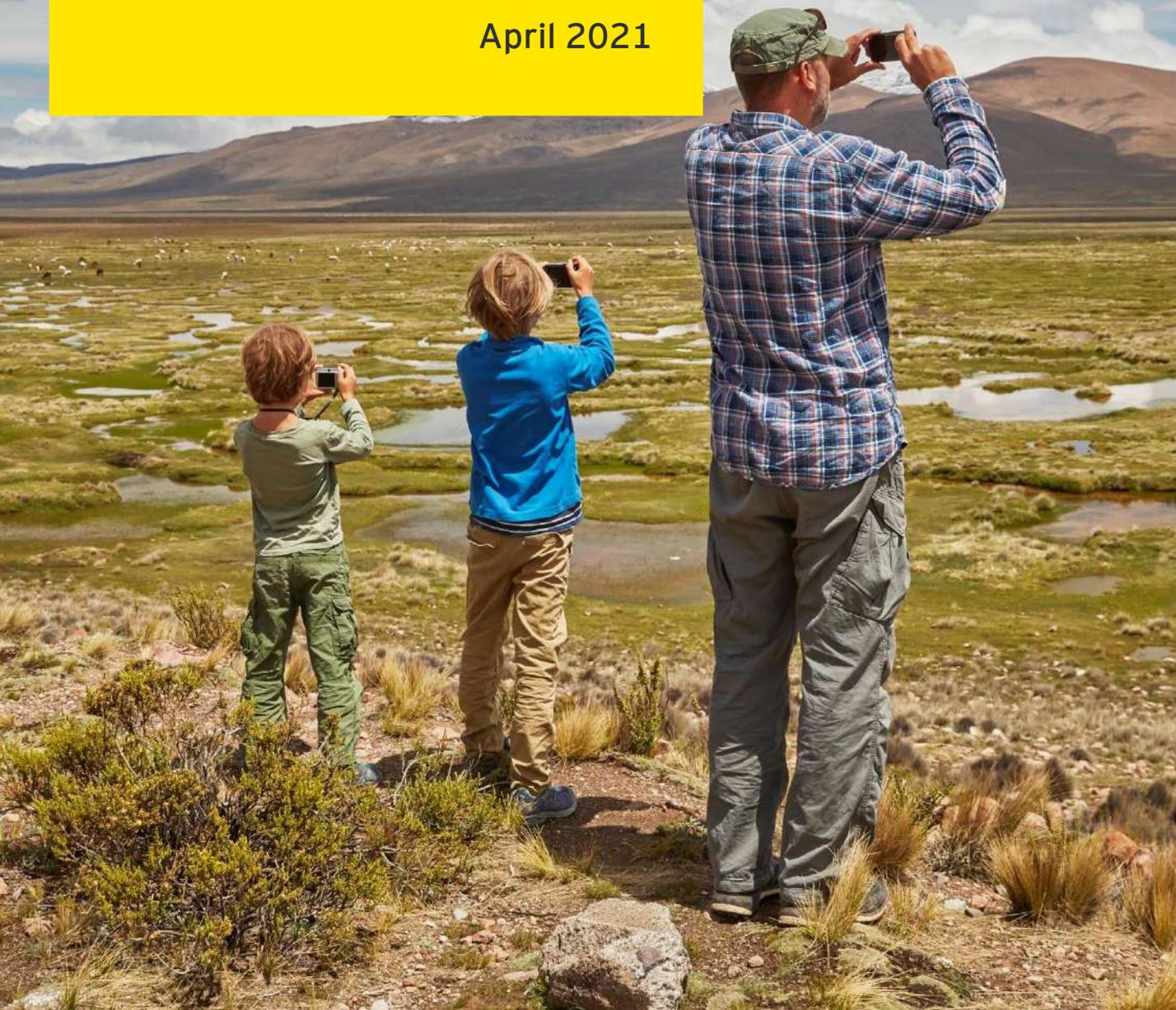


The European Green Deal

Decarbonizing the Romanian
energy sector through
renewables

April 2021



Contents

Chapter Title	Page
Foreword	03
China vs. USA: a battle for decarbonization?	04
Europe's path towards fighting climate change: The Green Deal	07
Romania's energy market and the Green Deal	11
Low-carbon energy transition in Romania: private & public initiatives	14
What should Romania do in order to achieve Green Deal targets and thrive in the renewables arena?	18
Project team	20

