates into two services. Virtual CISO advisory establishes governance, risk assessments and NIS2-aligned policies. OmniSOC, SentryOT's managed Security Operations Center, provides round-the-clock monitoring, early threat detection, structured reporting and coordinated incident response, delivered by analysts fluent in both cyber protocols and physical energy processes.

„NIS2 compliance rests on two pillars. Governance and procedures come first, and our vCISO service positions operators for the assessments and reporting obligations ahead. Operational resilience comes next, through our 24/7 specialized SOC, built for early detection, structured reporting and incident response in energy environments. Together, these give energy operators an accelerated, accountable path to NIS2 compliance," says Mircea Stremtan, Sales & Marketing Director, ENEVO Cybersec / SentryOT.

SentryOT gives energy operators immediate access to both pillars, grounded in over a decade of European energy engineering.

sentryot.com



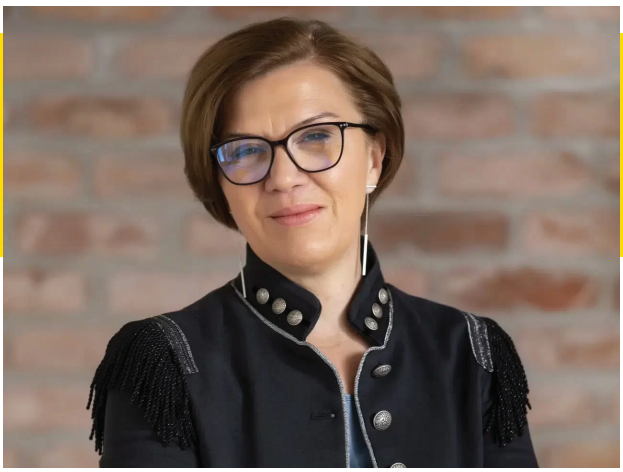




3

Grids, systems and flexibility

How do we avoid a succession of waves of enthusiasm?



DANIELA DĂRĂBAN
Executive Director of the Federation of Energy Utility Companies' Associations (ACUE)

A "wave of enthusiasm" tends to start with a technology and then look for problems it can solve. In recent years, Romania's energy policy has started to look too much like a succession of waves of enthusiasm. First, we rushed into solar PV. Then prosumers. Now batteries. Each time, the technology of the moment risks being presented as the solution that will almost single-handedly solve the energy system's problems.

Subsidies can create the wrong signals. If funding says "we are building batteries", the market will build batteries. But in a particular area, the system's question may be "do we need a transformer, a line or demand response?" The cost of a wrong choice is not just the cost of the asset. It can also mean congestion, redispatch, curtailment, additional grid investment and, ultimately, costs borne by consumers.

A national energy system is not built according to fashion, the availability of a funding line or the technology receiving the most attention in a particular year. It is built on figures, scenarios and system models, starting from a much simpler question: what combination of resources can provide us with a secure, affordable and as clean as possible energy supply, every hour of the year? Proper planning starts from the system's problems and looks for the combination of solutions with the lowest total cost.

Taken on their own, figures say very little. As of 30 June 2026, Romania had around 359,000 prosumers, with total installed capacity of about 4 GW. The two nuclear units at Cernavodă have a combined capacity of around 1.4 GW. If we look only at nameplate capacity, we could say that prosumers already have almost three times as much installed capacity as Romania's nuclear fleet. That is the fashionable message in Romania today.

And yet, the two are not comparable. ANRE reports around 1.77 TWh injected into the grid in 2025, not total generation, because part of the electricity is self-consumed. Nuclearelectrica produces around 10 TWh net in a typical year, while prosumers may generate roughly 4-5 TWh a year.

The most important difference appears when we stop looking at the system on an annual basis and start looking at it season by season and hour by hour. Transelectrica's adequacy study for 2027, 2030 and 2035 shows very clearly why.

In winter, the main risk is a shortfall. High demand. Short days. Almost no solar PV at the evening peak. Possibly weak wind. Unavailability at some power plants. Imports that cannot be assumed to be unlimited. If these conditions coincide, the system must have enough reliable and flexible resources to cover demand.

As of 1 August 2026, Romania's national power system (SEN) had a total of 989 MW of storage capacity available, including both standalone storage facilities and storage capacity integrated into hybrid power plants. Batteries help. They can shift energy generated at midday to the evening peak. They

can respond quickly to imbalances and provide important system services. But a battery sized for two or four hours cannot, on its own, solve a period of several days of low renewable generation.

An essential distinction emerges here: a battery's power, expressed in MW, does not tell us how long it can sustain that power. For that, we also need to look at the energy stored, expressed in MWh. A system that needs flexibility for two hours has a different problem from one that must cover a shortfall for two days. As the share of solar and wind grows, we therefore need flexibility across multiple timescales: batteries, hydro, nuclear, demand response, interconnections, dispatchable capacity and a much smarter grid.

But if in winter we worry that we do not have enough energy, in summer we may face the opposite problem. On a very sunny day, solar PV, prosumers, wind, nuclear and hydro can all produce very large amounts of energy at the same time. At certain hours and in certain areas, the problem may no longer be a lack of generation, but the system's ability to absorb and transport it. Then we no longer ask only "do we have enough?" We ask: what do we do with the surplus? Store it? Export it? Increase flexible demand? Curtail generation? Can the grid transport it? Where does congestion appear?

There is also a third, increasingly important scenario: heatwaves and drought. During such periods, demand can rise sharply because of air conditioning, while hydro generation may fall. Very high temperatures affect the performance of some equipment, while higher water temperatures and low water flows can impose constraints even on plants that depend on water for cooling. The grid itself is also placed under additional stress.

A serious energy system must therefore be tested for bad days, not for the "average day". Severe winter. Low wind. Minimal solar generation. Drought. Heatwave. Nuclear unavailability. Reduced imports. Grid failures. And, above all, combinations of them. This is where the problem with the current wave of enthusiasm for batteries emerges.

BESS is an extremely useful technology and will play a major role in Romania's energy system. But the risk is that we repeat the same mistake. The most important question is not "how many GW of batteries can we install?" The right questions are: where do we need them? What problem do they solve? What duration do they need? At which grid node should they be located? What congestion do they avoid? What services do they provide? What alternative investment can they defer or replace?

Batteries do not replace the development of a grid that is structurally inadequate. They can reduce congestion. They can provide system services. If sited intelligently, they can defer or even avoid certain targeted grid investments. But they cannot substitute for the lines, transformers and transmission capacity the system needs.

Energy must be able to be absorbed, transmitted and distributed. The grid is probably the least spectacular, but one of the most important topics in the energy transition. Without sufficient lines, transformers, automation, voltage control, digitalisation, smart metering and congestion management, we can end up with a great deal of installed capacity and too little real ability to use it efficiently.

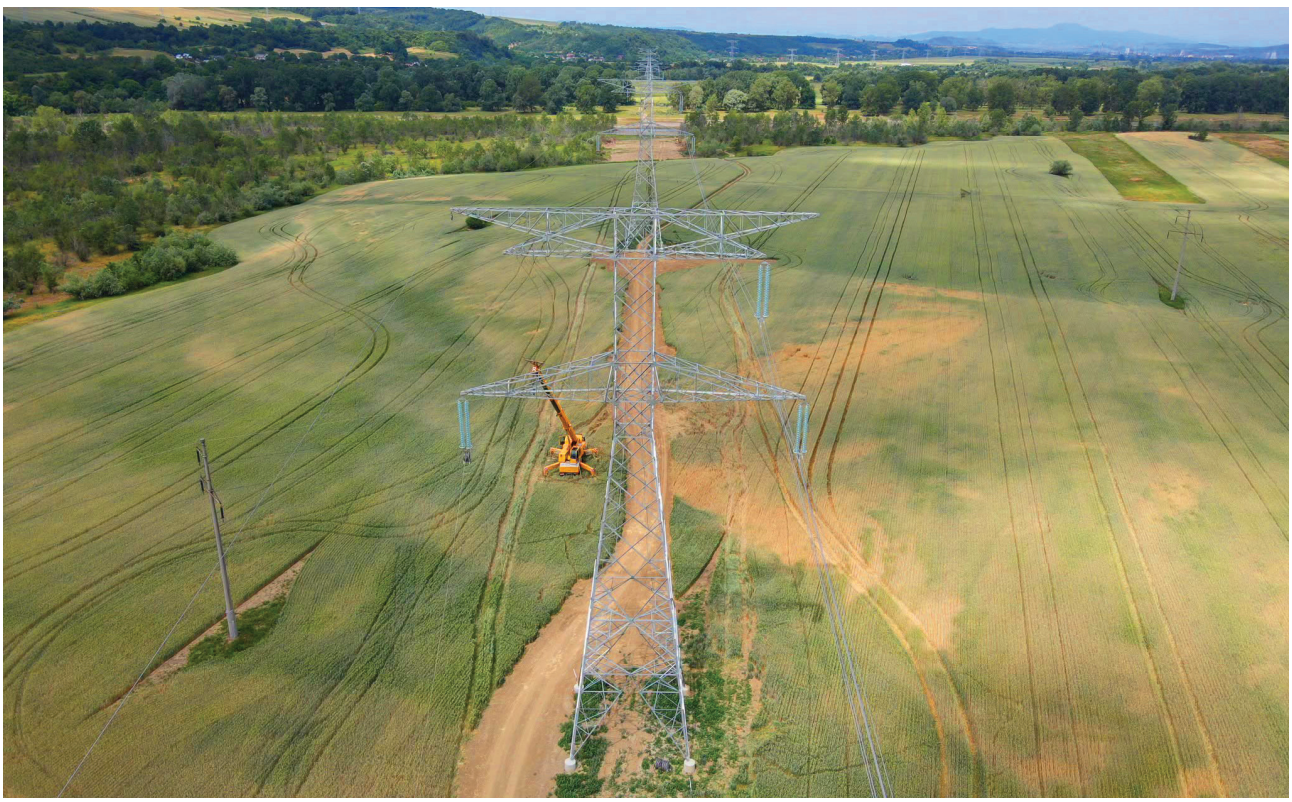
Moreover, the system needs to know what is happening. The 4 GW installed by prosumers shows how quickly this reality is changing. If operators do not know, almost in real time, how much is being generated, how much is consumed locally, how much is injected and where congestion appears, there can be a very large gap between what physically exists in the system and what can actually be anticipated and controlled.

Data therefore become energy infrastructure. The same is true of demand-response services. Sometimes it may be more efficient and cheaper to incentivise an industrial consumer to temporarily reduce demand at peak hours than to build new capacity used for only a few dozen hours a year. At other times, the same consumer can be encouraged to increase consumption when there is a solar surplus.

The energy system is not the sum of the technologies we install. It is the result of the way they work together. And that is precisely why decisions based on waves of enthusiasm are so dangerous in energy. Each technology solves certain problems and creates or amplifies other needs.

Romania does not need another rush towards the technology of the moment. Before the next wave of subsidies, we need a shared view of the energy system that enables evidence-based decisions. Because in energy, trends come and go. But a bad infrastructure decision can stay with us for decades.

Transelectrica accelerates grid modernisation for the new wave of investment



Romania is entering a stage in which the development of new generation capacity must be accompanied by an accelerated transformation of the transmission grid. From Transelectrica's management perspective, the priorities are clear: modernising existing infrastructure, increasing transmission and interconnection capacity, digitalising operations and adapting grid connection mechanisms to the growing pressure on the network.

The grid enters a new modernisation cycle

The investment programme includes the refurbishment and modernisation of major substations, the upgrade of key transmission corridors to 400 kV, the construction and reconductoring of power lines, the installation of equipment for reactive power compensation and voltage regulation, as well as smart monitoring systems. In parallel, interconnections with neighbouring countries are being developed, including the Suceava–Bălți, Nădab–Békéscsaba and Gutinaș–Strășeni projects, alongside new domestic lines required to evacuate generation and reduce congestion.

The transformation is not limited to physical infrastructure. Transelectrica is investing in the digitalisation of substations and transmission lines, power quality monitoring, synchrophasor platforms, EMS/SCADA systems and IT&C infrastructure. A new communications network, a private



cloud and the development of a Security Operations Centre are intended to increase the availability and security of digital infrastructure and enable secure participation in European data exchange and operational mechanisms within ENTSO-E.

Alongside grid expansion and modernisation, Transelectrica is gradually introducing technologies that could change the way the infrastructure is operated. The company is installing photovoltaic plants and energy storage systems to supply the internal consumption of electrical substations, developing pilot digital substation projects in Alba Iulia and Mostiștea, expanding online transmission line monitoring through DigiTEL Smart Lines and preparing to install FACTS equipment at the Gutinaș, Suceava and Roșiori substations to optimise voltage regulation and power quality.

Grid connection capacity becomes a critical resource

Pressure on the grid is already extremely high. Calculations carried out in accordance with the ANRE methodology indicate that, for the 2028–2037 period, available capacity is 0 MW in all analysed grid areas. The result highlights the importance of ensuring that the development of new energy projects progresses in parallel with investment in transmission and distribution infrastructure.

Against this backdrop, the relationship with producers and developers is becoming increasingly important. Transelectrica maintains dialogue with grid users through meetings and information sessions aimed at clarifying grid connection procedures, grid use and the steps investors are required to follow.

From 30 June 2026, the connection of new generation facilities is being carried out under the new capacity allocation methodology. The process begins with the annual determination and publication by the transmission system operator of the capacity available in the transmission and distribution grids, broken down by year and grid area. Developers then submit applications and participation guarantees, which are assessed by the grid operators, while Transelectrica updates the Global Solution Study. Where demand exceeds available capacity, the procedure may include auctions, followed by capacity allocation agreements and, subsequently, the steps required to obtain the grid connection approval, or ATR.

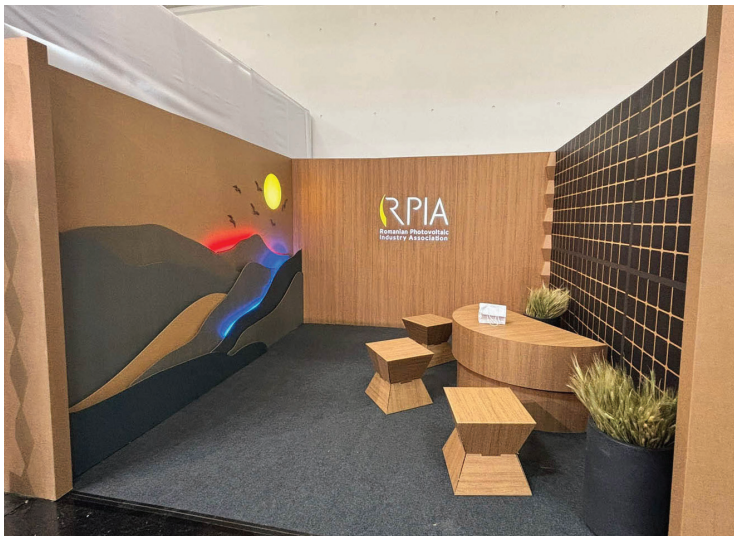
For Transelectrica, the challenge over the coming years is therefore twofold: accelerating investment that increases grid capacity and resilience, while at the same time managing transparently and efficiently a resource that has become critical to Romania's energy development: grid connection capacity.

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Romania strengthens its position on the European photovoltaic map





Romania's photovoltaic market is entering a stage of maturity in which the pace of development needs to be matched by execution quality, storage integration, local expertise and stronger connections with the European ecosystem. The message emerged at Intersolar Europe 2026, where RPIA represented Romania's solar and energy storage sector through a dedicated exhibition stand and a workshop focused on the development of the local market.

The discussion brought together companies active in battery manufacturing, EPC, operations, legal services and professional training, alongside SolarPower Europe and AHK Romania. More than 80 participants attended a discussion on the industry's ability to deliver bankable projects, integrate storage and build assets designed to operate for 30 years.

The contributions also reflected the changing profile of the local industry. Romanian contractors are moving from subcontractor roles towards becoming full EPC partners, while some companies are already exporting their expertise to other European markets. At the same time, issues typical of a more mature market are becoming increasingly relevant: repowering, floating PV, agrivoltaics, 24/7 operations, cybersecurity and the training of technicians needed for the next wave of investment.

RPIA's presence in Munich provided Romanian companies with a common meeting point for investors and international partners, as well as a platform to present a market that is no longer marginal in Europe. The association's stand received the Better Stands Silver Award for its sustainable design and construction.

The underlying message of the participation, however, went beyond exhibition visibility: Romania already has companies, expertise and projects capable of competing at European level. The next stage will depend on how effectively the industry can turn that foundation into an advantage in execution, flexibility and investor confidence.

The grid cannot be upgraded on paper



CHRISTIAN LEONTE, CEO WALDEVAR Holding - left and **IOAN POPOVICIU**, CEO WALDEVAR Power Grid - right

Romania's renewable build-out has made one fact increasingly difficult to ignore: grid development is now an execution challenge. Connection capacity must be created on the ground through new lines, substations, system reinforcements and the modernisation of existing infrastructure.

This is where specialised execution capacity becomes critical. WALDEVAR Power Grid brings more than 30 years of experience in the engineering, construction and maintenance of electrical networks from 0.4 kV to 750 kV. Its track record includes over 1,500 km of high-voltage lines and more than 4,000 km of OPGW installations, supported by highly qualified in-house teams and specialised equipment.

An important part of Romania's answer may not require building entirely new corridors. Reconductoring existing transmission lines can increase their transfer capacity while retaining established routes, making it a practical instrument for strengthening the network where renewable development is moving faster than new infrastructure can be permitted and built.

Since becoming part of WALDEVAR Holding, WALDEVAR Power Grid has entered a new phase of development, with significant investment planned in specialised machinery and equipment for high-voltage line works, alongside an accelerated recruitment programme for specialised personnel. Its integration into the group also expands its ability to participate in complex turnkey infrastructure projects, including works that previously required participation as an associate or subcontractor. This creates a stronger execution platform for the large-scale grid investments ahead.

The scale of investment ahead is significant, but capital alone does not build a transmission line. Projects require engineering expertise, specialised machinery, qualified crews and the ability to execute complex works safely and to schedule. This execution capacity will increasingly determine how quickly Romania can convert planned renewable generation into connected generation.

WALDEVAR Power Grid brings these capabilities into a group that also delivers renewable generation, BESS and hybrid energy projects. This allows grid requirements to be considered from the outset of project development, rather than addressed as a separate interface at the end.

For Romania to turn its renewable potential into connected generation, grid infrastructure must be delivered at the same pace as new generation capacity. Building that execution capacity is now a central part of the energy transition.

WALDEVAR
POWER GRID

A new Network Code expected in force in Q4 2026 - Requirements for Generators



VALERIU BINIG
Valeriu Binig, Deputy Chair of the AmCham Energy Committee

The European Commission has closed the public consultation on the new version of the Network Code Requirements for Generators – NC RfG 2.0. As it will be adopted by Commission Regulation it will become mandatory national legislation, with the exceptions of stances where Member States will be allowed to decide and regulate based on subsidiarity and proportionality.

NC RfG 2.0 brings novelties sourced from a lengthy construction time with involvement of relevant organizations such as ACER, ENTSO-E, EU.DSO. It brings into the game the Electricity Storage Modules (ESM) and the Electric Vehicles and Electric Vehicles Supply Equipment categories (also considered ESM). ESMs will be considered generators, along Synchronous Power Generating Modules (SPGM) and Power Park Modules (PPM). Work is still ongoing on compounding rules for such modules.

Grid Forming is Mandatory for all Type C and D Power Park Modules including smaller Power Park Modules (eg Type B) connecting via a 110 kV feeder. Significant modernisation will lead to facilities being considered new and subject to new requirements. Such updated requirements include Rate of Change of Frequency (ROCOF) withstand, Fault Ride Through for A type modules, other High Voltage Ride Through requirements. C and D class modules subject to Power Oscillation Dumping requirements.

An important provision from the preamble addresses the subject of potential renewal of the grid connection solution study and endorsement when a Power Pakl Module installs an ESM for the purpose of satisfying requirements of the new RfG 2.0:

"(11) ... Electricity storage integrated to a power-generating module used solely for the purpose of meeting the respective requirements of this Regulation should be considered as part of such module while its capacity should not count towards the power-generating module capacity."

