



CODE OF  
**GOOD PRACTICE** FOR  
**RENEWABLE ENERGY**  
IN ROMANIA

2021



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# Dear Reader,



**Carlo Pignoloni**  
CEO, Enel Romania  
President of the Board, RWEA

You may wonder why the Romanian Wind Energy Association (RWEA) decided to issue a Code of Good Practice for the industry now, in 2021, more than 10 years since the first wind energy projects in the country were commissioned. Wind energy, with more than 3000 MW installed, has become one of the major energy sources in the country and last year accounted for almost 14% of the total energy produced in Romania.

While this is a very important share, adding to the sizeable quota of renewable energy generation in Romania, it is quite safe to say that we are far from the country's potential. RWEA members demonstrated that they came to invest in the country for the long term, supported economic growth and technological advance and are part of the backbone of the energy sector. But there is much more left to be done. At the time when I am writing these lines, several new renewable projects have been announced in Romania by different companies, and the pipeline is expected to grow significantly. This is a welcome development, as Romania's generation fleet is ageing and needs to be replaced quickly and at optimal costs. The country, its economy and its people need access to affordable, reliable, sustainable and modern energy and one cannot overemphasize wind's importance.

This brings me to the purpose of this Code and its timing. In order to make this transition just, we need to think of all stakeholders and improve the quality of life of citizens-customers. As technology is making electricity increasingly cheap, stable and reliable, liberating it from the price fluctuations of fossil fuels, RWEA companies are here to help Romania achieve its tremendous potential. Furthermore, the vector of electricity enables us to use available resources more efficiently. In short, the benefits are enormous and with renewables we can decarbonize electricity and consequently numerous other sectors of the economy. This is a perfect example of technology being the climate's ally.

Romania has a huge opportunity to let its energy sector drive and support the growth of the economy. In other words, we are moving closer to the scenario that Thomas Edison dreamt of, in which one day electricity would be "so cheap that only the wealthy can afford the luxury of burning candles". We can now imagine the time when we will not think about "renewable" energy, but just energy, because all energy will be renewable.

**Let us all work together to achieve this.**



*N.B. by Renewable Energy Sources (RES) this code refers to wind and solar energy and does not include hydro energy nor biomass.*

**Welcome to Romania's first Code of Good Practice for Renewable Energy Sources (RES)!**

The present paper comes at a crucial time in the country's energy transition, to applaud past successes, highlight sector specific challenges and opportunities, and bring together

public and private stakeholders united by one simple mission – creating a framework that is both climate friendly and economically viable, for the generations to come.

RWEA (Romania's Wind Energy Association) compiled the lessons learned by a 10+ years mature industry to kick off a second wave of RES developments with a long-term vision in mind. The country's National Energy & Climate Plan (NECP) envisions an additional 6 GW of RES capacities needed by 2030, which in turn means immense economic opportunity and the birth of a national industry supply chain.

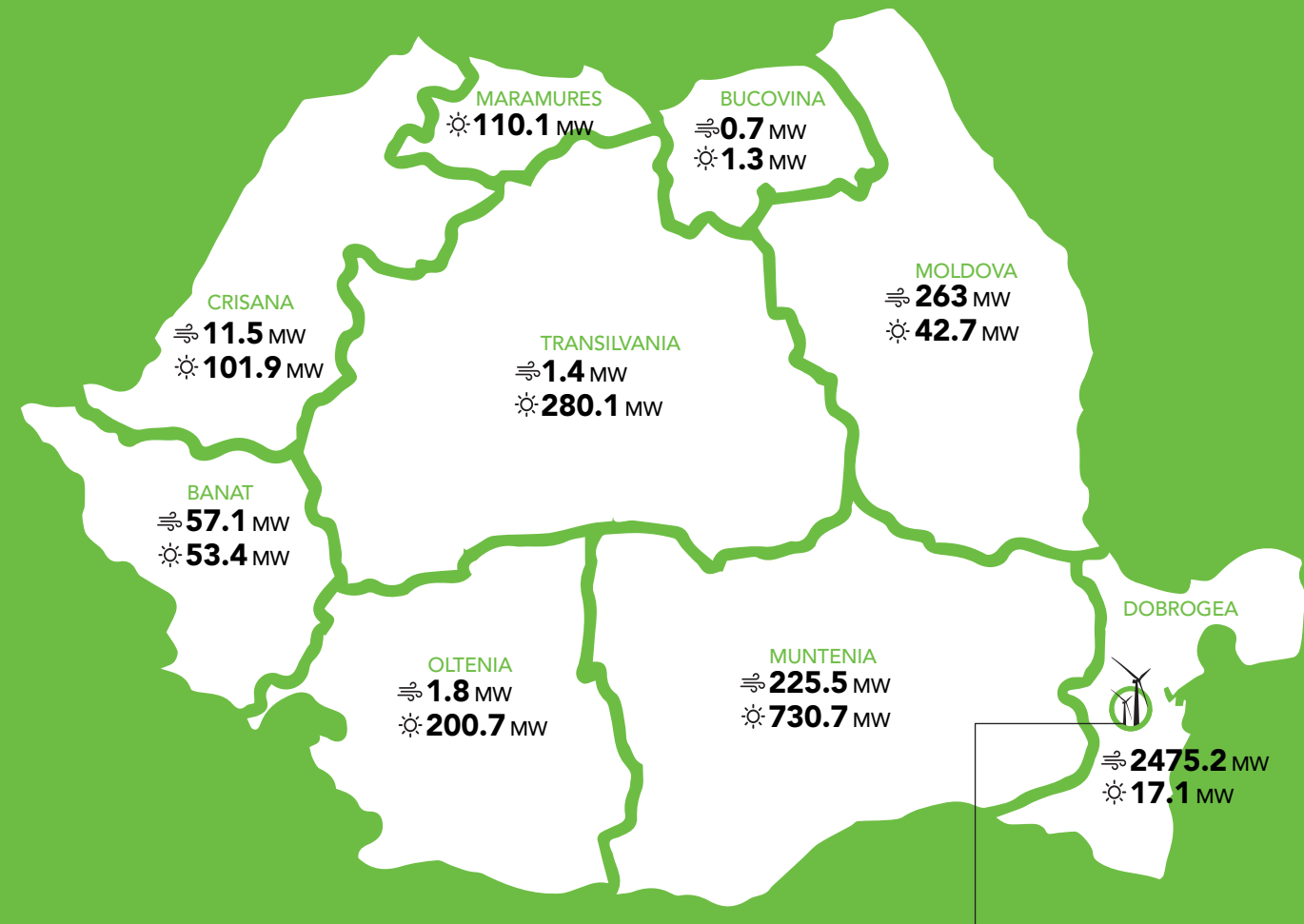
**The Code of Good Practice follows three overarching goals:**

- to guide existing and potential investors in the journey of setting up wind and solar farms in Romania, from permitting and community engagement to grid connection and decommissioning
- to extend a collaborative hand to public authorities, suggesting ways to integrate the EU energy transition agenda into Romania's national plans, benefitting the overall economy and future of our people
- to advocate for the variety of side industries that have room to develop in Romania and in this way attract new players to our national supply chain



# overview of renewable energy capacities in Romania

☞ wind ☼ solar



Due to the very favorable wind conditions Dobrogea dominates Romania's map in terms of installed wind farm capacity, capturing nearly 2,500 MW out of the country's total 3,000 MW installed power. Other areas such as Muntenia, Banat and Moldova present ample opportunity for development as well.

Romania boasts Europe's largest wind park: Fântânele Cogea (600 MW)

Solar farms are more evenly spread out between the regions. Muntenia is leading with 730 MW installed capacity, followed by Transilvania (280 MW), Oltenia (200 MW) and Crişana (101 MW). Most regions are suitable for additional solar farms thanks to generous environmental conditions.

## total installed capacities

☞ 3036.2 MW ☼ 1538.2 MW

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RES potential  
in Romania



development  
step by step



technology &  
workforce

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SUSTAINABLE  
ENERGY  
IS THE POWER  
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**a second wave  
of RES development**

# RES history at a glance

**2008** Following Brussels' call to action towards member states to contribute to the joint EU RES target for 2020, Romania commits to a share of 24% of renewable energy in its final energy consumption. The Government sets forth a **Green Certificates support scheme** to encourage development and sends the market into a period of effervescence - local and international investors alike gear up to seize the opportunity.


What follows is a period of growth and steep learning, as both authorities and industry players work to bridge the knowledge gap in a field that is just taking shape in Romania. RWEA also comes to life, providing a common voice to the needs of the industry.

**2011** The framework proposed by the Government is adjusted shortly after its launch, and legislative changes continue to be introduced in the coming years. Unfortunately the amendments made are mostly to the detriment of RES developers.

Romania quickly reaches **850 MW of installed power** from RES (mostly in wind energy capacities).




**2012** Fantanele-Cogealac Wind Park is finalized. Romania now boasts Europe's largest onshore wind park (600 MW).



**2014** Romania reaches **4GW installed power** from renewable energy sources.

In November, the day-ahead market in Romania starts operating in a coupled way with the markets in the Czech Republic, Hungary and Slovakia.

Industrial consumers are exempted from the obligation to purchase green certificates.



**2015** Romania reaches its RES target for 2020 ahead of schedule. Hydro brings a significant contribution.

**2018** First MW of renewable energy **storage** is installed in Romania.

**2019** Prosumer legislation enters into force. The Environment Fund Administration (AFM) agrees to co-finance up to **90% of the total investment** in rooftop PV systems for households, and makes available a budget of aprox. EUR 100 mil.

**2020** The final version of the **Romanian National Energy-Climate Plan (NECP)** is set forth.

Romania commits to a target of 30.7% overall share of renewable energy in its final energy consumption. This translates to another 6.9 GW of renewable energy capacities, on top of the existing 4,5 GW.



**2021** Energy efficiency & green energy become one of the six pillars of the **The National Recovery and Resilience Plan**. The initial negotiating budget is set at EUR 1,3 bn.

The market enters a **second wave of development**.

# the RES boom of the early 2010s

Romania's renewable energy industry now finds itself at an unprecedented point, one in which all signs are turning green and not only the environment, but the economy stands to gain immensely from the projected growth. In order to better understand how we got here, and what there is to look forward to, let's have a brief look at the past.

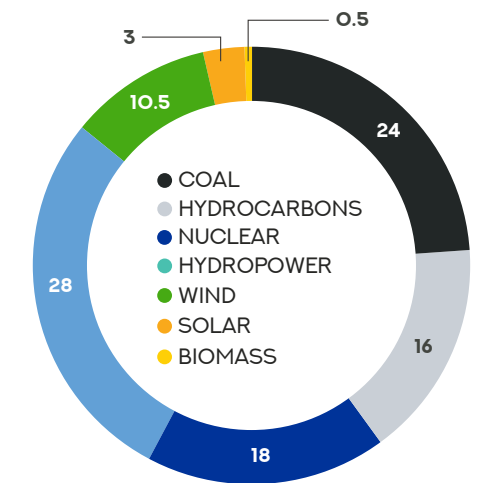
In 2009, Romania, a recently admitted member state of the EU, adopted Directive 2009/28/CE meant to promote the use of renewable energy sources. The RES Directive introduced the obligation of member states to contribute to the joint EU RES target for 2020, namely 20% of the final gross energy consumption.

In setting the national RES targets, which were negotiated member state by member state, the defining criteria were the following: the starting point and the country's RES potential, the domestic gross product and the final gross energy consumption, and the measures adopted in the past in support of RES.

Bearing in mind this criteria, Romania's RES target for 2020 was set at 24% of the national final energy consumption. This ambition was reflected in Law 220/2008, alongside a national system of subsidies based on green certificates (GCs) meant to incentivize production. In a nutshell, RES power producers were awarded GCs in proportion to the amount of energy they produced and the type of RES technology they used. GCs were tradable on a dedicated centralized market, at minimum and maximum price levels set by the law: EUR 27 and EUR 55 respectively, indexed with inflation. The RES support scheme was approved by the European Commission in July 2011, which promptly triggered an unprecedented wave of investment in clean power generation in Romania.

So strong was the incentivizing power of that support scheme that it soon became a victim of its own success. Already in March 2014 the support scheme was curtailed by means of governmental decision, which blindsided investors, especially in the solar PV sector. The turbulence that ensued was similar to what had happened in many European countries at the time, a period of boom and bust, followed by a general slow-down in development. The support scheme was applicable to RES projects commissioned prior to December 31st 2016, but producers are still able to gradually sell their certificates up until 2031.

Romania's electrical energy mix (% output)



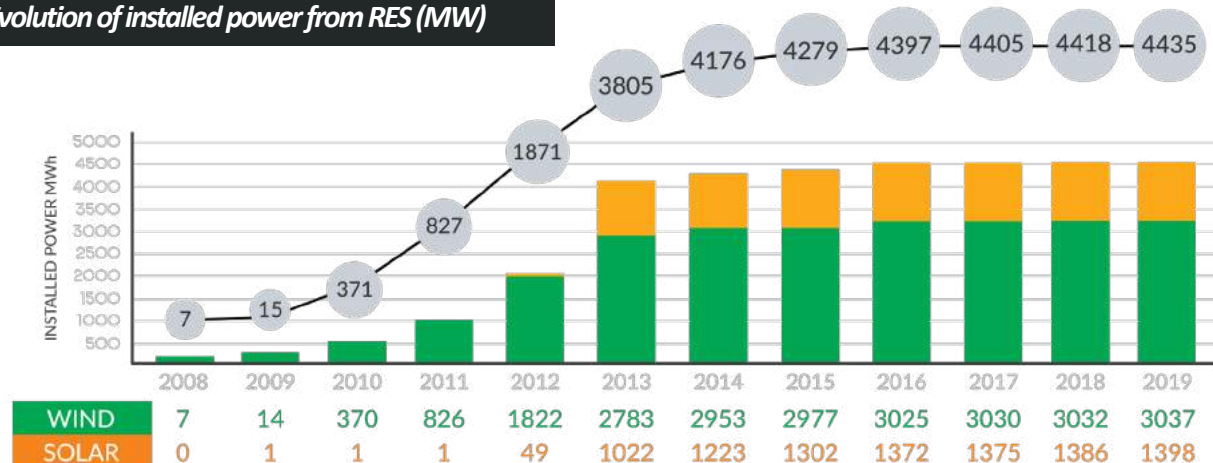
source: Investment Reports, 2019

Evolution of RES support scheme in Romania



The number of GCs awarded by the state was drastically curtailed in 2014.

Evolution of installed power from RES (MW)



source: Eurostat, 2020

## where to from here?

All things considered, the green energy segment had its share of challenges in Romania as in most other jurisdictions. However, new projects have been announced as of 2021, foretelling a new wave of developments. The overarching market fundamentals point not only to a repeat, but a surpassing of the 2010-2013 investment boom. This new phase of effervescence is driven by a now more mature market, with past lessons learned, superior technology and the regulatory backing it needs to propel it forward. The COVID-19 crisis, if anything, amplified the awareness of businesses, governments and citizens to the economic necessity to diversify energy sources.

The publication of this Code of Good Practice comes at an auspicious time to bring together shared experiences, current priorities and future recommendations for private and public stakeholders alike. Its ambition is not to serve an exhaustive or rigid to-do list, but rather to highlight more efficient, fair and forward thinking actions that benefit not only the industry, but Romania's economy and community at large.

# road to 2030: a decade of opportunity

Can Romania repeat an investment boom in renewable energy sources, even more expanded in magnitude and duration than the one of 2011-2015? Will the current ecosystem make way to new, competitive, modern-day means of RES support? And will the technical and administrative hurdles to RES integration into the power system be eliminated at a sufficiently high pace?

The answer to each of these questions is yes, and the reason has to do fundamentally with the EU's grand vision to decarbonize the continent by 2050: the European Green Deal. We are talking massive investments in green and environmentally friendly technology, energy efficiency, and a move towards a clean, circular economy. In effect, as of 2050 any remaining GHG emissions in the EU's economy would need to be balanced by carbon sinks. The proposed regulation also introduced National Energy and Climate Plans (NECPs) until 2050 calling on each country to draw an action plan and commit to these common goals.

In 2020, the European Commission also released two game-changing strategies: the *EU Strategy on Energy System Integration* and the *EU Hydrogen Strategy*. The underlying idea of these two documents is that renewable energy sources offer proven and scalable solutions for the decarbonization of over 60% of the final energy consumption. How? By electrifying sectors such as transportation, heating as well as certain industrial processes.

In December 2020, the European Commission agreed to raise the 2030 GHG emission reduction target to at least 55% compared to 1990, as part of the European Green Deal.