About this report

The support framework offered by the European Green Deal is a key driver for the transition to low emission energy industries across the European Union. The level of investments in the area of renewable energy in Romania will depend on appropriate regulations and governmental support and a perfect synchronization with current business intentions. The report analyzes current trends on the Romanian energy market, as well as other energy sector developments within large economies that reflect the importance of renewable energy adoption across the globe for a timely and appropriate response to climate change.

Foreword

Climate change has become a central topic on everyone's agenda, private or public actors, illustrating the scientists' concerns on the impact of economic activities on the environment. While many large companies across the globe have expressed their commitment to a more sustainable world, COVID-19 has shown the vulnerabilities of the business environment.

The health crisis has amplified concerns on climate change and drawn more attention towards the rise of sustainability and environmental protection across the globe. The need for decarbonization has generated changes in global strategies of governments and companies in terms of energy efficiency and renewable energy sources across the globe.

Nevertheless, climate change negationism, populism and low adoption of renewables in some countries have undermined the efforts made so far in terms of decarbonization and fighting climate change.

The decarbonization of Romania's energy sector relies largely on the support framework of the European Green Deal. The potential of renewable energy in the market can prove to be the key driver for the decarbonization of the Romanian energy sector, as long as public initiatives synchronize with business intentions.





1

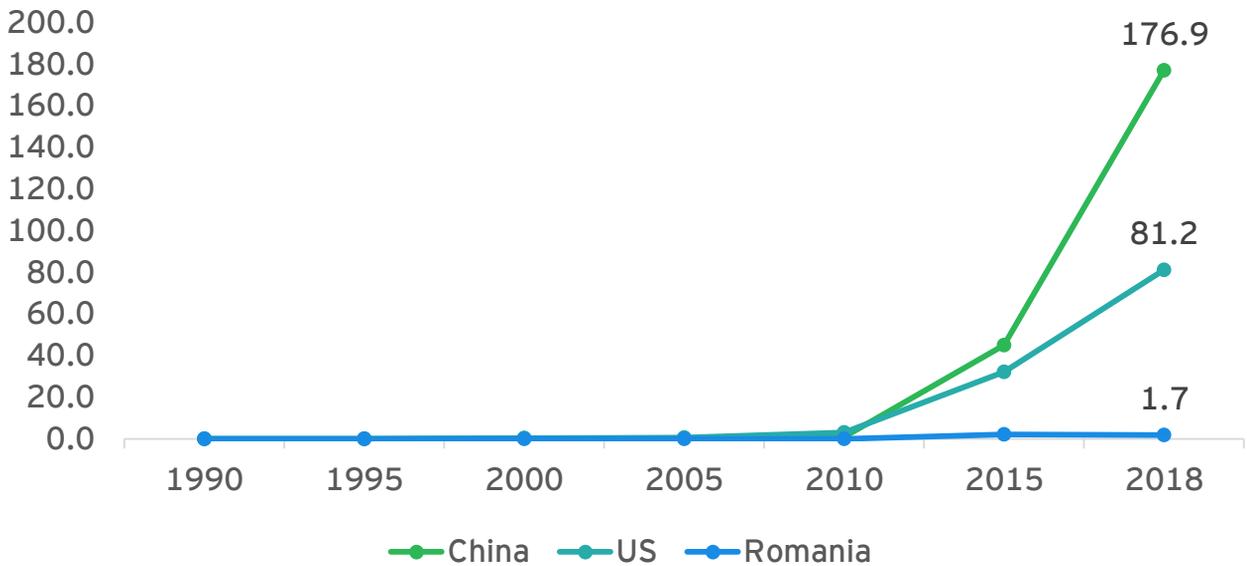
China vs. USA: a battle for decarbonization?