The proposed regulation brings in an important requirement for A modules (subject of continuous debate in Romania on the background of the proliferation of prosumers):

Article 17: **Reactive power and voltage stability**

"The power-generating module shall be capable of receiving and reacting to an external signal enabling the relevant system operator to transmit reactive power or voltage control mode setpoints. The power-generating module controls shall apply any revised setpoints without undue delay."



The new regulation also describes how Grid Forming obligations will be imposed to new A type Power Park Modules in order to compensate for the gradual retirement of SPGMs:

Article 29: **Grid forming capability**

„1. With regard to grid forming capability of power park modules, the TSO, in coordination with the distribution system operators, shall, by [...], submit to the regulatory authority a proposal for a national roadmap.

The roadmap shall include analysis of at least:

a) future power system needs in terms of frequency and voltage stability;

b) effects on distribution system operation of high penetration of grid forming power park modules such as:

i. risk of local network island operation and oscillations;

ii. impact on protection systems;

iii. mitigation measures and alternative solutions.

The roadmap shall define the network readiness for a time-phased start of application of requirements related to grid forming capability for power park modules of Type A and B as well as for EV3 V2G EVSE.

1. Based on the roadmap referred to in paragraph 1, the regulatory authority shall determine the date from which the requirements set out in paragraph 3 become mandatory for Type A and B power park modules. "

A very important provision opens the way towards imposing new technical requirements upon the existing installations:

Article 45: **Application of certain requirements to already connected power-generating modules**

„By [...], in each Member State, the TSO in coordination with the DSOs shall carry out a cost-benefit analysis in accordance with Article 46, in order to evaluate the need to apply all or some requirements of this Regulation to existing power-generating modules and submit the proposal to the regulatory authority in accordance with paragraph 5 of this Article."

It is important that the interested scientifical community in Romania analyses and debates the new legislative act which is likely to generate significant impact in the development of the Romanian power sector.

Next phase in energy transition
Making renewables work for the system



KRASIMIR ZHIVACHKI,
Senior BESS Product Manager, Enery

Romania has had a good progress towards the energy transition in the recent years. Installed solar capacity passed a major milestone by the middle of this year, and a sizeable share of that was added in the first half alone. Now it is expected the target of 10 GW set for the end of the decade to be met years ahead of schedule. Prosumers account for a substantial part of the total. Short permitting times, EU funding, a contracts-for-difference scheme that actually delivered and somehow existing PPA market turned what was once a stretch goal into reality in just a few years.

That success has quietly changed the question everyone in the sector is answering. For most of the past five years the number that mattered was megawatts connected. It is becoming megawatt-hours delivered at the hour the system needs them the most.

From capacity installation to system integration

Summer 2026 exposed weaknesses in the electricity mix. On 29 June, during the heatwave, Romania recorded the highest evening day-ahead prices in Europe, above 4,200 lei/MWh. Weeks later drought took both Cernavodă units offline for the first time in 23 years, while low water on the Danube reduced output at Porțile de Fier. On the worst days a fleet of almost 19 GW delivered under 7 GW. Earlier in the same year the opposite happened: commercial solar hit a record 2,048 MW around noon, about a third of demand at the time, and the day-ahead market recorded its first negative hours of 2026 the following day.

None of these results are renewables problems. It is a timing problem, and increasingly a network problem. The European Commission's 2026 country report places transmission and distribution among Romania's main structural vulnerabilities. For investors, the arithmetic behind a project has changed with it. Value used to be capacity multiplied by yield multiplied by a broadly flat price. Capture rate now sits in the middle of that calculation, and it falls as more output concentrates on the same hours of the day. The market has started to price this. PV capture rates are somehow stagnant in the past 4 years but are at levels that don't compromise the bankability of the projects.

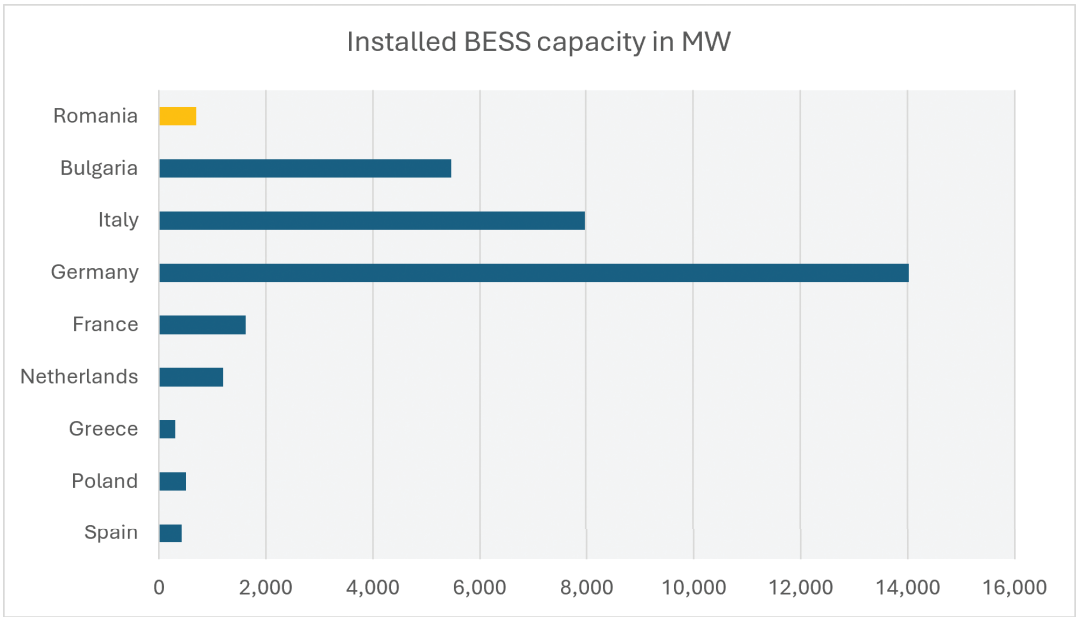


Figure 1. Installed BESS capacity in selected EU countries, in MW, as of H2 2026, including co-located projects
Source: Enery, based on ENTSO-E data and own estimates

The role of storage

Romania closed the first quarter of 2026 with roughly 1,130 MWh of operational BESS. Year earlier the figure was under 300 MWh. Transelectrica's own assessment is that the planned renewable fleet will need somewhere between 10 and 20 GWh of BESS by 2030, so the country sits at roughly a tenth of what it will require. Policy has moved quickly to close that gap, but more importantly the market is moving even quicker as the first-coming first-serving principle will be highly valid for the new BESS projects.

At Enery we have watched this sequence run its course once already. We operate the largest battery storage portfolio in Bulgaria, and the pattern there was the same one Romania is now entering. Solar arrived first. Prices split into a cheap middle of the day and an expensive evening. Storage followed, initially because a support scheme made it possible and then because the market made it sensible. In Romania, it is the market case that primarily will drive deployment.

One lesson from that experience is worth passing on. The value of a battery is determined entirely by how it is dispatched. Two identical systems on the same grid can produce very different annual revenues depending only on how they are traded, and as spreads compress that difference grows rather than shrinks. Duration, cycling depth and market strategy are commercial decisions long before they are engineering ones.

Optimizing across markets rather than within one

The Romanian fundamentals are attractive for flexible assets as the graph shows even more attractive in terms of capture prices (spread price) compared to PV and even wind. On the ancillary side market continues to be elevated and batteries heavily tap into this revenue stream. The constraint is depth rather than price and saturation is expected to materialize in the next 1 to 2 years. The opportunity is still there, but no single product is deep enough to absorb the batteries now under construction. A strategy built on day-ahead arbitrage alone, or on one reserve product alone, will be competed away as volume arrives.

What holds up better is optimizing an asset across several



Figura 2. Annual PV capture price in Romania
Source: Enery, based on ENTSO-E data and own estimates

markets at once: the day-ahead, continuous intraday and intraday auctions, balancing capacity and balancing energy through aFRR and mFRR, FCR once prequalification is fully in place. All of it is bound by state of charge, degradation and warranty terms, and re-run continuously as forecasts move rather than fixed at noon the day before.

European market design has moved in the same direction. Since 1 October 2025 the day-ahead market clears in 15-minute intervals across all coupled bidding zones, Romania included, aligning it with intraday trading and with the imbalance settlement period. Ninety-six products a day instead of 24 is a meaningful change And because Romanian day-ahead capacity has been implicitly allocated through market coupling since 2021, a Romanian portfolio is in practice optimized against a regional price rather than a national one. This opened the door for even more revenue opportunities to be utilized by optimizers like Enery. Optimizers are not conventional traders. They bid the same asset into day-ahead, intraday and the aFRR/mFRR markets and re-optimize the position continuously as forecasts and markets move, with a single aim: to extract the maximum value the markets allow at any given moment. These bidding and forecasting processes are highly automated and rely on developed complex algo

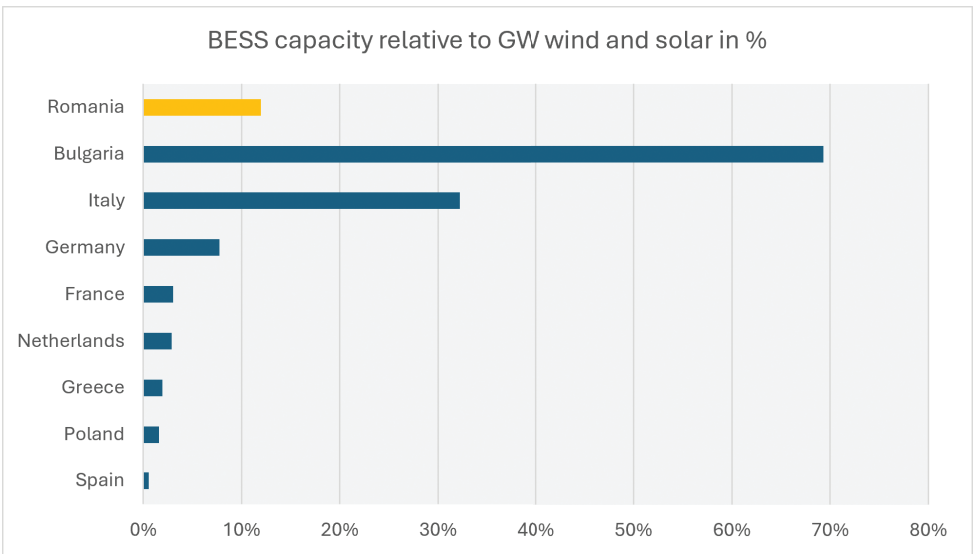


Figura 3. BESS capacity relative to installed wind and solar capacity, in %
Source: Enery, based on ENTSO-E data and own estimates





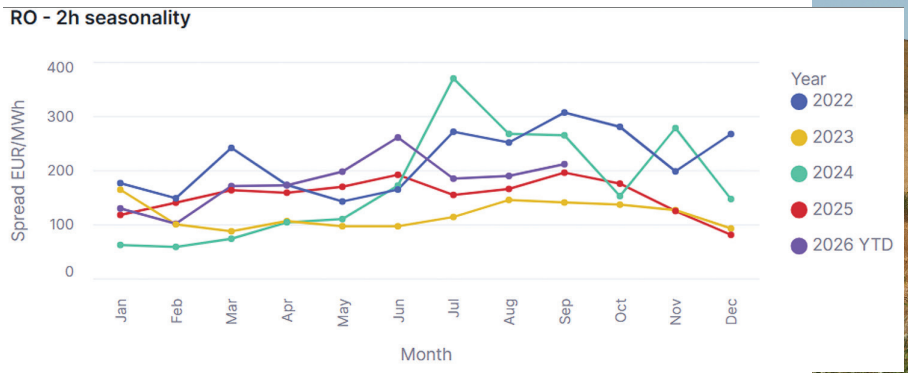


Figura 4. Price spreads for 2-hour intervals on OPCOM

trading solutions and multi-market optimization strategies.

What Romania needs next

Most of the framework already exists, and the direction is reasonably clear. A few things would help it move faster: the first mass utility-scale BESS financings closing, lenders building a working grasp of the business case, and momentum carrying into more complex structures that combine merchant exposure with contracted revenue. Because the problem is no longer a shortage of projects, network capacity, regulatory gaps or investor willingness structuring lending flexible enough to work and getting real capital into the realization of the projects.

The second and most valuable thing Romania can offer investors over the next five years is not another support scheme. It is confidence that the rules in place today will still be the rules in ten years.

Romania spent a decade proving that renewables could be built here at scale. That question is settled. The next stretch is about operating them, and about keeping a system with 10 GW of solar, less coal and a tighter grid balanced, affordable and secure. That will be decided less by panels and turbines than by batteries, flexible consumers and the way all of it is traded. Ultimately consumers will be the ones who benefit. Bulgaria, with 7.2 GW of utility-scale solar and over 15 GWh of operational BESS, has prices roughly 7% below Romania, which has 3.1 GW and 1.4 GWh. Exports would normally close a gap like that, but the interconnection saturates: once the cross-border capacity is full, the two markets decouple and Romania clears at the higher price. Seven percent sounds modest until it is applied to a country's entire consumption: at current market prices, it amounts to more than €430 million a year in additional cost for Romanian consumers.

Storage at the centre of system flexibility

Romania is entering a new phase of its energy transition. As solar and wind capacity continue to expand, the challenge is shifting from adding generation to integrating it efficiently into the system. Battery storage is becoming central to that equation, and Romania's market is developing it at a speed that is beginning to set it apart in Central and Eastern Europe.



IRENE MIHAI,
Policy Director RPIA

Romania's energy mix, much like that of Europe as a whole, is undergoing a rapid transition from a system built around fossil fuels to a more decentralised model with a growing share of intermittent generation. Since 2022, around 7 GW of solar capacity has been added to the national system, across both utility-scale projects and prosumer installations, alongside several hundred megawatts of new wind capacity. As a result, depending on the season, renewables can account for between 35% and 70% of daytime electricity generation.

The increased deployment of solar and wind brings, however, new challenges. Renewable output depends on resource availability and does not always align with demand, with generation peaking around midday, while consumption is highest in the evening, creating the well-known "duck curve". Bridging this gap requires solutions that can move electricity from periods of surplus to periods of peak demand. Storage provides this flexibility, helping balance supply and demand and reduce price volatility. Yet for battery systems to scale quickly, regulation must evolve at the same pace as the market.

The Romanian market in the European context

At European level, storage needs are estimated at around 200 GW by 2030. Yet, despite its growing

	Provisions concerning storage
Commission Recommendation of 14 March 2023 on Energy Storage – 2023/C 103/01	**Calls on Member States to:** ● remove regulatory barriers to energy storage; ● adapt network tariffs to reflect the dual role of storage facilities as both consumers and producers, including through the elimination of double charging; ● streamline permitting procedures; ● incorporate storage targets and measures into national energy and climate planning; ● assess flexibility requirements as part of network development planning; ● identify financing needs and assess whether system and flexibility services are adequately remunerated; and ● support research and innovation in storage technologies.
Regulation (EU) 2019/943 on the internal market for electricity, as amended by Regulation (EU) 2024/1747 on improving the Union's electricity market design	The revised Regulation requires Member States to assess their flexibility needs and establish national objectives for flexibility from non-fossil sources, including the expected contribution of energy storage (Articles 19e and 19f). Where market-based investment is insufficient to meet the identified flexibility needs, Member States may introduce dedicated support schemes for non-fossil flexibility resources, including energy storage (Article 19h).
Directive (EU) 2019/944 on common rules for the internal market for electricity, as amended by Directive (EU) 2024/1711	The Directive provides EU-level definitions of energy storage and energy storage facilities and establishes a framework aimed at removing unjustified barriers to storage investment. It also enables distribution system operators to procure flexibility services from storage facilities and supports their participation in balancing and other system services.
AccelerateEU – Energy Union, COM (2026) 370 final	Energy storage is identified as a key pillar of the resilience and flexibility of the European energy system. The estimated storage requirement by 2030 amounts to approximately 200 GW, nearly four times the current capacity of around 55 GW. Battery storage is expected to account for a significant share of this expansion. The initiative also highlights the need to support projects already under development and to accelerate the implementation of EU rules on permitting, flexibility and energy storage.
Tripartite Agreement on Energy Storage – 26 June 2026	The first EU tripartite agreement dedicated to energy storage. The agreement includes national commitments for new capacity to be developed between 2026 and 2028, totalling approximately 30–35 GW.

importance, the EU still lacks a single framework dedicated exclusively to this segment. Recent legislation and policy initiatives, however, point in the same direction – facilitating investments and removing barriers.

The policy direction established at EU level is increasingly reflected in the domestic regulatory framework. Thus, in recent years, Romania has taken a series of measures to facilitate the development of energy storage, both by removing economic barriers and by simplifying the authorization process. An important step in this direction was the adoption of Emergency Ordinance No. 134/2024, which established the primary framework for eliminating double taxation. Subsequently, ANRE Order No. 56/2025 implemented the exemption of energy withdrawn from the grid, stored, and reintroduced into the system from the payment of transmission and distribution tariffs associated with withdrawal and for system services.

The elimination of double taxation, along with support schemes funded through the National Recovery and Resilience Plan (sub-measure I.4.3) and the Modernization



Fund (call PFM/530/PFM_P1/NA), contributed to accelerating the development of large-scale systems. As a result, in less than a year, total installed capacity exceeded 1.2 GW (2.3 GWh), of which over 700 MW were added in the first eight months of 2026. A similar trend is observed in the distributed generation segment, where the number of prosumers with storage systems has more than doubled since the beginning of the year, also crossing the 1 GW threshold (estimated at 1.6 GWh). Looking ahead, growth potential remains high, particularly given the acceleration of investments in photovoltaic and wind capacity, for the integration of which the transmission and system operator, Transelectrica, estimates that 10–20 GWh of storage will be needed by 2030.

What makes Romania particularly interesting is not only the pace of growth, but also its timing. In more mature markets, batteries were often added after significant volumes of solar and wind were already in place. In Romania, hybridisation is taking shape much earlier in the renewable development cycle. Storage is therefore expanding almost in parallel with new renewable capacity, narrowing the gap between intermittent generation and the infrastructure needed to integrate it.

Financing and Revenue Streams

The investment case for large-scale storage projects is increasingly supported by both a broader range of revenue streams and access to non-reimbursable public funding.

