

大成 DENTONS

Investing in renewable energy projects in Europe

Dentons' Guide 2020



Official media partner

BloombergNEF

Foreword

After several years of declining clean energy investment, Europe's energy transition is entering a new phase. The von der Leyen Commission's goal of replacing the current 2030 emissions reduction target of 40 percent with a target of 55 percent reductions against 1990 levels calls for a step change in member states' decarbonization efforts. This increased ambition, and the targets set by member states at national level, will help end the slowdown in European renewables investment that has come with many countries meeting their 2020 goals earlier than anticipated.

The clean energy sector has become a mature and competitive industry on which much of the EU's climate ambition is based. Energy demand from transport, as well as that of residential and industrial heating, will increasingly have to be met with clean electricity for emissions to decline towards net zero by 2050. BNEF estimates that

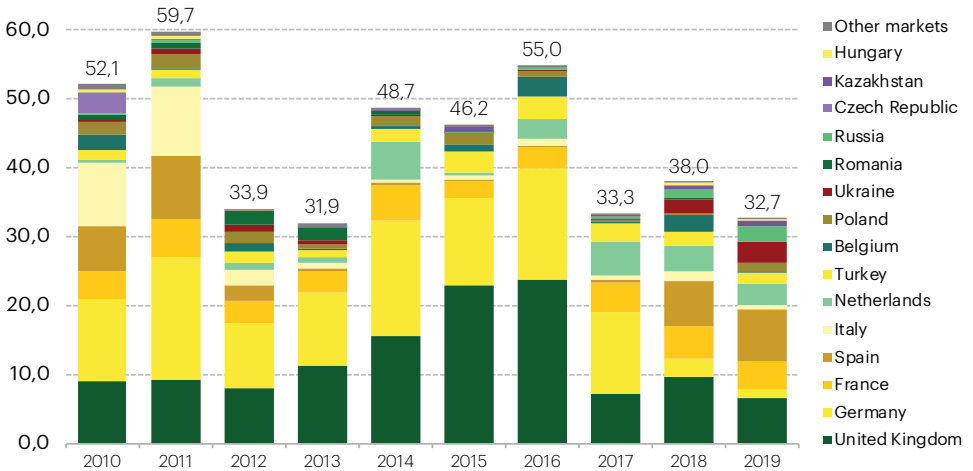
just over €1 trillion in clean energy investment is needed over the next decade for the EU to meet its clean energy deployment goals. Batteries that help better integrate variable renewables and power electric vehicles are another key feature of this transition and are set to see investment grow. Anticipated cost declines in renewables and storage technologies mean that the least-cost solution to exceeding 70 percent of renewables in the power system by 2030 calls for 51 GW of utility-scale storage installations. The Commission's approval of €3.2 billion in state aid for research and innovation in battery technology from seven member states in December 2019 is a sign of how critical this sector is considered in European capitals.

The new Commission's Green Deal communication published at the end of 2019 highlights the more strategic approach it wants to give to the EU's energy transition. A combination of favorable

financing regulations, changes to taxation and state aid will be used to support the development of industrial actors that are world leaders in being clean. For renewables investors, this could mean a reduction in the cost of debt and tax burdens relative to fossil fuel projects, adding to an already supportive financing environment. Adoption of new rules on corporate disclosure and better labeling of clean investments through the 'Green Taxonomy' are other measures that will boost the clean energy sector's appeal to corporate offtakers and investors alike.

Some of the doubts left around the enforcement of 2030 targets are also being alleviated. Progress made by member states towards their share of the 2030 emissions reduction efforts could be monitored through the 'Semester Process,' the EU's twice-yearly economic and budget plan monitoring exercises made infamous during the recent sovereign debt crisis. Member states will also increasingly need to show their commitment to an accelerated transition to access the €285 billion EU budget earmarked for climate, and the new

US\$ billion



New clean energy investment in the markets covered in this report, 2010–2019

Source: BloombergNEF

€100 billion 'Just Transition' fund. The coal sector is the one that must create space for renewables investment first. Higher EU ETS carbon prices and national coal phase-out policies have already made a major dent in EU coal capacity, and BNEF expects that just under 90 GW of capacity will be retired over the next decade under current policies.

For all the positive momentum brought by the new Commission and the continued maturing of clean technologies, there are also reasons to temper this optimism. Whilst the record score of the Greens in the European Parliamentary elections confirmed a shift in popular opinion in favor of climate action, local opposition to clean infrastructure is increasingly constraining investment. Germany's wind sector, which became the largest contributor to power generation ahead of coal in 2019, is going through a major downturn caused by rampant litigation and permitting issues. New installations in 2019 have crashed to 1.4 GW from a high of 4.9 GW in 2017, destroying thousands of jobs in the process. These numbers are all the more worrying as BNEF expects that an average installation rate of 7 GW

a year over the next decade is needed for Germany to meet its climate objectives and replace its nuclear and coal generation fleet. The German example highlights one of the key challenges faced by clean energy investors. High-level goals are a major step towards a more dynamic European clean energy investment market for the years to come but project development conditions on the ground are often still excessively cumbersome. The EU and member states will need to take steps in favor of clean infrastructure deployment if they are to stay on track to become the first region to achieve net zero by 2050.

Dario Traum

Head of Policy – EMEA, BloombergNEF

The European wind industry faces major challenges—the EU Green Deal must include a renewables industrial policy

The German wind turbine manufacturer Enercon announced 3,000 redundancies at the end of 2019. This makes 38,000 job losses in the wind industry in Germany in the last four years. And the wind supply chain is struggling across Europe right now. Another of the seven main European turbine manufacturers, Senvion, is filing for bankruptcy.

Germany's problems owe much to national policy mistakes. But three generic issues are weighing down the wind industry and risk undermining the energy transition and fight against climate change:

i) The rapid fall in auction prices for new wind farms is great for consumers and the industry welcomes it. It is due in large part to global supply chains that

allow turbine manufacturers to source materials and components at the best price, scale and quality. But the margins on what we make and assemble in Europe are extremely tight.

- ii) Steel safeguard and other recent trade defense measures increase the cost of making wind turbines in Europe. They are also undermining the cost reductions we have achieved and risk pushing high value-added jobs out of Europe.
- iii) The Chinese wind turbine industry is knocking at Europe's door. They already challenge European manufacturers in non-EU markets, especially with their cheap state-backed finance. They are now selling turbines in Europe. As in

other sectors, China has industrial overcapacity in wind turbines, and their domestic market is contracting...

Europe led the world in wind energy and still has the best technology (just). The European Commission and IEA both see wind becoming the number one source of power in Europe. And for good reason: it is the cheapest form of new power in most of Europe and with the technology developing it is an increasingly stable form of energy, quite apart from how it benefits climate change and air quality.