## Romania's RES ambitions for 2030

**30.7%**

share of energy from renewable sources

**6.9 GW**

new renewable energy capacities

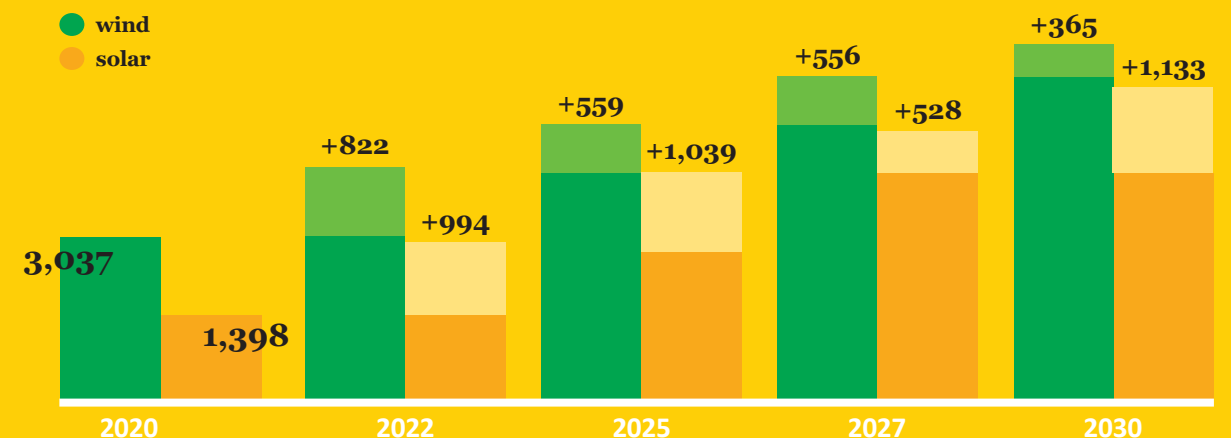
# how does the European Green Deal impact Romania?

The final version of the Romanian National Energy-Climate Plan commits to 6.9 GW of wind and solar power by 2030, on top of the existing 4.5 GW, potentially turning Romania into a leader of RES development in Central and Southeast Europe.

According to the NECP, the total investments needed for this transformational process would amount to more than EUR 22 bn (including other investments in the grid and conventional capacities), an order of magnitude that makes investments in clean energy a pillar of economic development and industrial strategy.

To meet the overall RES objectives and the intermediary trajectories, the NECP proposes the following capacities to be installed in wind and solar investment projects:

## Additional installed capacity 2020-2030 (MW)



Besides new capacity, investors may consider repowering part of the existing renewables fleet in the next ten years, approximately 3 GW of wind, as well as close to 1.5 GW of solar PV.

At the end of 2020, the European Commission published its assessment of the NECPs and the recommendation for Romania is to increase its level of ambition regarding the share of energy from renewable sources from 30.7% to at least 34%. But this percentage is likely to end up even higher because Romania must adjust the NECP by 2023 to reflect the European objective of at least 55% reduction in greenhouse gas emissions by 2030.





## Dan Drăgan

State Secretary  
Ministry of Energy

### In what ways does the Ministry of Energy plan to contribute to the development of RES capacities in Romania at this point in time?

First off I would like to re-emphasize that the Ministry of Energy and the people that are part of the current administration, including myself and Minister Popescu, support renewable energy and see it as a vital component for the future of our country. It was in our responsibility to develop the National Energy and Climate Plan - according to it, by 2030 we will install another 6.9 GW of RES capacities, to meet the 30.7% target we assumed. As you may have noticed, in the past few months several companies in which the state has a stake have announced plans to invest in wind and solar projects. We find it important that all stakeholders participate in this wave.

### The EU has recommended an even more ambitious target for Romania, of 34%?

We stay up to date with the debates that are taking place at EU level regarding the climate neutrality plans. No doubt Romania is one of the states that will require an accelerated development, but this must be done in accordance with the possibilities of the energy

system. The 6.9 GW make for an ambitious objective and requires considerable investment. The NECP will indeed be re-evaluated before 2030 (most likely in 2023) and the way forward will not be one of reduction, on the contrary, it will probably show even more openness towards RES produced energy.

### Even though some technologies have reached grid parity, CfDs are seen as very useful by the industry - how far ahead are you in their implementation?

Indeed many technologies have reached an LCOE (levelized cost of energy) that allows them to function competitively on the market, but this doesn't apply to all, depending on the operating time and the price per MWh. In this sense the Ministry is working with a team of consultants on a first draft for CfDs. A first evaluation will be launched publicly towards the end of this year.

### What are the specific intentions of the Ministry when it comes to offshore wind and hydrogen?

In the offshore area there are already several companies (including partially state owned ones) that have announced their intention to develop capacities in the Black Sea. But there



are certain legislative steps that still need to be taken before we are ready to kick off projects. We also noticed a strong interest from Romanian companies to become part of a hydrogen supply chain, together with methane gas. By looking at what other countries have done in this area we will elaborate a strategy for hydrogen. I estimate that the first ideas and elements of the strategy will be launched by end of this year.

### One key mission during this wave of development is to grow the national supply chain. Does the Ministry plan to support the industry in this process?

We trust that together with the Ministry of Economy we can come up with a few good directions to help develop this industry segment. It is essential in our view to collaborate with industry members on such topics, on our side we are happy to offer support where we can.



**We want all companies involved, from developers to component producers, to trust that the Ministry of Energy is open to discussions and committed to helping the market develop, in accordance with the strategies in place at both a national and European level.**

# thoughts from the industry



## Adrian Borotea

Strategy & EU Agenda Director, **CEZ Romania**  
Executive VP, **RWEA**



*Our portfolio will remain focused on the needs of the local communities it serves, especially now that we have the support of a strong shareholder. We plan to invest for the long term to future-proof the distribution infrastructure, and enhance its reliability, efficiency and safety.*

*We also see an opportunity to consolidate our leadership position in the Romanian RES market. Our business wants to play an important role in achieving the country's goal to install 6 GW of renewable energy capacity over the next decade.*



*We started with the acquisition of a small 7.5 MW solar energy project in Stănești, but the ambition is to have over 500 MW in renewable energy by 2025, either through acquisitions or through our own development efforts. In this effervescent market, in which authorizations for old projects are being resumed, Electrica Furnizare is prepared to join the wave.*



## Florin Gheorghiu

Director  
**Enel Green Power Romania**



*The speed with which we execute projects and put them into operation is the defining element of RES technologies, and what sets us apart from the other technologies present on the market.*

## Olimpia Vădean

Financial Manager  
**Verbund**



*Verbund shelved its development activity in the past few years but things are different in 2021 - we already started the reauthorization process for our 57 MW project and the intention is to expand our presence well beyond this.*



## Luca Giacomelli

Romania Area Manager  
**HeliopolisRO**



*Our roots are in engineering and sustainable development. Starting with 2009 in Italy and 2011 in Romania, we have been active in the field of renewables, developing and building a variety of wind and photovoltaic installations. We are currently developing a 500+ MW pipeline in Romania. We believe in the potential of this country and particularly in light of recent EU directives are confident its national RES capacity will increase.*



## Radu Enache

Project Development, **WPD**  
Board Member, **RWEA**

*In addition to achieving sound technical success, we want to make sure that our projects follow the best ethical practices. They must have a genuinely positive impact on the community, and to this end we collaborate with "Local Action Groups", after all they are most familiar with local needs and priorities.*

*We also consider all aspects surrounding environmental protection, even those not required or specified by the law. We consider that it is ours, the industry's responsibility, to make sure that the projects we engage in have the smallest possible environmental footprint. We are optimistic for the stage we are in and committed to developing significant capacities in Romania in the next 10-15 years.*



## Andrei Manea

Board Member, **RWEA**



*A particularly favorable environment for renewable energy is taking shape in Romania, but a great deal of work remains to be done. Projects must be excellent from both a technical and economic point of view, if they are to access support schemes such as CfDs, market mechanisms like PPAs or simply to function on the competitive market. Half hearted efforts are no longer an option in this new wave.*

# creating national value

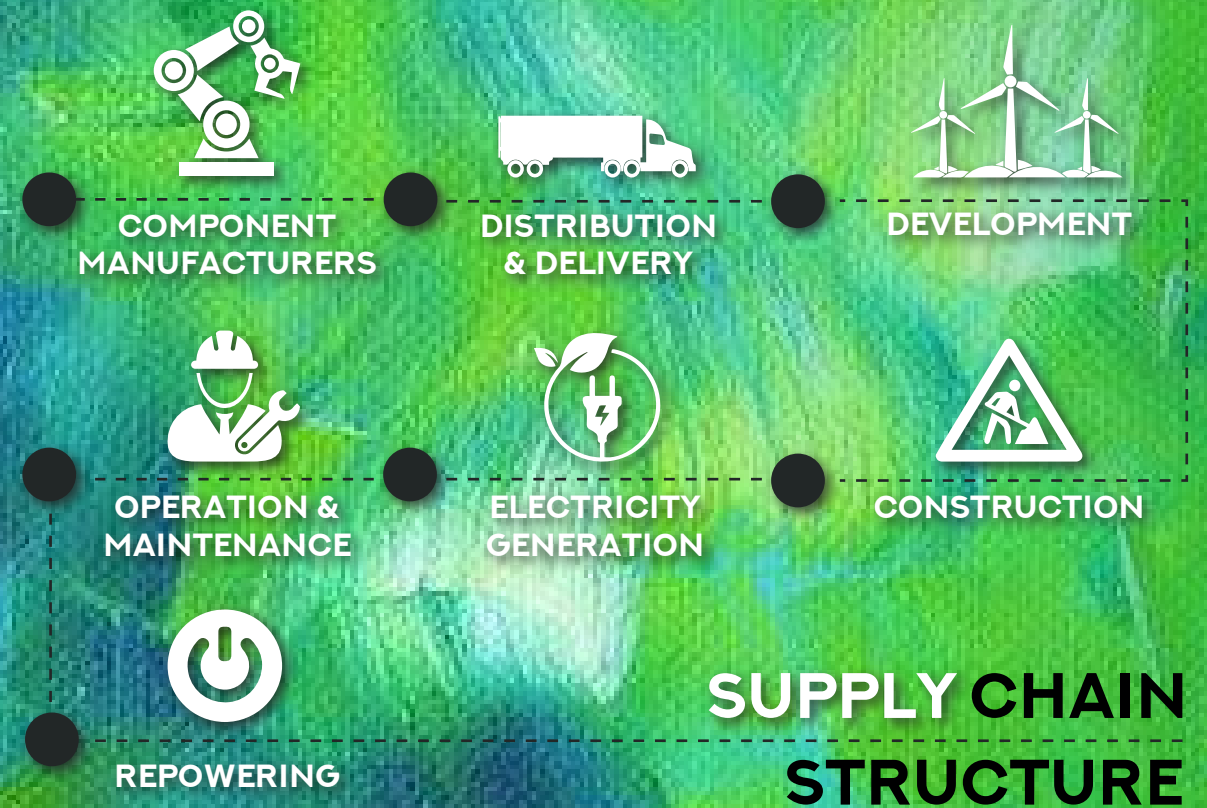
The first wave of renewables development brought associated investments of more than EUR 8 bn. However, the Romanian business environment was not yet ready to capture a significant share, since most of the components were imported, leaving development, construction and the O&M side to international actors. With this new wave of development, the Romanian economy has come into its own and it is now high time for it to capture a significantly larger share of value creation.

The opportunity for a strong local supply chain is rooted, on the one hand, in the fact that already installed capacities require progressively more complex maintenance work, and repowering operations are on the horizon. On the other hand, Romania will need significant resources (financial, human and technical) to install new capacities (be they photovoltaic, onshore or offshore wind), resources that the country does not currently have. Sourcing components and services from international markets is an option, but this comes with a multitude of disadvantages, from high transportation costs to long purchasing timelines. Producing components for wind turbines or PV panels, software or storage equipment are just a few examples of what can be done here, and that can contribute to the broader development of the Romanian economy.

So far there are local productions sites for bearings and forgings, along with ones for generators and electrical control systems for turbines. In addition, Romania benefits from the experience of a wind turbine technician training center in Constanța, that has been producing experts covering the needs of multiple regional markets and is already preparing offshore technicians.

In the case of a sustained development of offshore wind in the Black Sea, Romania has a major asset in Constanța Harbor, that components manufacturers can take advantage of for transportation and shipping purposes. In addition, integrating new renewable energy capacities opens opportunities for developing the clean transport sector (including charging infrastructure), as well as energy storage solutions, allowing battery and hydrogen value chains to be developed at the national level, with applications also in decarbonizing heavy industrial processes, besides sustainable transport.

**As dwindling technology prices put pressure on the cost of labor in Western Europe, it makes ever more sense to relocate part of the manufacturing chain towards Eastern Europe.**



Throughout their positions and participation in public events, such as RESInvest, the Romanian renewable industry constantly called for support to attract and develop local value chains, based on the size of the national and regional markets. Romania finds itself at a crossroads, and growing the local supply chain means taking the road to slowly closing the socio-economic gap with Western European countries.

Undoubtedly, the RES sector has a significant potential of offering quality, well-paying jobs, but smart and forward-looking state policies must be adopted in order to create the right investment environment and the needed human capital.

## ways to attract new manufacturers & service providers

An efficient promotion to domestic and foreign players of the timely opportunity for a RES supply chain in Romania (i.e. through programs such as RESInvest initiated by the industry in 2021).

A reliable forecast of the needed volumes of equipment and services to create long term visibility for investors.

An incentivizing national framework (eg. green financing instruments, tax incentives, minimum local content).

Training & recruitment programs to expand the available talent pool.



**Sorin Poteraș**  
General Manager  
Schaeffler Romania

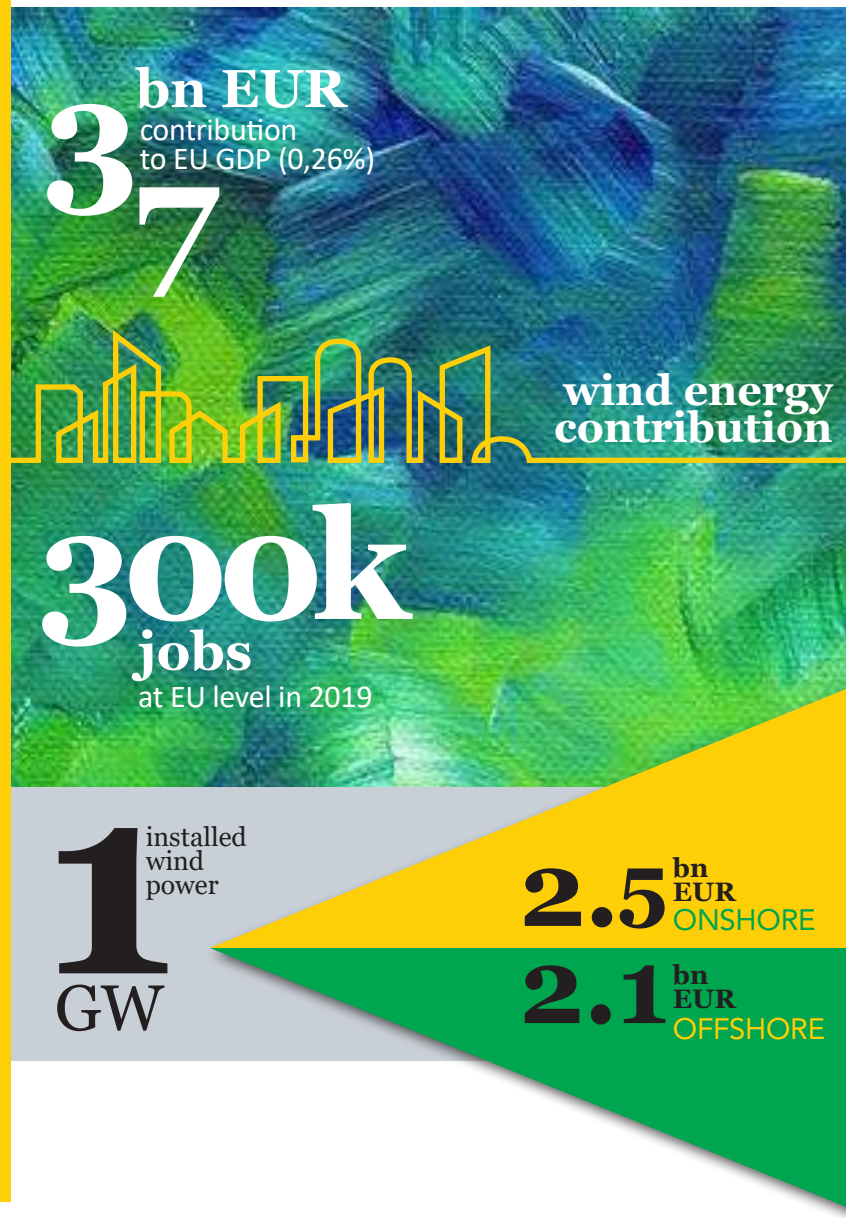
We own three production units in Romania, one of which is fully dedicated to large bearings. It handles both mass-produced pieces as well as wind turbine solutions, delivered to global customers. The current global context raised challenges in terms of supply of raw materials and components - in general we source them from external partners, but we would like to see local supply chains developing here as well.