Beyond arbitrage on spot markets, battery systems can participate in balancing and reserve markets, including frequency containment reserve

	FCR	aFRR	mFRR
Status	**Operational**		
Achiziție	**Licitații zilnice Transelectrica**		
Activation requirements	Automatic, proportional to the frequency deviation; full activation within 30 seconds	Automatic; full activation within 5 minutes	Manual; full activation within 12.5 minutes
Minimum delivery period	At least 15 minutes	15 minutes	5 minutes
Reserve direction	Symmetrical band	Upward and downward	Upward and downward
Remuneration	Pay-as-bid	Capacity: pay-as-bid Activated energy: pay-as-cleared	Payments for reserved mFRR capacity and activated balancing energy

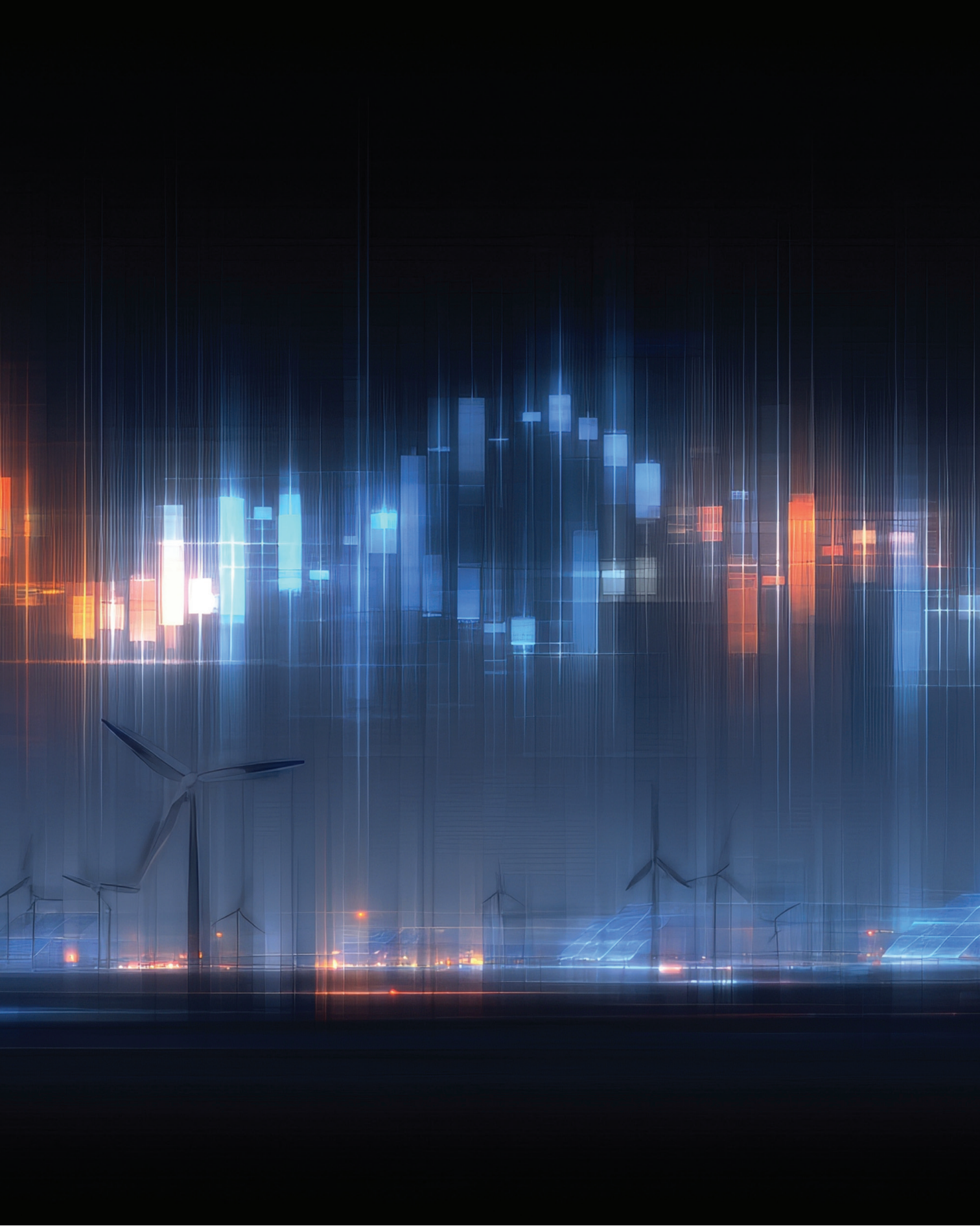
(FCR), automatic frequency restoration reserve (aFRR) and manual frequency restoration reserve (mFRR). Their fast response times make batteries particularly well suited to these services.

Public funding remains another important driver. The latest Modernisation Fund call supports standalone batteries connected to transmission or distribution networks. With a budget of EUR 150 million, the scheme targets projects of at least 1 MW and a minimum two-hour discharge duration, with the objective of adding at least 2,174 MWh of new capacity.

Support also extends to distributed storage. The Casa Verde Baterii programme has a 2026 budget of RON 400 million and provides support of up to RON 15,000 per beneficiary for residential battery systems linked to photovoltaic installations.

The combination of rapid renewable deployment, regulatory changes, a broadening revenue stack and public support is giving Romania one of the fastest-growing storage markets in Central and Eastern Europe. More importantly, storage is emerging early enough in the country's renewable build-out to become part of the architecture of the system, rather than an adjustment made after the fact.







4

Capital, risk and bankability

After the NRRP: How European funding will change after 2028

Ministry of Investments and European Projects, MIPE



Romania's National Recovery and Resilience Plan was more than an exercise in absorbing European funds: it was a test of a new way of designing public policy, in which funding follows performance and reform precedes investment. Approved in 2021 with an initial value of 29.18 billion euros, the Plan underwent two major revisions: in 2023, under the pressure of the war in Ukraine and the need to strengthen energy security through the REPowerEU chapter, and in 2025, when the focus shifted decisively towards realism, concentrating resources on mature projects with a genuine prospect of completion. In the final stage of implementation, with the third revision nearly completed and 31 August 2026 marking the finish line for the final milestones and targets, the NRRP was approaching an estimated value of 20.1 billion euros, a smaller portfolio than initially envisaged but, precisely for that reason, one closer to what Romania can realistically deliver.

This evolution is not a story of downsizing, but one of learning. The Recovery and Resilience Facility was designed and launched at an unprecedented pace, which inevitably resulted in numerous and, at times, excessively detailed milestones, rigid amendment procedures and a considerable administrative burden for the institutions required to coordinate, monitor and audit dozens of reforms and investments simultaneously. The central lesson Romania is taking forward into future European instruments is that the success of a programme of this scale is measured not only by the funding allocated, but also by genuine governance capacity: clearly defined objectives, a reasonable number of indicators, flexible procedures and sustained institutional coordination supported by constant dialogue with beneficiaries.

In the renewable energy sector, this lesson takes on a very concrete form. Among other things, the NRRP financed new wind and solar generation capacity, industrial energy-efficiency measures and, through the REPowerEU chapter, grant schemes for households seeking to switch to renewable energy sources or improve their energy efficiency, complemented by funding dedicated to the Renovation Wave, the largest programme of its kind

ever implemented in Romania. The figures demonstrate commitment; what the experience gained shows, however, is that the main challenge is no longer the availability of financial resources, but absorption capacity: fragmented interventions, the need for coordination between policies covering generation, grids, storage and the digitalisation of the energy system, as well as the insufficient maturity of some projects. Turning allocations into measurable results for the economy and citizens continues to depend on mature project portfolios, stronger institutional capacity among beneficiaries and a better-calibrated balance between grants and financial instruments.

What comes next is not a pause, but continuity with a strong social dimension. The National Social Climate Plan, coordinated by the Ministry of Investments and European Projects in its capacity as national authority, will use the Social Climate Fund to take forward the mission of protecting vulnerable households, vulnerable transport users and micro-enterprises affected by the introduction of ETS2. The energy-efficiency experience accumulated through the NRRP, including photovoltaic panels, storage capacity and solutions that have proved effective in practice, will thus become the starting point for complementary interventions, including smart metering and intelligent consumption management, designed to continue supporting those most exposed to the risk of energy vulnerability beyond 2027.

Beyond this immediate horizon, the financial architecture of Europe's next decade is beginning to take shape. The 2028–2034 Multiannual Financial Framework, as proposed by the European Commission in July 2025, places the energy transition at the heart of its priorities: clean energy and infrastructure, energy efficiency and decarbonisation, storage, and smart transmission and distribution grids, aligned with the Trans-European Networks for Energy and the objectives of the Clean Industrial Deal. For Romania, the main instrument through which these priorities will translate into concrete investments will be the National and Regional Partnership Plan. Its preparation process begins this year, with submission to the European Commission set to start



in July 2027 and a final deadline of 31 January 2028.

If the NRRP was the instrument through which Romania accelerated the twin green and digital transitions, what follows, the National Social Climate Plan and, subsequently, the National and Regional Partnership Plan, is intended to consolidate what has been built so far and ensure continuity of investment, with an increasing focus on social resilience, reducing energy vulnerability and strengthening the competitiveness of the Romanian economy.

The central lesson Romania is taking forward into future European instruments is that the success of a programme of this scale is measured not only by the funding allocated, but also by genuine governance capacity: clearly defined objectives, a reasonable number of indicators, flexible procedures and sustained institutional coordination supported by constant dialogue with beneficiaries.

Financing Romania's Next Energy Transition



GEORGE GKIAOURIS
Acting Director, Energy Europe, European Bank for Reconstruction and Development (EBRD)

Over the past three years, EBRD has helped finance 15 renewable energy projects in Romania, supporting the deployment of nearly 3 GW of renewable energy capacity. Through direct commitments of more than EUR 500 million, the Bank has also mobilised a further EUR 1.1 billion from commercial lenders, institutional investors and development finance partners. This experience provides us a unique perspective on how Romania's energy market is evolving and what will be required to sustain investment at scale.

If there is one lesson from this experience, it is that Romania does not suffer from a shortage of capital. It suffers from a shortage of bankable projects.

The next phase of the energy transition will therefore not be defined by how many projects obtain permits, but by how many can reach operation.

This is a sign of a maturing market. A few years ago, the discussion centred on whether renewable energy projects could be financed. Today, the focus is increasingly on financing structures, revenue visibility, grid capacity, implementation readiness and risk allocation. Capital remains available, but it is increasingly selective.

The introduction of Contracts for Difference has been an important step in strengthening investor confidence and attracting private investment. The continued development of bankable corporate power purchase agreements further expands financing options and support market growth.

However, one lesson from our recent experience is clear: generation alone will not deliver the next phase of the energy transition.

As renewable penetration increases, flexibility becomes just as important as new generation capacity. We have seen a sharp rise in interest in battery energy storage projects and expect storage to become a fundamental component of Romania's energy system. Batteries can support grid stability, avoid curtailment and reduce excessive price peaks. Over time, Romania will also need to develop long-duration storage solutions, including pumped storage hydropower, to complement batteries and strengthen overall system resilience. Recognising this

need, EBRD is working with the Romanian authorities to assess future storage requirements and develop support mechanisms that could help make long-duration storage investments bankable. The next challenge is creating sustainable commercial frameworks that provide the revenue visibility needed to attract large-scale private investment across the storage sector.

At the same time, grid infrastructure must keep pace with the rapid deployment of new generation assets. Across Europe, network investment is becoming one of the defining challenges of the energy transition, and Romania is no exception. In many cases, renewable development is advancing faster than the expansion of the grid needed to connect and integrate new capacity.

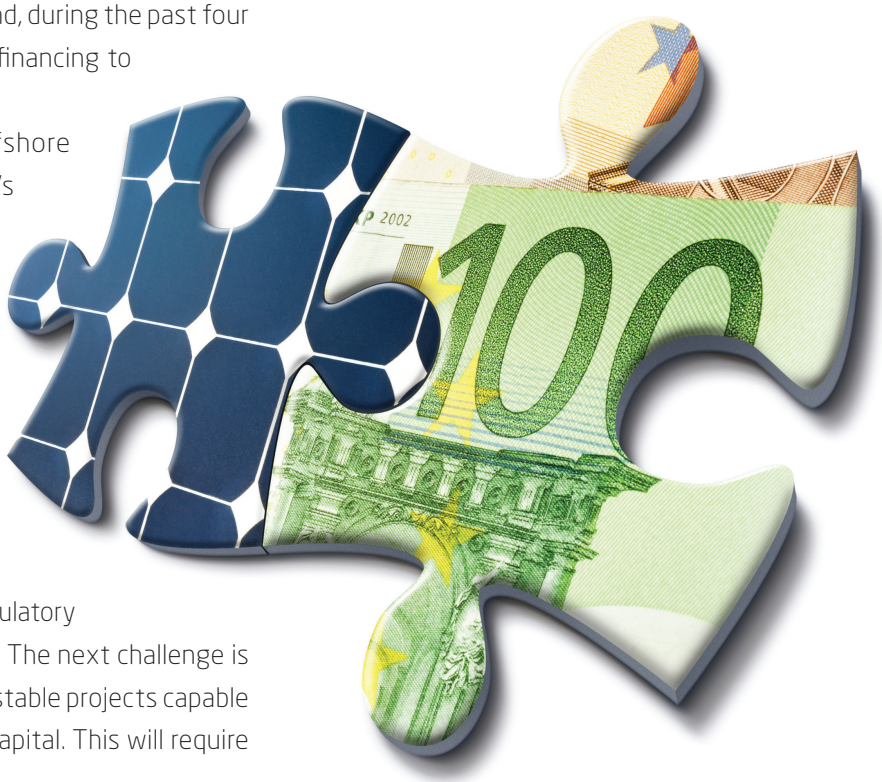
For this reason, accelerating investment in transmission networks, including through the implementation of Transelectrica's investment programme, should be viewed as a strategic priority. A resilient and modern grid is not merely an infrastructure objective. It is a prerequisite for maintaining investor confidence and unlocking future renewable and storage investments. Similar grid modernisation and expansion investments should happen at the distribution grids. To that end, during the past four years, EBRD provided significant financing to Romania's main grid operators.

Looking further ahead, offshore wind represents one of Romania's most significant untapped opportunities. EBRD has been proud to support the Romanian authorities in laying the foundations for offshore wind development in the Black Sea, including the identification of concession areas with an estimated potential capacity of 3.1 GW and the development of the regulatory framework for future investment. The next challenge is translating this progress into investable projects capable of attracting large-scale private capital. This will require regulatory predictability, timely grid development and a clear investment roadmap.

Public funding also has an important role to play. Instruments such as the Modernisation Fund can help address specific market gaps and improve project bankability. Their success, however, should be measured by their ability to mobilise private capital rather than replace it.

Romania enters this next phase from a position of strength. The country has abundant renewable resources, a growing pipeline of projects and increasing investor interest. The priority now is ensuring that investments in generation, storage and networks evolve together.

The measure of success should not be just the pipeline of GW under development announced. It should be the volume of private capital that has been invested in the sector, the employment opportunities that this volume of investment creates and the resilience of Romania's energy sector to withstand the increasingly frequent external energy shocks, without major impacts to its energy consumers.



The EIB's role in the next investment phase



MARIUS CARA
Head of EIB Group Office in Romania

Romania's renewable energy market has entered a decisive new phase. After years of rebuilding investor confidence, the country has become one of the most dynamic clean energy markets in Central and Eastern Europe. The conversation is no longer about ambition or project pipelines. It is about delivery: bringing projects to financial close, connecting them to the grid and transforming investment into long-term economic value.

This transition matters far beyond Romania. As Europe advances the Clean Industrial Deal and strengthens its energy security, affordable, reliable and domestically produced clean electricity has become a strategic asset for competitiveness and industrial resilience.

For the European Investment Bank (EIB), the lending arm of the European Union and the EU Climate Bank, supporting this next stage of market development means more than providing long-term finance. Our experience financing renewable energy projects across Europe shows that investment accelerates when project preparation, sound governance, permitting, grid development, financing and regulatory certainty advance together. Where one of these elements falls behind, investment slows – regardless of how strong the project pipeline may be.

At this point, the role of the EIB also evolves. While the first wave of renewable energy investment focused primarily on financing individual projects, the next phase is about strengthening the wider investment ecosystem. This means mobilising long-term finance, supporting high-quality project preparation, improving risk allocation, investing in electricity grids, storage and flexibility, promoting strong governance and sustainability standards, and attracting additional private capital.

Romania's renewable energy mix reflects this evolution. Hydropower remains the backbone of renewable electricity

> ***Romania's renewable energy mix reflects this evolution. Hydropower remains the backbone of renewable electricity generation, while photovoltaic investment is driving a new growth cycle.***



generation, while photovoltaic investment is driving a new growth cycle. Utility-scale solar parks are expanding rapidly, supported by the Modernisation Fund, the Recovery and Resilience Facility, the introduction of Contracts for Difference and growing demand from businesses for clean electricity.

The EIB's recent 34 million euros financing for three photovoltaic parks in the Oltenia region illustrates how this approach works in practice. As part of a 121 million euros financing package, the project will add 190 MW of renewable capacity – enough to supply clean electricity to more than 160,000 households.

The next challenge is no longer renewable generation alone. Romania's expanding project pipeline also highlights the need for stronger electricity networks, battery storage and greater system flexibility. The next gigawatt of renewable energy will only deliver its full value if it is matched by the infrastructure capable of integrating it efficiently into the electricity system.

Stable regulation, efficient permitting and close cooperation between public authorities, financial institutions and private developers have proven just as important as access to capital.

The transition is also increasingly being driven by business itself. According to the EIB Investment Survey 2025, 76% of Romanian companies already experience the physical impacts of climate change, while 96% have implemented measures to reduce greenhouse gas emissions. Nearly half have invested in renewable energy generation or sourcing, more than two-thirds have invested in energy efficiency, and 61% have invested in cleaner technologies – well above the EU average. Climate investment is no longer simply about compliance; it is becoming a driver of resilience, productivity and competitiveness.

As the EU Climate Bank, the EIB is making strong progress towards its commitment to support 1 trillion euros in green investment between 2021 and 2030. In 2025, 57% of our financing – 57 billion euros – supported climate action and environmental sustainability, including renewable energy, electricity networks, sustainable transport and innovative clean technologies.

The green transition through the lens of financial sustainability



COSMIN MARINESCU
DEPUTY GOVERNOR
National Bank of Romania

The green transition has long ceased to be merely an environmental objective and has become an integral part of a broad and profound transformation of the economic growth model towards sustainable competitiveness and resilience. Today, climate risks are important factors in ensuring economic and energy security. The experience of recent years, including the recent crisis in the Middle East, shows us that dependence on a single supplier, transport route or particular technology could turn geographical mobility or energy security into major sources of macroeconomic vulnerability.

Climate risks must be managed intelligently

A rigorous analysis of the implications of climate change for the economy and the financial sector must take into account the two main categories of risks. On the one hand, there are physical risks, which may manifest themselves either acutely, through the intensification of extreme weather events, or chronically, through periods of persistent drought and rising average temperatures. These effects accumulate gradually, but may materialise abruptly, often simultaneously across a region.

A relevant example is provided by the episodes of extreme heat that have affected Europe since May this year, followed by successive heatwaves in June and July. The lack of precipitation and high temperatures throughout the Danube basin caused severe hydrological drought, affecting, among other things, electricity generation at the Paks nuclear power plant in Hungary and the Cernavodă nuclear power plant in Romania. We have recently seen the Danube flow at the point where it enters Romania fall to almost one third of the multiannual average for the period, to 1,600–1,700 m^3/s in July 2026 compared with an average of 4,700 m^3/s.

On the other hand, transition risks are particularly relevant, as they arise from the legislative, technological and market changes associated with the decarbonisation process. Both categories of risks have a significant impact on the economy, both directly, by affecting production and consumer preferences, as well as asset values and prices, particularly when energy or agricultural production is disrupted, and indirectly through various second-round effects. These may be transmitted through the deterioration of companies' balance-sheet positions or through wealth effects, and may be amplified by increasing risk aversion among investors and financial markets.

Inaction, or inadequate or delayed intervention through strictly reactive policies and measures, could result in significant

losses in terms of financial stability and sustainability, while eroding economic growth potential.

Shared interest, but different roles

In recent years, many central banks have already integrated climate risks into their internal macroeconomic analyses in order to assess specific risks to financial stability and the supervisory framework. For example, the European Central Bank works closely with the Network for Greening the Financial System (NGFS) and the Bank for International Settlements (BIS) to develop relevant climate scenarios and environmental risk assessment tools and to integrate them into the activities it carries out under its mandate.

The National Bank of Romania has been a member of the BIS since 1930, the year the institution was established, and became a member of the NGFS in September 2020. Our commitment focuses primarily on the proper assessment and management of climate risks in the banking sector, as well as on promoting the development of green finance.

Mobilising the resources needed to finance the transition is, however, primarily the responsibility of the private sector, while public authorities are responsible for ensuring a coherent and predictable policy framework that supports green investment.

The economic viability of projects remains a priority

The National Bank of Romania's principled approach is that the green transition should neither be treated nor financed as an exception to prudential standards. In the real economy, capital does not follow the "green label" of a project, but is allocated according to the quality and economic viability of investment projects, including their administrative capacity for implementation. Treating the issue in any other way, outside the rigour of economic calculation, disadvantages the project initiator, the financier, the beneficiaries and the economy as a whole.

The latest Financial Stability Report highlights Romania's high vulnerability to natural disasters. The fact that more than two thirds of the country's counties face a medium or high risk of extreme events such as floods or drought contributes to greater uncertainty, given the wide dispersion of the potential negative effects on the economy.

Green finance is expanding, but...

Our data show that private investment in improving energy efficiency has remained modest in recent years, with only 48% of companies reporting such investments. At the same time, although green finance appears to be expanding rapidly, banks' exposures to carbon-intensive sectors remain predominant.

Climate-relevant non-financial companies are playing an increasingly important role in the national economy. In the middle of last year, they generated 37% of the economy's gross value added and employed 30% of all employees of non-financial companies. Bank lending to these companies amounted to 86.6 billion lei at the end of March 2026, almost half of the total loan portfolio to non-financial corporations.