But it does not automatically follow that the further expansion of wind will be “made in Europe.” If Europe has a weaker manufacturing base, it will be harder to expand renewables and deliver the energy transition.

Europe needs a clear industrial policy for the renewables industries it has painstakingly developed. The Green Deal for Europe is a great opportunity to establish one. The key elements would be:

- Market scale in Europe and visibility to support investments. The National Energy and Climate Plans for 2030 are central to this.

- Sustained investment in research and innovation. Like other “mature” industries such as automotives and aviation, wind needs continued innovation to remain competitive.
- Policies that keep financing costs low. Wind is capital intensive. Those financing it need a perspective of stable revenues.
- Trade policies that recognize the importance of global supply chains to keeping high value-added manufacturing in Europe and to a cost-effective energy transition.
- A strong focus on skills and workforce development.

Europe has over 300,000 jobs in wind energy today. If we get the Green Deal and industrial policy right, there could be many more.

Giles Dickson

CEO, WindEurope

Solar boom in the EU: a new solar decade

As we stand at the brink of a new decade, it is a good time to look forwards and consider the place of solar in the European Union's energy mix – today and tomorrow. In 2019 we focused with greater depth on Europe and published our first-ever EU Market Outlook, which provides details on what we expect to be the prelude of a European solar boom for the coming decade and beyond. According to our report, 2019 was one of the best solar years on record in the EU-28, with an estimated 16.7 GW of installations added in the region, representing a 104 percent increase over the 8.2 GW added in 2018. This makes 2019 the strongest growth year for solar in the EU-28 since 2010.

In 2019, Spain regained its 2008 position as Europe's largest solar market, adding 4.7 GW. Rounding out the top solar markets for 2019 were Germany (4 GW), the Netherlands (2.5 GW), France (1.1 GW), and Poland, which nearly quadrupled its installed

capacity to 784 MW. This trend of increased solar installations was noted across the entire EU, with 26 of the 28 member states installing more solar in 2019 than the year before. By the end of 2019, the EU saw a total of around 131.9 GW of solar PV, which represents a 14 percent increase over the 115.2 GW operating in 2018.

There are several reasons to explain this new solar boom in Europe. Primarily, the increased demand can be attributed to solar's cost-competitiveness—it is often the cheapest power generation source—as well as the approaching deadline for member states to meet their binding national 2020 renewable energy targets. EU countries have also begun to prepare for their road to compliance with the Commission's Clean Energy Package, which sets a 32 percent renewables target by 2030. As the most popular energy choice for Europeans, solar is an obvious candidate to help national

governments meet their climate targets; and as the most versatile, flexible, and easy-to-install means of expanding the share of renewables, solar emerges as the prime solution in transitioning to a climate-neutral Europe. The 2019 ‘Clean Energy for All Europeans’ legislative package contains many pro-solar provisions that will support the dissemination of PV power until 2030.

Despite adding more capacity than any other power generation technology in the EU in 2019, solar’s share of electricity supply is still only close to 5 percent. There is still significant room to take advantage of solar’s manifold benefits, and fully tap the nearly endless opportunities for solar in Europe. For example, if solar were to be installed on all available rooftop space in the EU, this would produce at least 680 TWh of renewable electricity per year, representing almost 25 percent of the current electricity consumption. Since more than 90 percent of EU rooftops are unused, there is immense potential for renewable power sitting right over our heads. Further, Europe needs to strengthen the solar manufacturing sector as a cornerstone of the green economy, positioning solar technology as a major element in the EU’s industrial strategy. To ensure both Europe’s long-term

security of supply and industrial leadership in clean energy technologies, it is key to establish solar as a strategic value chain.

In the most likely medium-scenario of our EU Market Outlook 2019–2023, we expect continued growth in the EU solar PV market until 2023, with a 26 percent increase in 2020 bringing demand to 21 GW, and installations on track to reach 21.9 GW in 2021. The record-breaking year is expected to be 2022, with an anticipated all-time high 24.3 GW of installations in the EU, and again in 2023 with 26.8 GW of newly-installed solar capacity. Our report signals that 2020 will be the beginning of a true solar decade for the EU, as solar contributes not only to the EU’s 2030 climate targets, which include the ‘Clean Energy Package’ target of 32 percent renewables, but also to the more recently proposed European Green Deal target of at least 50 percent and up to 55 percent reduction in greenhouse gas emissions. Let the solar decade begin!

Michael Schmela

Executive Advisor and Head of Market Intelligence, SolarPower Europe

EU regulatory overview



2019 saw the adoption of the final parts of the EU's Clean Energy Package, including the new Internal Market Directive and Regulation, whose provisions may be as important for the renewable energy sources (RES) sector as the revised Renewables Directive and the Energy Union Governance Regulation, adopted in December 2018.

In June 2019, the European Commission published its assessment of the draft integrated National Energy and Climate Plans submitted by EU member states under the Governance Regulation. They found that in relation to RES, the 2030 targets set by member states collectively fell short of the binding EU-wide target of 32 percent of final

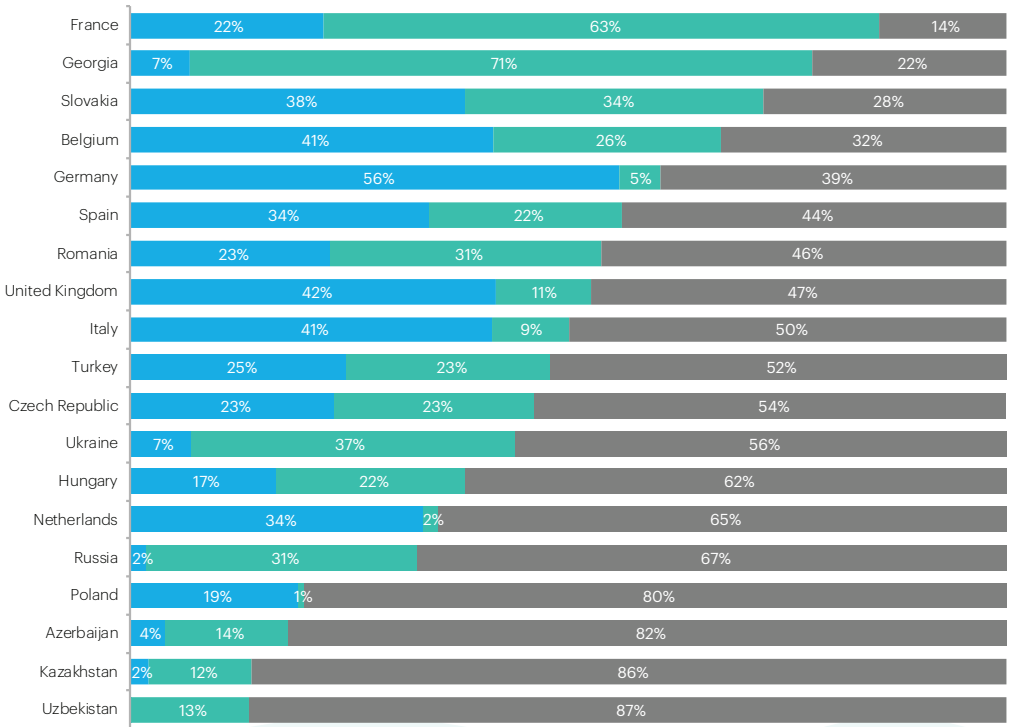
energy consumption to come from RES by 2030—perhaps by as much as 1.6 percentage points. The recommendations issued to a number of member states inviting them to reconsider their RES ambition for 2030 are an early test of the new governance framework, which has no EU-level binding targets on individual member states.