Leaders of the world dealing with climate change

The leading economies of the world in terms of adopting renewable energy are, paradoxically, the largest polluters of the world: China, followed by the United States. China is the world's leading country in electricity from clean energy sources, accounting for 28.7% of global wind generation and 31.9% of global solar generation. US is the second largest producer from both wind and solar, accounting for 21.7% of global wind generation and 14.7% of global solar generation (2018 data).

In recent years, China has manifested its desire to invest in green energy infrastructure and has shown this commitment by doubling its new renewable capacity in 2020. Nevertheless, energy demand in these two major economies remains highly dependent on fossil fuels.

Figure 1: Solar PV electricity generation (in TWh)



Source: International Energy Agency

For the United States, the last 4 years have been more complicated, marked by Trump's presidency, a climate change skeptic. During his mandate, he has withdrawn the United States from the Paris Climate Agreement, key legally binding international treaty on climate change and has prioritized economic growth over reduction of CO2 emissions, claiming environmental regulations could harm millions of jobs.

After 4 years of zero-climate action, American citizens have turned to a very different leader, who has been outspoken about the importance of protecting the environment. On day 1 of his presidency, Biden rejoined the Paris Climate Agreement, revoked the permit for a new oil pipeline system and vowed to ensure the U.S. achieves a 100% clean

energy economy and reaches net-zero emissions no later than 2050 and reduce the carbon of US building stock with 50% by 2035.

On April 22, Earth Day, the United States will host a Climate Summit, where the leaders of the major polluting nations of the world will discuss about ambitious pledges in terms of decarbonization.

Nevertheless, putting promises into actions, more precisely into legislation and regulations may prove be harder than it seems, with a divided Congress and additionally, the lobbying influence of big fossil fuels corporations. China and the United States will ultimately play the largest role in the global fight against climate change.





2

Europe's path towards fighting climate change: The Green Deal

EU's journey to climate neutrality

Climate neutrality has also been defined as a 2050 target for the EU, a desideratum stipulated within the Green Deal framework, a legal commitment which includes a set of initiatives that aims to smoothen Europe's transition towards a clean, circular economy through efficient use of resources, restauration of biodiversity and cutting pollution in all forms.



The implementation of the deal tackles various such as innovating agriculture, investing in hydrogen for energy purposes, renovation of building stock, offshore energy, minimizing current pollution and various forms of sustainable investment.

By 2030, the European Commission proposed the greenhouse gases reductions to be at least 55% compared with 1990 levels.

One of the main ways through which the European Commission aims to achieve climate neutrality is decarbonizing the energy sector. Arguably, carbon trading or carbon offsetting/reduction projects represent short-term solutions to a pressing problem. According to the European Commission, 75% of the EU's greenhouse gas emissions come from the production and use of energy across economic sectors.

As part of the European Green Deal, the European Commission proposed in September 2020 to raise the 2030 greenhouse gas emission reduction target, including emissions and removals, to at least

55% compared to 1990

Several funding mechanisms have been put in place for decarbonizing the energy sector to support the targets set within the deal:

- 1. The Recovery and Resilience Facility**, a framework that will make €672.5 billion in loans and grants available to support reforms and investments within member countries. 37% of expenditure is set to be directed towards climate investments and reforms.
addresses energy efficiency projects. Private companies, public entities and other types of organizations can attract between 70% and 100% non-reimbursable funding for investments in modernizing the power sector and wider energy systems starting 2021.
- 2. The Just Transition Mechanism**, key driver of the European Green Deal, mobilizing 150 billion EUR for the next 8 years (2021-2027) through a common fund (Just Transition Fund), an transition scheme (InvestEU "Just Transition" scheme with €30 billion as investments) and an EIB public sector loan scheme (backed by €1.5 billion of the EU budget, mobilizing up to €30 billion of investments)
- 3. The EU renewable energy financing mechanism**, where the private sector can play an important role in developing renewable energy projects for national energy markets
- 4. The Modernization Fund**
- 5. The 10 bln. euro Innovation Fund** focuses on investments in highly innovative technologies that can bring on significant emission reductions. Companies, public entities and international organizations have the opportunity to obtain up to 60% of the costs linked to innovation for such projects.
- 6. Connecting Europe Facility** aims to facilitate decarbonization and interoperability of networks across borders and sectors. Legal entities can secure up to 50% (or 75% under specific conditions) of the costs related to investments in the energy transport area and cross-border renewable energy projects.