The National Bank of Romania's 2025 Annual Report includes an assessment of the impact of regional temperature variations on economic growth. Rising temperatures affect agricultural production, as well as labour and capital productivity. By contrast, in regions with colder climates, higher temperatures may have favourable effects by expanding the range of agricultural crops or services that can be provided.

For European regions, estimates generally indicate a negative relationship between temperature developments and GDP per capita. The most pronounced effects occur during prolonged episodes of extreme heat, which can severely affect important or even strategic sectors such as agriculture and energy. In these situations, the negative impact on economic growth is significant, particularly in less developed regions, in the first two deciles of GDP per capita, where the estimated decline reaches around 2.2 percentage points.

The National Bank of Romania will continue to support, through instruments specific to the responsibilities of a central bank as well as through financial education initiatives, a smart green transition and the proper management of climate risks.

To build sustainable economic growth, we need to embrace a responsible balance between economic, social and environmental objectives, so that the balance of opportunities can continue to improve in a sustainable manner.

From price risk to storage flexibility: The evolution of financing of the second wave of renewables



CĂTĂLIN CEPIȘCĂ,
Senior Director, Energy, Metals and Utilities Department, Raiffeisen Bank Romania

Romania's second renewables wave involves the successive financing of three types of risk: merchant exposure, contractually stabilised revenues and the monetisation of energy flexibility.

The first stage began in 2021–2022, when ready-to-build projects attracted project finance based on long-term power price forecasts. In the absence of revenue stabilisation, market risk influenced debt sizing, repayment profiles, reserve levels and the sponsor's equity contribution. Local banks began financing projects with merchant exposure based on independent price forecasts and structures capable of managing volatility. Raiffeisen Bank played a pioneering role in Romania's first project finance transactions for such projects, validating a model that paved the way for further investment.

Long-term power purchase agreements followed. In this respect, the Contract for Difference mechanism and the CfD auctions for wind and solar capacity were decisive. Following the end of the green certificate cycle, investors and lenders gained revenue visibility over a horizon compatible with long-term financing.

In the second stage, financing is structured around the 15-year CfD period, plus construction. Revenue stabilisation reduces market risk, while the analysis focuses on construction, schedule, budget, technical performance, grid availability, imbalances and contractual robustness. The projects have reached the financing stage, and their assessment also depends on the allocation of risks among the sponsor, EPC contractor, suppliers, operator and lenders.

Banks support EPC contractors through performance guarantees, advance payment guarantees and guarantees covering other obligations during construction. Trade finance instruments facilitate the production, procurement, transportation and delivery of equipment.

The third stage integrates storage into financing architecture. Following market exposure and contractually stabilised revenues, the current stage finances energy flexibility and its monetisation.

CfD-supported, storage and hybrid projects are progressing in parallel, with a significant share expected to begin commercial operations in 2027–2028.

This evolution reflects the maturity of wind and solar technologies. Unlike the first wave, when green certificates mitigated a broader range of risks and accelerated investment, the second is based on commercially proven technologies, developed supply chains and decades of optimisation and cost reductions. The challenge lies in allocating commercial, technical and execution risks to the parties best placed to manage them.

Project finance is the predominant model for dedicated investment vehicles, while integrated utility groups rely mainly on consolidated balance-sheet financing. Independent projects retain the classic structure: a dedicated project vehicle, bank financing, an EPC contract, operation and maintenance contracts, energy commercialization mechanisms, and repayment and distribution parameters.

For wind and solar projects, differences are increasingly determined by commercialisation strategies and the level of risk assumed, rather than by equipment. From full merchant exposure to CfD structures, each model entails its own risk profile and financing level.

The focus is shifting from construction to efficient operation. Performance will depend on execution quality, technical availability, production, costs, imbalance management and commercial strategy.

This shift leads to storage. The concentration of solar generation within the same time intervals can cannibalise prices and generate periods of very low, zero or negative prices, compounded by the variability of the resource. Storage provides a response, supported by declining battery costs.

The key questions concern sizing and use: two- or four-hour configurations, participation in energy or ancillary services markets, and the suitability of tolling agreements. These choices influence bankability. As storage is less mature than wind or solar, it entails stricter requirements for financial models, sensitivity testing and sponsor strength.

Transparency and operational excellence will strengthen together. Performance must be compared with both the initial financial model and similar assets in the same market. Centralised data, advanced analytics and AI can establish benchmarks for availability, production, degradation, costs, revenues and the assumptions underlying the financing.

The next transformation may concern capital structure. Projects currently under construction will become operational assets with proven production, availability and cash-flow track records. As portfolios mature, the focus will shift towards refinancing, aggregation and capital structure optimisation.

Bank refinancing, portfolio-level financing, and green or infrastructure bonds backed by renewable and storage assets may define the next stage. If the current cycle is characterised by the accelerated construction of new capacity, the next may focus on managing and refinancing mature portfolios through more diverse sources of capital.

Overall, the second renewables wave involves both increased installed capacity and the maturation of financing: from projects exposed to market risk, to contractually stabilised revenues, then flexibility through storage and, ultimately, the refinancing of operational assets and access to capital markets. It marks the transformation of an emerging market into a mature asset class.

From Bankable to Insurable.
Managing risk earlier in BESS, Wind and Solar Projects



PRESLAVA GENCHEVA
Commercial Strategy & Growth Manager Renewable Energy Insurance Broker (REIB)

Romania's renewable energy market is entering a stage where securing land, technology and financing is no longer enough. Grid access, financial guarantees, technical design, insurance and lender requirements are becoming increasingly interconnected. For investors, this means one thing: risk needs to enter the project conversation much earlier.

A new test for project quality

Romania's renewable energy market is entering a more mature phase. The question is no longer simply how much capacity can be developed, but which projects can secure grid access and financing, move into construction and remain resilient once operational.

As the pipeline grows, access to the grid is becoming a test of financial commitment as well as technical readiness. In May 2026, ANRE increased the financial guarantee required for certain projects above 1 MW from 5% to 20% of the grid connection tariff, excluding VAT. A further guarantee of EUR 30/kW is now required when applying for an establishment authorisation.

The direction is clear: Romania wants grid capacity to support projects that are ready to move forward. For investors, this means financial guarantees need to be considered much earlier in project planning.

This is also where the structure of the guarantee matters. Depending on the applicable requirement, an insurance bond can provide an alternative to a bank guarantee. The choice should be considered alongside the project's wider financing strategy, as preserving banking capacity can provide greater flexibility for other project needs.

Risk decisions are moving upstream

The same principle applies to insurance. Too often, it enters the conversation when construction is approaching and many important decisions have already been made.

Yet insurability is shaped much earlier. Technology and supplier selection, project layout, EPC contracts, warranties and commissioning arrangements can all influence how insurers and lenders view a project. For BESS, this may



mean system integration, fire protection and testing. For wind projects, turbine technology, site conditions, transport and installation, component reliability and access for repairs can have an equally important impact on the project's risk profile.

Recognised standards and testing can help demonstrate that risks have been properly assessed and mitigated. But the wider principle is simple: good engineering, clear contracts and insurance should work together, rather than being treated as separate workstreams.

If these questions are addressed too late, investors may face higher insurance costs, restrictions in coverage, additional technical requirements or even design changes. Changes that are manageable on paper can become expensive once procurement or construction has started.

The cheapest risk to solve is often the one identified before construction begins.

Bankability continues beyond construction

Reaching commercial operation does not end the risk discussion. For lenders and investors, the ability of a project to maintain predictable cash flow after a major event is equally important.

The exposure looks different across technologies. A BESS project may depend on several revenue streams and can lose income even when only part of the system is unavailable. A wind project may face prolonged downtime when a critical component fails and replacement equipment, specialist vessels or cranes are not immediately available. In both cases, the physical damage may be only part of the financial loss.

Construction delay and business interruption protection therefore need to reflect the actual project, its technology and its revenue model rather than follow a one-size-fits-all approach.

Grid guarantees, construction insurance, delay protection and operational cover address different risks at different stages, but they share the same principle: risk should be structured alongside the project, not added afterwards.

At REIB, this approach is built on practical experience across renewable energy technologies and markets. With more than 14 GWh of BESS capacity and over 7 GWp of solar projects insured, alongside extensive experience in wind energy projects, we support investors throughout the project lifecycle - from early risk assessment and Grid Bond solutions to construction, delay and operational protection. By bringing insurance expertise into the project early, we help align technical decisions, financing requirements and risk transfer before they become costly constraints.

The strongest projects are not made bankable first and insurable later, they are designed to be both from the beginning.

Financing Romania's renewable growth



MARIAN DOBRILĂ,
Managing Partner TDP Partners

Renewable energy financing in Romania depends on how projects allocate construction, market and revenue risk. State aid and Contracts for Difference (CfDs) remain important, but the market is expanding towards PPA-backed lending, partly merchant structures supported by guarantees, construction bridge facilities and battery storage financing.

The Modernisation Fund remains the main source of public support for generation, networks and storage, although its contribution to bankability depends on aid intensity, reimbursement timing, eligible costs and implementation conditions. The EUR 150 million scheme for standalone storage, now open and targeting at least 2.174 GWh, will test whether grant funding can accelerate deployment while preserving viable capital structures.

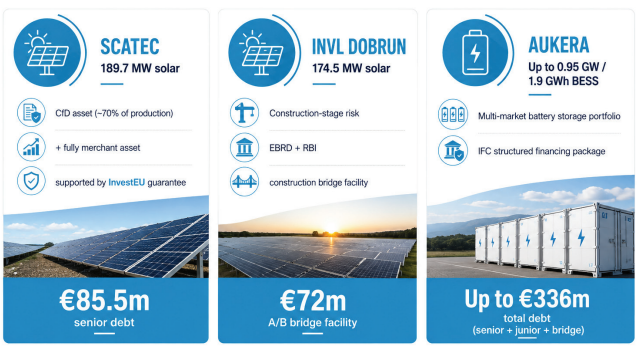
International financial institutions increasingly use guarantees and risk-sharing instruments to mobilise commercial capital. EBRD's EUR 750 million RenewEU De-Risking Framework covers renewable generation, BESS and grid investment across Romania and other EU markets, combining EBRD lending with InvestEU first-loss guarantees for eligible debt tranches from EUR 1 million to EUR 50 million. The framework improves the bankability of higher-risk transactions while mobilising private capital.

The clearest route to long-term project finance remains the CfD. Romania's first two auctions awarded around 4.2 GW under 15-year contracts exceeding the 3.5 GW target. These contracts provide revenue visibility and a pricing reference against which lenders can assess PPA-backed and merchant assets.

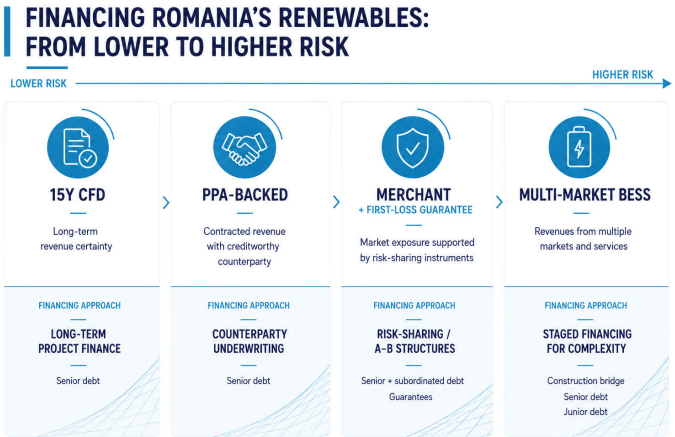
Scatec's 190 MW solar portfolio shows how different revenue profiles can coexist in one structure. EIB, EBRD and BCR provided project financing for a portfolio with total capex of approximately EUR 121 million and leverage of around 70%. A 15-year CfD covers approximately 70% of expected production, while the remaining output will be sold on the Romanian wholesale electricity market.

Outside the CfD framework, debt capacity increasingly

RECENT ROMANIAN TRANSACTIONS



Source: Company and IFI announcements – Scatec (EIB, EBRD, BCR – press release, July 2025); INVL Dobrun (EBRD, RBI – press release, January 2026); Aukera (IFC – press release, July 2025).



depends on PPA duration and pricing, counterparty strength and retained merchant exposure. Technically similar assets may therefore sustain substantially different levels of leverage, debt tenor and pricing. First-loss guarantees are beginning to narrow this gap, while construction bridge facilities allow capital to enter before projects are ready for long-term refinancing.

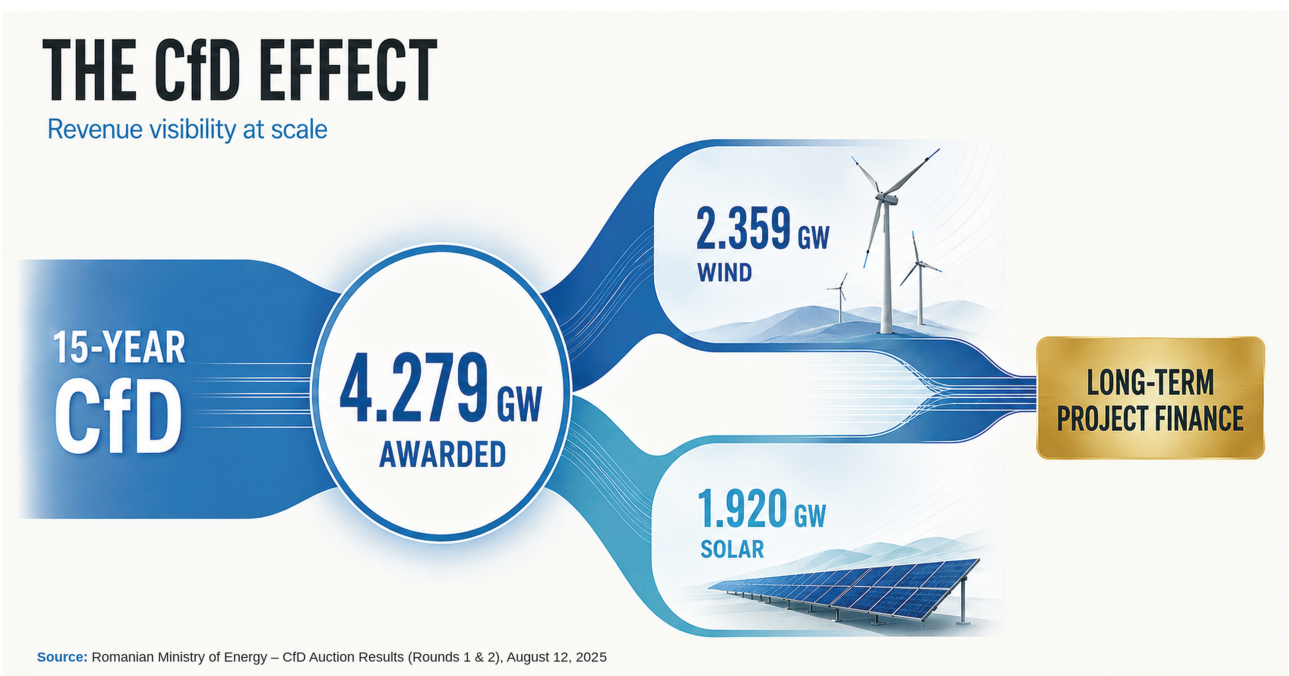
This evolution is visible in INVL's financing. EBRD and Eiffel provided a EUR 24.4 million construction bridge facility for the company's 60 MW Dolj portfolio in 2024, while EBRD subsequently approved a EUR 72 million construction bridge facility for INVL's 174.5 MW Dobrun project, with an estimated total project cost of EUR 117 million. The latter is structured equally between EBRD and Raiffeisen Bank International, illustrating the role of international institutions in mobilising commercial capital.

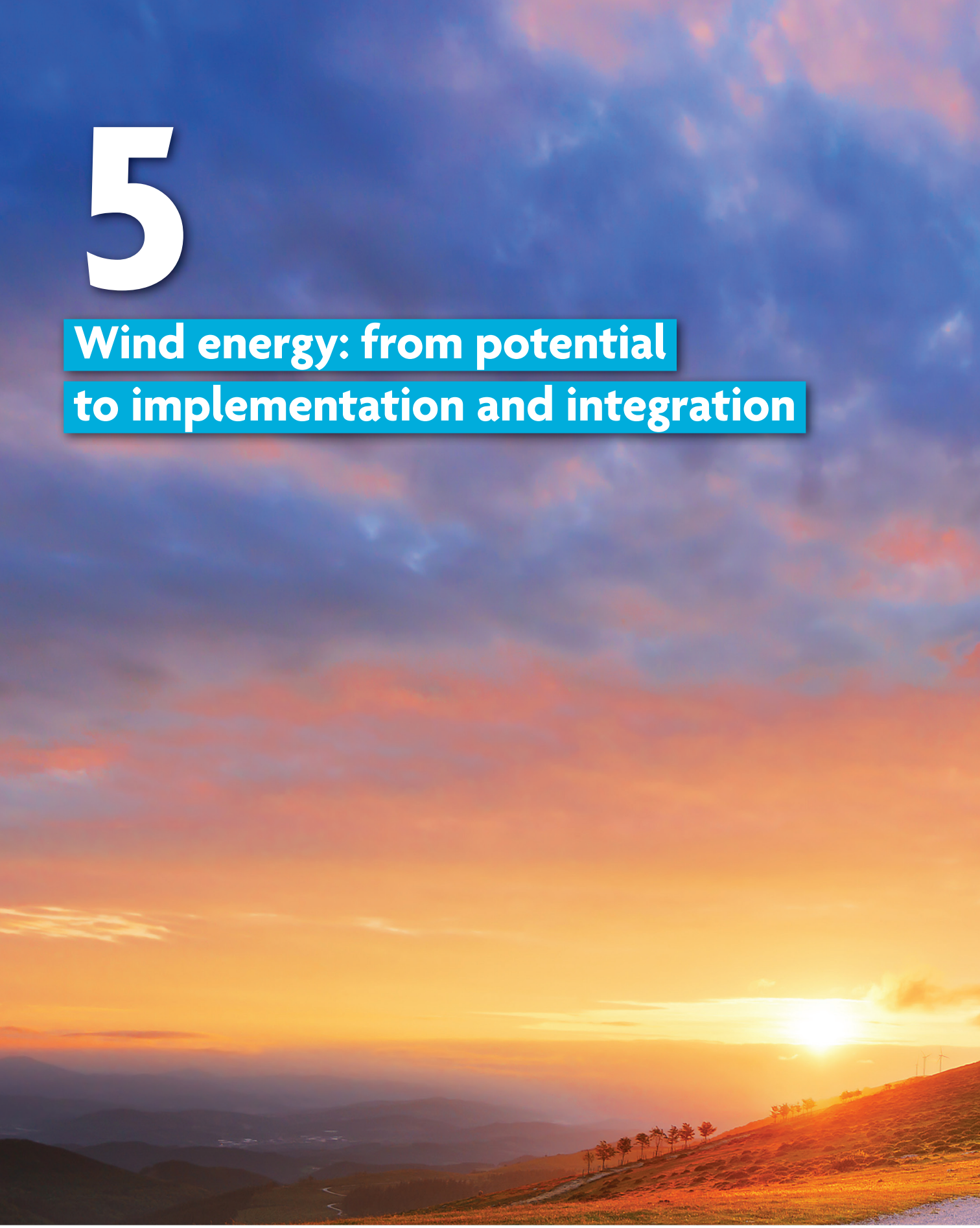
Storage is following the same shift towards institutional financing. Dedicated grant schemes are increasingly complemented by debt and risk-sharing structures designed to accommodate assets whose revenues depend on several markets and services rather than a single contracted price. This makes lenders particularly sensitive to revenue diversification, downside protection and operating assumptions.

As solar penetration increases, the financial value of storage will depend not only on standalone IRR, but also on its ability to improve revenue quality, limit downside exposure and increase the debt capacity of a wider portfolio.

Public support is extending towards Power to X, including biofuels, biomethane and hydrogen, although these sectors remain at an earlier stage of financial maturity. Their bankability will depend on more than grants, requiring credible feedstock arrangements, long-term offtake and sufficient revenue visibility to attract conventional project finance.