Our experience in Romania has been positive overall, it provides an environment fit for development and a well trained and competitive workforce.

WindEurope Study, 2019

## wind energy and economic recovery in Europe

The wind energy industry contributed more than EUR 37 bn to the EU's GDP (about 0.26%). Over EUR 23 bn came as direct contribution and EUR 14 bn indirectly, for both onshore and offshore activities. Wind turbine manufacturers and developers have the highest share of contribution to the GDP, followed by manufacturers of parts and components, offshore substructures and service providers. In 2019 wind energy was also responsible for the creation of over 300,000 jobs, a quarter of which in the offshore segment.



Deloitte Study, 2019

## renewable energy in Romania: potential for development by 2030

For the analyzed period 2021-2030 the overall impact generated by wind farms in the Romanian economy amounts to an estimated added value of EUR 5.47 bn. The direct impact (EUR 2.52 bn) includes the investments and development activities for wind power plants and the indirect impact (EUR 2.95 bn) represents the sum of all activities carried out by the suppliers and subcontractors of wind power plants.





**Zoltan Nagy-Bege**  
Vice-President  
**Romanian Energy Regulatory Authority (ANRE)**



**Investor confidence in the Romanian renewable energy market has returned and we want our actions to prolong this sentiment.**

**The RES industry is enthusiastically preparing for a second wave of development. How does ANRE plan to support industry members in this process?**

We would like a better control of technical connection approvals, and more transparency regarding areas where there is still available capacity. We started an inventory recently to understand just this, what are the spots where new capacities can be integrated, relatively quickly and without additional investment. We have already gone through a few rounds of reporting and every week the available capacity decreases, a sign that investors' interest is very high.

The main challenge is that a large share of investors and developers want to place their projects in areas where the wind and solar potential is at its maximum (Dobrogea), but the access is fairly limited because there are already numerous capacities installed.

We also want to change the way in which the available grid capacity is contracted, we are considering a model based on auctions. Just now we are in the process of selecting a consultant to put together a study that weighs the advantages and disadvantages of this model, and ways in which it could be implemented. The conclusions will be ready in about three months (July), including proposals for alternatives in case auctions don't prove to be the best way.

**Why do you think that an auction-based mechanism is the most likely to work? And what are the associated risks?**

I am concerned that if we simply publish this data (important for any investors/developer) we will only increase the value of the land around those points. So it would be useful to have a mechanism that prevents that. In the same time we want to avoid the phenomena that took place in the 2010s, when we reached a connection volume way higher than the available capacity: we ended up with about 5000 MW built, however, the connection agreements that had been granted suggested a total of over 15.000 MW. We want projects to be more realistic this time around.

**Romania has had a slower path than other countries in terms of bilateral contracts, what can investors currently rely on from this point of view? And how do you expect changes in the balancing market to impact them?**

The good news is that starting with January 1st 2020 the EU Regulation 943 which allows bilateral agreements (PPAs) has entered into force, and it is directly applicable to all member states including Romania. Meanwhile we also defined the concept of "long term contracts" as those longer than a month. In theory, anybody who wants to conclude a PPA can do so, the only condition is that they obtain a producer license before their first delivery.

So for us the situation is clear, this type of agreement is permitted, but there are still some issues that leave market participants reluctant. Indeed, Law 123 continues to stipulate that trading on the centralized markets is mandatory. GEO 74/2020 did modify this law, in a way which allows the conclusion of PPAs, but only for capacities installed after June 1st 2020. This is an obvious discrimination against older capacities, in fact the European Commission has already signaled its disapproval. The solution to all these issues may come when Directive 944, essentially the new law of electricity, is transposed into national legislation.

Regarding the balancing market, the move to a single price and a 15 minute settlement period places Romania among the first in Europe, as the actual implementation deadline was 2025. The month of February was closed under this model and, while it is early to draw solid conclusions, the signs are all positive: compared to January the balancing costs went down, and we hope this continues to be the trend.

**The Government is considering Contracts for Differences (CfDs) as an option for support. Do you see it is a useful tool to encourage the development of renewables?**

I don't think mature technologies still need a support scheme, it would be difficult for end consumers to take it on and the industry can nowadays support itself through other means. For instance, I hope to see as many projects as possible that are funded with European money, especially now that we have so many options available. I would also note that a balanced mix remains crucial - if we pursue one single direction this balance breaks. We need renewable energy as well as gas capacities, and there is plenty of interest for both.





# unprecedented financial instruments

**We have established that Romania is pursuing very ambitious objectives and the overall economy stands to gain immensely as a result. The question that remains – how can these efforts be financed? All things considered (development works, technology, grid improvements etc.) the investments needed are estimated around the EUR 22 bn mark.**

While this may sound intimidating, the current wave of development has access to financing instruments like never before. First off, the EU has assembled a series of funds and mechanisms, some fully dedicated to clean energy development and others that point to this sector as a pillar of the future. Adding to this, financial institutions have become reluctant to support conventional sources of energy, turning their attention (and funds) towards RES instead. And investors are also ready to pour in their own money, even more so if the state decides to lend a helping hand through support schemes or well thought out market instruments.

## EU funds & mechanisms



For the massive investments that are necessary to achieve these targets, Romania, along with other members states, benefit from generous EU financial support.

### the Modernization Fund

An essential financial instrument is the Modernization Fund, gathered from revenues obtained from auctioning 2% of the total ETS allowances that all of the members states of the EU pool together for 2021-2030. Its precise destination is that of bolstering the clean energy transition in Eastern Europe through investments in renewable energy sources, energy efficiency, digitalization, expansion and modernization of the power grid, battery storage etc.

**6-8  
bn. EUR**

**Modernization Fund  
for clean energy  
investments in  
Romania**

Romania's share of the Modernization Fund is 200.766.096 ETS allowances which, pending on the market value of ETS along this decade, could raise some EUR 6-8 bn in cash for clean energy and energy efficiency investments. This makes the Modernization Fund the most important EU financial instrument for Romania. Now, in order for Romania to be able to timely and efficiently access the Modernization Fund, it is paramount that the Energy Ministry does its part.

### the Just Transition Fund

The Just Transition Fund (JTF) mostly seeks to overcome the economic and social costs of the climate transition in the most vulnerable coal and carbon intensive regions. In order to unlock funding from the JTF, EU countries will have to prepare their Territorial Just Transition Plans and pinpoint which areas will be most affected. Romania certainly has its share of regions that fit the bill, Jiului Valley being just one example.

### the Recovery and Resilience Mechanism

The Recovery and Resilience Mechanism gives Romania access to EUR 29.2 bn. One of the six pillars of the plan, Green Transition, sets out a dedicated category for renewable energy and energy efficiency. Projects can benefit from financing if they are mature projects, with advanced technical and economic documentation. They also need firm commitments from final beneficiaries to conclude public procurement contracts by the end of 2022 for at least 70% of the allocated amount, and the rest by the end of 2023.

# market mechanisms & financial instruments

Power Purchase Agreements (PPAs) have been long awaited by the Romanian RES community and 2020 brought a series of good news on the matter. And while a public support scheme is not very likely, authorities have been entertaining the idea of Contracts for Difference (CfDs).

## Power Purchase Agreements (PPAs)

PPAs are very straightforward for small scale installations of up to 3 MW – they can be negotiated directly with local authorities and suppliers and concluded outside centralized markets. For capacities beyond this mark some clarifications are still needed. As of 1 January 2020, by virtue of the EU Regulation 943/2019, PPAs are legally allowed in all EU member states. This, however, has not been fully reflected in the Romanian law, which has deterred market participants to close PPAs out of legal insecurity.

ANRE made efforts to clarify the matter in 2019, when they released an order to say that long term contracts are allowed over-the-counter, outside of OPCOM's centralized markets, as long as they respect certain rules. The Authority also defined long term contracts as those "longer than a month". Later in 2020 the Government formally introduced PPAs, for all RES farms built after June 1st 2020. In September 2020 a new trading platform introduced „centralized long-term PPAs”, whereby investors can register and trade electricity without having a producer's license.

### The Energy Law also received a few helpful updates:

In order to facilitate investment financing, producers can contract electricity even if they do not yet have the license in place. They are, however, required to obtain it at least 60 days before the first delivery.

Market participants who combine electricity produced from multiple energy sources and those who combine the electric loads of several customers can enter into bilateral agreements for energy aggregation.

## Contracts for Difference (CfDs)

At the time of writing, Romanian authorities are pondering a support mechanism for „low-emissions energy sources” (i.e. nuclear power and RES). They are drafting amendments to the Energy Law and to the ANRE and OPCOM secondary legislation to accommodate CfDs and provide investors with the right tools to secure revenues.

In the initial CfD mechanism proposed by the authorities in 2019 producers benefitted from a fixed price level known as a “strike price”, which reflected the cost of investment in a particular technology. An ex-ante “reference price” would be established annually, calculated on the basis of the average prices recorded on the centralized markets in previous years. Producers would then move to selling electricity on the competitive market - if the price obtained was below the strike price, they would receive a payback for the difference. On the flip side, if the market price was higher than the strike price, CfD beneficiaries would have to reimburse the counterparty.

## the role of national financial institutions

To ensure the financing needs of the European Green Deal, a significant share of funding must be covered by private investments and financial institutions. One idea is to set up a national promotional bank to help issue and trade green bonds, and access funds from investment banks such as the EIB and EBRD.

A step in the right direction was in fact taken by the National Bank of Romania, that is currently preparing a report due mid-2021 on the perspectives for green financing at national level. This is happening through consultation and parallel working groups on specific topics. The industry is involved through RWEA, side by side with government representatives, the Romanian Presidential Administration, EIB, EBRD, the World Bank, commercial banks, and relevant NGOs.



**Cristina Ghimbovschi**  
Head of Project Finance & Financial Analysis  
BCR



*We need to hedge against risk. In this respect we welcome PPAs or state support schemes such as CfDs that add revenue predictability.*

**In terms of investors we favor those who:**

*have an excellent understanding of the market and an intelligent approach to managing risks*

*carry a medium or long term vision (“here to stay”)*

*are assisted by consultants with a proven track record, that can attest to the project's viability*

*use proven technologies, as opposed to those that are still in a pilot phase*

*have an overall diversified portfolio*



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# RES development from A to Z



# 1 understand the legislation



# 2 choose & secure your location



# 3 engage the community



# 4 obtain the necessary permits

# 5 register to sell electricity



# 1 understand the legislation

Legislation can make or break a successful energy project (and it has!) so one of the first things to pay close attention to in this business is the regulatory and legal framework that defines the industry. Romania's laws have undergone certain amendments in the past 13 years since renewables first set up shop in the country, aligned with the European acquis, but also adapted to market conditions. The civil law system treats local and foreign investors equally and is welcoming of overseas investments.

*\*References made to the normative acts in this section include their most recent amendments (up until May 2021)*



## Foundation of RES Development in Romania (Law 220/2008)

Law 220/2008 is ground zero, or the birth of a framework for renewable energy in Romania. The law creates the necessary context to encourage investors to move into RES, including through the introduction of a green certificate quota support scheme and priority off-take. The support scheme is applicable to RES projects commissioned prior to 31 December 2016. Producers benefiting from this support scheme are still able to gradually sell their certificates up until 2031.

## Technical Conditions for Grid Connection (ANRE Order 51/2009 and ANRE Order 30/2013)

This order is meant to let investors know what minimum technical requirements must be met by wind and solar power plants connected to the grid to operate safely and other useful related matters.

## Rules for operation of electricity generation and storage capacities (ANRE Order 80/2013, as amended)

This document provides the general conditions under which the license is valid for the commercial operation of electricity generation capacities and, where applicable, heat produced in cogeneration. This also includes inter alia storage facilities added to electricity generation capacities, electricity market obligations and electricity measurements, the relationship with the transport system operator (TSO) and OPCOM, financial warranties and specialized personnel, data communication to authorities etc.

### Exemption of Certain Consumers from Supporting RES (Governmental Decision 495/2014)

Certain large industrial consumers are exempted from purchasing their otherwise required quota of green certificates in order to maintain their competitiveness. Similar to other European countries, this exemption was notified as state aid and applies until 2024 for an estimated 300 industrial beneficiaries.

### Licenses and Authorizations in the Electricity Sector (ANRE Order 12/2015)

This document showcases key rules regarding the setting-up authorizations for RES capacities and commercial exploitation licenses, amendments and transfer of such authorizations and licenses, as well as other rights and obligations for owners of RES capacities.

### GCs Mandatory Annual Quota (ANRE Order 157/2018)

Investors that benefit from the GCs support scheme enjoy transparency regarding the calculation of their annual mandatory quota. This document provides details about the calculations for the year of analysis, and the next year as well in situations of GCs quota non-compliance.

### Welcome Prosumers (ANRE Order 226/2018)

The year 2018 marks the introduction of the “prosumer” concept in Romania’s legislation, allowing individuals to produce their own green energy and inject any surplus into the distribution grid. They can sell the energy directly to the main supplier and the price they received is equal to the weighted average price on the day-ahead market in the previous year.

## Romania’s Energy Strategy 2019-2030 with a 2050 Perspective

In November 2018 Romania’s Ministry of Energy released the country’s new energy strategy, which had been long awaited by the industry. The need for new investments (to upgrade obsolete production capacities, introduce new technologies with low environmental impact, develop interconnection installations etc.) is evident from the pages of this strategy. The document was amended in 2020 and is still awaiting approval of its final form.

### National Plan for Energy and Climate Change 2021-2030 (NECP)

The NECP was submitted to the European Commission in April 2020. Its policies and measures pursue the decarbonization objective assumed by Romania as a member state. Romania commits to a total of 30.7% of RES-electricity in its final energy consumption mix by 2030.

### Licensing Energy Storage Installations (ANRE Order 198/2020)

Yet again, investors move faster than the legal framework and in 2018 and 2019, the first electricity storage capacities are installed as pilot projects. The legislation for licensing the energy storage installations enters into force only in November 2020.

### Alternative Fuels Infrastructure (Law 34/2017 and ANRE Order 201/2020)

Romania has a relevant history of hydrogen research and production. In 2017 the country issued the main rules for alternative fuels infrastructure, and in January 2021 the legal framework for licensing hydrogen installations.

### Single Imbalance Price (ANRE Order 213/2020)

Romania aligned its balancing market with the EU’s recommendations regarding a new method for settlement of single-price imbalances: the new method applies to a single settlement price, and a 15 minute settlement interval.

### New Trading Possibilities (Law 155/2020 amending Energy and Gas Law)

In order to secure financing, investors now have access to a new trading possibility i.e. to conclude PPAs without having a producer’s license (but subject to obtaining it within at least 60 days before their first delivery). As an exception from trading on centralized markets, economic operators that mix various electricity sources or the loads of several clients are allowed to conclude bilateral agreements for aggregation with owners of these sources or their customers and suppliers.

### A New OPCOM Centralized Market for Conclusion of PPAs (ANRE Order 129/2020)

The new platform was designed to offer long term electricity trading possibilities to renewable energy investors who have not yet obtained their commercial exploitation license. Confirmation of the trades performed is, however, subject to obtaining the commercial exploitation license before delivery of the electricity to the off-taker.



# 2 choose & secure your location

## conduct preliminary studies

Depending on the project's nature, you should first understand exactly how much energy could be obtained in your location of choice, assess whether the land is appropriate for such developments and the energy source sufficiently plentiful.

This process includes an array of wind tests, solar irradiation tests, geotechnical, topographical studies and noise studies, among others. These tests should be performed within a specific period of time, depending on the renewable energy technology used. For wind, the recommended period is approximately 12 months.