Of course, it is one thing to set targets and another to achieve them. But the Clean Energy Package had scarcely started to come into force before the new European Commission led by Ursula von der Leyen published its initial proposals for a European Green New Deal, which go well beyond the ambitions of the Clean Energy Package in a number of respects.

The European Green Deal is in large part the EU's response to the need identified by the Intergovernmental Panel on Climate Change at a global level, to aim for net zero greenhouse gas emissions by around 2050 in order to keep global average temperature increases to an acceptable level from the point

of view of climate impacts. The headline interim goal of increasing the EU's greenhouse gas emission reductions target for 2030 "to at least 50 percent and towards 55 percent compared with 1990 levels in a responsible way" represents a significantly increased level of ambition.

Share of 2018 installed capacity



- Renewables
- Other zero carbon
- Fossil fuels

Generation capacity mix of the markets covered in this report, 2018

Note: "Other zero carbon" includes nuclear and large hydro.

Source: BloombergNEF

Alongside the Commission's Communication on the European Green Deal, a roadmap of key actions indicates that the next two years should see a series of EU policy or legislative proposals that are highly relevant to the renewables sector, ranging from revisions to the EU Emissions Trading Scheme and a carbon border adjustment mechanism for "selected sectors," to revision of the Energy Taxation Directive and a strategy on offshore wind.

No new RES sectoral target has been proposed so far, but the Green Deal Communication refers to the need to develop, by 2050, a power sector "that is based largely on renewable sources, complemented by the rapid phasing out of coal and decarbonizing gas." The ways that the revised EU rules on electricity market structure and design in the Clean Energy Package are implemented at member state level will

be crucial to making this possible.

Reading through the country-specific chapters of this guide, it is clear that there are still too many places in Europe where it is harder than it should be to develop and integrate into national power systems the new renewable capacity that is required not just by international climate policy, but increasingly by consumers too (or at least many multinational business consumers of energy). Equally (and perhaps for similar structural reasons), it is noticeable that, notwithstanding falling technology costs, in most of the countries surveyed, it is the availability or otherwise of subsidies that remains the major determinant of how much new development activity there is. Although there are also some "corporate PPA" success stories, perhaps some new business and regulatory models are needed.

Azerbaijan

While the oil and gas sector has historically been the most important feature of Azerbaijan's economy, the country is now steadily making progress in the development of RES. In particular, draft laws on the use of renewable energy sources in the production of electricity and on energy efficiency are reportedly being prepared. It is expected that they will be adopted and that the country will increase its wind and solar energy capabilities in the near future.

Share of renewable energy in gross final energy consumption in 2018 – 8.1 percent¹

Azerbaijan national target by 2020 – 12 percent²

Drivers

The Ministry of Energy of Azerbaijan has been working together with the Norwegian energy consultancy DNV-GL to expand and support the use of renewable energy sources in Azerbaijan. According to their assessment, the country's wind and solar energy potential is promising,

and the selection of appropriate regions for RES development is currently underway. Areas have been determined where 600 MW of wind power plant capacity and 400 MW of solar power plant capacity could be developed.

A Decree of the President of the Republic of Azerbaijan, dated

¹ Statistical report on the website of the Ministry of Energy of the Republic of Azerbaijan (www.minenergy.gov.az/index.php/az/30-energetika/alternativ/323-abem)

² Data from the State Agency on Alternative and Renewable Energy of Azerbaijan (restyled as: State Company on Alternative and Renewable Energy)

May 29, 2019, encouraged the use of renewable energy sources and the creation of a favorable investment climate in this area. It also expressed support for private sector involvement and noted the forthcoming law on the use of renewable energy sources in the production of electricity, as well as the development of contracts for the purchase of electricity and the connection of RES facilities to the power network with the involvement of international companies.

A number of international energy companies have signed memorandums of understanding and similar documents with the Ministry of Energy of Azerbaijan. These and other companies have participated in periodic working group meetings with the government.

The Asian Development Bank (ADB) has collaborated with the Ministry of Energy of Azerbaijan on the implementation of a pilot floating solar project, presenting its first project report on the development of floating solar energy technologies last year. The Ministry has also made a request to the Cabinet of Ministers of Azerbaijan to review issues related to land allocation and permits for initiation of the project.

Constraints and risk factors

There is uncertainty as to the content and implementation schedule of the draft laws relating to RES in Azerbaijan that are in the process of being prepared. While temporary tax incentives to support the use of RES are possible based on the existing investment promotion certificate regime, investors may face a risk of suboptimal tariffs, as well as issues with technology transfer and a lack of financing.

Belgium

Belgium is a federal state. Energy is a shared competence between the federal state and the regions (Flanders, Brussels-Capital and Wallonia). Following the Law of January 31, 2003, on the Phase-out of Nuclear Energy for the Purposes of the Industrial Production of Electricity, Belgium undertook to phase out nuclear power by 2025. Knowing that this energy source represents nearly 40 percent of the country's production capacity, significant alternative investments are to be expected. To cope with this transition, there are incentives at the national and regional level, particularly to stimulate increased use of renewables.

Share of renewable energy in gross final energy consumption in 2018 – 9.4 percent

Belgium national target by 2020 – 13 percent, with a long-term goal of 17.4 percent by 2030

Drivers

According to the Belgian Federation of Electrical and Gas Companies, wind power was the leading source of renewable electricity production in Belgium in 2018 (around 10 percent), followed by biomass (8 percent)

and solar energy (5 percent), which represents a slight increase compared to the previous year.

With the completion of three new offshore wind farms (Mermaid, Seastar, Northwestern II), production

capacity in the North Sea will exceed 2 GW as of 2020.

The federal government has established a legislative framework¹ to reach a capacity of 4 GW, paving the way for a promising future for offshore wind. Through a bidding process, the procedure will be more open, competitive and transparent.

As it considered that action should be taken to ensure security of supply on the eve of a nuclear phase-out, the parliament approved a framework law² to create a capacity remuneration mechanism aimed at supporting capacity providers. However, the Royal Decrees implementing this law have yet to be drafted.