Ultimately, bankability depends less on headline returns than on effective risk allocation.





5

Wind energy: from potential to implementation and integration



Building a resilient future for the Romanian wind industry



DAN-CRISTIAN PETRE
General Manager Vestas Romania

Romania has what it takes to become one of Europe's most dynamic renewable energy markets. The country has excellent wind resources and a renewed momentum. With a national objective of reaching 7.2 GW of onshore wind by 2030, Romania's ambition is clear and, in my view, achievable.

But ambition alone will not deliver the energy transition. Turning targets into projects, and projects into long-term value, requires a stable, predictable, and well-designed support framework. This is particularly important for CfD (Contracts for Difference). Greater grid capacity, interconnectivity, and a more agile permitting process are also key to achieving a robust and sustainable energy system.

CfDs are ultimately a form of public support, and that support should maximise value. Affordable clean electricity remains essential, but future auctions should also recognise broader benefits such as resilient supply chains, European industrial competitiveness, cybersecurity, sustainability, and workforce development. The principles behind the NZIA (Net-Zero Industry Act) and the upcoming IAA (Industrial Accelerator Act) offer a useful direction by encouraging non-price criteria that reward long-term value creation alongside cost efficiency.

Modern wind turbines are digital, grid-connected assets that can be monitored, updated, and controlled remotely, making cybersecurity and operational control a matter of national and energy security. The key risk is control, who can access, update or manipulate wind turbine technology through its lifetime. Regulation must therefore focus not only on components, but on effective control and trusted access. The implementation of NIS2 (Network and Information Security Directive 2) and CSA2 (Cybersecurity Act) should ensure that high-risk actors cannot gain control through remote access, software, and services.

However, we also need to be realistic. No auction design can compensate for a project pipeline that is not mature enough. The outcome of Romania's second CfD is a clear signal. The wind segment awarded less capacity than the volume available, not because of a lack of developer interest, but because many projects continue to face challenges including lengthy permitting processes, grid access and curtailment uncertainty, financing constraints, and significant bonding requirements. Grid access is becoming one of the defining constraints for wind development, especially in regions with the best resources.

If grid access, permitting, and financing do not progress in line with auction volumes, the market will struggle to absorb the support being offered.

From my perspective, the most important conversation is not only about megawatts. It is about the long-term economic value that renewable deployment can create. When developers, manufacturers and service providers can rely on a visible and sustained project pipeline, they are able to make long-term investments in local capabilities, infrastructure, and people, as we have done at Vestas Romania.

The renewable energy transition requires a highly skilled workforce capable of building, operating and maintaining increasingly sophisticated energy infrastructure. Modern wind turbines depend on specialised expertise in areas such as electrical systems, digital monitoring, safety procedures, and high-voltage operations. Developing these capabilities takes years of investment in training, knowledge transfer, and professional development.

At Vestas, we have experienced this first-hand. Since entering Romania in 2009, we have built a strong local organisation with nearly 2 GW of installed and under-construction wind capacity and approximately 400 employees across the country. We have also invested significantly in local service infrastructure, warehouses, and dedicated training facilities.

Our regional training activities provide safety and technical programmes that help technicians develop the skills required to work safely and efficiently on modern wind turbine technologies. These programmes support both today's workforce and the next generation of renewable energy professionals.

This is where Romania has a tremendous opportunity. By creating a stable project pipeline, a predictable investment framework, and well-designed value-based CfD schemes, the country can do far more than install additional wind capacity. It can attract talent, strengthen local expertise and EU industrialization, create high-quality jobs, and establish itself as a regional centre of excellence for renewable energy services and operations.

Vestas®

EnVentus™

Introducing
V182-7.2 MW

Built on what works.
Designed for what's next.



Wind. It means the world to us.™

Romania: Building value beyond Megawatts



DR. TORALF POHL
Sales Director Eastern, Northern Europe, UK & Ireland, ENERCON

Strategic market with long-term potential

When discussing Europe's energy transition, the focus often falls on installed capacity and project pipelines. While these metrics matter, they tell only part of the story. For ENERCON, Romania represents something more: a strategic growth market, a strong talent base, and an increasingly important contributor to Europe's renewable energy future.

Romania is one of ENERCON's key markets. Ambitious renewable energy targets, excellent wind resources, and a strong pipeline of projects make the country highly attractive. What stands out most, however, is the opportunity to create value that extends well beyond the construction phase of a wind farm.

Creating value through local expertise

Today, ENERCON operates 324 MW of installed capacity in Romania and employs 185 people locally across sales, project management, and service operations. Our largest reference project is the 226.2 MW Casimcea wind park, which demonstrates both our technological capabilities and our long-term commitment to the market.

Romania is far more than a sales market for ENERCON. In Constanța, we operate a central spare parts warehouse and a regional service centre supporting wind farms across Europe. The expertise developed here benefits not only Romanian projects but customers throughout the continent.

This aspect of local value creation is often overlooked. Lasting value is created through highly skilled specialists whose expertise supports projects across borders. These capabilities are built over many years and remain embedded in the local economy.

Our commitment to Romania continues to grow. A recent milestone was our return to the installation segment with a project in Galați County, where 7 x E-160 EP5 E2 turbines were delivered, installed, and commissioned, adding more than 38 MW of capacity. The project demonstrated the strength of the entire value chain, from logistics and installation to commissioning and long-term service readiness.

More yield. More flexibility. More value.

We are already looking ahead to the next phase of growth, with projects featuring ENERCON's flagship E-175 EP5 E2 turbine. Combining high energy yield, intelligent turbine technology, flexible configurations, and optimisation opportunities throughout the project lifecycle, it is designed to meet the demands of modern wind energy projects.

With up to 7 MW rated power and a 175-metre rotor diameter, the E-175 EP5 E2 is among Europe's highest-yielding onshore wind turbines. As the winner of WindPower Monthly's Turbine of the Year 2025 award and fully type-certified, it provides customers with greater planning certainty and supports efficient project development. Its strong market acceptance was demonstrated by becoming the most permitted turbine type in Germany in 2025.

The first deployment of our latest E-175 model is already underway in Romania. Through our partnership with Qair for the Cobadin project in Constanța County, we will supply 7x E-175 EP5 E2 turbines. For ENERCON, working with an international partner such as Qair confirms both the maturity of the Romanian market and the confidence in our ability to support a project across its full lifetime.



Beyond turbines: Integrated energy solutions

The industry is increasingly moving beyond stand-alone wind projects. Customers are seeking integrated solutions that combine advanced turbine technology, site-specific tower concepts, long-term service agreements, and battery energy storage systems.

Storage is becoming particularly important as renewable generation increases. The value of electricity depends not only on how much energy is produced but also on when it is delivered. The ability to store and release power when it is needed can improve project economics while supporting grid stability.

In markets such as Germany and the UK, hybrid wind and storage projects are rapidly becoming the norm. Romania is following this trend, and we see significant opportunities to expand integrated wind-plus-storage solutions in the years ahead.

Unlocking Romania's renewable future

Wind energy will continue to play a central role in Europe's transition towards a secure and sustainable energy system. The main challenges today are no longer technological. Modern turbines are more efficient and reliable than ever before. The key barriers remain permitting processes, grid expansion, and investment certainty.

Romania's wind energy sector is entering a new chapter. The opportunity is not simply to install more megawatts, but to build a resilient, competitive, and future-ready renewable energy industry. With a strong local footprint, proven technology, highly skilled people, and an expanding portfolio of integrated solutions, ENERCON is committed to being a long-term partner in that journey. We are not only investing in projects, but in expertise, capabilities, and sustainable value creation that will support Romania's energy transition for decades to come.

Beyond Turbines: Nordex's Long-Term Investment on Romania's Wind Future



ALEXANDRU LAMBRU,
Director Sales Eastern Europe Region & New Markets

Romania is entering a decisive phase in its energy transition. Growing electricity demand, accelerating electrification, ambitious decarbonization targets, and renewed investor interest are creating the conditions for a new wave of renewable energy development. At the same time, recent years have underscored the importance of a more diversified and resilient energy mix: periods of reduced hydropower output caused by drought, combined with maintenance outages at conventional generation assets, have shown the need for additional domestic capacity that strengthens energy security and reduces reliance on imports.

For Nordex, Romania is far more than an attractive renewable energy market—it is one of the strategic growth markets within our regional portfolio, and a place where we continue to invest in people, expertise, and capability for the long term. As Europe's leading onshore wind equipment manufacturer, Nordex brings decades of experience, a proven track record across more than 40 markets, and over 68GW of installed capacity worldwide. Our motor is the confidence that developers and investors place in Romania, reflected in the growing number of projects under development and in the expanding role wind energy is playing in the country's energy future.

What sets Nordex apart is our long-term approach. We are not simply a wind turbine supplier — we support customers across the entire lifecycle of a project, from development, financial close and construction through operations and service. A wind farm is an asset expected to generate clean electricity for more than two decades, so success depends not only on the quality of the turbine itself, but on the quality of the partnership behind it throughout its operating life. Our strong financial position, growing order backlog, and expanding service business support this long-term partnership approach, providing customers and investors with confidence that Nordex will remain a reliable partner throughout the entire lifetime of their assets. .

Our focus is clear: Nordex is an onshore wind specialist. That focus allows us to continuously optimize our turbine portfolio around the needs of onshore developers and



utilities, delivering proven technology, operational reliability, and competitive economics in markets such as Romania. Customers benefit from solutions built specifically for the realities of onshore wind development, where performance, reliability, and cost-effectiveness have to go hand in hand. Our latest generation turbines, including the N175/6.X from the Delta4000 platform, are designed to maximize energy yield while reducing the levelized cost of energy, helping developers and investors improve project returns.

This experience is built on a strong track record across emerging and fast-developing markets throughout Central and Eastern Europe, where project execution often demands flexibility, local knowledge, and close cooperation with stakeholders. The lessons learned across the region allow us to bring practical, tested solutions to Romania, supporting customers as they navigate evolving market conditions and project requirements and including grid code compliance.

With a strong engineering culture and a lean decision-making structure, Nordex can respond quickly to changing customer requirements and market developments. In dynamic markets such as Romania, that agility on the turbine supplier side is a genuine advantage for developers seeking pragmatic solutions, direct engagement, and a partner able to keep pace as projects move from development through construction to operation.

This commitment is reflected in our growing local presence. Every new project helps build a local ecosystem of engineers, technicians, project managers, health and safety specialists, logistics experts, and service professionals. The economic impact extends far beyond electricity production: during construction, projects engage Romanian contractors, transport companies, civil and electrical works specialists, crane operators, accommodation providers, and numerous local suppliers. Local infrastructure improves, regional businesses see increased activity, and communities receive new investment.

Recent projects totalling more than 500 MW, such as Alpha South, Peștera 2, and Urleasca demonstrate both the scale of investor interest in Nordex and the growing



contribution modern wind projects can make to Romania's energy security, regional development, and job creation. These are not simply investments in renewable electricity generation — they are investments in local economic activity, technical expertise, and long-term industrial development.

The impact continues well after construction ends. Wind farms require decades of maintenance, inspections, repairs, digital monitoring, and performance optimization. By investing in local service infrastructure and technical expertise, Nordex helps create stable, highly skilled jobs mostly in remote areas while ensuring customers get the most value from their assets over their full operating life.

Innovation remains at the heart of this effort. Modern wind turbines are sophisticated digital systems, integrating advanced sensors, predictive analytics, intelligent control systems, and remote monitoring. As energy infrastructure becomes increasingly digitalized, cybersecurity matters just as much as technical performance — protecting critical infrastructure requires technology backed by transparent governance, robust cybersecurity standards, and trusted regulatory frameworks.

As a European manufacturer, Nordex develops its products and digital solutions within one of the world's most demanding regulatory environments. For developers, investors, and financial institutions, that combination of proven technology, trusted European standards, dependable service support, and local execution capability makes wind projects not just sustainable, but bankable investments capable of delivering value for decades to come.

Romania has all the ingredients needed to become a renewable energy leader in Southeast Europe, and Nordex is proud to be part of that journey. We are helping build more than wind farms — we are helping create skilled jobs, strengthen energy security, develop local expertise, and support a resilient, competitive energy system that delivers lasting value for Romania. With market-leading technology, strong regional experience, and a long-term commitment to the country, Nordex is well positioned to support Romania's next phase of renewable energy growth.

OX2: The most active catalyst for wind projects in Romania



LĂCRĂMIOARA DIACONU-PINȚEA,
country manager, OX2 România

On the Romanian wind market, the difference between developers is not only in the size of the pipeline, but in how many projects are actually built – and how many are built in parallel. From this perspective, OX2 is the most active local catalyst: the only developer with multiple wind farms under construction simultaneously.

The model that supports this pace is integrated, from one end of the value chain to the other: land, authorization, connection, route-to-market (PPA or CfD), financial structuring, investor attraction, construction and technical and commercial asset management.

Green Breeze (99.2 MW, Galati County) was the first project delivered through this model. It has gone through all the critical stages of bankability – development, authorisation, connection, a 12-year PPA – until the transaction with Nala Renewables, completed in 2024. OX2 remained responsible for construction and the park was commissioned in September, now entering the technical and commercial management stage.

What follows, however, shows the real delivery capacity: Ansthall (96 MW, 12-year vPPA with Ahold Delhaize, traded with HELLENiQ Renewables in 2025) and Urleasca (77 MW, 15-year CfD for 43 MW, traded with Scatec in 2026) are simultaneously under construction, both fully coordinated by OX2 – not successively, but in parallel.

Five years after entering Romania, OX2's portfolio is over 1.5 GW: around 600 MW under construction or on the verge of construction – including South Wind (around 300 MW, Constanța County, CfD, first user of the 400 kV Deleni substation, connection point for around 3 GW of projects) – and another around 1 GW in development. OX2's strategy is to maintain this pace, starting construction of 200-300 MW annually.

The indicator of success for OX2 is not the number of MW under development, but how many projects, in parallel, go all the way – from land to investment, to construction, to energy delivered to the system.

Execution is the new edge: what Romania's renewable market needs next



ALEXANDRU PĂTRAȘCU,
Country Manager Romania,
Scatec

Romania's solar build-out is ahead of schedule. But the constraint on the sector's next phase of growth is no longer capital; it is execution. Grid access, permitting, and storage integration now decide which projects get built, more than financing does

Against that backdrop, an integrated model is well suited to take projects from the drawing board to the ground, and it is worth being specific about what that means in practice. Scatec is not only the developer and long-term owner of a project; the company is also its own EPC contractor during construction and its own O&M manager and operator once a plant is generating, holding all these roles in-house across its portfolio rather than handing them off to third parties at each stage. Developing, constructing and operating a project this way means every megawatt taken on is one intended for connection and decades of operation, not a permit held for later resale. It also gives an investor the flexibility to adapt project design as grid rules and market conditions evolve, and the accountability to deliver on schedule in a market where timelines remain the biggest risk.

That long-term commitment extends beyond individual projects. A developer that stays on as EPC contractor and operator is not a short-term buyer of construction services who disappears at commissioning, but a recurring, long-term counterparty for the civil works, electrical, logistics and O&M firms it works with across development, construction and decades of operation – a materially more durable relationship than a single project handed over and forgotten.

This approach is increasingly reflected across the sector, as more developers active in Romania move toward a "build to operate" approach. For Scatec, however, this is not a new direction, but a continuation of how the company has always worked, from Egypt and South Africa to Romania today. In Egypt, Scatec's journey began with the 380 MW Benban solar project in 2017. Today, the company is delivering the next generation of hybrid renewable projects, including the 1.1 GW Obelisk solar project with a 200-MWh battery energy storage system, as well as the 1.95 GW Energy Valley project with 3.9 GWh of battery storage.

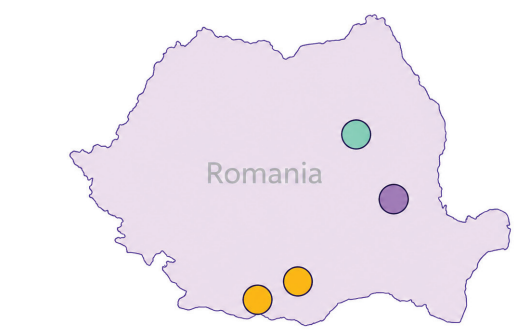


Applying the integrated model to Hybrid PV-plus-storage design, proven at scale in Egypt and South Africa, offers a practical template for how Romania can absorb rapid renewable growth without congestion or curtailment. This is where grid access, the central execution challenge, comes back into focus. There is a significant gap between permitted capacity and the system's real connection needs, and the government's move to reform grid queue rules is a welcome step toward closing it.

The CfD auction system has done its job, bringing capital into Romania's renewables market. The question the industry needs to answer together is what comes after: how developers work with the TSO to secure grid connection, structure suitable PPAs, and carry projects through construction once the CfD period ends. That is a shared, forward-looking challenge for the whole sector, not a critique of any single part of it.

Scatec's own pipeline in Romania reflects that same long-term commitment. The Dobrun & Sadova solar portfolio is under construction, and further solar, wind and battery storage development is under way. We have the backbone. We intend to build on it here, together with Romanian partners, just as we have in Egypt and South Africa.

Scatec develops, builds, owns, and operates renewable energy plants, with 6.6 GW generation and 2 GWh storage capacity in operation and under construction across five continents and aiming for 12.3 GW renewable generation and 6.8 GWh battery storage capacity in the near term. Scatec's Romania portfolio as of August 2026 includes 77 MW Urleasca onshore wind project (acquired, reached financial close and construction start initiated), as well as 190 MW Dobrun & Sadova solar projects currently under construction and the 89 MW/178 MWh Buciumi battery storage project in backlog.



Dobrun & Sadova
190 MW
- 70% CfD
- Target COD 2H'27

Urleasca
77 MW
- 57% CfD
- Target COD 1H'28

Buciumi
89 MW/178 MWh
- 100% merchant
- Target COD 2H'27

ENEVO Group, an EPC+ Approach for Energy Infrastructure Projects



In complex energy infrastructure projects, a significant share of the risk is generated not only by a particular piece of equipment or a specific phase, but at the interfaces between them. The power plant must be coordinated with the substation and the grid connection works, the storage system with the automation and energy management platforms, and all digital components must be protected and operated coherently. ENEVO Group's EPC+ model starts from this reality and extends responsibility from engineering, procurement and construction towards technical integration, commissioning and post-commissioning services.

Why Energy Projects Must Be Viewed as a Whole

A photovoltaic project or a storage system does not operate in isolation. Asset performance depends on the infrastructure through which the energy is evacuated, on compliance with the grid operator's requirements, and on the way the control systems exchange data and commands. A sound solution for each individual component, analysed separately, does not guarantee that the overall system will perform correctly. Incompatibilities between designers, suppliers and contractors often surface late, during the

testing and commissioning stages, when remedying them affects the project schedule and budget.

The EPC+ model applied by ENEVO Group entails the unified design and coordination of all these interfaces. The objective is not merely the completion of the works, but the delivery of an asset that can be connected, tested, operated and maintained under the conditions set out in permits, technical codes and the project contracts. For the client, the benefit is clearer technical accountability, from the grid connection solution through to the behaviour of the plant after commercial operation begins.

From Grid Studies to Commissioning

The integrated model begins by correlating the plant solution with the grid studies and the connection scheme. Equipment sizing, the choice of substation configuration, protection coordination and the definition of control systems all form part of the same analysis. The multidisciplinary capabilities ENEVO Group has consolidated allow the project to be addressed from the plant installations through to the infrastructure by which it connects to the grid.

Energization and commissioning are treated as stages of the same process, not as a formal handover between contractors. Functional tests must confirm both the behaviour of each subsystem and the response of the asset as a whole to power setpoints, grid events and fault scenarios. Before commercial operation, grid compliance tests are carried out, and the validated configurations must be retained and managed under control throughout the operating life.

Storage Changes the Project Architecture

The integration of a BESS best illustrates the need for a joint approach. The batteries, the battery management system, the power conversion systems, the high-voltage substation, the SCADA system and the EMS platform must be sized and tested together. The charging and discharging strategy influences the grid connection, the protections, the data exchanges and the way the asset participates in the market.