In order to effectively fight climate change. EU's leadership has concluded that the power sector should be comprised of mostly renewable sources. On the long-term, the goal for member states is to ultimately eliminate coal and other fossil fuels from their energy mix. EU's vision on the power sector is based largely on energy efficiency and renewable energy, while the deal also tackles important issues such as decarbonizing gas, energy affordability, as well as market integration, interconnectivity and digitalization. The EU's plan to become the first carbon-neutral continent by 2050 was adopted by the European Council at the end of 2019, with an opt-out from Poland.

In terms of decarbonization and investing in zero/low-emissions energy solutions, the EU's target for the share of renewable energy in gross final consumption by 2030 is 32%. This transition to renewable energy has faced criticism from member countries highly dependent on fossil fuels. Nevertheless, EU's leadership has come up with various frameworks to support the most

affected countries by this transition.

As part of the European Green Deal, the top beneficiaries of the Just Transition Mechanism are Poland, Germany and Romania, considering their high dependency on fossil fuels for the energy consumption. Romania will be able to access as much as 4.45 billion EUR as part of this mechanism, which promises to support the transition towards low-carbon energy and also improve energy infrastructure and create new jobs within the green economy spectrum.

The three Ds that all energy experts are talking: decarbonization, digitalization, decentralization should be the driving forces to the new energy world at global level and for the entire European Economic Area, while the energy business sector is set to play a huge role in this transformation, along with national regulators.

32%

is the targeted share of renewable energy in gross final consumption by 2030 for the European Union