As part of the adoption of Belgium's National Climate and Energy Plan, federal and regional governments agreed on measures related to decarbonization and have committed to increase the share of renewable energy while improving energy efficiency. In addition, federal

and regional governments have put in place funds to promote innovation and research.

Constraints and risk factors

The legal framework continues to undergo changes, which is why legal uncertainty is probably the most significant risk on the Belgian market, in particular with regard to the possibility of a partial extension of the life of nuclear units.

The fragmentation of legislation between the federal and regional levels does not facilitate investors' understanding of the rules in place and the support mechanisms available.

There are also risks associated with European and Belgian competition and state aid rules, particularly regarding support for new production capacities.

-
- 1 Law of May 12, 2019, amending the Law of April 29, 1999, on the Organization of the Electricity Market in View of Introducing a Competitive Tender Procedure for the Construction and Operation of Production Installations in the Maritime Areas under the Jurisdiction of Belgium
 - 2 Law of April 22, 2019, amending the Law of April 29, 1999, on the Organization of the Electricity Market Establishing a Capacity Remuneration Mechanism

Czech Republic

In recent years, consolidation has been a key feature of the Czech RES market, with bigger players buying up smaller ones. While growth in the share of RES in the energy mix has stagnated in recent years, a fresh wave of incentives is expected to be introduced in 2021 to help meet the EU 2030 RES target (currently 32 percent).

Share of renewable energy in gross final energy consumption in 2018 – 15.2 percent

Czech Republic national target by 2020 – 13 percent, with a long-term goal of 22 percent by 2030

The National Energy and Climate Plan of the Czech Republic has been proposed by the Ministry of Industry and Trade in accordance with the requirements of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action. The Czech Republic proposes to contribute to the European target by 2030 with a 22 percent share of renewable energy in gross final energy consumption, a very significant increase compared

to the Czech Republic's 2020 national target.

Drivers

The Energy Regulatory Office has decided on promotion of electricity production from RES in accordance with the Promoted Energy Sources Act in 2020. State aid for RES was approved by the European Commission with respect to installations commissioned after January 1, 2013, as well as those

commissioned between January 1, 2006, and December 31, 2012—in 2014 and 2016 respectively.

The incentive scheme is based on support for electricity producers in the form of (i) feed-in premiums (“green bonuses”) and (ii) feed-in tariffs set annually for each type of RES. Green bonuses were significantly lowered, due to increases in wholesale electricity prices. The feed-in tariffs are mandatory prices at which selected electricity traders are obliged to buy RES electricity, designed to ensure that projects recover their investment costs over a 15-year period, and that revenues per unit of electricity including inflation are maintained. Feed-in premiums supplement wholesale electricity prices.

The annual state support for electricity producers is to be increased in 2020. In September 2019, the government decided to contribute with CZK 27 billion (approx. €1 billion) for the next year, which is 3 percent more than the previous two years.

Constraints and risk factors

The amendment to the Promoted Energy Sources Act proposed by the Ministry of Industry and Trade of the Czech Republic has been returned to the government

for redrafting. The amendment aims to deal with the issue of overcompensation by: reducing future support, limiting the period during which support is paid out and, where necessary, recovering aid. However, the government believes the measures proposed do not go far enough in terms of controlling overcompensation. Moreover, severe criticism has been leveled at the various benchmark IRRs (8.4 percent for non-fueled projects and 10.6 percent for fueled projects) set up to indicate the threshold for overcompensation. Given the time the ministry will need to redraft the amendment, the originally presumed effective date of January 1, 2021, is looking optimistic.

France

The Energy-Climate Law enacted on November 8, 2019, has set ambitious targets: a 40 percent reduction in fossil fuel consumption by 2030 and carbon neutrality by 2050. Renewable power increased by 2.5 GW in the last 12 months (+5 percent), following a steady curve. Renewable installed power now exceeds 52.8 GW. It accounts for 21 percent of electricity consumption, which is less than the previous year due to a drop in hydroelectric production.

Share of renewable energy in gross final energy consumption in 2018 – 16.6 percent

France national target by 2020 – 23 percent, with a long-term goal of 33 percent by 2030

Drivers

On-demand feed-in tariffs are still available for certain small projects. However, as a rule, producers are entitled to feed-in premiums awarded after bidding processes. The premium is granted to top up the market price. Auction prices continued to drop and reached €59.50/MWh for large photovoltaic farms and €63/MWh for wind farms in 2019 (-5.41 percent

and -5.83 percent compared to 2018 auctions). This mechanism is secured through the signing of 20-year contracts with EDF. The aggregation market is gaining maturity.

In 2020, the final version of the Multiannual Energy Program (MEP) will be issued. This program sets out objectives for the growth of renewables on a 10-year scale,

setting the pace for public tenders and offering investors a stable framework. The prospective scenario focuses on solar energy, with the aim of reaching 20.1 GW by 2023 and between 35.1 and 44 GW by 2028. As of September 2019, only 9.3 GW were connected to the grid.

2019 was also the year when construction of the first offshore wind farm began. With more than 19,000 km of coastline and the emergence of an “industrial ecosystem,” France has tremendous potential. However, due to seven-year judicial challenges, no offshore wind farm has yet been commissioned. Four floating offshore wind projects are progressing, but have not reached completion yet. President Macron has announced that at least 1 GW will be awarded every year until 2024, whether fixed-bottom or floating.

Among new trends, the strong development of corporate PPAs must be underlined. For instance, in May 2019 a home equipment and multimedia distributor signed a 25-year supply commitment. After being flagged up for their energy consumption, banks are also resorting to corporate PPAs that cover up to 10 percent of their consumption, for a wide range of durations (3–25 years).

Constraints and risk factors

The targets set by the MEP will most likely not be met. There is no legal sanction for non-compliance with long-term objectives, and other measures and actions should only be “compatible” with the MEP. Therefore, it is more a statement of political ideals and aspirations than anything else.

That said, public financial support for renewable energy reached €5 billion in 2018, which is three times higher than in 2011. In 10 years, the price of electricity for residential customers has increased by more than 50 percent, which could lead to social protests and a possible switch of priorities into reducing energy consumption. The latter is slowly decreasing. By reference to 2012 levels, the objective was a drop in consumption of 7 percent by 2023 and 14 percent by 2028. However, as of 2018, it had only decreased by 0.4 percent.

Georgia

Georgia is rich in renewable energy resources. With 77 percent of the country's total installed electric power generating capacity, hydropower remains the leading RES in Georgia. The last two years saw a sharp increase in total consumption and summer peak load. The deferral of commissioning dates and the high cost of hydroelectric plants, together with the increased demand for electricity, make the utilization of domestic resources of wind and solar power especially important for ensuring security of energy supply. Hydropower has also faced increasing public opposition, further emphasizing the importance of wind and solar as renewables.

Georgia aims to increase the share of renewable energy in total energy consumption from 29.5 percent (2019 data) to 35 percent by 2030, according to the recently adopted law on renewable energy.