## secure relevant rights to the land

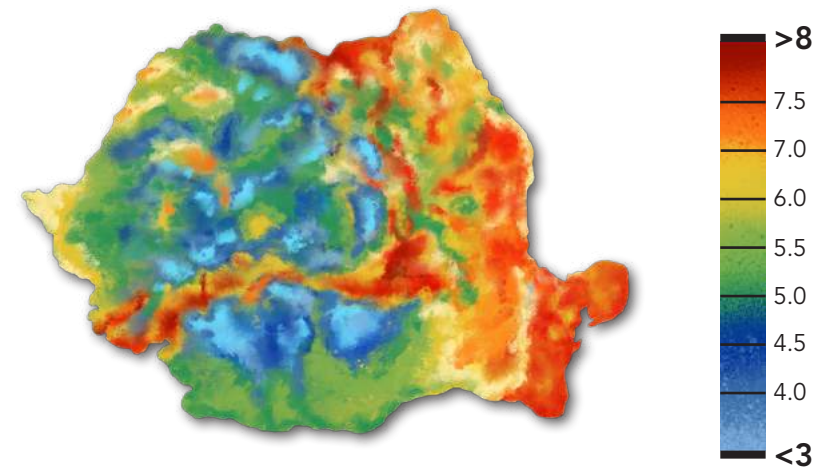
According to Romanian regulations, constructions may be erected only by the land owner or the holder of another building right (the so-called rights in rem, Ro: drepturi reale). A simple lease agreement does not entitle the lessee to obtain a building permit. In addition, depending on the location of the project, you might need to secure additional easements (e.g. rights of way, blades' servitudes), on neighboring properties or on local roads in order to ensure access to the project. Ownership and rights in rem must be registered with the Land Registry in order to ensure their effectiveness against third parties.

Some developers choose to secure the entire surface, not just the footprint of the wind farm elements. This is because once the environmental studies are completed it is possible that some turbines will need to be relocated. Securing the entire surface from the very beginning will ensure an optimal development, without subsequent constraints and costs. A very important aspect is that of aerial easements for the passage of blades over neighboring lands, which is not expressly mentioned in the law. It is recommended that the necessary agreements are signed during the micro-siting phase.



*In Romania RES developers benefit from a statutory right of use and easement over neighboring properties to the extent needed for their projects. However, in reality, landowners often do not allow access without the payment of certain compensation. They are your neighbors so it is important to negotiate openly and ethically (i.e. propose a fair price, use your legal knowledge to draw up terms that are favorable to both of you).*

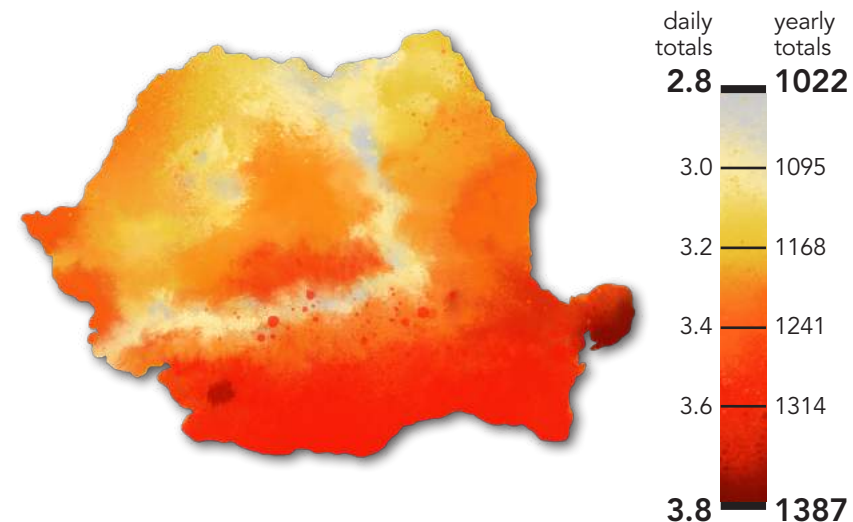
*This is also the right time to start legal procedures to remove the land from the agricultural circuit, a procedure that is known to be time (and money) consuming.*



**wind mean speed (m/s)**  
(long term averaged period 2008-2018, at 100m high)

Romania's wind speed is at its highest in the Eastern side of the country, particularly in the South East. The average wind speed in this region is over 8m/s, measured at 100m altitude.

Source: Vortex, 2018



**solar power potential**  
(long term average of PVOUT, period 1994-2018, kWh/kWp)

Solar energy can be harnessed throughout Romania's territory. In the Southern part of the country the Photovoltaic Power Potential Output (PVOUT) can reach up to 3.8 kWh/day.

Source: The World Bank, Global Solar Atlas 2.0, 2019



*Two aspects are crucial when selecting the location of a project: the ability to connect to the grid and the wind and solar maps. Dobrogea region is regarded as the best area in the country (especially for wind development) but it is rather overcrowded which makes grid connection more difficult. You may want to explore other regions of the country as well.*



# 3 engage the community

**A very important, albeit often neglected dimension of planning for the development of wind and solar farms is building trust and gaining the cooperation of local communities.**

This is an aspect that goes above and beyond the developer's legal obligation for public consultation, as it involves an actual in-depth understanding of local public perceptions, beliefs, fears, expectations, and risk assessments with regard to the planned investment. A diligent developer will anticipate the economic, environmental, and public health impact and plan accordingly. Once you get a proper understanding, a set of accessible and common sense explanations must be tailored to the public.

**Talk clearly and honestly about the benefits of building and operating a RES project in the community:**

Taxes on foundation and construction – e.g. the turbine tower and foundation taxes – are paid directly to the municipality. In many areas, rural and otherwise, these payments make for an important source of revenue for the local budget;

Rent payments to landowners for their leased surfaces – turbines are there to stay, which means safe money for the long run;

Quality jobs for the local workforce from builders to engineers, in different stages of the wind farm's development. This is where nation and country level authorities can lend a helping hand by putting together formation, reskilling and upskilling programs. Not to mention the effect of horizontal multiplication, with a variety of new jobs in services and production;

Grid modernization, reinforcement and expansion and transport infrastructure upgrade. This is a win-win situation: helping locals by attracting more investments into the region and modernizing neighboring roads;

CSR actions bring added value to the social life and wellbeing of local communities.

All this of course, does not happen overnight. Building trust, earning the good will and cooperation of locals, and projecting an overall positive image of the investment project takes time and effort in our personal life, as well as in business. You need to show genuine involvement and get a real grasp of the place's history and traditions, and pay respect to its cultural norms.

Undoubtedly, CSR actions are one way to go to build confidence and earn sympathy by addressing, for instance, some nagging challenges to local infrastructure (i.e. repairing a road or fixing a bridge), renovating a school or kindergarten, refurbishing a local medical office, or offering some form of material aid to the more economically vulnerable part of the community (e.g. school supplies for pupils from low-income families).



*You can and should work hand in hand with the authorities, who after all share the goal of bettering the community. It is important to say that the business is here to stay and not be stingy about sharing the benefits.*



*In particular, your communication specialist – there should be one as it is far more expensive to miscommunicate – needs to be familiar with the main narratives in the central and local media. Stories that sift through social media also have ripple effects and shape public perception, for the better or worse. When handled poorly, the collective emotions triggered by such narratives translate into fears and concerns about the presumed negative effects of the project's operation upon the local environment, agriculture, biodiversity, public health etc. If the case, these must be addressed in their own terms, through direct engagement and accessible, though well-documented communication.*



**Amalia Anghel**  
Corporate Communication Manager  
**ENGIE**



*We are glad to see that in Romania, unlike in other countries, there is a favorable perception among local communities regarding wind energy. People understand that, in addition to having cleaner energy, their community benefits economically from taxes to the global budget and jobs generated directly or indirectly from the construction and operation of parks.*

PROPERTY & CONSTRUCTION TAXES

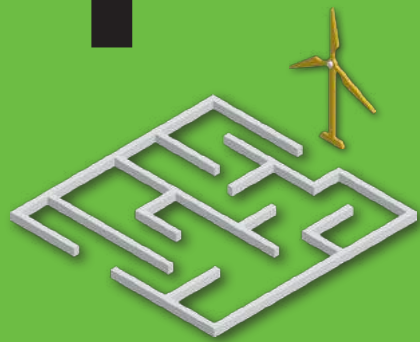
RENT PAYMENTS

QUALITY JOBS

GRID MODERNIZATION

CSR ACTIONS

# 4 obtain the necessary permits



The permitting process in Romania is actually simpler and faster than in most other EU jurisdictions. But it is still important to make sure your documentation folder is complete upon submission, with all steps taken in the right order and a timely fashion.

What makes a difference when dealing with the authorities is coming from a place of understanding and patience. Obtaining a permit can seem simple and straightforward but sometimes rules vary from one jurisdiction to another in Romania and some flexibility is needed.



construction phase

**540**

**days**

maximum time to complete the process



**4** public institutions

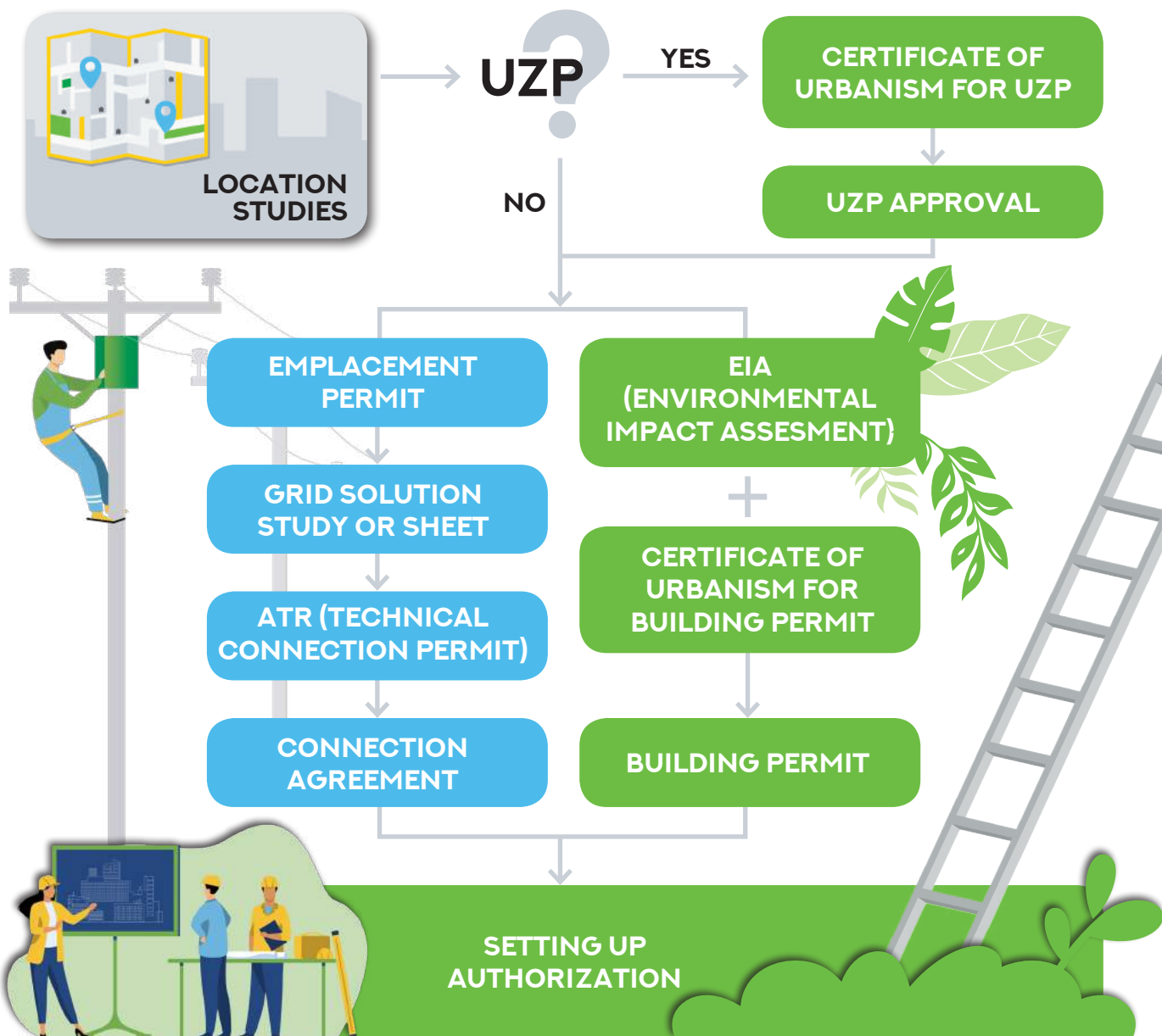


ANRE  
City Hall/County Council  
DSO/TSO  
Local Environmental Authority

permit types **3**



- civil
- grid connection
- post construction



## CIVIL PERMITS

### Urbanism Certificate for Urban Zonal Plan (UZP)

(Authority: City Hall / Term: 30 days )

Demonstrates the legal, economic and technical regime of the property where the RES facility will be built.

### Urban Zonal Plan (UZP)

(Authority: Local City Hall or the County Council, depending on land positioning / Term: 30+ days)

An UZP is always needed, unless there is a General Urban Plan (GUP) in place that already allows the construction of RES projects in the area. This plan plays an essential role because it defines how the project will look, the impact it will have on the land, utilities' network etc.

### Environmental Permit for UZP Phase & Building Permit Phase

(Authority: Local Environmental Authority / Term: up to 6 months, depending on project complexity)

The length of this procedure varies based on the area in which the project is developed and the type of technology used.

### Environmental Impact Assessment (EIA)

(Authority: Local Environmental Authority / Term: 60+ days)

Establishes the conditions and the environmental protection measures that must be complied with during the development and construction of the RES facility, connection to the grid, roads infrastructure, substation etc. The local community should be informed of the environmental authority's final decision.

Projects with a potentially significant impact on the environment, after completion of the first stage of the procedure, may require a mandatory report on the EIA. In practice, an EIA is required for wind energy projects but usually not for the overhead lines and other grid upgrade works.

*The Environmental and Social Impact Assessment (ESIA), though not required by Romanian legislation, is useful in order to obtain bank financing, and thus recommended as an additional step.*



### Building Permit

(Authority: Local City Hall or the County Council, depending land positioning / Term: 30+ days)

The permit is the key document that gives you permission to start construction on your renewable energy project, as well as the necessary electrical connection works, internal roads etc. The building permit may also establish a period during which the works must be commenced (usually 12 months) and a period during which they must be completed (usually 24 months from commencement).

Before applying for this permit, a separate Urbanism Certificate and related permits must be obtained for the construction of the RES production capacity, crane platforms, internal roads, substation and related connection works. A technical documentation for building permit must be drafted by an architect and submitted together with relevant permits with the authority.

### Setting Up Authorization

(Authority: ANRE / Term: 60 days)

This is the administrative act which confers you the right to build the RES production capacity. It also grants you complementary rights to the legislation, especially during the construction period (e.g. passing and/or storage rights on the third parties lands).



***At this point you should have the project financing secured because relevant proof will be requested by the authority.***

*Acceptable financing sources are: investor's own capital, proof of credit lines or loans, bank guarantee letters, loans granted by natural/legal persons, non-repayable financing from national or international bodies, other documents of a contractual or pre-contractual nature relating to the financing of the investment.*



### Dana Dinescu

Managing Director, PNE Wind  
Board Member, RWEA

*In order for projects to be bankable, you have to do everything "by the book", starting with contracts for land securing and auditing, wind measurements and studies validated by international companies, geotechnical and geophysical studies, environmental impact studies, up to grid connection solutions and the project authorization from A to Z. The development is like a puzzle. If you do not arrange the pieces correctly, with know-how and a lot of work, mistakes occur in the end, that could block a project, or lead to higher implementation costs. Quality makes the difference. And passion contributes to the project's success.*



## Emplacement Permit

(Entity: Distribution System Operator (DSO) / Term: 15 days)

This permit confirms that your proposed setup is compatible with the electricity grid and installations in the area.

## Solution Sheet / Solution Study

(Entity: DSO / Transmission System Operator (TSO) depending on the installed capacity/ Term: (i) 3 months in case of connection to a grid with electrical voltage of 110kV or higher; (ii) 30 days in case of connection to medium or lower voltage electricity lines)

A solution sheet assesses one connection option to the grid and is drafted for capacities under 30 kVA. A solution study assesses two connection options, and is drafted for capacities that should be connected to a grid with a nominal voltage of 110 kV or higher. The technical economic and social committee of the DSO validates the solution chosen by the investor.

## Technical Connection Approval (ATR)

(Entity: DSO/TSO depending on the installed capacity Term: 10 days for a solution study; 30 days for a solution sheet)

The ATR states when and where the project can connect to the grid, and the associated costs. You should note that the ATR loses its validity after a) 3 months from the date of issuance, if the investor has not submitted a financial guarantee; b) 12 months from the date of issuance, if the connection agreement has not been concluded; c) the period of validity of the approvals/authorizations under which the ATR was issued has expired, or if they have been cancelled by judicial decision in a court case.

Reinforcement works from the upstream grid to the connection point may be necessary in order to transmit the RES facility's output. If so, you need to create the necessary technical conditions for the connection, and submit a financial guarantee of up to 20% of the ATR's value depending on the works which have to be done according to the Technical Connection Approval issued. This financial guarantee must be lodged prior to the conclusion of the Grid Connection Agreement and no later than 3 months after the date of the ATR's issuance.