The same logic applies to automation and dispatch systems. The data required by process operators, maintenance teams and those handling commercial operation originates from the same installation, but has different refresh rates, levels of detail and security requirements. A common data acquisition and management architecture reduces the engineering effort imposed by subsequent integrations, lowers the error rate and enables technical and commercial decisions to be based on consistent information.

Responsibility Continues After Construction Is Complete

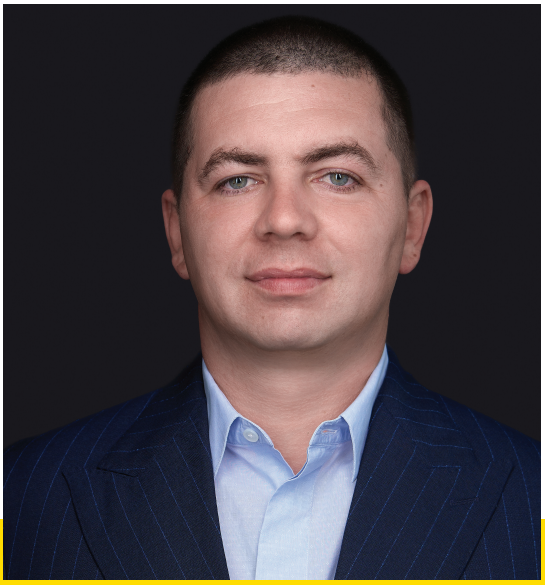
Commissioning does not close the relationship with the client; it opens the stage in which the asset's actual performance is measured. This is determined by availability, maintenance, monitoring, dispatch and the optimisation of energy flows. Continuity between the teams that designed the installation, those that built it and those that operate it shortens diagnostic time and ensures that the record of technical decisions, configurations and tests is preserved.

Over the operating life, the installation evolves. Replacing a piece of equipment, updating an application or changing the operating strategy can affect functions that were validated initially. Keeping documentation up to date, verifying modifications and repeating the relevant tests make it possible to maintain the technical coherence of the asset. At the same time, operational experience can be used to improve the solutions applied in subsequent projects. The EPC+ model does not eliminate the complexity of an energy project, nor the risks specific to its development. What it does provide is a framework that ensures continuity between design, implementation and operation, so that the energy asset can be verified, maintained and adapted across its entire life cycle.

Commissioning does not close the relationship with the client; it opens the stage in which the asset's actual performance is measured. This is determined by availability, maintenance, monitoring,

How digitalisation is changing the way renewable energy projects are built

As renewable energy projects develop into larger, more international and complex, the ability to execute them efficiently is becoming a critical competitive advantage. Paul Moldovan, founder of Parapet, explains how digitalisation is changing the operating model of EPC companies.



PAUL MOLDOVAN,
founder of Parapet

How has the role of EPC companies changed as the renewable energy sector has developed?

Five or six years ago, the industry's main challenge was installing as much renewable energy generation capacity as possible. Today, Europe has ambitious targets, investor interest is strong and technologies have reached maturity. What makes the difference now is the ability to turn plans into projects that are delivered efficiently.

EPC companies no longer manage only what happens on construction sites. At Parapet, we coordinate engineering, procurement, logistics, finance, health and safety, construction works, commissioning, subcontractors, equipment and hundreds of employees working across several countries. Every new project adds another layer of complexity, while entering a new market amplifies the challenge.

How do we keep pace? By rethinking the operating model. We have built a model around a strong digital component. Instead of each department working independently, engineering, procurement, logistics, human resources, finance, HSE, construction and commissioning now operate within a single shared ecosystem called LUCID. Today, more than 300 Parapet employees use the platform every day, regardless of the country or construction site where they work. LUCID monitors dozens of ongoing solar, wind and BESS projects while also integrating hundreds of vehicles and construction machines operating across Europe.

What exactly is LUCID, and how does it change the day-to-day management of a wind, solar or BESS construction site?

At its core, it is an operational platform that provides a real-time view of everything happening across our portfolio, from the first pile driven into the ground to the commissioning of the power plant or storage facility.



Every relevant activity is recorded and visualised in real time. Project managers can immediately see how many photovoltaic modules have been installed, how much concrete has been poured for wind turbine foundations, where equipment is located, which deliveries have arrived, how many people are working on site and how work is progressing.

Instead of waiting for daily or weekly reports, management teams have access to operational dashboards that are continuously updated. Clients can also access dashboards dedicated to their own projects, giving them real-time visibility into execution.

What is the most important change brought by the new operating model, and what are the benefits for renewable energy developers?

The most important change is not automation, but the speed of decision-making. Traditionally, project managers receive information about progress after several hours or, sometimes, several days. By the time a problem becomes visible, it has often already affected the execution schedule.

Today, decisions are made while the work is still under way. If module installation is progressing faster than expected but inverters deliveries are delayed, the procurement department can see the situation immediately. If a commissioning activity falls behind schedule, the impact on subsequent stages of work becomes immediately visible. Instead of reacting to yesterday's information, teams manage their projects using real-time operational data.

For an EPC company delivering large-scale projects, that difference directly affects delivery schedules, project costs and overall profitability. Those advantages are also reflected in developers' portfolios. For developers, digitalisation brings greater transparency, better cost control and the conditions for faster project delivery.

Can digital platforms help address one of Europe's biggest challenges: the shortage of skilled labour?

Certainly, although perhaps not in the way many people expect. Technology will not replace experienced engineers, electricians or commissioning specialists. What digitalisation can do is increase the productivity of every professional.

Digital workflows reduce repetitive and administrative tasks, automate documentation and standardise procedures. Digital platforms also accelerate onboarding: when someone joins a project in another country, they immediately work

> ***I believe artificial intelligence will have its greatest impact well before problems actually emerge during the construction phase. Instead of telling us that a project is already behind schedule, AI will identify, several weeks in advance, patterns indicating a higher probability of delays.***



according to the same operational standards, procedures and reporting structures.

The goal is to enable professionals in the field to coordinate more projects, more efficiently.

What role do you believe artificial intelligence and a digitalised operating model will play in the EPC sector in the coming years, and what impact will they have on development at both local and international level?

I believe artificial intelligence will have its greatest impact well before problems actually emerge during the construction phase. Instead of telling us that a project is already behind schedule, AI will identify, several weeks in advance, patterns indicating a higher probability of delays.

We see significant potential in productivity forecasting, planning optimisation, procurement planning, supplier performance analysis and risk identification. The same applies to asset operations. Predictive maintenance will increasingly identify equipment issues before failures affect generation.

International expansion is often presented as a commercial challenge. In reality, it is an operational one. The real question is not whether you can add new projects in the portofolio but whether you can execute them to the same standards regardless of location. That is where digitalisation becomes a strategic advantage.

At Parapet, once a workflow proves effective on one project, we can replicate it in every country where we operate. Engineering processes, occupational safety standards, reporting structures, procurement workflows and quality controls remain consistent because they are integrated into the same operational platform.

Digitalisation therefore becomes a strategic advantage that allows us to deliver projects with the same operational discipline, transparency and quality of execution, regardless of the market, every time.

Wind Open Day 2026: Wind energy, seen on the ground



Wind Open Day reached its ninth edition in 2026 and brought more than 150 participants to Galați County, to two wind projects at different stages. Green Breeze, 99.2 MW, owned by Nala Renewables, had recently been energised and was in commissioning, while Ansthall, a 96 MW project owned by HELLENiQ Renewables, was under construction, with foundation works almost complete. Both are developed and built by OX2 and total almost 200 MW of new capacity.

The visit showed in practical terms the route from project to electricity generation: site infrastructure, foundations, component transport, installation, substations, testing and grid connection. The educational component remained important. Around 20 students from the Faculty of Power Engineering at Politehnica Bucharest and about 30 pupils from Cuca commune joined industry representatives, authorities, investors and the media. The two sites showed them the successive stages of a wind farm, from foundations and roads to energisation, testing and grid connection. The journey to Galați was also part of the event, with participants travelling in a special carriage dedicated to Wind Open Day.

Wind Open Day began in 2017 with a visit organised by RWEA and Greenpeace Romania to EDPR's Făcăeni wind farm, to explain directly on site how wind energy works. The 2019 edition at Fântânele-Cogealac focused on the professional retraining of miners from the Jiu Valley, while the fourth edition, in 2021, was linked to the launch of RenewAcad, the training centre for the renewables sector. In recent years, the initiative followed the industry's evolution: in 2024 at the Vestas centre in Mihail Kogălniceanu and in 2025 at the VIFOR construction site. After nine editions, Wind Open Day has become a meeting point for industry, young people, communities and the public, with a focus on direct experience in the field.



6 Photovoltaic energy: versatility, innovation and new models of development


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Prosumers – from expansion to integration

In less than four years, prosumers have grown from a marginal presence in the energy mix to more than 4 GW of installed capacity, fundamentally reshaping distributed generation in Romania. Following a period of rapid expansion, the market is now entering a new phase in which storage, new compensation mechanisms and energy communities are beginning to redefine the role of the prosumer and give Romania a distinctive profile in Central and Eastern Europe.

IRENE MIHAI,
Policy Director RPIA

Among European markets, Romania has recorded one of the most remarkable developments in the prosumer segment. In less than four years, installed capacity increased from just a few megawatts at the beginning of 2022 to more than 4.2 GW today, turning distributed generation from an almost non-existent element into one of the largest components of the National Energy System.

The expansion of the segment has been supported by a combination of factors, including a favourable regulatory framework, relatively easy access to the grid and dedicated funding programmes. Starting from a flexible definition of the prosumer – the final customer that generates renewable energy for its own consumption and may feed surplus electricity into the grid, provided that this is not its main commercial or professional activity – legislation has sought to reduce barriers and improve the economics of investment. At the same time, grid connection procedures were simplified and the market benefited from a range of incentives, including the possibility to sell electricity without an operating licence, exemption from the obligation to purchase green certificates and, for individuals, exemption from tax liabilities related to the electricity generated. From 2022 onwards, these measures were complemented by quantitative compensation for installations of up to 200 kW and financial settlement for capacities between 200 and 400 kW, further improving the investment case for end consumers.

Alongside regulatory developments, funding programmes such as Casa Verde Fotovoltaice, Electric UP and dedicated calls under the Recovery and Resilience Plan supported investment in both the residential sector and among SMEs and HoReCa businesses. The cumulative impact of these measures is reflected in the size of the market: by the end of July 2026, Romania had more than 373.249 prosumers, with a total capacity of 4.148 MW. Around 90% of them – 337.607 – are residential installations, accounting for 2,149 MW, while



the remaining 35.642 are C&I, totalling 1.999 MW.

Following the accelerated expansion of 2023–2024, however, the market is beginning to change its profile. While the focus until recently was almost exclusively on adding new generation capacity, since 2025 the integration of storage systems and the growing share of hybrid projects have become increasingly visible.

The number of prosumers equipped with batteries has more than doubled in around seven months, from approximately 65,000 at the end of 2025 to 139,967 today, 97% of whom are individuals. The shift is particularly visible in the residential market, where storage allow households to increase self-consumption and use solar electricity beyond the hours in which it is generated.

New rules for a changing prosumer market

As the segment grows in both size and complexity, the regulatory framework must adapt to a market in which generation, consumption and storage are increasingly interconnected. A first step was taken with the adoption of Law No. 160/2026, which amends Electricity and Natural Gas Law No. 123/2012 and extends the definition of the prosumer to explicitly include energy storage. The new legislation maintains quantitative compensation for installations of up to 200 kW and financial settlement for capacities between 200 and 400 kW, while introducing greater flexibility in how electricity can be used and monetised. As a novelty, residential installations of up to 27 kW can now use the credit



generated through the compensation mechanism to pay for electricity consumed at other points of consumption or for natural gas bills, provided that these are supplied by the same energy supplier, marking a shift towards a more integrated prosumer model.

The effective application of the new provisions will, however, also depend on the adoption of secondary regulations, which will detail the mechanisms and procedures required for implementation.

From individual to collective

While the development of prosumers has so far focused primarily on individual installations, the new regulatory framework for energy communities is gradually opening the way for collective forms of generation, consumption and energy sharing.

In 2026, ANRE Order No. 9/2026 established the rules governing the participation of energy communities in wholesale electricity markets, including the sale of surplus electricity after members' consumption has been covered, as well as the conditions under which storage capacities may provide services to grid operators.

The framework was further developed in June 2026 through the establishment of the National Register of Energy Communities, which sets out the conditions required for their recognition and operation. These



include open and voluntary participation, at least five members, effective control exercised by those members and a focus on generating economic, social or environmental benefits for members or the local community. Additional requirements relate to connection to the same distribution system operator and the use of smart metering systems.

The trajectory of the prosumer segment once again highlights the distinctive nature of Romania's energy market transformation. In a relatively diverse regional landscape, the country is developing a profile of its own, with distributed generation emerging as one of the forces shaping the evolution of the sector.



From rooftop to balcony: the "plug & play" era

Small-scale "plug & play" solar systems are gaining ground across Europe. Their relatively low cost, simple set-up and flexibility make them particularly attractive to consumers who cannot install a conventional rooftop system – including tenants and apartment residents.

In Romania, for installations with a capacity below 800 W, the technical grid connection rules do not impose additional specific restrictions or conditions. Even for these small-scale systems, however, installation must be carried out by authorised electricians or companies certified by ANRE.

Where the electricity generated is used exclusively for self-consumption, without feeding surplus electricity into the grid, notification of the grid operator and compliance with the applicable technical requirements are sufficient. By contrast, monetising surplus electricity requires the user to obtain prosumer status.

For panels installed on balconies or façades, construction and urban planning rules must also be observed. In practice, this may require the consent of the homeowners' association and, as a rule, the relevant urban planning approvals and building permit from the local authority, in accordance with Law No. 50/1991.

A new method for solar construction oversight

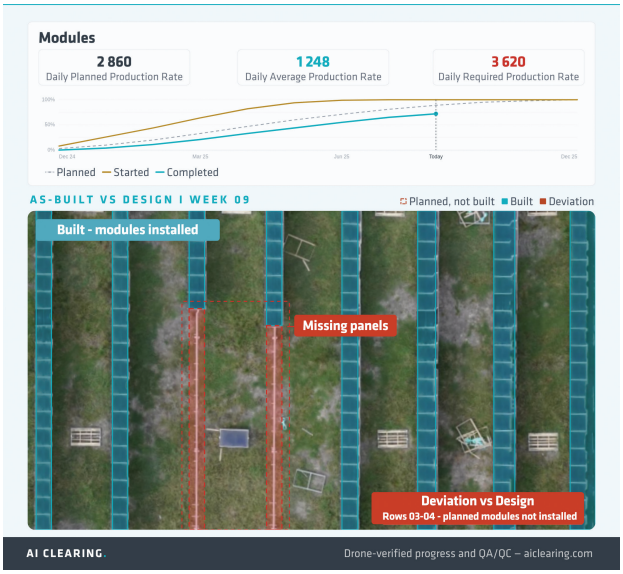
AI Clearing

Drone imagery is increasingly used on solar construction sites - but photos alone don't guarantee quality. The real value comes from what happens after the flight: systematic, automated analysis that catches issues before they become expensive to fix.

A drone flight over a solar construction site is easy to schedule. But a flight is not an inspection - aerial images are just data until they're analysed against the design. Without that step, photos can look complete while hiding deviations that appear at commissioning.

What happens after the flight

Construction monitoring doesn't improve by increasing the number of site visits. Rather, it's about treating each flight as a source of data that needs to be understood. Converting site imagery into 3D site models can reveal what has changed since the previous flight. This process works best when it's automated, driven by AI trained on construction data - the core approach behind AI Clearing's platform. By comparing each 3D model to the design, schedule and the previous flight, the platform tracks progress, identifies deviations, and flags issues - such as misaligned modules, missing components, or work that doesn't match the specifications. The process happens the same day, with the report ready within hours. The same approach carries past handover into O&M, where thermal imagery flags defects on an operating solar site - hot spots, damaged panels or failed connections.



Beyond progress tracking

On utility-scale sites, this shortens review cycles from weeks to days and replaces site notes with a single, continuously updated record that Asset Owners, General Contractors and EPCs can rely on. Clients using automated oversight report CapEx savings of up to 4% compared with manual inspection - and AI analysis has helped cut construction time by up to 20 days per year.

The same record also changes how disputes play out. Every flight produces objective documentation of what was built and when - a single source of truth neither side can argue with. On projects backed by this evidence, the cost of resolving disputed claims drops by an average of 20%.

About AI Clearing

AI Clearing is a company using AI to improve how construction progress is monitored and verified on large-scale infrastructure projects. First ISO 42001-certified AI in construction.

Where water meets energy, we build the future



WALDEVAR Floating PV is building a new generation of renewable energy infrastructure. Water, engineering and solar power come together. Built on WALDEVAR's extensive EPC experience, the new company brings all key FPV capabilities under one roof. Hydrotechnical engineering, hydrographic surveys and modelling, electrical and structural engineering, anchoring and mooring, construction, commissioning and dedicated O&M: one team, one integrated approach.

Our work starts with understanding the water. Every site is different. Hydropower reservoirs, quarry lakes, industrial ponds and aquaculture basins each have their own dynamics. That is why we don't adapt standard solutions to the water. We engineer each FPV system around the water. From the first site investigations to long-term operation, every technical decision is shaped by local conditions, environmental constraints and the behaviour of the water itself.

Our multidisciplinary approach also allows FPV to become part of a broader energy ecosystem. We look at how floating solar can work with existing infrastructure, hydropower, storage and grid connections to make better use of assets already in place.

We also build the capabilities our projects demand. Our own heavy-duty vessel was designed for anchor deployment. A new European manufacturing facility, with an annual capacity of over 600 MW, will take integration even further. This combination of engineering, dedicated equipment and manufacturing capability gives us greater control over quality, execution and project delivery.

Our experience is already taking shape on the water. The 10 MWp Nufărul project for Hidroelectrica is advancing hydro-solar hybridisation in Romania. In France, we delivered a 14 MWp Floating PV Park on a gravel pit.

Different waters. Different challenges. The same engineering mindset.

We develop more than Floating PV projects. We are building the expertise, technology and engineering methods for an industry whose potential is only beginning to emerge.

WALDEVAR
FLOATING PV

Satellite data brings Romania's solar potential into sharper focus



DR. FRANK KASPAR,
EUMETSAT, Darmstadt

Long-term satellite observations can provide high-resolution information on site-specific solar potential and its variability. EUMETSAT is responsible for operating the series of METETOSAT satellites that have been observing the weather in Europe and beyond since 1977. Here, we summarize how these observations are used to provide relevant information for assessing national solar potential and provide examples for Romania.

Four decades of satellite data behind solar planning

The increasing deployment of solar energy systems requires reliable information on solar resource availability. The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) operates Europe's meteorological satellite systems and provides continuous observations of the atmosphere, oceans, land surface, and climate to support weather forecasting, climate monitoring, environmental services, and a wide range of socio-economic applications. It is an intergovernmental organization headquartered in Darmstadt, Germany, serving its 30 member states and collaborating closely with their national meteorological services. EUMETSAT operates both geostationary satellites (METEOSAT) and polar-orbiting satellites, ensuring uninterrupted observations of the Earth system 24 hours a day. The first METEOSAT satellite was launched in November 1977, and continuity of observations was implemented by a series of follow-up satellites. The METEOSAT data record now extends over more than four decades, which makes it a valuable resource for the creation of consistent long-term climate data records.