Drivers

Interest in construction of wind and solar power plants has increased in recent years due to the much shorter time it takes to build them compared to hydroelectric plants. The 10-Year Network Development Plan for

2019–2029 (TYNDP) estimates a total potential of 1,850 MW RES integration over that period, comprised of 520 MW of solar and 1,330 MW of wind energy. The Georgian Electricity Transmission System Operator, with the support of European

consultants, has broken these figures down further, into 333 MW of wind and 130 MW of solar power (25 percent of the total) which can be integrated before 2020–2021; and 665 and 260 MWs of wind and solar energy sources, respectively, which it should be possible to integrate by 2025. Subject to implementation of specific measures, such as ensuring additional upward and downward balancing reserves and undertaking necessary measures for frequency stability, it may be possible to increase the permissible capacity of wind and solar for 2020–2021 to as much as 50 percent of the total potential for 2019–2029.

The new law on renewable energy introduces the use of incentive mechanisms available to investors. Such incentive mechanisms may include tax relief, direct price support schemes, fixed and variable premium payments, including feed-in tariffs, Contracts for Difference, green certificates, auctions, etc. The precise list of the incentive mechanisms and respective implementation conditions will have to be approved by the government within one year of the adoption of the law.

The RES sector in Georgia continues to receive steady support from international

organizations. €76 million have already been mobilized from international donors (including a €2 million grant from the European Commission and €74 million worth of loans from KfW and AFD) to support the implementation of the reforms under the law on renewable energy.

Constraints and risk factors

The legal framework for the energy market remains a challenge, and the RES field is not systematically regulated. Following its accession to the Energy Community in 2017, Georgia undertook to adopt a law on renewable energy and a national renewable energy action plan (NREAP) in order to fulfill its obligations. The initial deadline (December 2018) for adoption of the law has passed, as the law on renewable energy was only recently adopted by the parliament. According to the new law, the Georgian government shall approve a 10-year national renewable energy action plan within 12 months after the adoption of the law on renewable energy.

Germany

The share of renewables in the German energy mix continued to increase in 2019 and overtook fossil fuels for the first time. Germany is still on track to beat its EU RES 2020 target. During 2019, the federal government agreed on a phase-out of coal and the parliament adopted a climate package, including, for example, the introduction of a CO₂ price from 2021 onwards. Still, Germany will not hit its EU greenhouse gas emissions reduction target for 2020. While some changes have already been made to the climate package, more are expected.

Share of renewable energy in gross final energy consumption in 2018 – 16.5 percent

Germany national target by 2020 – 18 percent, with a long-term goal of 30 percent by 2030

Germany's energy transition, or *Energiewende*, involves a phase-out of nuclear by 2020 and of coal-fired power by 2038 at the latest, continued promotion of RES electricity, and measures to increase energy efficiency. In 2019, approximately 45 percent of gross electricity consumption came from RES and Germany has therefore

already met the national target for RES electricity by 2025 (40–45 percent of the electricity supply).

The transmission system operators expect a further expansion of RES by almost 6 GW in 2020. As a result, electricity generation from RES is expected to increase by 9 TWh or 4 percent.

Drivers

With the federal government aiming to supply 65 percent of electricity from RES in 2030, and the RES support auction system for new projects now well established, Germany should continue to be an attractive market for investments in renewables.

But the paths of solar PV and onshore wind have diverged recently. While the 2019 PV auctions were on average oversubscribed by a factor of 2.6, with an awarded weighted average remuneration of between 4.80 Ct/kWh and 6.59 Ct/kWh, the onshore wind auctions were undersubscribed, and in the first half of 2019, the number of new turbines commissioned fell by 80 percent. The permitting process has become harder and slower. The next offshore wind tenders are scheduled for September 2021.

In October 2019, the federal government adopted legislation to promote technical innovations (system combinations of fluctuating and non-fluctuating renewable energies, e.g., solar energy + storage) and energy security.

In 2021, bids may be submitted for combinations of systems. These must be designed to provide positive secondary control power for at least 25 percent of their installed capacity.

Constraints and risk factors

- Grid expansion and stability, which is of particular importance given the need to transmit power from offshore wind projects in the Baltic/ North Sea to centers of demand in the south of the country, is still a highly political issue in Germany.
- Intention of the federal government to implement stricter distance regulations for onshore installations (1,000 meters) having an impact on both new and repowering projects.
- Landlord-to-tenant electricity supply models are still not really accepted by German households, although the regulatory basis for them was established in mid-2017.
- Lack of charging infrastructure is a fundamental obstacle to the expansion of e-mobility.



Hungary

Photovoltaic power generation continues to be the most popular renewable technology in Hungary primarily due to its past and present subsidy schemes and the country's geographical circumstances. Wind power projects remain practically barred due to various regulatory obstacles. The ongoing nuclear power plant development of 2,000 MW capacity at the existing Paks site plays a significant role in Hungary's clean energy policy.

Share of renewable energy in gross final energy consumption in 2018 – 12.5 percent

Hungary national target by 2020 – 14.65 percent, with a long-term goal of 21 percent by 2030

Drivers

Hungary's government adopted its integrated National Energy and Climate Plan (NECP) in January 2020. Solar technology remained a central feature of the Hungarian NECP. The final plan envisaged increasing installed solar capacity to 1,964 MW in total by 2023, and to 6,452 MW by 2030.

The NECP set the goal of increasing

the share of renewables in gross final energy consumption to 21 percent by 2030.

A new RES scheme was introduced in Hungary on January 1, 2017, in line with the European Commission Communication on the Guidelines on state aid for environmental protection and energy 2014–2020. The support scheme called METAR is primarily based on a price

premium type of subsidy (Contract for Difference or CfD) that may be awarded further to auctions. The very first pilot METÁR auction was launched in early September 2019 with the deadline for bids being December 2, 2019. The support to be distributed in the current METÁR auction is capped at HUF 1 billion per year (approx. €3.1 million per year) and 200 GWh per year. Projects up to a maximum 20 MW built-in capacity were admitted in this very first tender. 169 bids were submitted and all but one of the bids relate to solar projects. The official auction results are expected in February – March 2020.

In the period 2020–2026 the Hungarian Energy Office is authorized to distribute renewable CfD subsidies through auctions up to a yearly cap of HUF 2.5 billion (€7.7 million).

Constraints and risk factors

While feed-in tariff (FIT) support is closed to new applicants, several renewable projects that are either operational or under construction (overwhelmingly solar) were awarded FIT support. These existing supports will expire in the period 2040–2045.

The government adopted changes in regulations governing the FIT system in late December of 2019 due to the introduction of the notion of balancing responsibility under the new EU Electricity Regulation. Projects benefitting from the FIT system will be exposed to balancing costs as of April 2020. In order to mitigate the significant financial burden FIT projects will face as of April 2020 due to their balancing responsibility, they will be entitled to a temporary and gradually decreasing compensation until the end of 2025.