## Grid Connection Agreement

(Entity: DSO / Term: 5 days)

This document marks what has been selected from the ATR, in other words it transforms the offer into a contract. It also sets a deadline for completing the works and how the payments for the connection fee shall be made.

The following preliminary actions must be taken before applying for the connection certificate: **commissioning the RES facility and energizing the utilization installations.** Both are performed by the DSO as provided in the connection agreement. You can skip the energizing step if the connection agreement does not mention this procedure.

## Environmental Authorization

(Entity: Local Environmental Authority. Term: 90 days)

The authorization should be obtained upon the commissioning into function of the RES facility and provides the environmental conditions that should be met for electricity generation. The authorization must be obtained by the investor before applying for the License.

## Connection Certificate

(Entity: TSO / Term: 3 days)

The Connection Certificate is issued after construction is completed and testing performed, to confirm that all conditions for connection to the grid are met.

## Licensing the RES Capacity

(Entity: ANRE / Term: 60 days)

Once the RES capacity is complete and connected to the grid, you must apply to ANRE for a commercial exploitation license, which allows the operation of the energy facility. The license is valid for 25 years.



## Mirela Grigore

Country Portfolio Manager, **VSB Energy**  
Board Member, **RWEA**

*Patience and diplomacy are key ingredients when interacting with public authorities here. The laws have changed many times and there are certain inconsistencies from one county to another, which also means a different interpretation of the rules. We are now going through the re-authorization process for one of our projects, and we can tell much progress has been made compared to 2008. Everybody (us included) understands their role in the process better, and the general attitude is one of support.*



# 5 register to operate and sell electricity on OPCOM platforms

Once the RES facility becomes operational the producer can start selling energy. Wholesale trading takes place on centralized markets, organized and managed by OPCOM.

To operate on OPCOM, the RES producer must register with the market administrator by signing a participation contract, a lease contract for the USB token key and a REMIT contract to empower OPCOM to report on all transactions where the RES producer is a contracting party.

Recent amendments to the law provide some exemptions from trading on the OPCOM platforms for producers and electricity suppliers:

- RES producers can conclude PPAs regarding the electricity generated in a new RES capacity even if they don't have the license yet (they need to obtain it 60 days prior to first delivery);
- New producers commissioned after June 1st 2020 may conclude PPAs at negotiated prices outside the centralized market, subject to compliance with competition rules;
- Market participants that mix various electricity sources or the loads of several clients can conclude bilateral agreements for aggregation with source owners or their suppliers.

**Note:** Despite the obligation to trade on centralized markets, certain bilateral contracts are in effect because they were negotiated and concluded before the Energy and Gas Law entered into force. The same goes for certain export and import contracts. As per the secondary legislation which entered into force in September 2020, long term supply contracts between electricity market participants are also allowed.

## centralized markets organized by OPCOM:

**DAM**  
Day Ahead Market

**CMBC**  
Centralized Market of Bilateral Contracts with Extended Auction  
**Mechanism-EA** with continuous Negotiation  
**Mechanism-CN** with Fuel Processing Mechanism-FP

**ID**  
Intraday Market

**CM-OTC**  
Centralized Market with Double Continuous Negotiation for Electricity Bilateral Contracts

**CM-LCM**  
Large Consumer Mechanism

**CMUS**  
Centralized Market for Universal Services

**LTCM**  
Centralized Market for Long-Term Electricity Contracts

## register with the TSO to buy and sell electricity as a Balancing Responsible Party (BRP)

The TSO manages the balancing market (established in 2005) by buying and selling active electricity from and to market participants, holding dispatch units in order to compensate any deficit or excess of production.

This market is binding for all license holders. You will therefore need to register as a BRP and receive an EIC code from the TSO, or transfer responsibility to another BRP. Transferring comes with the advantage of aggregating imbalances and reducing costs. Bringing together several participants in the same BRP means mutual compensation of individual imbalances and the efficient distribution of costs and benefits. Your role as a BRP is to balance the differences between the contracted electricity and the electricity measured at full contour level by offering competitive prices and high-quality services to license holders who delegate their responsibility to you.



# deal-making in the new wave of RES investments

by **Monica Cojocaru**, Partner // M&A & Regulatory and **Georgiana Bădescu**, Partner // EU & Competition Schoenherr și Asociații SCA

The second half of 2020 and the first quarter of 2021 have seen an increased appetite for greenfield investments and M&A transactions in the Romanian renewable energy market. Whether part of wider strategic moves (such as ČEZ Group’s sale of its Romanian assets to funds managed by Macquarie Infrastructure and Real Assets) or stand-alone transactions, the M&A deals announced in this period have mostly targeted wind and PV projects.

## noteworthy deals

Hydroelectrica acquired the 108 MW wind project Crucea from Steag GmbH

Alternus Energy Group acquired two PV parks with a combined capacity of 15.4 MW in Dâmbovița and Prahova from ReneSola Power

ENGIE acquired a 9.3 MW PV park in Harghita

Electrica Furnizare acquired a 7.5 MW PV park in Stănești, Giurgiu from Raylexo Limited and Long Bridge Management.



## typical transaction structures

Given the assets’ specifics and the high degree of regulation in the industry itself, renewable energy transactions tend to be more complex than standard M&A deals. Even so there are a few structures that have crystalized over time. Transactions typically take place at two key moments during the lifespan of the project: once the RES project reaches the ready-to-build stage, or once the RES project is up and running.

### transactions during the development stage

This is a time of uncertainty - investors want to shift most of the risks to the developers, which are better equipped to manage them. Will the planned installed capacity be approved by the network operator? Will the required project land be secured and at what cost? What will be the level of connection costs? Are there any grid reinforcement costs? Are there any roadblocks that would interfere with the construction?

Investors typically prefer to secure an option to buy the RES project / shares in the project company in the form of a call option, and exercise it when the project reaches the ready-to-build stage. Conversely, developers would rather look to get a full commitment upfront from the investors, by entering into genuine share purchase agreements. Regardless of which of these two options come to pass, transactions at the greenfield/brownfield stage are typically blended with development services agreements that set the project specifications as well as expectations in terms of development timeline and standards.

While transaction implementation will not be subject to merger control at this stage (as the target acquired is not generating revenues yet), the foreign direct investment (FDI) screening will need to be conducted and, if required, the transaction will be conditional upon FDI approval.

### transactions during the operational stage

Once the project is up and running, the risks are more transparent and easier to allocate between the parties. At this stage, transactions tend to be more straightforward and deal certainty significantly higher. Implementation is typically subject to a set of conditions precedent, such as regulatory clearances (merger control and FDI), if applicable, and the (heavily debated) absence of material adverse change.

While the preferred structure remains the share deal (which is much simpler to execute), for various reasons (e.g. historical liabilities, post-closing integration) some investors opt for asset deals.

Although the due diligence exercise is somewhat simplified, asset deals create challenges like:

- the transaction perimeter has to be carefully defined to ensure that all assets and rights needed for the project are being transferred;
- the transfer of permits and licences needs to be closely coordinated so that the project can continue operation;
- the transfer of deferred GCs (or CfD contracts once implemented), when applicable;

# what is new?

Here are a few recent legal developments that will reshape the way RES transactions are being structured in Romania

## stricter FDI screening rules

The Romanian Competition Council (RCC) has put forward new draft legislation aimed at tightening existing FDI screening rules. Under the current rules, all investments in sensitive sectors fall under the scrutiny of the state defence authority, the Supreme Council for State Defence (CSAT). However, this scrutiny was limited to investments leading to a change of control and to a limited number of sectors deemed of national strategic importance.

Under the new FDI regime, all transactions and new investments that meet an investment value in excess of EUR 2 mil must be notified to the FDI Screening Commission (via the RCC) if they take place in strategic areas such as energy.

The following entities will have to submit an FDI filing: Non-EU citizens and companies (including trustees), EU-based companies controlled by non-EU citizens and/or non-EU legal entities that intend to make an investment

### This is what it means for new RES projects:

Transactions above the EUR 2 mil threshold implemented in the development stage may be subject to an FDI screening.

The investor's shareholding structure must be assessed up to the final beneficial owner, as EU-based companies controlled by non-EU entities fall under the FDI screening regime.

FDI assessments should be performed throughout the lifespan of an investment, as subsequent measures, like upstream changes of control in an existing investor or share capital increases, can also trigger an FDI screening.

The timeline for the FDI screening must be considered when setting expectations for the closing date and related long-stop date. Based on the current version of the FDI Draft Law, the FDI Screening Commission has 60 days to review the filing - this period can be extended if other authorities (such as CSAT) need to be consulted. Decisions are communicated within 45 days from when they are made.

## faster transfer of shares in limited liability companies (LLCs)

Most RES projects are developed and operated by LLCs. Until recently, transfer of shares in LLCs to third parties was subject to the creditors' 30-day opposition period, which in practice stretched to some 45 days, meaning complications and delays for M&A transactions.

Following recent changes to the Companies Law 31/1990, shares in an LLC can be transferred to third parties within any timeframe set by the parties, bypassing the opposition period. Also, if the articles of association so allow, the transfer of shares to third parties in LLCs will no longer require the approval of shareholders representing at least three-quarters of the company's share capital. These changes mean that it will be easier and faster to execute M&A transactions.

In addition, the already tried M&A transaction structures will likely be reshaped and aligned with the new market realities once the new market model (i.e. CfDs, PPAs, corporate PPAs) is defined and effective access to grants and subsidies is ensured.

*Note: a slightly amended version of this material has also been published in the 2021 edition of "Renew Romania | the investor's Guide to Renewable Energy Projects", published by Schoenherr si Asociatii SCA*



**technical  
considerations**

# the National Power Grid



**Romania's national transmission system operator, Transelectrica, is responsible for 20 million people having safe and stable access to electricity.**

In our ongoing quest to diversify supply and decarbonize the economy it is paramount to have an efficient and synchronized development of the transmission network and renewable energy sources. Of course, such things mean a well thought out investment plan. Spain, for instance, invested enormously in the upgrade and digitalization of Red Eléctrica, which is one of the most advanced platforms in the world and is ready to take on the country's 60 GW of planned RES developments by 2030.

Romania is also making efforts to expand, modernize and digitalize the system. But where do we stand now? Dobrogea, the area that hosts the largest share of the country's power generation assets, has additional renewables planned for development, alongside two new nuclear units at Cernavodă. This basically means almost doubling the installed capacity in the coming years in an area with quite limited local energy demand. And with offshore wind on the horizon, the pressure on the grid will only increase.

Transelectrica is optimistic about its ability to integrate the 6GW of RES planned for 2030, as long as regions outside of Dobrogea are also chosen by investors to develop new projects. Nevertheless, its recently published Ten-Year Network Development Plan (TYNDP/ PDRET) for 2020-2029 showed a mismatch between the new RES capacities envisaged by the NECP and the TSO's capacity to integrate them (in its most optimistic scenario, the TSO estimated an installed capacity in wind power about 1,000 MW smaller compared to the NECP).

**Transelectrica is optimistic about its ability to integrate the 6.9 GW of RES planned for 2030, as long as regions outside of Dobrogea are also chosen by investors to develop new projects.**

Following the feedback received from the industry, the TSO performed some additional analysis. In effect, besides accounting for the 30.7% RES target, Transelectrica is also considering ca. 500 MW of offshore wind in the Black Sea, to be connected via the Constanța Sud power substation. Although the updated plan does not offer an in-depth system adequacy analysis of this scenario, the conclusions are encouraging regarding the grid's capacity to integrate additional variable power generation, under certain conditions.

Other than expansion, Romania's energy networks need massive investment & revamps in digitalized solutions and equipment if we want to unlock the potential of smart grids and customer centric services. Other than some timid developments approved by the ANRE – namely the pilot projects for smart-meter deployment by DSOs – progress in this area has left much to be desired. Romania is among Europe's fastest growing IT&C hubs are the moment, a massive competitive advantage which can be leveraged by the energy industry, at more accesible costs. ICT accounts for 6% of GDP, and there is an ever growing variety of tools and services that can translate into new energy solutions and business approaches, at home and globally.

## to do...

### 1.

**To actually achieve national RES targets and ease the pathway towards a decarbonized economy, this must be on Transelectrica's to-do list:**

- Update its TYNDP starting from the latest renewable energy development scenarios included in the NECP and National Energy Strategy;
- Propose and execute new projects for transmission lines that would contribute to integrating the aforementioned future RES capacities;
- Have a constant dialogue with the relevant stakeholders to reduce uncertainty, taking into account that the lead time for infrastructure projects is significantly longer compared to new production or demand objectives.

### 2.

**On the other side of the playing field, this is what RES developers should put on their list:**

- Apply for the ATRs when they have financial security and certainty that the project will in fact be moving forward. This can avoid bottlenecks resulting from projects that reserve the grid space but do not actually come to fruition, as was the case in 2011-2014.
- Conduct feasibility studies in regions outside of Dobrogea, where the grid capacity for RES is under lower strain.
- Engage in an open and constructive dialogue with the TSO, including through RWEA and other industry associations.



## Adrian Goicea

President of the Supervising Committee  
Transelectrica

### In anticipation of the second wave of RES development, what do you consider to be the main lessons learned from 2011-2014, and your recommendations to investors?

The initial development period of the previous decade was quite difficult, especially in the absence of a regulatory framework to guide the connection to the electricity grid. First of all, we had approved connection requests of over 15,000 MW, a shocking figure, both from the perspective of electricity consumption, which is around 9,000 - 9,500 MW at the peak of winter consumption, and from the point of view of the electricity grid, which was not prepared to integrate this inflow of flexible energy capacity. The main problem with these requests, however, was that most of the projects did not materialize, and in general we notice a lack of consistency on the part of applicants. It is to everyone's detriment to block the pipeline of the electricity transmission network with projects that do not have a clear green light. An important recommendation from our side that only those projects that have the financing line and feasibility studies completed apply for a connection permit. Also, the connection process is an essential step in the development of any project and must be properly understood and planned. Along with economists, lawyers, etc. every developer needs a solid team of technical consultants to provide appropriate guidance throughout the project.

Equally important is a good familiarization with the legislative and regulatory framework, to the latest updates.

### According to the NECP, the intention is to integrate ~ 6 GW in RES by 2030. Is the network currently ready and what line upgrades are you relying on?

The short answer is yes, but under a few conditions, the most important being for developers to apply for projects in other high potential areas of the country, and not only in Dobrogea. However, in order to increase the integration capacity of renewable energy in the Dobrogea region, we currently have several projects under execution:

the new 400 kV double circuit overhead power line (OHL) between Cernavodă and Stâlpu stations, with an input/output circuit in the 400 kV Gura Ialomiței station, to be completed by 2023

the new 400 kV OHL between Smârdan and Gutinaș stations, to be completed by 2024

the reconduction of the 220 kV OHL Stejaru - Gheorgheni, which will allow the increase of the power transfer from Dobrogea, through Moldova and to Transylvania, to be completed by 2024

the transition to 400 kV of the 220 kV axis Stâlpu Teleajen - Brazi Vest, to be completed by 2025

the interconnection of the lines with Bulgaria in the Medgidia Sud substation, 400 kV OHL Stupina Varna and 400 kV OHL Rahman - Dobrudja, to be completed by 2023

the new 400 kV OHL Medgidia Sud - Constanța Nord, which is being integrated into the plan

All these lines will allow the connection to the network in the South-East of Romania of a production of 1,000 - 1,500 MW. Therefore, wind farms or photovoltaic power plants can be put into operation gradually starting with 2023, even in this region. The Electricity Transmission Network Development Plan, developed by Transelectrica, is reviewed every two years (last version December 2020) and, depending on the connection requests over the next period, we will decide if it is necessary to integrate additional capacities. According to our preliminary analysis, we have a potential for the integration of 1,000 MW of wind energy in the South-West and West of the country where we have the new 400 kV OHL Iron Gates - Resita under construction, as well as the 400 kV OHL Resita - Pancevo, already completed. In addition, we will upgrade the Iron Gates - Arad axis from 220 kV voltage to 400 kV voltage by 2027. We are also thinking of direct current networks that allow better control of power flows. For solar energy, the potential is vast and balanced nationwide, making it even easier to integrate into the grid.

### What methods do you use to mitigate delays and avoid the repeat of past problems?

On the one hand, many of the projects we are currently working on benefit from European funding - this comes, of course, with an extra level of monitoring and accountability. And at the national level, the government's plans include targets for Transelectrica that must be met and

aligned with those for the development of various energy sources, so the legislation provides an additional level of protection that did not exist before 2019. And last but not least, we monitor projects internally, with significant penalties for executors in case of delays.