Mapping Romania's solar resource at high resolution

One application of METEOSAT data is the assessment of solar radiation (reaching the Earth's surface) in support of solar energy applications. Such satellite-derived solar radiation information complements measurements from national ground-based networks and provides coverage across continents and oceans based on a consistent

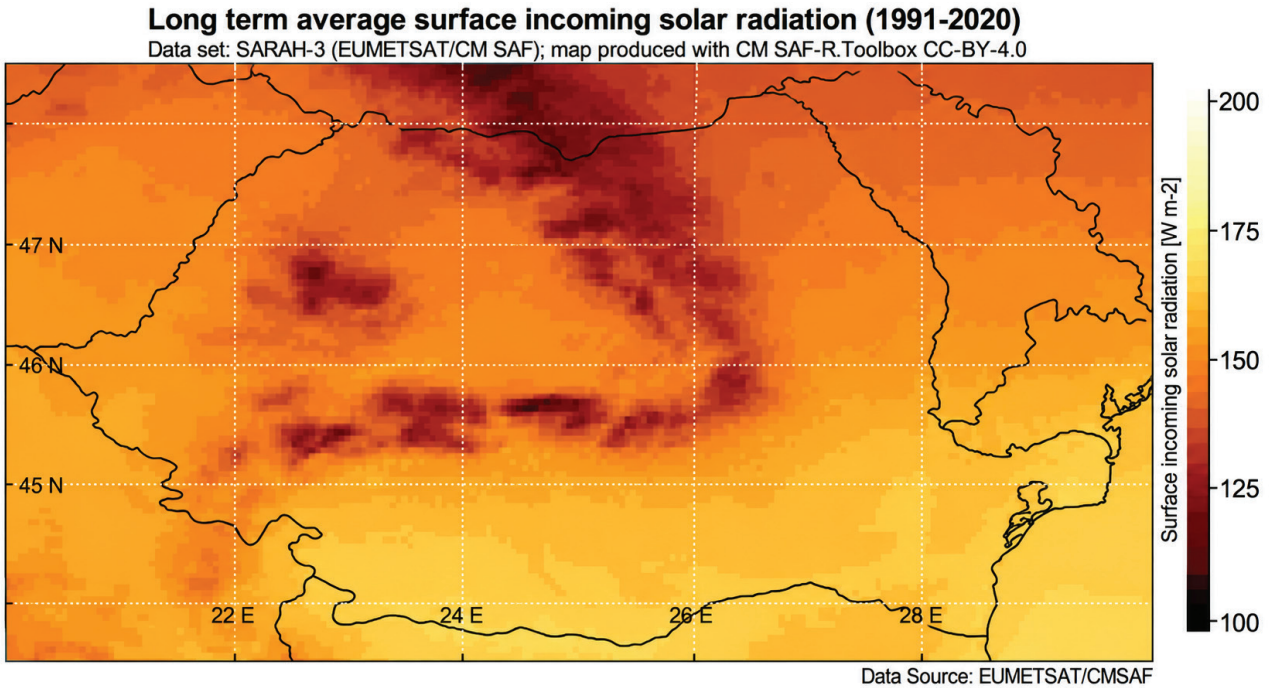


Figure 1

methodology across national borders and availability in regions with sparse ground observations. A key contribution of EUMETSAT to solar resource assessment is provided through EUMETSAT's Satellite Application Facility Climate Monitoring (CM SAF). CM SAF generates long-term, high-quality climate data records derived from satellite observations. Among its products is the Surface Solar Radiation Data Set - Heliosat (SARAH), which is based on observations from the METEOSAT satellite series and provides data from 1983 to the present. Version 3 (SARAH-3) includes global horizontal irradiance (surface solar irradiance), direct irradiance, sunshine duration and further parameters. SARAH-3 is provided with a spatial resolution of 0.05° and a temporal resolution of up to 30 minutes over the METEOSAT field of view. Validation studies demonstrate high accuracy and long-term stability, making the dataset suitable for renewable energy applications that require long-term information.

Based on SARAH-3, Figure 1 shows the (satellite-derived) long-term average surface incoming solar radiation of Romania for the 30-year reference period 1991 to 2020.

Figure 1: Long-term average surface incoming solar radiation over Romania for the 1991-2020 reference period (Dataset: SARAH-3, provided by EUMETSAT's CM SAF; Pfeifroth et al., 2024), CC-BY-4.0

How solar and wind complement each other across the seasons

The high temporal resolution of the dataset also allows to assess solar variability at various time scales, e.g., seasonality or the frequency and duration of phases with low production.

Figure 2 shows the seasonal cycle of solar radiation for Romania (monthly mean values for 1991 to 2020, together with the range of individual monthly values). This clearly illustrates the well-known fact that solar radiation is higher in summer, but it is worth noting that the seasonal variation in wind speed in European countries is typically complementary (see e.g., Kaspar et al., 2019). This is illustrated in the figure based on data of wind speed at a height of 100 m above ground, derived from the global reanalysis ERA5 of the Copernicus Climate

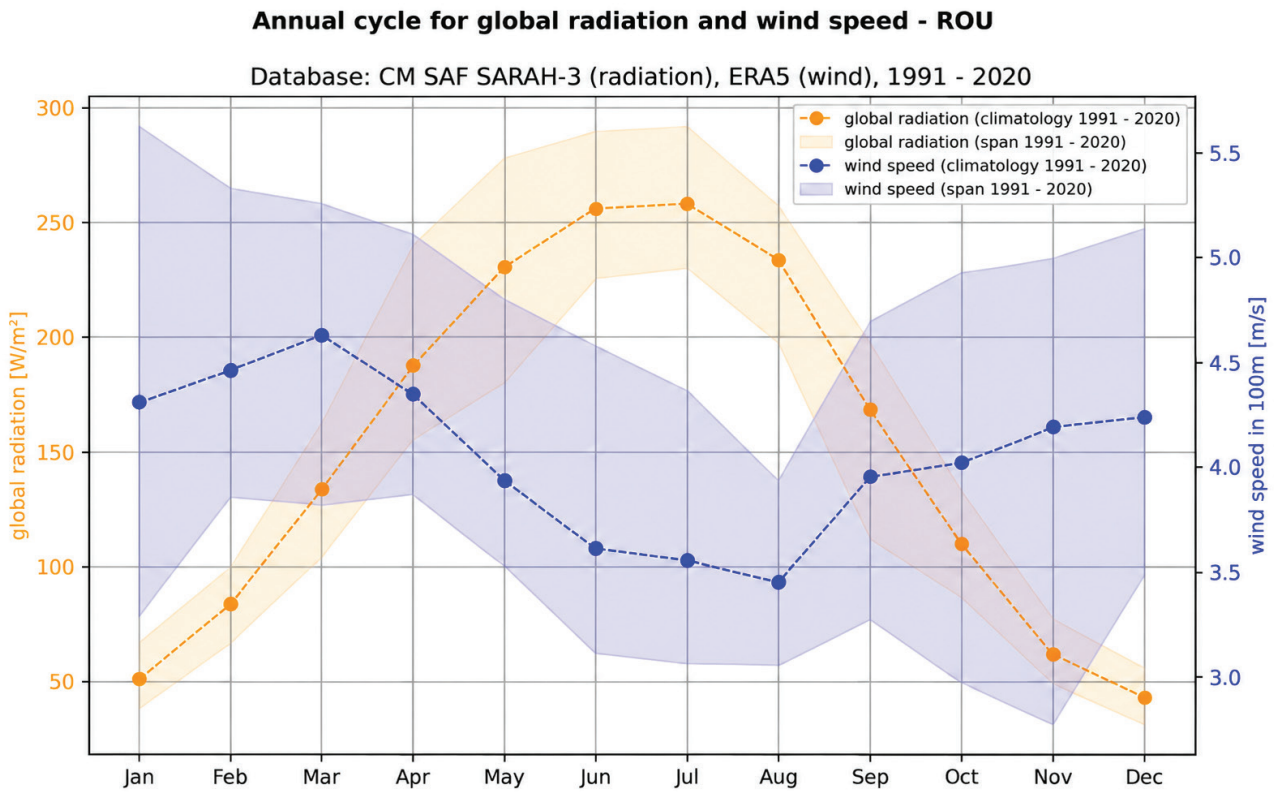


Figure 2

Change Service (C3S). A reanalysis dataset is produced by combining historic weather observations and state-of-the-art atmospheric models. ERA5 makes intensive use of satellite data (Hersbach et al., 2020) and is therefore another example of how EUMETSAT's data supports sector specific applications (either directly or indirectly). The combination of such high-resolution datasets allows the assessment of temporal and spatial features of weather events that may pose challenges for the energy sector, such as simultaneous shortages of wind and solar power or increased weather-driven energy demand, for example due to heating or cooling requirements.

Figure 2: Average seasonal cycle of solar radiation and wind speed in Romania. Over part of the power curves, wind power generation scales approximately with the cube of wind speed (v^3). Consequently, the seasonality of wind energy production is even more pronounced than the seasonality of wind speed itself. (Source: Tim Usedly, Deutscher Wetterdienst, CC-BY-4.0)

Combining satellite data with local measurements

Observations from EUMETSAT's METEOSAT satellites provide a unique opportunity to derive long-term climate data records with spatially comprehensive information for most parts of Europe and beyond. The datasets are therefore already used in various energy-related applications, such as the easy-to-use PhotoVoltaic Geographical Information System of the European Commission (implemented by JRC: https://joint-research-centre.ec.europa.eu/photovoltaic-geographical-information-system-pvgis_en). Satellite-based datasets provide consistent information on a large scale. This



information can be further optimized by combining it with local data, such as measurements from weather stations. We therefore always recommend to also get into contact with national experts.



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Recycling, Reuse, Resilience – A Circular Future for Europe's Solar Industry

In less than six years, solar has evolved from a relatively marginal energy source into one of the pillars of the European Union's energy transition. The tripling of installed capacity and the accelerating pace of deployment, however, bring two major challenges. An increasing number of panels will reach the end of their operational life in the coming years, while global supply chains remain heavily concentrated in a single region, creating a new source of vulnerability. Although these may appear to be separate issues, they are closely interconnected. Luckily, recovering materials from decommissioned panels could help support the development of a more resilient European industrial base.

IRENE MIHAI,
Policy Director RPIA

Against the backdrop of the health, climate and energy crises that marked the beginning of the 2020s, and in the context of the European Green Deal and REPowerEU, solar PV has become one of the pillars of Europe's clean energy transition and energy security. Supported by the EU target of 750 GWdc (600 GWac) by 2030 and broader efforts to strengthen strategic autonomy, solar capacity has tripled in less than six years, rising from 139 GW in 2021 to more than 420 GW today.

The rapid deployment pace is helping reduce dependence on imported fossil fuels and reinforce energy security. At the same time, however, the solar PV supply chains remain heavily concentrated outside the European Union, leaving the sector exposed to external vulnerabilities. One of the solutions pursued at EU level is therefore the development of domestic industrial capacity and the expansion of European manufacturing. Yet the impact of such measures remains limited as long as the raw materials required for production continue to come predominantly from external sources.

Alongside this security dimension, growing installed capacity will also result in increasing volumes of solar panels reaching the end of their operational life, raising questions around their collection, treatment and recycling. The material composition of these products creates a direct link with security of supply. Solar panels contain significant quantities of aluminium, copper, silicon and silver, all of which are required in manufacturing processes, while their recovery could provide a secondary source of raw materials for European industry. Unlocking this potential, however, requires an appropriate framework capable of supporting material recovery and their reintroduction into the economy.

From deployment to responsibility across the full life cycle

Element	UE	România	Provisions
Legal framework	Directive 2012/19/EU, as amended by Directive (EU) 2024/884	Emergency Ordinance No. 5/2015, as amended by Law No. 127/2024. Full transposition of Directive (EU) 2024/884 is addressed by Bill PL-x 174/2026, currently undergoing parliamentary proceedings.	The requirements apply to producers/importers, distributors, collectors and treatment operators.
Producer registration	Establishes the producer registration and reporting systems.	National Register of EEE Producers, managed by ANMAP – Article 38 of Emergency Ordinance No. 5/2015.	Producers/importers must register in the national register and obtain a registration number before placing products on the market for the first time.
Extended producer responsibility	Establishes producer-responsibility mechanisms.	Article 25(6)–(8) and Article 38 of Emergency Ordinance No. 5/2015; Order No. 269/2019.	Producers choose and declare their compliance route, either individually through an approved operating plan or by transferring responsibility to an authorised collective organisation. For solar panels, the contract must specifically cover photovoltaic panels; a generic waste-collection contract is not sufficient.
Financing waste management	Establishes the principles governing the financing of collection, recovery and disposal.	Articles 28 and 33 of Emergency Ordinance No. 5/2015, depending on the category of user.	Under a collective scheme, producers declare the quantities covered and pay the contributions set out in the contract. Under an individual scheme, they finance operations through their own system. For panels currently supplied to professional users, Article 33 places the financing obligation on the producer.
Collection of solar panels	Requires separate collection.	Articles 10 and 13 of Emergency Ordinance No. 5/2015.	Holders transfer panels to an authorised system, while the producer or producer-responsibility organisation ensures their collection and subsequent routing.
Treatment and recycling	WEEE must be treated in appropriate facilities and recovered in accordance with the Directive.	Articles 20–27 of Emergency Ordinance No. 5/2015 and Order No. 417/2021.	Collection organisations must send WEEE for treatment, while authorised operators separate or recover materials and keep records of the resulting material flows.

At EU level, solar panels are treated as electrical and electronic equipment for waste-management purposes and fall within the scope of Directive 2012/19/EU on waste electrical and electronic equipment, as amended by Directive (EU) 2024/884.

Under this framework, producers are subject to extended producer responsibility and are required to finance the collection, treatment, recovery and disposal of waste in accordance with environmental protection requirements. In Romania, the applicable regime is established by Emergency Ordinance No. 5/2015, as amended by Law No. 127/2024, which transposes Directive 2012/19/EU.

The current framework therefore establishes both the route and the allocation of responsibilities for panels reaching the end of their operational life. From a circularity perspective, however, the WEEE Directive remains an imperfect instrument. Solar panels are classified within the broader category of large equipment and are largely subject to the same recovery and recycling targets as other equipment in that category. Therefore, valuable materials are often lost due to improper handling or downcycling.



From waste management to industrial resilience

The importante of recovered materials extends well beyond the waste-management framework. Through the Critical Raw Materials Act – Regulation (EU) 2024/1252 – the European Union aims to strengthen access to raw materials required by strategic sectors and reduce dependence on geographically concentrated external sources. For 2030, the CRMA establishes, among other benchmarks, that the EU's recycling capacity should be able to produce at least 25% of its annual consumption of strategic raw materials.

In parallel, the Net-Zero Industry Act seeks to strengthen European manufacturing, with the objective that by 2030 EU manufacturing capacity should be able to meet at least 40% of the Union's annual deployment needs for net-zero technologies. The European Solar Charter complements this approach through measures designed to strengthen the competitiveness and resilience of Europe's solar PV industry and stimulate



demand for products manufactured in Europe.

Circularity cannot fully eliminate dependence on external sources. It can, however, diversify Europe's supply base and retain a greater share of the value embedded in materials already placed on the EU market. Viewed together, end-of-life management and the expansion of European manufacturing are therefore part of the same effort to strengthen the resilience of the solar PV sector.



Good practices

Through Horizon Europe, the European Union is financing projects that address both the recovery of raw materials from solar panels reaching the end of their operational life and the development of more efficient and competitive manufacturing processes.

Two examples are RETRIEVE – Reintegration of Photovoltaic Waste Back Into Manufacturing as High Value Products – and EMPOWER – Alternative Processes and Equipment for Advanced Manufacturing of PV Technologies to Boost the European Energy Independence. Together, the two projects address different parts of the same circular value chain, connecting recycling with manufacturing.

RETRIEVE focuses on the development of advanced solutions for recovering and valorising materials from end-of-life photovoltaic panels and reintegrating them into high-value applications. EMPOWER, meanwhile, focuses on strengthening manufacturing technologies and capabilities across the European photovoltaic value chain.

The Romanian Photovoltaic and Storage Industry Association (RPIA) is a partner in both projects, helping connect Romania's photovoltaic ecosystem with European research and innovation initiatives aimed at strengthening the competitiveness and resilience of the sector.





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Workforce: education and skills for the energy of the future

People Power. The Workforce Behind Romania's Wind, Solar and Storage



SEBASTIAN ENACHE,
Director, RenewAcad

Romania's renewable energy sector has moved from a niche pursuit to a national industrial priority. From 2024 onward, an updated National Energy and Climate Plan (NECP), a maturing grid and permitting environment, and a wave of utility-scale wind, solar and battery storage projects have moved the sector into a new phase.

Behind every megawatt of that pipeline sits a less visible, and more binding, constraint: people. A certified electrician, a GWO-trained wind technician, a battery-storage specialist or an OT-security engineer cannot be produced on demand – training cycles run from months to years.

This article draws on RenewAcad's 2026 workforce study, combining NECP projections, labour-intensity benchmarks, a workforce model and a survey of 504 residents across seven counties.

At a glance

- 19.2 GW of new wind, solar and battery storage capacity between 2026 and 2035, taking total renewable capacity from roughly 8.6 GW to 27.8 GW
- Approximately 35,600 net new direct jobs needed – close to 57,000 including the indirect supply chain
- 2030 is the peak hiring year, with close to 6,830 net new direct jobs, followed by an 87% drop in 2031
- Around 14,800 GWO-certified wind service technicians will be needed by 2035
- Women hold an estimated 15-18% of Romania's renewable-energy jobs today
- 82% of adults surveyed said they would take up free renewable-energy training if offered

The 2035 build-out: what 27.8 GW actually means

Under the updated NECP, Romania is committed to expanding installed renewable capacity from approximately 8.6 GW in 2025 to 27.8 GW by 2035 – a net addition of 19.2 GW. Solar PV accounts for the largest share (+9.6 GW), followed by onshore wind (+6.4 GW), offshore wind (+1.4 GW) and battery storage (+1.8 GW).

Solar and onshore wind additions are front-loaded, peaking around 2029–2030, while offshore wind is back-loaded, with commissioning expected mostly from the early 2030s onward.

From MegaWatts to people: Quantifying the workforce gap

Applying the model's labour-intensity factors to the NECP build-out produces approximately 31,200 net new installation workers over the decade, plus around 4,400 permanent O&M hires, for a combined total of roughly 35,600 net new direct jobs. Including the indirect supply chain, total employment impact rises to close to 57,000 jobs.

The permanent O&M workforce alone is set to grow from an estimated 1,900 technicians today to around 6,250 by 2035.

A decade at a glance: peak, plateau and cliff

Between 2026 and 2030, solar and onshore wind installation ramp up sharply, pushing net new hiring from roughly 3,780 in 2026 to approximately 6,830 in 2030. Then, in 2031, demand collapses to around 910 net new jobs – a fall of almost 87% – as solar and onshore wind targets have largely been met and offshore wind has not yet ramped up.

This "2031 workforce cliff" carries a specific risk: without proactive retraining and redeployment, workers hired during the surge could leave the sector precisely when offshore wind – requiring different certifications – begins to ramp up. Employers and training providers therefore have a narrow window to design cross-training pathways.

The occupational anatomy of the workforce

Solar PV accounts for roughly 13,600 direct jobs, onshore wind 12,200, offshore wind 7,200 and battery storage 2,600. Installers and mounting fitters make up around 70% of solar demand. In wind, GWO-certified service technicians account for 80% of onshore and 70% of offshore demand – close to 14,800 individuals by 2035. Battery storage is smaller but presents one of the most acute qualitative gaps.

Cross-cutting occupations include grid-integration and power-systems engineers, HSE specialists, SCADA operators and OT/ICS cybersecurity specialists. Formal recognition has not kept pace with the market: as of 2023, only three of roughly 20 distinct wind and solar job profiles carried official COR status.

Digital transition and the data-centre frontier

As wind, solar and storage assets become increasingly connected, the sector is acquiring the risk profile of critical digital infrastructure. Data centres are also emerging as a new claimant on the same clean power and grid skills.

This widens demand for grid-integration engineers, high-voltage technicians, storage specialists, SCADA operators and OT/ICS cybersecurity specialists. Digital and cybersecurity competence should therefore be embedded across training curricula from the outset.

Regional focus: where will the workforce come from?

The seven counties most exposed to utility-scale solar – Dolj, Olt, Gorj, Mehedinți, Vâlcea, Teleorman and Argeș – will need approximately 2,036 net new direct solar PV workers between 2026 and 2035.

Construction is a natural feeder pool, sharing electricians, welders and site labour with renewable-energy installation. Mining regions are another source of transferable skills. In the Jiu Valley, RenewAcad and Monsson are investing near the former Petrila mine in a components factory and battery-storage projects.