Italy

In 2019 the Italian government issued a National Energy and Climate Plan that envisages phasing out of coal and adding approximately 40 GW of renewable energy generation capacity by 2030. Solar plants will be the main driver, with 30 GW of new capacity. The country plans to reach its 2025 intermediate target of 13 GW with a more balanced mix of 7 GW of solar PV and 6 GW of onshore wind.

Share of renewable energy in gross final energy consumption in 2018 – 17.8 percent

Italy national target by 2020 – 17 percent, with a long-term goal of 30 percent by 2030

Drivers

On July 8, 2019, the Italian government issued its long-awaited new incentives scheme (FER1 Decree), which supports RES by means of Contracts for Difference (CfDs). CfDs are made at strike prices close to the market level, but remove exposure to volatility risk by ensuring a guaranteed tariff. The first auction took place in October 2019 and another six will follow in 2020 and 2021.

The FER1 Decree provides new incentives of about €1 billion per year, which, according to the government's forecasts, should allow for the development of about 8 GW of new generation capacity.

But it will take more than government support schemes to achieve Italy's ambitious renewables targets. Most of the new installations will have to be developed without incentives.

Advantageous geographic and meteorological conditions, high electricity prices, and decreasing construction costs provide a propitious environment for a new boom in massive greenfield RES developments, especially solar PV.

Financial PPAs, fully merchant projects or a combination of the two are expected to take off in Italy in 2020. Since early 2019, the market has been heating up and is now catching up on Spain. On the offtake side, there is strong demand from both utilities and traders, often from outside Italy. A significant number of solar PPAs have made headlines in 2019, mainly for their duration having reached or exceeded 10 years.

Constraints and risk factors

In the absence of subsidies, new projects are exposed to the volatility of merchant prices, which presents an obstacle to financing. Long-term purchase agreements at fixed or shaped prices reduce exposure to market volatility, but only large and sophisticated players are able to negotiate such complex contracts. While Italy has announced its intention to create a platform to negotiate standardized long-term energy contracts, the FER1 Decree provides no immediate measures.

New developments struggle to secure sufficiently large plots of land and there is currently an overheated rush to secure the best sites. Some regions hinder development on agricultural land despite Italian national law specifying that projects can be installed in such areas. The new Unified Regional Authorization Proceedings (PAUR), which provide for an integrated procedure of environmental impact assessment and permitting, is not yet correctly applied in all regions.

These uncertainties and the considerable staying power and patience needed to develop utility-scale greenfield projects (2–3 years) have led large players to continue investing in operational plants. As there are now few large projects left, the focus has switched to smaller plants, which investors optimize both technically and financially and then flip into larger portfolios.

Kazakhstan


Despite being ranked first in uranium mining, ninth in coal reserves, 12th in oil reserves, Kazakhstan is increasing its support for the development of renewable energy sources. Nonetheless, the country is in the very early stages of developing RES.

In 2019 developers commissioned 23 power plants using renewable energy sources, compared to 10 in 2018 and just six in 2017. By the end of 2019 electricity generated from renewable sources was expected to reach 2.3 percent of total electricity generated (1.3 percent in 2018).

Drivers

In 2019, the Law of Kazakhstan on the Support for the Use of Renewable Energy Sources marked its 10th anniversary. During this period Kazakhstan's regulation of RES has evolved: beginning with the "tariff approved through feasibility study" model, which was followed by a fixed tariff regime, it has now progressed to a purchase price established at auction. Through secondary legislation on RES, Kazakhstan has also introduced indexation

of fixed tariff and auction prices with reference to inflation and currency fluctuation. In 2019, the auction scheme (introduced in 2018) was reinforced with the introduction of project auctions, whereby a project is auctioned together with an allocated parcel of land, grid connection point, conditions for connection, results of public hearings, etc. The first project (solar) auction was held on November 27, 2019, when the auction price fell from KZT 29 per kWh (€0.068 per kWh) to



KZT 12.49 per kWh (€0.029 per kWh). After successful implementation of a solar project auction, the Ministry of Energy of Kazakhstan plans to develop a similar project auction for wind.

In September 2019, the European Bank for Reconstruction and Development announced that it would make a further €300 million available to support renewable energy projects in Kazakhstan.

Constraints and risk factors

The auction scheme in its current form is not without flaws. There are still a number of constraints in place such as shortage of financing, volatility of the national currency (tenge), cheap electricity generated from coal, and lack of support for household RES generation.

Moreover, most of the auctioned RES projects with capacity exceeding 50 MW—except for one project auction in November 2019—did not have allocated land or connection points.

The auction scheme still assumes that the offtaker is the Costs Settlement Center (CSC), a limited liability company having limited assets, without any guaranteed support from the system operator or the state. The CSC's reserve fund—in which it accumulates 3 percent of the total amount of CSC's expenses for the purchase of RES electricity—is hardly sufficient for CSC's rapidly increasing obligations toward RES electricity generators.

Luxembourg

Luxembourg is a key destination for investments in RES projects, having used its prominence as a financial center to play a significant and growing role in green finance. The Luxembourg Green Exchange, launched in 2016, is the leading exchange for sustainable securities. Half of the world's listed green bonds are listed in Luxembourg. Luxembourg structured funds are also often used for climate finance, by public and private actors. The share of renewable energy in gross final energy consumption is expected to grow in the coming years.

Share of renewable energy in gross final energy consumption in 2018 – 9.1 percent

Luxembourg national target by 2020 – 11 percent, with a long-term goal of 25 percent by 2030

Drivers

Luxembourg presented a draft integrated National Energy and Climate Plan on February 18, 2019. According to forecasts based on current scenarios, the expansion of renewable energy by 2030 would range between 18.6 percent and 19.8 percent. In order to reach

the target of 25 percent in 2030, the plan foresees that the shortfall should be covered by cooperation with other EU member states, which was already the case in 2017 with the signature of agreements with Lithuania and Estonia to meet the 2020 target.

Policies have already been adopted to promote the development and use of RES installations, and the target is to increase the share of renewable energy to 70 percent in 2050. The draft plan mentions that a package of policies and measures is under preparation, with a continuation of the existing framework in a more ambitious way, especially in the field of biofuels. In 2018, there was a first pilot call for tenders for large photovoltaic systems. There should be multi-annual calls for tenders as from 2020.

The production of energy from RES is promoted through subsidies and feed-in and premium tariffs for electricity.

Grid access for RES electricity is subject to general law provisions applicable to electricity. A tax incentive also applies to income from solar installations with capacity of 1 to 4 kW, which are exempt from income tax.