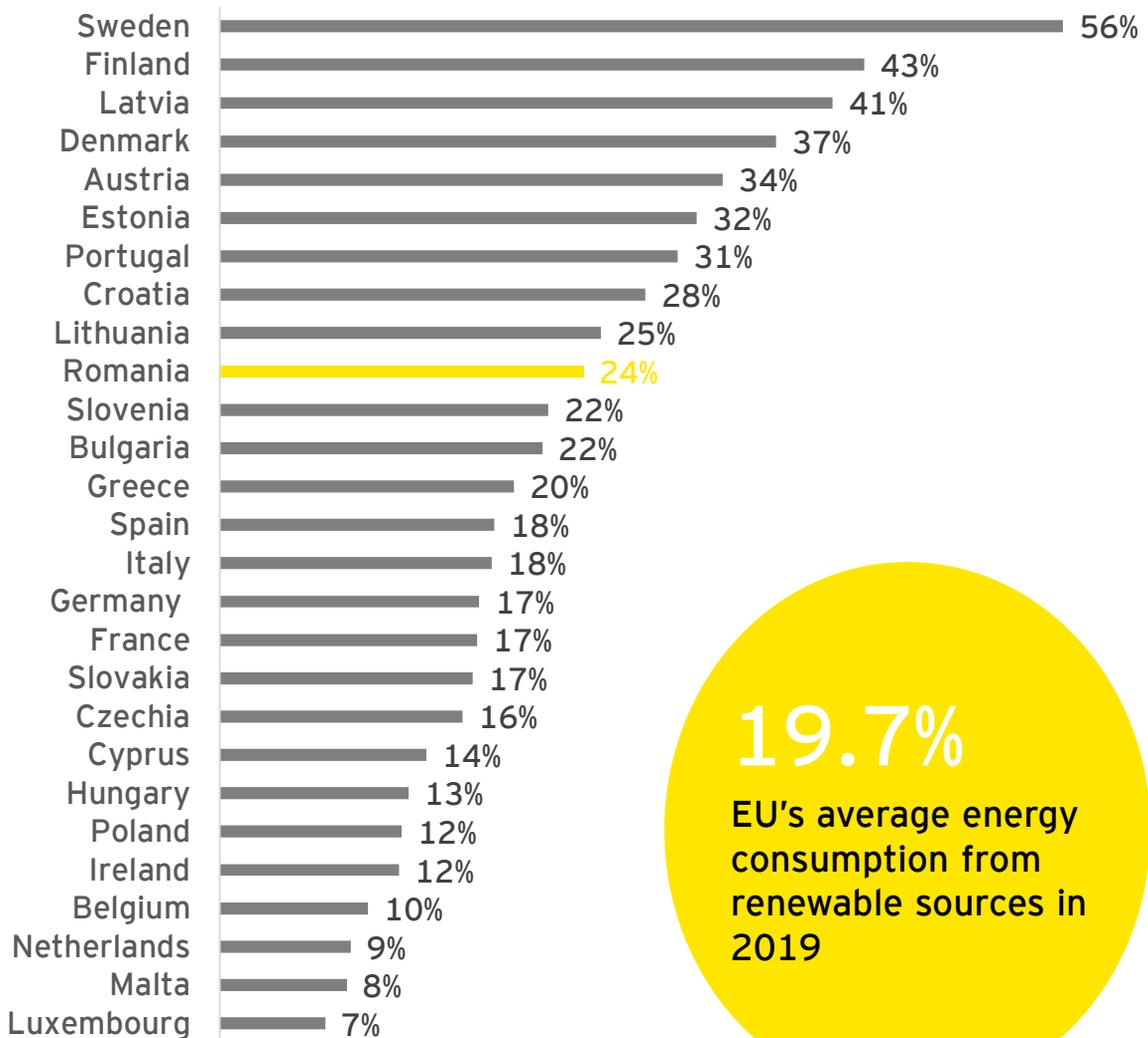
3

Romania's energy market and the Green Deal

Romania reached its 2020 EU renewables target of 24% of final energy consumption coming from renewables several years ago. In order to reach its 2030 renewables target of 30.7%, Romania plans to add around 7 GW of new renewables capacity, of which around 3.7 GW is projected to be solar projects, according to the plan.

In terms of energy consumption, in 2019, little over of 24% energy consumption originated from renewable energy sources, placing our country on the 10th place in the EU and above the union's average level.

Figure 2: Percentage of energy consumption from renewable sources in 2019, EU Countries