What the workforce itself says

A RenewAcad survey of 504 adults across the seven counties found that six in ten respondents would consider

Technology	Installation (person-years/MW)	O&M (FTE/MW)	One technician covers
Solar PV (Romania mix)	10.36	0.09	~11 MW
Onshore wind	5.10	0.44	~2.3 MW
Offshore wind	8.70	0.44	~2.3 MW
Battery storage (BESS)	4.50	0.04	~25 MW

Table 1. Labour-intensity benchmarks used in the RenewAcad workforce model (IRENA, SolarPower Europe, WindEurope; adjusted for Romania's technology mix).



a renewable-energy career, rising to 67% for photovoltaic retraining. Although 80% reported no direct prior experience, 82% said they would take up free training.

Financial security is close to a precondition: 68% expect a permanent contract, 69% a fixed schedule and 62% a minimum net salary of at least 5,500 lei/month. Cost, not distance, was the largest barrier to training.

The gender dimension: an underused reserve

Women hold an estimated 15–18% of Romania's renewable-energy jobs. Yet 61% of women surveyed said they would retrain for photovoltaic work and almost four in five would take up free training. The constraints are structural: limited visibility of female role models, mobility requirements and perceived qualification barriers.

A just transition: coal country and other restructuring sectors

Employment in the Jiu Valley coal sector has fallen from around 55,000 workers in 1989 to fewer than 3,000 today. A retraining programme run by Wind Power Energy together with RWEA had, by February 2023, certified 571 former miners and transitioning workers, placed 119 in jobs and supported a further 576 through training and skills validation.

Training infrastructure and foreign labour

RenewAcad has trained more than 18,000 technicians in over 14 years, operates the region's first GWO-accredited training centre and has been involved in efforts to formally recognise new renewable-energy occupations in Romania's COR. What is missing is scale, not a starting point.

Given the domestic gap, foreign labour is likely to remain a necessary complement to domestic training, especially around the 2029-2030 construction peak.

A sector that is going to keep growing

Three things stand out. First, the 2026 RenewAcad analysis points to roughly 35,600 net new direct hires



Technology	Net new direct jobs, 2026-2035	Incl. indirect (×1.6)	Dominant occupation
Solar PV	13,594	21,749	PV installer / mounting fitter (70%)
Onshore wind	12,173	19,476	GWO wind service technician (80%)
Offshore wind	7,232	11,572	GWO wind service technician (70%)
Battery storage (BESS)	2,606	4,170	Battery system technician (70%)
TOTAL	35,605	56,968	–

Table 2. Net new direct and indirect jobs by technology, 2026-2035, under the NECP baseline scenario.

through 2035, peaking at close to 6,830 in 2030 alone.

Second, the constraint is one of skills and certification, and it is already being worked on rather than merely diagnosed. What is missing is scale.

Third, retention through the 2030-2031 transition to offshore wind, and the ability to absorb workers as demand shifts from installation toward O&M, storage and digital roles, will determine how smoothly this decade's growth carries into the next one.

The workforce challenge is real, but it is the challenge of a sector that is expanding rapidly, not one that is stalling: Romania's wind, solar, storage and digital energy sector is going to keep growing through 2035, and the task now is making sure its workforce grows with it.

Preparing the workforce of the future





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Romania's energy sector is going through a period of change. After years in which the public debate focused almost exclusively on installed capacity, namely on the number of wind or photovoltaic MW added to the system, the market is now entering a phase of execution, operation and large-scale integration. This transformation is at least as relevant as technological progress, even if it is less visible. In this new stage, the success of the energy transition is no longer measured only in installed capacity, but in people's actual ability to design, operate, maintain and integrate these systems safely and efficiently.

From AIEE's perspective, the transition towards an energy system with an increasing share of renewables also brings a new set of skills requirements. Specialists are needed who can design and integrate these capacities into the grid, manage system automation and digitalisation, ensure their operation and maintenance, and respond to new requirements related to storage, flexibility and cybersecurity.

The skills that are becoming essential

The growing complexity of the energy system, driven by the accelerated integration of renewable sources, digitalisation and the increasing need for flexibility, will make a number of skills essential in the coming years:

- automation and control for hybrid systems and smart grids;
- predictive maintenance and diagnostics for equipment in wind and photovoltaic plants;
- storage integration and flexibility management within the system;
- dispatch and operation of an increasingly complex energy mix;
- cybersecurity applied to critical energy infrastructure;
- digitalisation and data analysis to optimise operations.

None of these skills can be developed exclusively in the classroom. They are built through direct contact with

industry, applied projects and exposure to the real challenges of the energy system. In this context, AIEE's role is to facilitate the connection between academia and industry, creating opportunities in which future specialists can understand not only what they learn, but also how that knowledge is applied in practice.

What AIEE's experience shows

Through the initiatives it has developed, AIEE has already created several strong bridges between academia and the professional environment, which can serve as a model for a broader sector-wide effort:

Energy Industry Career Forum (FCIE) - a flagship event which reached its 20th edition in May and facilitates direct dialogue between students in the energy field and industry employers; the evolution of successive editions shows growing maturity both in student interest and in the offering of participating companies.

Dispatcher for a Day - a practical exposure programme that brings students into direct contact with dispatch operations, precisely one of the skills identified as critical for the future.

AIEE Talk - a space for professional dialogue in which industry specialists share their career paths, giving young future engineers a clear view of the opportunities and development paths available in the sector.

Technical Forum - an annual technical event focused on identifying concrete solutions and exchanging good practices between academia and companies, with the 2026 edition placing particular emphasis on system renewal and grid modernisation.

AIEE Gala - Energy Professional's Day - an annual event recognising professionals in the sector, which contributes directly to the visibility and prestige of these careers.

From specialisation to interdisciplinary skills

One of the main challenges is the changing profile of the energy professional. While in the past a clearly defined technical specialisation could provide the foundation for a solid career, today's energy system increasingly requires the ability to work at the intersection of several fields.



Tomorrow's engineer will need to understand not only the technology they operate, but also its relationship with the grid, the energy market and the system's security and resilience requirements. Skills in automation, digitalisation, data analysis, artificial intelligence, cybersecurity, storage and flexibility management will become increasingly important alongside traditional technical training.

This transformation does not, however, make the fundamentals of traditional engineering less relevant. On the contrary, they become the foundation on which new skills must be built. Knowledge of electrical systems, energy processes, equipment and safety principles remains essential in an increasingly sophisticated system, where the impact of an operational error can be amplified exponentially and sound technical rigour remains irreplaceable.

Massive investment in renewables, grids, storage, energy efficiency and digitalisation are not only about infrastructure projects. It also represents an opportunity to rebuild the prestige of energy professions and to show young people that being an engineer, electrician or technician in the energy sector today means working with cutting-edge technology in a sector that is strategic to the country's economic future.

AIEE aims to remain a stable pillar of this strategic dialogue, not only as an organiser of events, but as a genuine bridge between academia and the concrete needs of industry. The quality of professional training is not a secondary issue in the energy transition: it is one of the real conditions for its success.

UPB provides education for the energy of the future



LĂCRĂMIOARA DIANA ROBESCU,
Dean of the Faculty of Energy Engineering, Politehnica București

The energy sector is undergoing an accelerated transformation driven by decarbonisation, decentralisation, increased flexibility, grid modernisation and digitalisation. At the same time, energy security and resilience are becoming increasingly important, while consumers are evolving into active participants. Energy efficiency, sustainability, smart energy systems, automation, artificial intelligence and data analysis are among the key elements of this transformation. Its success depends fundamentally on the availability of a well-trained workforce with skills adapted to new technologies and market requirements.

In this context, universities must adapt and modernise their study programmes so that graduates acquire learning outcomes that provide them with both solid professional skills and transversal competencies needed to meet current and future labour market requirements.

Romania needs cleaner energy, but also energy security and a stable and flexible system, while keeping prices affordable for users. The faculty's programmes provide training across the entire energy value chain, from energy generation from conventional and renewable sources to transmission, distribution and efficient use, while integrating skills in energy management, environmental protection, digitalisation and new technologies. Undergraduate education is complemented by master's programmes and doctoral studies in Energy Engineering.

To identify the skills required by future graduates, the Faculty of Energy Engineering has frequently organised meetings and debates with representatives of academia, the energy industry, professional associations and students. This dialogue has highlighted the need to maintain rigorous engineering training in the energy field, while integrating skills associated with the energy transition, digitalisation and the evolution of the labour market. In addition to technical training, it is important to develop transversal skills required for professional integration, including professional communication, teamwork, project management, critical thinking, adaptability, professional ethics and the capacity for lifelong learning.

The faculty has responded to these requirements primarily by updating its study programmes and course content. Topics relating to renewable energy, energy efficiency, smart grids, energy storage, hydrogen, digitalisation, SCADA





systems, nuclear engineering, environmental protection, the circular economy and ESG principles have been introduced or strengthened. Master's programmes have also been developed and updated in areas such as energy efficiency, renewable energy, digitalisation, energy systems management, smart cities and sustainable development.

However, the profile of the future energy engineer must be built together with industry. The relationship between universities and companies needs to go beyond recruitment and evolve towards the joint training of students through scholarships, mentoring, internships, laboratories, projects and the involvement of company specialists in teaching activities.

Together with its industry partners, the faculty develops a range of events, internships, technical visits, projects and laboratories equipped with modern technologies. Students work with applications covering renewable energy sources, small modular reactors (SMRs), SCADA systems, smart grids and automation. Since 2025, two dual-education programmes in renewable energy have been running, with a significant practical component delivered together with industry partners. Each year, EnergyFEST creates a space for dialogue between academia and industry, giving students the opportunity to speak directly with industry specialists, discover new technological solutions and learn more about potential career paths.

An important role is played by the Advisory Board of the Faculty of Energy Engineering, established in 2017 and comprising representatives of companies, public authorities, regulatory bodies, research institutes and professional associations. In 2026, the EDUBridge programme was launched with the aim of strengthening the link between the educational process and the professional environment by involving external specialists in teaching, practical activities, mentoring and the co-supervision of student projects.



The Skills Development Challenge in Solar PV and Storage



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Working Group Lead, GSC Skills Taskforce

1. A Capital Risk, Not Just a Labour Shortage

Solar photovoltaics and storage have become the single largest employer in the renewable energy sector. Most commentary on its skills problem focusses on labour supply such as too few installers, technicians and engineers to keep pace with deployment targets. That framing is accurate but incomplete. The more consequential effect of the skills gap is on risk management and impact on the cost capital itself. Financial institutions and insurers will focus on gaps in technical competency, not just technology risk, as a driver of how they price and underwrite solar and storage investments.

2. Where Risk Perception Actually Comes From

Financial insurers and insurers do not price solar and storage assets purely on panel or battery performance data. They price them on confidence in the people and processes around the asset. Whether engineering and procurement practices were sound, whether performance and degradation data can be trusted, and whether the supply chain behind the equipment is resilient enough to underwrite with confidence are all critical points of due diligence. Where that confidence is missing, risk is priced often more conservatively than the underlying technology risk would justify.

3. Why Conventional Responses Fall Short

Most of the industry's skills shortage sits in the roles that determine whether a lender can trust a project's numbers (system design, commissioning, grid integration, and operations and maintenance). These are the functions whose weakness drives the risk perception described above.

Whilst the default policy response has focused on training volume, more vocational places, more certifications, more installers. That response targets headcount, not confidence and assumes the constraint is too few people, when for a financial institution or insurer the real constraint is too little assurance that the people involved met a recognised, verifiable standard.

This is compounded by a lack of forward planning with most training tending to be reactive, in response



to a shortage rather than ahead of deployment curves. Therefore, training investment risks expanding the workforce without building the standardised, verifiable competency that changes project execution confidence.

4. The Intervention

The intervention is direct engagement between the solar industry and its capital providers on shared technical standards, common data frameworks, and structured dialogue that let lenders and insurers underwrite solar and storage with the same confidence they bring to established infrastructure classes. This is the role international bodies such as the Global Solar Council are positioned to play, not simply advocating for more training seats, but convening financial institutions and insurers to identify where technical knowledge gaps sit and building the frameworks that close them.

Given the scale of deployment required this decade, the industry cannot afford for capital to be systematically mispriced because of a competency gap. Closing that gap is essential for capital flowing efficiently to well-structured, high-quality projects and the sector's continued growth trajectory will depend as much on building a shared understanding of technical competency across the sector as a whole as much as on training the technicians who install the panels.

Following the Story of a Changing Industry

There is something slightly intimidating about changing the identity of an association that has represented so poignantly an industry for more than a decade. A logo can be redesigned relatively quickly. A name can be changed. But an identity needs to reflect where an organisation is today, where its industry is going and, perhaps most importantly, still feel familiar to the community that has grown around it.



ADRIANA PETRE,
Communication & PR RPIA, RWEA

Over the past months, I have had the opportunity to steer this process for RPIA as we prepared for a new chapter in the association's identity. We deliberately kept much of the process in-house, and that inevitably made us look more closely at RPIA itself: how it has grown, how its activity has expanded and how those changes reflect the evolution of the industry.

Storage naturally became part of that reflection. It is increasingly difficult to talk about the development of solar without also talking about flexibility, balancing and storage. The market has moved considerably in this direction, and our activity has followed, from the topics we address to the expertise and discussions within our community.

At the same time, we wanted the new identity to remain connected to RPIA. Solar needed to remain immediately recognizable, while storage had to become part of the same visual identity rather than feel like a separate addition. That thinking eventually shaped both the name and the logo, bringing the familiar solar element together with a new visual reference to energy storage. After more than a decade as RPIA, we are now ready for the next chapter.

Starting this October, RPIA will become Photovoltaic & Storage Romania.

Working on the new identity also offered a good reminder of how broad communication in renewable energy truly is. The sector sits at the intersection of policy, technology, investment and local communities, bringing together people with very different areas of expertise and perspectives. Navigating between them and understanding how they connect is an important part of

the job, and something I experience first-hand in my work across RPIA and RWEA. While the two associations represent different technologies and have their own identities and communities, their work often intersects through common projects, complementary events and many of the broader issues shaping the industry.

There is also a great deal to learn. Conversations can move quickly from policy to technology, financing, grids or local communities, often becoming quite technical along the way. I have learned to ask questions, turn to colleagues and members when I need to understand something better, and take the time to properly explore the subjects I work with. You cannot communicate something clearly if you have not first made the effort to understand it yourself.

Fortunately, this is an industry full of people willing to share what they know. Some of the best ideas come from simply listening to people with very different areas of expertise. Part of my job is to recognize those ideas, give them the right context and find opportunities to bring the people, projects and work behind them into focus.

Those opportunities can take very different forms. Alongside conferences, industry events and our more traditional communication work, there are plenty of other initiatives that allow us to approach renewable energy from a different angle, some of which I will mention below.

Through Solar Open Day at RPIA and Wind Open Day at RWEA, we open the doors of our members' photovoltaic and wind projects to students, local communities and the wider public. Visitors can see how a project works, meet the people behind it and better understand its relationship with the surrounding community and land. They can also see first-hand how renewable energy projects can work alongside agriculture, grazing and livestock, while supporting biodiversity.

This matters in an environment where renewable energy is still surrounded by misconceptions and, at times, disinformation. Sometimes the most effective communication is simply giving people the opportunity to see, ask, and understand for themselves.

Other initiatives take us into completely different territory. For five editions, RPIA members have formed our Solar Powered Team at the Bucharest Half Marathon and Bucharest Marathon. Running together has become a small tradition, bringing members together in a different setting and adding another dimension to the community around RPIA.

Beyond our own community, we have also built close relationships over the years with journalists and specialized media, industry and event partners, and European organizations. They keep us connected to conversations beyond our immediate membership and often bring new perspectives, expertise and people into our work. This becomes particularly valuable for projects with a broader scope.

The Code of Good Practice for Renewable Energy in Romania is one such project.

This year marks its third edition, following those published in 2021 and 2023. What began as an ambition to create a practical guide has grown into a reference point bringing together companies, institutions, experts and European organizations to map the challenges facing our industries and, more importantly, the solutions and good practices that can help renewable projects develop responsibly in Romania. For those looking at the Romanian market from abroad, it also offers a way of understanding an industry that is moving extraordinarily fast.

We are particularly grateful to everyone who has contributed to this edition and shared their expertise with us. The Code is ultimately built from those contributions and from a community willing to share knowledge.

The market will continue to move, and by the fourth edition some of the conversations on these pages will undoubtedly look different. That is precisely why documenting them matters: not simply to record where the industry stands, but to share what is being learned, what is working and what can be done better.



RPIA

Romanian Photovoltaic Industry Association

RPIA, the Romanian Photovoltaic and Energy Storage Industry Association, represents the solar and energy storage industry in Romania and companies within the associated value chains. The organisation actively participates in national and European policy-making processes and supports the development of a sector capable of increasingly integrating photovoltaic generation with storage solutions. RPIA's work covers investment, regulation, innovation, workforce training and the strengthening of local value chains, with a focus on energy security, flexibility and competitiveness.

MISSION

To support the sustainable development of the photovoltaic sector in Romania and to strengthen the entire associated value chain through dialogue, expertise and collaboration at national and European level.

MEMBERS

RPIA brings together around 70 companies and organisations from across the entire photovoltaic and energy storage ecosystem: from development, investment and construction to technology, services, operation and complementary solutions, including energy storage.

KEY MESSAGE

Solar energy plays a vital role in developing a more secure, competitive and flexible energy system, whilst generating investment and economic opportunities at a local level. RPIA helps to create the necessary conditions for the sector's accelerated development to result in a mature, robust and competitive industry in the long term.

BENEFITS FOR MEMBERS

RPIA members are directly connected to the dialogue shaping the evolution of the photovoltaic sector and have a common framework through which the industry's priorities and challenges can be brought to the attention of the relevant authorities and institutions.

The Association facilitates dialogue with key stakeholders in Romania and Europe, provides access to expertise and relevant information on legislative and market developments, and creates opportunities for collaboration and networking within the community. Members also benefit from regular analyses and updates, including via the RPIA newsletter.



RWEA
Romanian Wind Energy Association

RWEA, the Romanian Wind Energy Association, is the non-profit organisation that has represented the wind energy industry in Romania since 2008. The association plays an active role in national and European dialogue on energy policy, regulation, and research and development in the field of renewable energy. RWEA brings together stakeholders from across the entire value chain: energy producers and suppliers, turbine manufacturers, developers, contractors, service providers, training centres, and legal, financial and consultancy firms. Its membership includes some of the leading companies active in Romania's wind energy sector. Through institutional dialogue, analysis, communication, events and international cooperation, RWEA supports a stable market and the integration of new renewable technologies.

MISSION

To support the sustainable development of the wind energy sector in Romania and to strengthen a competitive industry through dialogue, expertise and collaboration at national and European level.

MEMBERS

RWEA currently brings together 65 companies and organisations from across the wind energy ecosystem: from developers, investors and technology manufacturers to providers of services, consultancy, finance and professional training.

At national level, Romania currently has approximately 3.3 GW of installed wind capacity, in a market that is entering a new phase of development.

KEY MESSAGE

Wind energy is one of Romania's strategic resources, playing an important role in increasing generation capacity, ensuring energy security and attracting new investment. RWEA helps to create the necessary conditions for Romania's wind energy potential to be transformed into projects, new capacity and long-term economic benefits.

BENEFITS FOR MEMBERS

RWEA offers its members a common platform for dialogue and representation in their dealings with the authorities, European institutions and organisations relevant to the sector. The association monitors legislative and regulatory developments, helps formulate the industry's positions and brings the sector's priorities and challenges to the attention of decision-makers.

Members have access to expertise, relevant information and an extensive community of professionals, as well as opportunities for networking and exchanging experiences through conferences, workshops and other dedicated initiatives. Cooperation with European and international organisations facilitates access to best practice and developments relevant to the industry, whilst communication and education projects contribute to a better understanding of the role of wind energy.

We would like to thank all the representatives of national and international institutions, our industry partners, our publishing partners and everyone who contributed to the production of the Code of Good Practice for Renewable Energy in Romania, 2026 edition.

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The market keeps evolving.

So does what good practice mean.

The energy transition does not stand still. Technologies mature, business models evolve, regulations change and new questions emerge. What represents good practice today will continue to be tested, refined and expanded through experience.

This Code is part of an ongoing conversation.

As the market evolves, so can this Code. A future edition will revisit these topics, featuring new lessons, new or familiar voices, and new priorities – reflecting the realities of the market and the experience of those shaping it.