On a separate note, a bill has been presented to parliament in order to establish the legal framework for a new type of renewable energy pledge bond. This further

demonstrates the importance that Luxembourg attaches to achieving sustainable development objectives and strengthens Luxembourg's position as a center of competence in the field of green finance. Notable among the various initiatives undertaken are the launch—together with eight private partners—of an accelerator for innovative green fund managers and the conclusion of a partnership with the European Investment Bank to create a climate finance platform.

Constraints and risk factors

The level of self-consumption remains low in Luxembourg compared to other European countries. Few small-scale producers are aware they can use their own photovoltaic production to cover their needs and thereafter inject only the surplus into the distribution network. It has usually been more attractive to benefit from the injection tariffs rather than self-use the energy produced. This may change, however, with the adoption of the EU Clean Energy Package, which supports self-consumption.

The Netherlands

The Dutch Climate Agreement seeks to reduce the emission of CO₂ and other greenhouse gases by at least 49 percent by 2030. At present, the share of renewable energy in gross final energy consumption is lagging behind the Dutch target for 2020. To speed up the energy transition, the government is taking additional measures to stimulate use of RES. However, despite these measures, it is very doubtful that the goals for 2020 will be achieved.

Share of renewable energy in gross final energy consumption in 2018 – 7.4 percent

The Netherlands national target by 2020 – 14 percent, with a long-term goal of 27 percent by 2030

The Netherlands has seen significant growth in solar energy over the past few years. In 2018, solar energy grew by 50 percent compared to 2017 and growth is forecast to continue in the years to come. The installed capacity of wind energy grew by just 4 percent in the same period, to installed capacity of 4,400 MW. Biomass is still by far the largest

source of RES in the Netherlands (62 percent), but it is highly debated.

Drivers

The SDE+ subsidy is currently still the most important instrument in stimulating the production of renewable energy in the Netherlands. Most of the applications in the latest subsidy round (Q3 2019) were

for solar PV projects. An additional round of SDE+ subsidy will open in spring 2020, with a budget of €1.5 billion to €2 billion. This additional subsidy round will be the last subsidy round under the current SDE+ scheme. A new subsidy scheme will then start, called SDE++. Under the new subsidy scheme, projects compete on the basis of “avoided CO₂ and other greenhouse gases,” instead of “generated renewable energy” as previously. Projects that reduce CO₂ emissions in a cost-effective way are first in line for subsidy.

Constraints and risk factors

The Netherlands is known as a competitive market, partly due to the limited availability of land. Not all municipalities are willing to grant planning consent for ground-mounted solar projects. Environmental considerations also play a key role and people living in the direct vicinity of a planned project often start proceedings against permits for RES projects. Furthermore, in many parts of the country there is currently a lack of available grid capacity. The DSOs in the Netherlands are generally obligated to offer grid connection for new energy production

installations. However, many of the DSOs refuse to allow new installations to connect to the grid where there is limited or no grid capacity available.

There is also a public debate about the use of biomass. Opponents challenge the sustainability of the use of biomass (wood) for energy production and point out the risks to public health and air pollution. As a result of this public pressure, in November 2019, two large energy production companies announced that they would pull out of new biomass plants in the Netherlands.

Another important risk factor for RES projects stems from a ruling of the Council of State of the Netherlands of May 29, 2019. The Council of State ruled that the legal system that the Dutch government introduced in 2015 (a program to simplify the permit requirements based on the Nature Protection Act) was in breach of European law. As a result, a permit under the Nature Protection Act may be required for projects that lead to nitrogen deposition on Natura 2000 sites. The Dutch government is currently working on new regulations that should enable projects to obtain the relevant permits again.

Poland

The Polish RES market continued to thrive in 2019, with a number of positive regulatory and legislative developments and strong interest from developers in both wind (onshore and offshore) and solar projects.

Share of renewable energy in gross final energy consumption in 2018 – 11.3 percent

Poland national target by 2020 – 15 percent, with a long-term goal of 21-23 percent by 2030

Drivers

With 2020 beginning, the Polish government is motivated to stimulate growth in RES. It has extended the support period under the auction scheme to 2039 and the deadlines for starting commercial operations for successful projects (a significant risk factor for winners); it has also relaxed the bidding qualification criteria and provided some flexibility on installed capacity and the volumes offered in the winning bid.

These and other changes are in response to the concerns that

investors expressed after auctions in 2018 and aim to improve the prospects of the winning projects and alleviate the “winner’s curse.” As a result, the 2019 auctions attracted a significant number of investors. 101 projects were awarded a CfD in an auction dedicated to wind projects, with prices in the range PLN 162.83–233.29 per MWh. In sum 77.84 TWh of RES electricity was contracted for delivery in the period 2020–2037 for a total price of PLN 16.23 billion.

At the same time, an increasing

number of investors are pursuing financing and construction of onshore wind farm projects without auction support, based on long-term offtake contracts and in some cases even route-to-market agreements.

Commercial PV (in Poland, not exceeding 1 MW) is growing fast, with over 110 MW of installed new capacity in the first half of the 2019. The rooftop installations sector is also growing, driven by rising electricity prices and government support in the form of the My Electricity program, with PLN 1 billion (€235 million) allocated to supporting rooftop PV, as well as a RES Act amendment which made net metering available to businesses and households.

In the offshore sector, dynamic M&A activity is taking place, prompted by political consensus over the construction of offshore projects in the Polish part of the Baltic, as confirmed by the draft Energy Policy to 2040. Planned offshore legislation is also driving interest.

Constraints and risk factors

The 2018 auction winners seem to be struggling. With auction prices just below PLN 200 per MWh (€47.2 per MWh) on average and high wholesale electricity prices, the CfD regime may provide not only benefits but also some obligations

for refunding surplus income. Nonetheless, the financings are progressing, and we hope to see more and more of this particular batch of projects entering the construction phase.

For solar the main constraint remains the inability to compete in the same auction basket with large onshore wind installations. If the 2019 auction exhausts the existing pipeline of pre-developed wind projects, the situation may change in 2020.

The draft law introducing a dedicated support system for offshore projects was published in January 2020, introducing a two-phased model of support based on the concept of the Contract for Difference. Different eligibility criteria will apply to each phase. Initially up to 4.6 GW of capacity could gain support granted directly by the President of ERO followed by individual state aid notifications to the European Commission. In the second phase, competitive auctions are envisaged, with the first auction planned for 2023. Special taxation for offshore projects will be introduced as well. The draft has entered the public consultation process.

Romania

Romania still has significant unexploited natural RES resources and, in principle, it is a market with capacity for further growth. However, during 2019 the regulatory authorities did not approve the legislative agenda expected by the energy market, leaving investor confidence unchanged on the previous year.