### What do you believe are the best methods for truly effective communication between Transelectrica and the industry?

We already have several channels open with the industry (conferences, workshops, etc.), including through RWEA, and on our part there is full openness and willingness to continue collaborating. What we want to communicate clearly is that the network has certain limits, both in terms of geography and time horizon. We can find solutions only by taking things step by step. There are essential aspects that must be taken into account, such as the national level of consumption and the technical possibilities of integrating new energies. A balance must be struck between grid connection requests and the safe operation of the system, otherwise we will all suffer, including investors who may have energy losses.

### Where do you see the new RES developments fitting into the wider interest of the Romanian economy?

Investments in RES must first and foremost be encouraged at the local level. Of course, foreign investors bring value and the means to build larger projects, but it is essential for our country to encourage the development of local entrepreneurship particularly in creating a national supply chain. From this second wave we expect to retain more significant parts of the investments, in order to become a true regional market player, thus capitalizing on the vast experience gained in the field of green energies in the last 10+ years.

# operation & maintenance

Wind turbines are exposed to inevitable wear and tear. Their expected lifetime span is 25+ years with over 97,5% availability, however sometimes components fail before that (particularly gearboxes and generators) or other issues occur.



While OEMs include a full service offering when selling the turbines there are local service companies that can optimize production and better manage RES parks and associated assets (roads, foundations, substations, connection points). Romania

benefits from the presence of all European OEMs which means that park owners and operators can expect a standardized level of service across the board. O&M costs typically account for 15% to 25% of the total levelized cost of electricity of wind power systems (MDPI 2021), and though it has been going down in recent years, it remains high for a good reason, which is to avoid accidents and also extend turbines' lifespan.

## Here a few recommended guidelines from the industry:

Wind farm owners have at least two options: they can develop their own O&M departments particularly in the case of larger projects, or they can outsource it to specialized companies familiar with the Romanian marketplace. Service and technical maintenance must be done periodically, but it should also happen ad-hoc

In addition, once per year the maintenance provider should collect and test oil and grease samples for conditions including: high ferrous or non-ferrous metal content, moisture in gearbox, moisture in bearings, and level of oil additives

Owners have the option to invest in predictive maintenance techniques and condition monitoring – this means finding the right point between corrective and scheduled maintenance. A robust vibration monitoring system can make it possible to find problems earlier

Proper database management and advanced analytics tools are important to keep track of downtime, costs, resources requirements etc. to better prevent any unexpected technical problems

Drones are becoming an increasingly useful tool for inspection and supervision of wind farms to spot failures before they happen. As of 2021 autonomous drones that can fly directly from dispatch centers are being used to monitor park premises.



## repowering & lifetime extension of RES facilities

As things stand, the renewable power assets in Romania are relatively young with the bulk capacity commissioned between 2009 and 2015. A majority of commercially available wind turbines are certified to operate for 25+ years based on their technical standards. Therefore, wind farms will start reaching the end of expected lifetime more or less towards the end of the decade, and solar PV even sooner. As this happens, the owners and operators of RES assets will have to decide to either decommission their wind farms or invest in extending their lifetime.

Repowering and lifetime extension are strategic decisions that must be considered at an earlier stage of the operational period of the wind farm. In light of the swift development of wind technology, with increasing capacities and sinking costs per unit of generated power, it may well be economically viable to carry out repowering.

**4.5** GW

**total wind and PV capacities installed (a large share may seek repowering by 2030)**

# the benefits of repowering a wind farm

Driving further cost reductions in wind energy.

Ensuring better integration of the wind resource in the electricity grids: replacing old turbines with state-of-the-art units able to provide grid support service will ensure the better integration of the variable wind resources into electricity grids compared to first- or second-generation machines.

Improving social acceptance and benefits to local communities, since replacing ageing assets with fewer modern ones is likely to harness a higher amount of power with comparatively less land use.

Using the wind energy resource most efficiently at the best sites, by harnessing higher shares of wind energy at the best wind sites in the post-2020 period.

source: WindEurope



**Cătălina Drăgoi**  
Operations Manager, ERG Power

*The wind farms currently in operation in Romania will reach maturity in the next ten years. From our experience in other countries, lifetime extension is a valuable option. As per our preliminary evaluation, this process involves obtaining a new building permit and lasts around 150 days in the best case scenario. Our recommendation would therefore be to simplify these steps, by introducing the one-stop-shop concept for permitting.*

Planning a fully repowered project is equally complex and presents similar risks as planning a new project. It usually calls for an updated Environmental Impact Assessment (EIA), new building and operation permits, and potentially a new grid connection. This process should be streamlined and as expedite as possible – ideally, no longer than three years. Keep in mind that if there is no change of the tip height, size or location you might not in fact need a new EIA since it is not considered a full repowering.



## repowering case studies

**The Zeewolde wind farm in the Netherlands** is a successful example of a repowered project.

220 old turbines were replaced with 91 new ones

an upgrade to 336,7 MW meant a tripling in electricity generation

**The Galbiori wind farm in Romania** is another example of repowering:

two 2.5 MW older model GE turbines have been decommissioned and are waiting replacement with a single unit leading to a 40% rise in efficiency.

# decommissioning & site maintenance post-closure

Decommissioning is an alternative to repowering measures by which a wind turbine and its associated infrastructure are disassembled, and the original use of the site (e.g. farming) is restored.

## when to decommission?

- When a turbine has suffered damage compromising safe operations or economic gains;
- Land use contracts reached their mark and could not be extended;
- The operating license expired;
- You are preparing for repowering.

An international standard for decommissioning wind turbines does not exist today, but WindEurope offers the following guidelines for sustainable decommissioning:

### 1. map out national legislation

Romania does not have specific regulations for decommissioning, but it is important to keep an eye out for upcoming rules surrounding dismantling, resource & waste management, and site restoration.

### 2. create a decommissioning plan

The plan must follow national and regional regulations and assign responsibilities between the authorities, turbine owner, operator and dismantling company.

### 3. execute the dismantling

The dismantling process needs to be done step by step, minimizing the impact on the environment.

### 4. manage resources

Wind turbines provide valuable resources that can be reintroduced into the circular economy. The prerequisite for this is a clean separation of materials (concrete, steel, cast iron, composites etc.) and innovative recycling processes.

### 5. restore the site

After the works are finished the land must be restored to its greenfield condition, protecting soil and groundwater for residue, filling in the pits and making sure the site ends up visually pleasing.



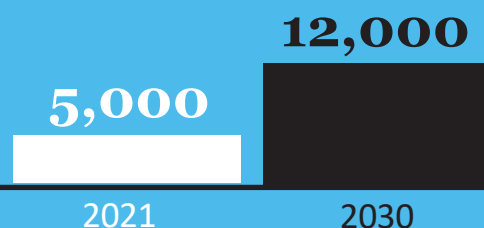
# workforce & skills

Almost everyone in the global business community currently recognizes Romania as a great source of IT talent. Technicians in the renewable energy arena are quickly developing the same reputation. The local market currently employs roughly 5,000 people, and the number is expected to grow alongside the industry. Specifically, the workforce is expected to reach nearly 12,000 people by 2030.

When wind and solar energy capacities started being installed in Romania in 2008, foreign expertise was brought in to show everyone the ropes, however, in the past decade enough experience was accumulated that Romania became an exporter of know-how. Over the years many technicians have been recruited as full-time employees or contractual workers for projects in Europe, and then all over the world. The reason, on the one hand, is the quality of the work, as well as their reputation for flexibility and willingness to travel on a project-by-project basis.



**RES employees will more than double by 2030**



Data source: WindEurope



Skills and qualifications in RES mean a potential new career path for coal workers. RWEA and RESS are putting a lot of efforts into pushing legislation to align national occupational standards with these new jobs and introduce the onshore and offshore wind turbine technicians job into the local legislation.



**Sebastian Enache**

Business Development, **Monsson**  
Board Member, **RWEA**

## professional reconversion training center

Many areas in Romania are affected by the energy transition phenomena, leading to job or path losses. The Professional Reconversion Training Center is a 10-year plan that means to be part of a broader national and regional set of solutions to address this. The proposition is to set up an academy for renewable energy, as well as energy distribution, to help the transition process by educating workers about job opportunities in these respective two fields. The target is to train 7,000 miners and people from similar fields of work (700 per year), which can fill the gap of the needed workforce. The project is coordinated by RWEA & RPIA in partnership with regional distribution companies, as well as regional universities and the Ministry of Energy.

**A pilot project for professional reconversion was kicked off in 2020 with a focus set on a few pressing matters:**

- raising awareness of the urgent need to include RES focused occupational standards in the legislation
- putting together a study on miners' headcount
- understanding the existing skill-gap so that the curriculum is properly adapted

People need to be taught about the mechanics, hydraulics and electrical components of PV and wind energy installations, as well as electricity distribution. This can be learned in six months, and become the stepping stone to a new career.

An understanding was signed that RWEA and RPIA members would prioritize center-trained hires. This is ultimately a feasibility study for the wider scale 10-year project, which should follow the same goals and modus operandi.



# 10 year plan

**7,000 workers** trained in RES & energy distribution in Romania

**24 months** the duration of the pilot project which kicked off in 2020



# health & safety practices

Coming up with an adequate and coherent framework for keeping people safe in the (still relatively young) renewable energy industry has in many ways been a game of playing catch-up. This has been the case all over the world, with some countries acting quicker to develop supporting legislation than others. Its importance cannot be understated as the work can be hazardous, taking place high in the air, in confined spaces, as well as in remote locations away from cities, and even villages. This means that people have to be well equipped to take care of themselves and provide first aid, when needed, while waiting for help to arrive.



**100k** GWO TRAINED WORKFORCE

NATIONALITIES TRAINED IN 42 COUNTRIES **190+**

**380+** CERTIFIED TRAINING SITES

At an international level the creation of the Global Wind Organization, a non-profit organization formed by turbine manufactures and owners, was a real game changer. They standardized global HSE practices by publishing the first version of the Basic Safety Training (BST) standard in 2012, followed by the Basic Technical Training (BTT) Standard in 2017. Romania integrated these new standards by creating the first GWO training center in Southeast Europe, offering vocational & HSE courses.

**GWO Basic Safety Training** needed for every worker in the wind energy industry



FIRST AID



MANUAL HANDLING



FIRE AWARENESS



WORKING AT HEIGHTS



SEA SURVIVAL

RWEA is working closely with the Ministry of Energy and the Ministry of Labor to bring the legislation to par. The expectation is to have this successfully firm up by June 2021. The industry is also working alongside ANC (Autoritatea Națională pentru Calificări) in order to certify vocational and HSE courses with regional and local authorities in Romania. This can help graduates in their job application processes and standardize local practices.



**RenewAcad**

RENEWABLE ENERGY SCHOOL OF SKILLS FOR ENERGY TRANSITION

The Renewable Energy School of Skills for RES RenewACAD was launched in 2019 to reskill the mining workforce in the areas affected by the energy transition (7,000 people in total, 700 per year). The goal is to centralize human resources, managing the available workforce and forecasting the professional skills needed in the RES and electricity distribution industries in Romania. The pilot is implemented by RWEA, RPIA, CEZ, Enel, Monsson and in partnership with the Ministry of Energy and the University of Petroșani.



**RES EMPLOYEES IN ROMANIA** certified to date

**3,000** Many take refresher courses every two years





**Daniel Burlan**  
President of the Board  
**CE Oltenia**



**What do you consider to be the role of traditional energy sources in Romania’s energy transition era?**

The current guidelines call for the abolition of coal-based energy, even though it has always ensured the balance and security of the national energy system. Coal-based energy production will continue in the EU until proper storage capacities and hydrogen technologies are implemented.

Complexul Energetic Oltenia is a strategic pillar of the national energy system, which covers ~ 20% of the energy market and about 30% of the total system services at SEN level. These quotas should be covered by other producers to ensure the necessary consumption, which is not possible at this time.

**How has CE Oltenia been affected by the rising cost of CO2 certificates?**

The recent evolution of the price of CO2 certificates is a major problem for all coal-based electricity producers, and for us its share in the unit cost of electricity production can exceed 50%. The price has increased dramatically in recent years, currently reaching over EUR 44/certificate.

From the establishment of the company in 2012 until now, CE Oltenia has paid approximately RON 4 billion in own funds for CO2 certificates. Under these conditions, in order to continue the company’s activity, it is imperative to approve the Restructuring and Decarbonization Plan, which will ensure access to funds for the development and restoration of the company’s viability. This will be possible mainly due to the commissioning of natural gas-fired power plants, which will reduce the specific emission at company level by ~38%, starting in 2026.

**To this end, are you also considering expanding into renewable energy i.e. through photovoltaic panels and green hydrogen?**

Currently, the technologies for energy production capacities that use 100% synthetic fuel (hydrogen) and that can partially or fully replace natural gas, are not yet approved. However, we plan to implement a 30% H2-Ready technology. We want to remain an important player in the energy market and we do not rule out new investments or the modernization of gas installations with a higher proportion of hydrogen.

**What is the trajectory of the energy transition in Romania from your angle, and the plans that CE Oltenia wants to achieve with priority?**

The energy industry has entered an unprecedented era of change, which means that the restructuring of CE Oltenia has become a priority.

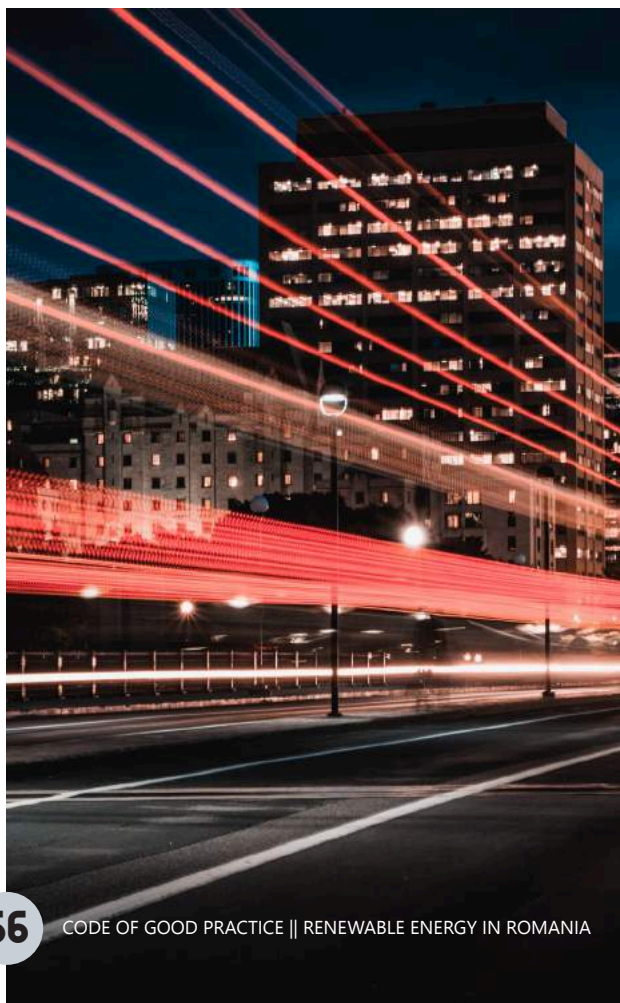
This transformation involves a triple effort (investments - restructuring - financing) and a large set of commitments at the institutional, corporate, sectoral and banking levels that will take place over a period of five years.

The total installed capacity of the company was 3,570 MW in 2020 and will reach 3,094 MW by 2026, with lignite capacity reaching ~53%.

The Restructuring Plan is the strategy through which CE Oltenia can develop and modernize its production capacities, benefit from new, less polluting resources and streamline operations.



**The Restructuring and Decarbonization Plan for 2021-2025 involves diversifying the energy mix by introducing renewable energy and gas in the company’s portfolio. One of the main points of this plan is the construction of eight photovoltaic parks with a total capacity of 725 MW.**



A photograph of an offshore wind farm at sea. The sky is a clear, light blue, and the water is a deep blue with gentle ripples. Several wind turbines are visible, with the largest one in the foreground on the left. The turbines are silhouetted against the sky. In the distance, a small boat or platform is visible on the right side of the horizon.