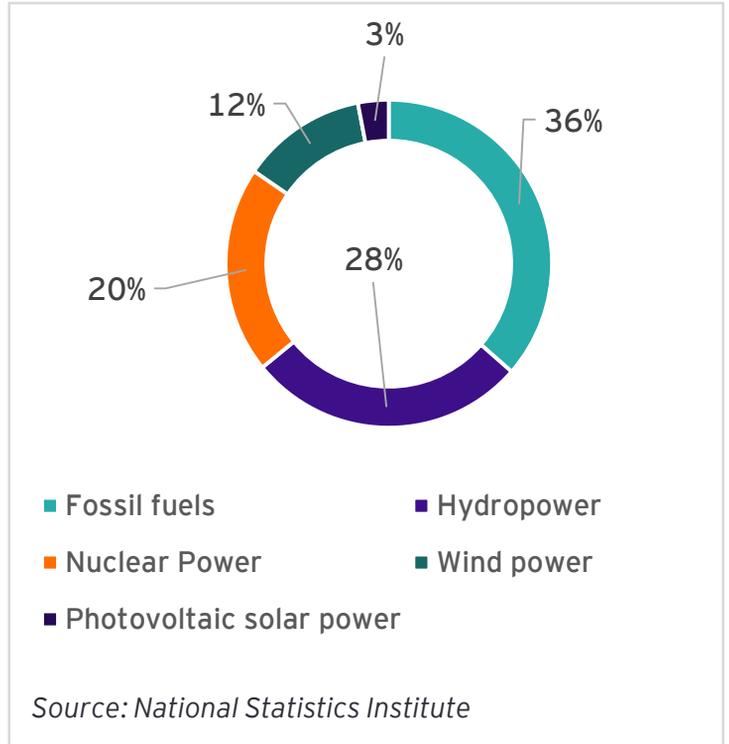


Source: Eurostat

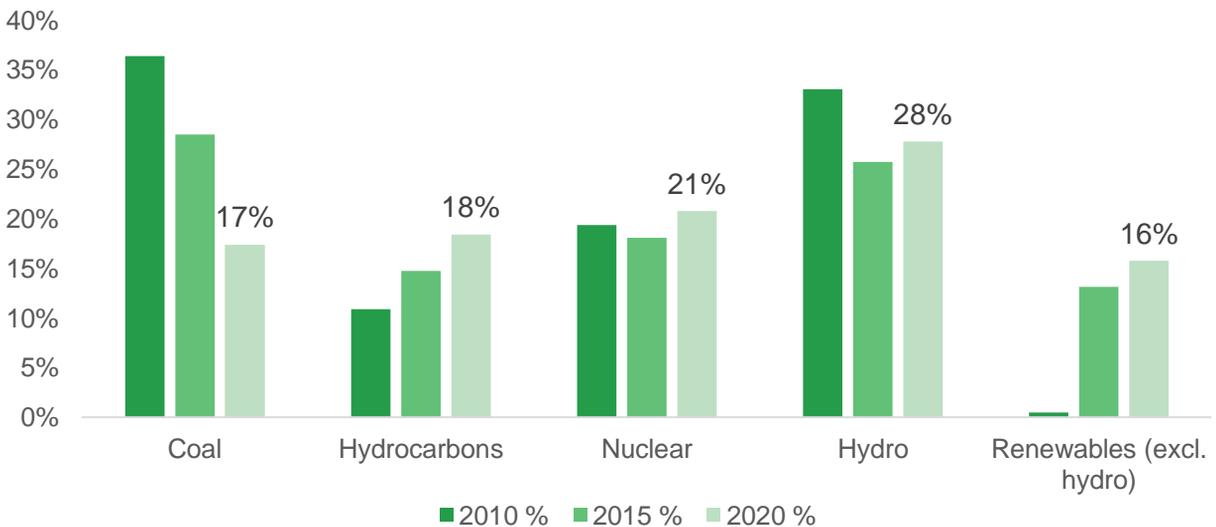
Romania's energy mix

In 2020, electricity production in Romania was comprised of 12.4% wind power, 3.4% from photovoltaic solar panels, while 27.6% of the electricity production was coming from hydropower. In total, renewable energy production (wind, photovoltaic and biomass) amounted to 16%.

According to the data provided by the European Commission, Romania's greenhouse gas emissions fell over 50% compared to 1990's levels due to a significant reduction in energy demand and industrial activity, increase in energy efficiency and gradual compliance to more restrictive environmental standards. Energy still represents the main source, accounting for 2/3 of national GHG emissions, followed by agriculture, industry and waste management.



The electricity generation mix has undergone structural changes during the last decade. While coal's share halved in the reference timeframe, renewables filled in most of the gap following available potential and the accelerated development during 2010-2015 and natural gas experienced a sustained growth from 11% to 18% as the energy transition fuel.



Source: Transelectrica



4

Low-carbon energy transition in Romania: private & public initiatives

Business opportunities in the Romanian renewable energy sector

In the past years, there have been several energy multinational companies very open to change that have embraced the sustainability agenda in their core business strategy. The introduction of the European Green Deal will clearly impact the activity of important actors in the energy arena and the need to reshape their investment strategy in the following decades has been acknowledged by multiple companies.

Romania has witnessed a decline in terms of renewable energy attractiveness, partly due to the lack of appropriate regulations and appropriate governmental support. According to **EY latest Renewable**

Energy Country Attractiveness Index (RECAI), once among the top 40 most attractive countries in terms of renewable energy in 2015 (34th place), in 2020, our country has fallen below this top, being surpassed by European countries such as Poland, Greece and Austria.