# technologies of the future

# offshore wind potential

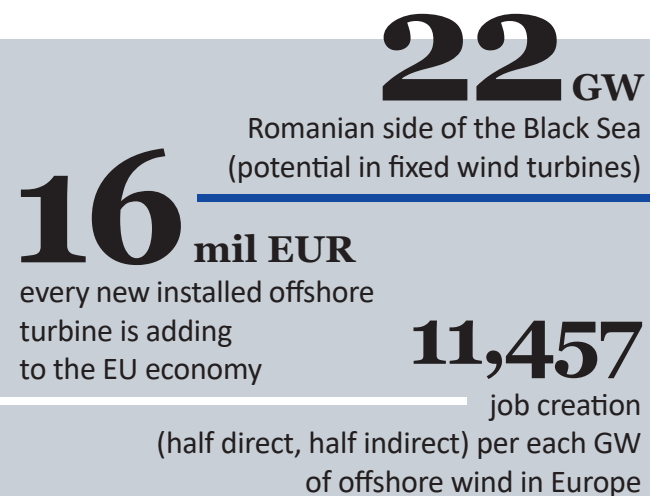
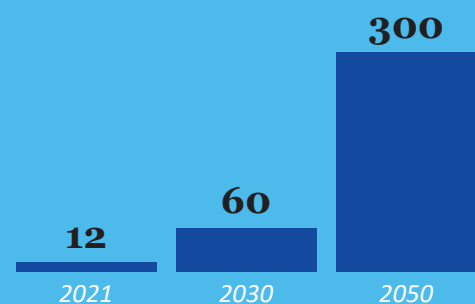
The EU has an ambitious path to walk in its endeavors to cut CO2 emissions in order to become carbon neutral by 2050 and with land being a limited commodity, sights have naturally been set on the generous sea territories. With an ambition to grow from 12 GW presently to at least 60 GW of offshore wind by 2030, and no less than 300 GW by 2050, the EU Strategy on Offshore Renewable Energy relies on this resource for the huge amount of clean electricity needed.

Romania's Black Sea, while not matching the North Sea or the Baltic Sea in terms of wind capacity or surface, still *can* and *ought* to be a source of significant RES capacity. RES targets in the NECP do not refer to offshore wind capacities (yet), but the Ministry of Energy has already announced plans to support the development of this technology in the upcoming period.

There have been several recent initiatives by state-owned and private companies to explore the possibility of investing in offshore wind capacities in Romania. State-owned company Hidroelectrica, the largest electricity producer in Romania, included in its investment strategy 300 MW of offshore wind by 2026, while natural gas producer Romgaz has also expressed its interest in the sector.

According to the Maritime Spatial Planning Directive (the MSP Directive), the 22 coastal Member States were expected to develop a national maritime spatial plan by March 31st 2021 (this deadline has already been exceeded by Romania). However, a draft law for offshore wind energy was approved by the Romanian Senate at the end of 2020. Presently it is under administrative procedure to obtain approvals from specialized commissions in the Chamber of Deputies.

## offshore wind capacity planned in the EU (GW)



# draft law for offshore wind energy

The draft law lays the ground-rules to build and commercially operate offshore wind parks. The Ministry of Energy plays an important part in this process, as it is tasked with issuing licenses and coordinating with other authorities for the full permitting process.

## building & exploitation licencing

There are two ways to obtain building and exploitation licenses, namely through competitive auction procedures and open procedures. These are the four licences that must be checked:

## subsidies for offshore wind capacities

Offshore wind parks set up through a **competitive procedure** benefit from subsidies according to the CfD mechanism;

Offshore wind parks set up through an **open procedure** benefit from a premium of EUR 0.025/kWh added to the electricity market price. This subsidy is limited to EUR 0.060/kWh. If the electricity market price is above EUR 0.035/kWh, the premium is reduced accordingly.

In addition to the premium, offshore wind parks can be compensated for balancing costs in an amount of EUR 0.020/kWh for 20 years from the connection date to the grid

### license to conduct investigations

**VALID:** 1 year

### license for wind park construction

**VALID:** throughout the construction phase

### license for electricity generation

**VALID:** 25 years from grid connection date

### authorization for electricity generation

(for installed capacities above 25MW)

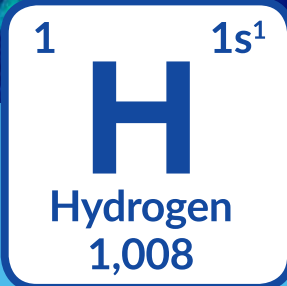
# green hydrogen

The economic revival plan of the European Commission identifies and prioritizes hydrogen as an investment target, with the stated intent of assuming a global leadership status in this realm. Clean hydrogen is produced by electrolysis, using electric energy from wind and photovoltaic sources, so it is the winning ticket sustainability wise.

In Romania, Dobrogea meets the prerequisites to host a cluster for hydrogen technology, as it has both exceptional capacity to produce clean hydrogen through wind, and potentially significant hydrogen demand from existing refineries, the steel industry, district heating, urban public transport, decarbonizing port activities, as well as naval transport.

**Law 155/2020 aligned Romania with EU legislation by defining hydrogen producers and regulating its commercial exploitation.**

In terms of steps already taken, Romania has installed and upgraded hydrogen refueling points, which comply with the technical specifications provided by ANRE. Additional ones are scheduled to be installed by 31 December 2025 to ensure the circulation of hydrogen powered vehicles on national roads and cross-border points alike.



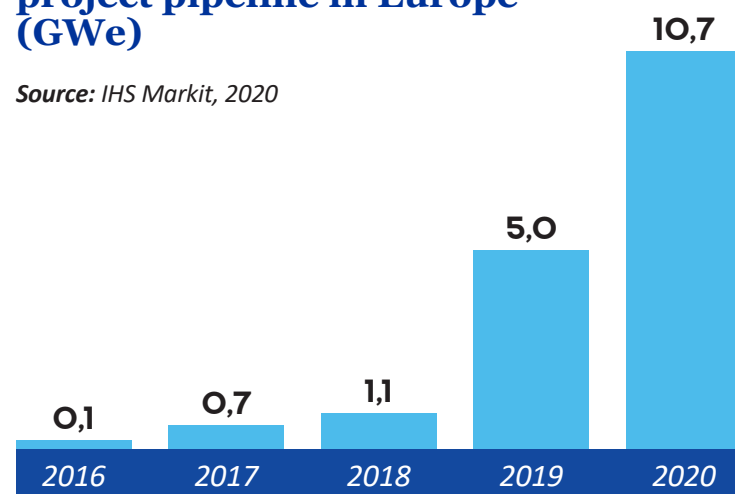
**In 2020 amid the COVID-19 crisis the EU and 6 member states released their hydrogen strategies**

In 2021, ANRE also introduced the rules for the setting-up authorization and the commercial exploitation license. The license gives investors the right to collect tariffs for services provided in connection with the operation of the hydrogen installations, including hydrogen storage facilities.

Of particular importance for the authorities seems to be the establishment and maintenance of protection and safety areas associated with the normal operation of hydrogen production facilities.

## evolution of the hydrogen project pipeline in Europe (GWe)

Source: IHS Markit, 2020



# energy storage

Although the cost of technology kept going down throughout the last decade, a key barrier for large scale deployment remains the lack of viable business cases, taking into account project costs and market rules limiting revenue streams. Most of the storage technologies still need financing opportunities and subsidies. Among them:

- Capacity mechanisms to provide fixed incomes for existing and future storage facilities
- Expanding the current subsidies for prosumers – households and SMEs – to storage projects
- New support schemes for off-grid solutions with storage, for example in agriculture (irrigation or farms), off-grid residences, industry, etc
- A clear remuneration scheme for V2G owners, and incentivizing the use of V2G by means of tax exemption for its adoption
- Initiatives that foster a circular economy, such as second-life systems and services for batteries.



**Eduardo Nieto**  
Country Manager, EDPR  
Board Member, RWEA

*These are the conclusions that can be drawn from Romania's first energy storage projects:*

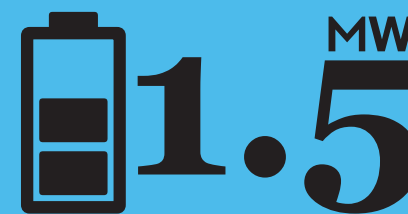
*talks with ANRE and Transelectrica in order to obtain an "agreement for the installation of the pilot project" lasted under two years*

*the country now has a regulatory framework for the installation of storage technologies*

*EDPR has 2 batteries installed and we intend to increase this footprint*

*even though the technology is not profitable in the short run, the long term benefits are immense*

## energy storage developments



Law 155/2020 brought specific provisions for new storage facilities and their management rules.

ANRE included references to storage capacities for energy producers in their recent provisions about licenses.

The NECP lists storage as an instrument to improve energy security.

Transelectrica's system adequacy assessment study mentions a minimum 400 MW of needed storage capacity.



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**local partners**



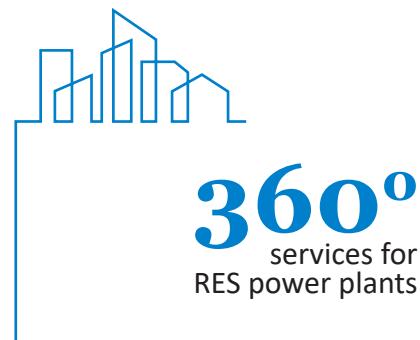
# ALIVE CAPITAL

Energy with a green heart

[www.alivecapital.ro](http://www.alivecapital.ro)

Alive Capital is a Romanian company founded in 2013, at a time when RES producers were negatively impacted by legislative changes. We came to life in order to assist these producers by providing high quality integrated management services.

At the core of our company stands a team of multi-field specialists. We use our knowledge in engineering, power supply, finance and management to obtain competitive prices and long term stability.



## integrated management services

- asset management
- energy trading
- energy forecast
- operation & maintenance
- project management (ready-to-build as well as turn-key projects)

## 6 PV capacities for electricity production

(owner of 15MW installed power)

Alive Capital became a producer of electricity in 2021, through the acquisition of the Frumușeni PV Power Plant.

## local dispatch center

the managed portfolio represents 234 MW installed power

## licensed supplier

of electricity and natural gas



**Giacomo Billi**

Founder & Chairman of the Board  
Alive Capital



*Year by year Alive Capital is developing a full package of integrated management services dedicated to RES electricity producers - from forecasting and operation, to monitoring and authorized dispatching. Assiduous work, perseverance and a sense of fairness helped us become a reference point in the renewable electricity market of Romania.*

*We are currently receiving many inquiries for electricity take-over from investors who are analysing the Romanian market - bank interest rates have turned negative and large scale investors are looking for the right solutions for their investments. No wonder they are attracted to Romania, given that a RES project still offers a positive IRR here and the overall risk is low: we are talking about a European country with a great need to renew its production capacities, and where the price of electricity continues to grow. Besides, once you obtain a production license your returns are guaranteed for 25 years.*



## the first green bonds in Romania (ALV23)

The development of our company and its complex activity led to a natural decision to transform its legal status into “joint stock company - SA” and launch a bond issue, successfully completed in December 2020. In April 2021 the bonds were listed on the Bucharest Stock Exchange (BVB).



**BERECHET RUSU HIRIȚ**  
attorneys at law

## practical solutions & dedicated representation



Berechet Rusu Hiriț is a boutique law firm founded by professionals with an individual experience of over fifteen years on the Romanian and international market. Valued for our know-how, commitment and work ethic, we provide thoughtful and effective advice across a range of practice areas such as energy, real estate and construction, logistics, retail, media and entertainment, environment, IT&C.

**In such a dynamic sector as energy, our team efficiently manages the challenges and capitalizes on the opportunities.**

We are recognized by local and global scale clients for our business intelligence, technical skills and in-depth knowledge of industry specifics. We assist on regulatory compliance of emerging projects, and legal matters related to electricity retail and natural gas supply, upstream and downstream oil and gas operations, renewable and unconventional energy, transportation and distribution, as well as on specific agreements in these fields. Lately, we have advised on renewable projects of more than 1000 MW and assisted the clients through the complex regulatory journey of structuring and authorizing a wind/photovoltaic project. We are also enthusiastic to be part of pioneering developments related to energy storage systems and future hydrogen generation projects.

**+1,000 MW**  
ADVISED IN RES PROJECTS



Windborne®  
Granted Patents:  
USA, Europe, Israel

The Resident Airborne Services (RAS) Platform consists of a robust aircraft, an all-weather charging station (NEST) **situated 24/7/365 on site**, the *Windborne* wind & performance sensor, and a command & control core which enables the scheduling, launching and reporting of automated services.

### Case study

**Service:** Nacelle Misalignment Detection

# of turbines:	12
All turbines tested (days):	14
Income recovery (in % of AEP):	3,5%
Customer Return (ROI)	15x

**Boaz Peled**  
CEO



  
**FIRST AIRBORNE**  
Resident Airborne Services

Put simply, RAS empowers operators and experts to inspect and monitor their assets on demand, irrespective of their location, scheduled or in real time, as often as needed, and without spending an additional penny per mission. For example, a blade inspection will currently involve tenders, qualifications, travel, fuel, accommodation, contractors, climbers, safety hazard, employee overhead and turbine downtime. With First Airborne's RAS, all it requires is to press "Launch Blade Inspection for WTG#25" - and sit back until the report is automatically generated post mission. And repeat as needed.

## the rise of preventive maintenance


- o inspection
- o performance monitoring
- o site supervision











# Modern solutions, together!


 Manufacturer of equipment for electrical installations with voltages of 0.4 - 400 kV

 SCADA systems, automation and smart grids, dispatching, IoT and IIoT

 Turnkey projects – complex engineering, procurement and construction projects

 Design and consulting

 Renewable energy power plants - construction, operation and maintenance

 [www.eximprod.ro](http://www.eximprod.ro)



[www.cms.law](http://www.cms.law)

## Integrated cross-practice legal advice

Through our integrated practice we actively work against ‘silo thinking’. We are market-leading, global advisers on:



- Traditional or newer electricity generation technologies
- Energy transition and climate change strategies
- Mid-stream activities
- Energy efficiency
- Finance, M&A, Real estate, Tax
- Regulatory, environment and commercial
- Disputes

### CMS Energy and Climate Change Practice:

> 450 energy and climate change lawyers  
 77 offices  
 In Romania for over 20 years  
 Experts in RES (solar, wind, storage, hydro)  
 from licensing to operation

 **at the forefront  
of renewables**

### CMS ROMANIA

Our Bucharest office is one of the largest international law firms in Romania and our top-ranked teams offer a full range of legal and tax services. Our Energy, Projects and Construction team comprises legal advisors fully dedicated to energy mandates, experienced in complex and large-scale renewable work for some of the world’s top international as well as local companies in Romania and the CEE region during the “first wave” of renewables. We are at the forefront of the sector’s revival through our work in shaping up most recent legislation, as well as by advising on landmark transactions for both operational and ready-to-build projects, as well as advising on complex offtake arrangements for new capacities.



**Horea Popescu**  
Managing Partner | CMS Romania  
Head of Corporate M&A in CEE and Bucharest



**Varinia Radu**  
Partner | CMS Romania  
Deputy Head of the CEE Energy Projects and Construction Practice Group, Head of Energy and Projects in Romania



**Ana Radnev**  
Partner | CMS Romania  
Head of Finance in Romania, Co-head Sustainable Finance CMS



**Roxana Frățilă**  
Partner | CMS Romania  
Head of Real Estate & Construction in Romania

# EAST SOLAR

Solar energy specialists.

www.eastsolar.ro  
contact@eastsolar.ro  
+ 40 729 195 222



PV panels • inverters • mounting systems • solar cable • connectors

60 Years  
of Solar Expertise



We offer developers a full range of PV equipment and a wide variety of services to ensure a smooth project implementation.

SHARP



SHARP - 60 years experience in PV cell development

East Solar - We are a privately owned, 100% Romanian company and official importer of SHARP PV panels.



design



supply



installation



implementation

# EDP RENEWABLES

EDP Renewables is a global leader in the renewable energy sector and the world's third-largest wind energy producer.

www.edpr.com  
communication\_edpr@edpr.com  
+40 215 270 362



## EDPR's PRESENCE IN ROMANIA

- 2010 first wind farm in the country
- 2013 first Solar PV power plant started operations
- 2018 first battery energy storage facility at the Cobadin wind farm in the Dobrogea region. "Stocare Project"
- 2019 EDPR began the construction of the second battery-based energy storage facility (1MW).

521  
MW OPERATIONAL  
IN 2020

1186  
GWh GENERAED  
IN 2020

3<sup>rd</sup>  
LARGEST  
RES PRODUCER  
IN ROMANIA

1<sup>st</sup>  
ENERGY STORAGE  
FACILITY  
IN ROMANIA

## SOCIAL RESPONSIBILITY

"Closer2You" program – project designed to improve the quality of life of communities in need.

In Romania, EDPR has successfully carried out several editions of this program and aid has take the form of: renovation of homes belonging to vulnerable families; new facilities at a school and kindergarten near the Facaeni wind farm.



**Eduardo Nieto**  
Country Manager  
EDPR Romania

EDPR is highly committed to the Romanian market, and EDPR's presence since 2008 confirms this. The company is ready to continue investing in the development of the Romanian renewable energy market as soon as the State supports new investments by creating a stable legislative environment

edp renewables



# MONSSON OPERATION

member of PLC Group

[www.monsson-operation.eu](http://www.monsson-operation.eu)



the energy  
which creates the future



Monsson Operation, member of PLC Group, is a trusted supplier in the international renewable energy business environment.