However, several companies have announced their intention to invest in clean energy projects locally.



Transactions and future investments

Enel is one of the energy companies present in Romania that has expressed desire to decarbonize their energy mix by 2050, with renewables taking over fossil fuels in terms of electricity production.

Other visible developments in the market are leaning towards the transition to renewables: in 2020, **Hidroelectrica** acquired the Crucea Wind Farm (with a capacity of 108 MW) and STEAG Energie Romania from STEAG GmbH, while **Electrica** acquired the Stănești photovoltaic park.

There are also major transactions announced in 2021 on the local market, including a **sale of CEZ** assets in Romania to Macquarie Infrastructure and Real Assets, evaluated at 1.2 billion EUR. **MIRA's** leadership has expressed the fact that Romania represents a very dynamic energy market and that the company is committed to invest in the transition towards low-carbon electricity.

Industry is also aboard the energy transition. **GFG Alliance's** steel businesses, including Liberty Steel Galati, will be incorporated into a new global group - Liberty Steel Group, with plans to implement a carbon-neutral strategy by 2030. **Green steel** strategy will be a key element for the newly established group, focusing on electric arc furnaces to recycle scrap steel, as well as using renewable sources of energy. This green strategy will also explore environmentally friendly technology such as hydrogen-based steel-making.

These are just some of the acquisitions made by important energy actors, with many investments announced for the upcoming period.



Governmental action for renewable energy transition

At governmental level, last year Power Purchase Agreements were introduced, in order to boost investments in the renewables sector by deregulating the local electricity market, per EU common-market regulations, thus allowing investors to minimize transactions risks. Until this legislative change, all electricity transactions could be carried out solely on the centralized market in a transparent, public, competitive and non-discriminatory manner. This restriction on freely negotiated PPAs was seen as the main obstacle preventing investments in new generation capacities, especially in the renewable sector.

Moreover, a Contracts for Difference scheme is currently assessed at the Ministry of Energy level, with financial support from the EBRD, in order to support investors interested in developing clean energy projects in Romania.

The New Electricity Law , where drafting process is currently ongoing and managed with support from EBRD, will include relevant provisions related to EU environmental legislation, system flexibility, increased interconnection and market liberalization that represent facilitators for the transition to a low-carbon economy





5

What should Romania do in order to reach its Green Deal targets and thrive in the renewables arena?

Six recommendations for an integrated plan for the renewable energy transition



Updates on policies and legislation are necessary to stimulate investments - the right mix of legal and regulatory framework will favor a sustained deployment of renewable energy capacities.



At country level, **strategic projects** must to be defined, prioritized and tackled in the context of significant financing potential of Recovery and Resilience Facility and other EU Funds available.



Developing a **resilient and flexible infrastructure** shall be the centerpiece of renewables integration - a high degree of grid stability can smoothen the energy transition.



Adopting new technologies for energy storage, improving energy efficiency and increasing decentralized generation will increase the share of clean energy to be installed.



Specific **market mechanisms** need to be developed to ensure maximum benefits for participants and to harness the full potential of renewables integration.



Last, not least, an **agile-based approach** can prove successful for achieving Green Deal targets - assessing current state, setting the objectives, tracking progress, receiving feedback from the sector and adapting on the go are the key steps of the transformation process.

Project team



Mihai Drăghici
Senior Manager, Consulting
Energy Sector Leader
EY Romania
Mihai.Draghici@ro.ey.com



George Constantin
Senior Consultant
Consulting
EY Romania
George.Constantin@ro.ey.com



Elena Buga
Knowledge Management
Specialist
EY Romania
Elena.Buga@ro.ey.com

EY | Building a better working world

EY exists to build a better working world, helping to create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to and new answers for the complex issues facing our world today.

© 2020 EYGM Limited.
All rights reserved.

ey.com

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity.

Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation is available via ey.com/privacy.

For more information about our organization, please visit ey.com.