Being a Romanian born company, the local RES market is a standing priority. The country will face a continuous development by 2030 with around 500 MW being added every year from both wind and solar capacities. Such growth will create more than 4,000 local job opportunities and training academies are already prepared to deliver the necessary skilled courses and committed to shape future careers within the renewable industry.

in Romania  
since 2007

We are ready to welcome the upcoming wind and solar power plants under our asset management services as we are well experienced and prepared for this challenge.



**15,000 MW**  
wind and solar capacities  
serviced worldwide

**1,500 MW**  
wind and solar capacities  
actively monitored

**800 MW**  
wind and solar capacities  
installed worldwide

**450 employees**  
in seven offices  
around the world

**5000 km**  
overhead power lines  
under management

**65 mil EUR**  
from installation, service  
and O&M in 2020



**Mihaela Aldea**  
CEO  
Monsson Operation  
member of PLC Group

**The Romanian RES market is entering a stage of dynamic growth – how are you gearing up to tackle this wave of opportunity?**

Indeed the local market is growing its RES capacity by at least 50% by 2030. As Monsson Operation has been acquired by PLC Group in late 2018, the focus is to make use of our joint international experience and bring to the table services that can both optimize and increase the productivity of our projects.

The Romanian market is mature and in need of ISP's (Independent Service Providers) that can help plant owners secure production and implement state of the art monitoring technologies. Monsson Operation currently has around 1,000 MW wind and PV projects under management in its dispatch center and over 15,000 MW customer portfolio across 15 countries. The future looks bright for the asset management services that the company is providing in Sweden, Italy, Romania, Germany and South-Africa. Under such services we have integrated our online Activity Management systems that allows wind farm and PV plant owners to manage online all the activities performed in the plant, offering a clear view on the supervision of contractors and subcontractors under a safe and secure environment.

**2018 was an important milestone with the PLC acquisition – how has the service offering changed as a result?**

PLC group has over 450 experienced technicians that build and operate renewable assets in more than 15 countries. By implementing reskilling programs

around the group, we will hire in the next two years an additional 100 technicians to overcome the new PV panel installation need and the growing numbers of turbines that will be installed in the local market up to 2030. Our clear estimation is that more than 800 turbines will be installed in Romania by 2030 and additional 4,000 jobs will be created to work in renewables on long term basis.

The experience we gained in the last 15 years of involvement in the RES asset management, combined with our new shareholders EPC experience, we will now be ready to offer Full EPC solutions for the new upcoming wind and PV projects. We can provide turn-key projects, electrical infrastructure and civil works management and do long term operation.

**That is an impressive array, how are you planning to maintain your privileged position and what are your personal goals for the company moving forward?**

We are proud to say that Monsson Operation started out as a leader and maintained this status in Romania. We had the first private RES dispatch center, we were the first company to hire and train wind turbine technicians, and the ones to set up the first and now largest renewable energy training center in south-east Europe, RESS.

Our goal is to provide state of the art services for the renewable energy market in Romania and Europe, continue the development of the company and diversify the activity in a way to make sure that our customers find the full value chain in our services.



[www.gwo-training.eu](http://www.gwo-training.eu)

**Renewable Energy School of Skills (RESS)** is the leading consultancy, innovation and technology company for wind energy training in South-East Europe, working with more than 90% of the market.

Our Energy School of Skills is a certified BZEE and GWO partner in Romania and the largest training school in SEE and together with BZEE's commitment to Real Turbine Learning our target is to improve Turbine Operation all over Europe. Starting summer of 2021 a second training center will be opened in Petrosani, Jiu Valley, to offer high quality training for reskilling programs implemented for energy transition areas.

**35**  
locations worldwide  
2 training centers in Romania  
Constanța & Petroșani

**10,000**  
wind energy technicians  
qualified yearly

**meet some of our people**



**Giorgiana Alexe**  
Managing Director

Giorgiana joined the training center in early 2014 and is now the managing director of both the Constanta and Petrosani training centers.



**Alina Lupașcu**  
Course Coordinator

After successfully finishing an internship program in our training Center, Alina is scheduling and organizing the logistics for more than 3,000 technicians per year.





Expert Opinion Article

# green energy: an increasingly attractive investment prospect

by Andrei Botiș, CEO, NAI Romania & Moldova

International companies focused on renewable energy had a record 2020 – Enphase Energy, SunPower, Sunnova or Tesla registered spectacular increases on the stock market, even surpassing 300%. In line with their choice of lifestyle, younger investors who prefer electric cars are looking for ways to invest in companies that contribute to a sustainable future and significantly reduce their carbon footprint.

This huge opportunity to invest in renewable energy sources has not been left unnoticed by Romanian investors either. Romania's potential includes 65% biomass, 17% wind energy, 12% solar energy, 4% micro hydropower plants, 1% photovoltaic + 1% geothermal. A standard wind turbine produces around 6 GWh annually, the equivalent of 3,000 households' consumption in a year and a productivity level that invariably attracts the attention of today's investors.

In order to obtain the necessary loans and financing for their

projects, wind and pv park developers need an evaluation report that includes the design and management of wind farms, the production and distribution of electricity, the evaluation of equipment maintenance and repair costs, and other financial and administrative issues. The assessment of revenues from the green electricity market takes into account various price indicators such as base load, maximum load or market value, renewable energy being subject to unpredictable weather conditions and constantly changing government regulations. Revenues from the sale of green energy is a relevant valuation tool that investors take into account and it allows for realistic operating estimates. With proper maintenance, the life cycle of a solar or wind power plant can last up to 30 years.

Today, stock market investors who want to diversify their portfolio identify countless opportunities for investments in sustainable energy, with the potential for strong growth in the coming years





further amplified by EU policies in light of the 2050 decarbonization plan. In addition, the European Commission highlighted the need for job creation in the field, leading to a high demand for qualified professionals in the renewable energy sector and an even higher economic impact. Investments in the production of solar and wind energy have proven profitable over time, and rapid technological progress is making it even more so in the present day scenario. It is important to receive clear data from the field and from the market is provided, and conduct regular evaluations to provide investors with the transparency and confidence they need to maintain and grow their confidence in the sector.



# PATRES

The Employers' Association of Renewable Energy Producers in Romania

www.patres.org

-  WIND
-  SOLAR
-  HYDRO
-  BIOMASS



PATRES (The Employers' Association of Renewable Energy Producers in Romania) started its activity in 2014. It provides a common voice for companies across the entire spectrum of renewable energy: solar, wind, hydro and biomass.

PATRES is an active participant in the public consultation process on primary energy legislation, as well as ANRE regulations and OPCOM procedures. Our organization has representatives in the Social Dialogue Commissions within the Ministry of Public Finance and the Ministry of Energy.

## our mission

- support and defend the interests of RES producers
- engage in constructive dialogue with relevant authorities in order to ensure a stable and predictable legal framework
- promote new technologies by collaborating with equipment producers and distributors

# PEIKKO GROUP

Your Turbine Foundation Optimizer – For the Winds of the World

[www.peikko.com/wind](http://www.peikko.com/wind)  
[wind@peikko.com](mailto:wind@peikko.com)



## Maximize the value and minimize the risks by partnering up with the turbine foundation optimizer

To harness the energy of the winds of the world, you need a solid foundation - one that is quick and economical to design, produce, transport and install, so that you can start feeding energy into the grid as soon as possible, with as low CO2 emissions as possible.

### OPTIMIZING PRE-CONSTRUCTION

Together with OEMs, tower suppliers and research institutes, Peikko develops the most optimal solutions for each market. We also partner with developers to specify the most suitable foundation type and location. We provide accurate preliminary foundation designs and investment calculations – including risk evaluations, CO2 studies and specialist training for your teams.

### OPTIMIZING CONSTRUCTION

Surprises are often found during the excavations – the geotechnical conditions might not be as expected. We can quickly study the situation and adapt the foundation designs to meet the changed conditions. With a direct link to steel component production, the effect to site schedule is minimized.

### OPTIMIZING AFTER CONSTRUCTION

As foundations are built very early on, issues might stem later, even after the commissioning of the wind farm. We are there to collect data, give recommendations and to write verifications.

When the turbines are coming to the end of their lifetime, we can analyze if this can be extended from the foundation perspective, resulting in extra years of energy production without any additional investment.



# PNE GROUP

[www.pne-ag.com](http://www.pne-ag.com)

PNE Group is one of the pioneers in developing wind farms at sea and on land. Based on this success, we are developing into a “Clean Energy Solutions Provider.”

The development of our different business segments is accompanied by a regional expansion of our business activities: in addition to Western industrialized countries, we are focusing our commercial activities on developing countries in Latin America, Africa and in both the Middle and Far East.

More than 450 employees dedicate themselves every day to moving one step closer to a world where energy demand is met solely from renewable energy sources. For clean, sustainable energy production – now and in the future.



## services

- initial site assessment
- implementation of approval procedures
- financing and turnkey construction
- operation
- repowering



## technologies



WIND



SOLAR



STORAGE



power-to-X



## PNE Romania

Dana Dinescu, Managing Director  
[dana.dinescu@pne-ag.com](mailto:dana.dinescu@pne-ag.com)  
+40 741 159 759



# RPIA

The Romanian Photovoltaic Industry Association

RPIA (the Romanian Photovoltaic Industry Association) is the voice of the solar industry and the associated clean energy value chain, driving the dialogue around the fastest growing, lowest-cost and most easily deployed energy source in Romania.

Solar power is the key enabler for Romania's pathway towards carbon neutrality, helping to shape a green foundation for its modern society and economy.

## our mission

- drive policies and initiatives to accelerate the efficient development of solar power and the associated value chain through active engagement in the national and European decision-making process
- communicate the benefits and potential of solar power to a wide audience
- enable the opportunity to create local value chains, qualified jobs and investments in innovation and clean energy technologies
- ensure a just transition, while contributing to the national security of supply
- be the central network for solar power and clean energy stakeholders in Romania



www.rwea.ro



# RWEA

The Romanian Wind Energy Association

# 90%

out of Romania's 3000MW installed wind power is represented by RWEA

RWEA (the Romanian Wind Energy Association) is a non-profit organization and the voice the wind energy industry. We are actively involved in national and international policy, promoting an open dialogue with the authorities. Our campaigns raise awareness about the benefits of wind energy and enhancing social acceptance, dispelling myths and providing easy access to credible information.

We support our members in a variety of ways, from networking to field trips and workshops. We frequently collaborate with local and global organizations and think-tanks to create the right synergies and exchange ideas on policy, financial instruments or technical know how.

**paving the way for a smooth energy transition**

## member makeover

- developers
- distribution companies
- turbine manufacturers
- service providers
- training centers
- legal, financial & consulting companies



## RESInvest in Romania

2021 marks the launch of the RESInvest in Romania program, dedicated to the development of the RES supply chain in Romania.

We are encouraging local production of technology used in the green sector and creating investment opportunities based on EU funds. RESInvest in Romania comes with recommendations of good practices for the sector's development, including projects for the integration of new professional activities on the labor market, updating the curriculum and job security.



# VSB

We know wind

[www.vsb.energy](http://www.vsb.energy)

VSB carefully oversees the wind energy project right from the start: beginning with site selection, plant and infrastructure planning, construction supervision, right through to technical and commercial management. We clarify legal matters, leading the project through the approval process and commission expert reports. The success of every project is our primary goal.

**20**  
years of  
experience

**200**  
employees in Europe

## your partner for green energy

VSB became an international group by opening the branches in Romania and Poland.

**Subsidiaries:** France, Czech Republic, Poland, Romania, Italia



## the wind is right catch every ray

By investing in solar and wind farms, you make a valuable contribution to the energy transition. But not only is this an attractive economic opportunity, it also entails decades of demanding technical and commercial challenges. We offer you a tailor-made service for your energy farm, relieving you of these challenges and keeping your investment profitable.

**We offer our services so that you can use every gust of wind and every ray of sun opportunely.**

- planning
- construction & comissioning
- technical & commercial management
- maintenance & repair
- repowering
- consulting

## investors

We offer institutional investors attractive investment opportunities including optimal project financing

## land owners

Are you a land owner and would you like to set up wind turbines on your property? VSB is a long-term and reliable partner who supports you during the entire project.

## joint venture partners

Public utility companies, energy suppliers, commercial enterprises, energy cooperatives and project planners can all implement their projects together with us as a joint venture partner.

**655**  
turbines built

**1400** MW  
total  
installed capacity

**58**  
PV plants built

**658**  
commercial  
management

**1100** MW  
technical  
management

**474**  
turbines O&M  
contracted



# WESEE

## Wind Energy Service East Europe

www.wesee.eu.com



Wind Energy Service East Europe, started in Romania in 2010 as a German-Romanian joint venture between EMEA Wind GmbH and Electrogrup, as a company specialized in installations and specific maintenance for wind turbines in the context of a rapidly growing wind energy market.

Through the years, our highly qualified staff, constantly trained according to the most relevant international certifications of the industry, contributed to successful projects and business growth and development.

2021 brought a consolidation of the German ownership together with the commencement of new business lines and a fresh multi brand approach for wind energy convertors, for full installation and maintenance services, keeping the focus on the core business that confirmed WESEE as an experienced partner European wide.



### FULL INSTALLATION SERVICES

WEC installation, foundation pre-assembly and base segment alignment, assembly/ preassembly works for nacelle and blades, PCT hybrid towers installation, cabling works & grid connections, safety ladder & service lift installation, repowering and other retrofits.



### MAINTENANCE ACTIVITIES

Annual maintenance, major components exchange, break in maintenance, oil and coolant exchange, yaw brake pads exchange, retrofits, anchor bolts tensioning, various mechanical and electrical troubleshooting and repairs, service lifts repairs etc.



### ENERGY SERVICES

High Voltage and Very High Voltage overhead lines pole assembly and installation, power stations, internal grid connections, mechanical installations for renewable projects (wind and solar).



- 1000+** MW installed
- 2000+** MW maintained
- 400+** WEC installations
- 850+** maintained turbines
- 11** years of experience
- 12** countries of operation
- 70** dedicated professionals
- multi brand**  
GE, Enercon, Gamesa, Nordex

# WOLF THEISS

www.wolftheiss.com

## WOLF THEISS



WOLF THEISS  
**ONE** REGION FIRM.

Wolf Theiss is one of the leading law firms in Central, Eastern and South-Eastern Europe. With over 30 lawyers, led by Managing Partner, Mr. Bryan Jardine, (who is also the Coordinator of the Firm's regional renewable energy practice), the Bucharest team's work involves local and cross-border representation of both domestic and international clients.

Combining expertise in law and business, Wolf Theiss develops innovative and pioneering solutions that integrate legal, financial and business know-how in the energy related matters on which it advises.

## We advised on a wide range of energy projects:

Assisting Ingka Investments with the staggered acquisition of 100% of the shares in 7 SPVs in Romania, holding 171 MW in RES

Advising one of the largest wind turbine producers on the acquisition of a number of wind park projects in Romania and Bulgaria.

Advising PV, hydro and wind producers on electricity and green certificates trading.

Advising a major Austrian energy provider, on the acquisition and development of 66MW wind farm projects in Romania.

## No.1

ranked by DealWatch by the number of deals closed in Romania in the last 7 years.

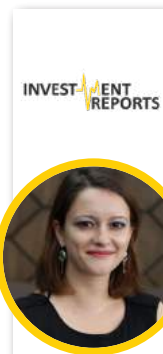
## Assisted on

**1 of 3 largest deals** ever made in Romania  
**3 out of the top 5 deals by value** signed in Romania in 2019  
**the largest transaction closed** so far in 2021.

# thank you

We want to thank all industry members and public authorities for their invaluable contribution to Romania's first Code of Good Practice for Renewable Energy. We are honored to be part of a dynamic and collaborative community, eager to join forces and push the industry forward.

## editorial team



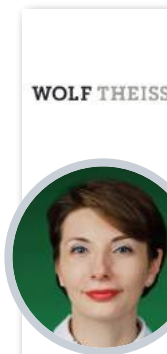
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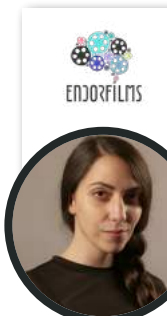
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adina  
Aurel



bryan  
Jardine



flavia  
Negoescu

INVESTMENT  
REPORTS

WOLF THEISS

EPG  
ENERGY POLICY GROUP

ENDORFILTS



**ENGIE Romania is a key market player in RES  
and a reliable partner for your business**

### **WIND Power Generation**

100 MW installed capacity in two wind farms

### **SOLAR Power Generation**

878 kWp installed PV in decentralized solutions for our customers

### **GREEN Mobility Solutions**

300 electric charging points installed  
Compressed natural gas for vehicles