Share of renewable energy in gross final energy consumption in 2018 – 23.9 percent

Romania national target by 2020 – 24 percent, with a long-term goal of 27.9 percent by 2030

Drivers

The existing RES support system is based on a mandatory quota of green certificates (GC) corresponding to a mandatory quota of RES power to be sold by electricity suppliers. The Romanian authorities are contemplating a new support mechanism based on Contracts for Difference (CfDs) that would use an agreed strike price as benchmark against the fluctuations of the competitive

market price. Approval of the CfDs regulations could come in 2020.

Constraints and risk factors

The GC-based support scheme for electricity from RES ended for new projects on December 31, 2016. For the moment, projects commissioned on or after January 1, 2017, get their revenues only from the electricity market and certain regulatory advantages that RES still enjoy. Attempts have been

made to reform the GC system. These have not always had positive results. For example:

- The validity term of GCs was extended from 12 months to up to 15 years to 2032.
- For accounting and resale purposes, GCs will gain in value when traded, not when issued.
- GCs must be traded on a centralized anonymous marketplace, to avoid market distortion.
- Measures have been taken both to limit the impact of GCs on consumer bills and to set a floor price for GCs in certain circumstances.
- April 1, 2017, through December 31, 2020, the trading of two GCs per MWh produced and delivered by solar power producers has been temporarily postponed.
- From January 1, 2019, the mandatory purchase quota for GCs for 2019 is 0.433 GCs/MWh.

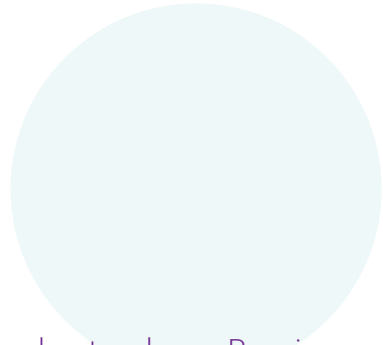
RES producers are required to sell all their electricity production on the organized electricity market operated by Transelectrica's subsidiary OPCOM (except for facilities under 3 MW). This has resulted in long-term PPAs being scarce and bank financing difficult

to obtain. In addition, the supply of electricity to household consumers has become a regulated prices market again.

The concerns of potential investors were not allayed by the national regulator's attempt to make available to OPCOM centralized market participants a special platform for trading electricity in a competitive, centralized and non-discriminatory mode. Undeterred, the Bucharest Stock Exchange and OPCOM are working to set up a futures-type market for electricity contracts in 2020.

It is hoped that the provisions of the EU RED II Directive that require member states to remove unjustified barriers to long-term PPAs and facilitate their uptake will help stimulate the market. A recent order by the Romanian National Regulatory Authority (ANRE) providing that electricity transactions can be performed on unregulated markets was a welcome first step in this direction. In order for such a step to be effective, primary legislation will need to be amended as well.

Russia



Given its large reserves of coal, oil and natural gas, Russia continues to depend on fossil fuels. At the same time, the Russian government encourages the development of all types of renewable energy. The state program on the development of renewables was adopted in 2014 and was extended in March 2019 for the period until 2024. RES projects are implemented on the basis of capacity supply agreements that guarantee 12 percent profitability through higher payments by consumers.

By the end of September 2019, the total generation capacity of Russia's power stations was 246.8 GW, of which 67.2 percent was fossil-driven, 20 percent was hydroelectric and 12.2 percent was nuclear.

Drivers

Wind and solar power stations jointly account for less than 1 percent of the total power generation capacity in Russia. Rusprom and Rosatom, state-owned corporations, are the RES market leaders.

According to experts, by 2024 wind power generation may amount to 3.6 GW (1.5 percent of the current total generation) with an annual turnover of US\$1.6 billion. Some of the biggest Russian wind power projects involve foreign partners, including Fortum, Vestas and Lagerwey. For example, Fortum and Rusprom have already launched two wind farms and more are expected. Their two wind farms in Ulyanovsk Region have capacities of 35 MW and 50 MW.

As to the solar power market, late 2018 saw the launch of two solar plants by T Plus, the largest private company in the energy sector in Russia. The 60 MW Sorochinskaya plant is the largest PV power station in Russia, while Novosergievskaya has a capacity of 45 MW. Hevel Group is Russia's largest integrated solar energy company, manufacturing solar modules.

Throughout 2019 a draft law on microgeneration has been making its way through the State Duma. When adopted, the law will provide criteria for microgeneration and allow owners of electricity generators of up to 15 kW to sell surplus electricity to the energy system. This is intended to encourage the development of microgeneration and mitigate the economy's excessive reliance on the centralized energy system.

The rapid increase in the number of RES units is being driven by the dramatic reduction in the CAPEX required. Between 2015 and 2018 the CAPEX relative indicator for wind generation fell from RUB 155 million (ca. €2 million) per MW to RUB 57 million (ca. €760,000) per MW. The solar energy sector is seeing similar falls in CAPEX requirements.

Constraints and risk factors

- Ambiguity, complexity and lack of regulations regarding RES.
- Uncertainty as to the government's long-term RES development policies. It is unclear whether the state program on the development of renewables will be extended beyond 2024.
- Tough competition between market players for the preferences and privileges related to RES.
- Heightened barriers to enter the Russian energy market, including local content requirements for equipment production.

Slovak Republic

After a relatively steady and non-transparent decade in the RES sector, Slovakia made fundamental changes in RES legislation in 2019, including the introduction of a new auction system. More than 70 percent of Slovak power generation is already derived from low carbon sources (nuclear and hydro), but the government must start to act pro-green in order to meet the EU targets for 2030.

Share of renewable energy in gross final energy consumption in 2018 – 11.9 percent

Slovak Republic national target by 2020 – 14 percent, with a long-term goal of 20 percent by 2030

For many years, low transparency, very strict legislation, a poor administrative and political environment and a moratorium on connecting new variable RES sources exceeding 10 kWh into the system have been viewed as the main obstacles to substantial RES development in the Slovak Republic.

Currently, the costs of RES support are still estimated to exceed the economic benefits it brings, which is viewed as problematic, especially in respect of the national target for 2030.

The most commonly used RES in Slovakia are biomass and solar energy, although there is also interest in heat pumps. With only five wind turbines actively working

in Slovakia, the wind energy market is extremely underdeveloped. Biomass is seen as one of the most interesting renewables.

Drivers

Pressure from the RES industry and recent EU developments translated into the most significant amendment of Act No. 309/2009 Coll. on the Promotion of Renewable Energy Sources and High-efficiency Cogeneration (the RES Act), effective mainly from January 1, 2019.

As of January 1, 2019, an auction system based on feed-in premiums applies for new electricity generating installations with installed capacity exceeding 500 kW. Winners of auctions will be granted a supplementary sum ("green bonus").

The new regime encourages the local consumption of electricity generated by installations not exceeding 500 kW capacity and not connected to the grid. This is intended especially for businesses that want to produce electricity for their own needs. Such projects will not be entitled to a subsidy, but equally would not pay grid connection charges, elements of which are a concern for other

RES producers, who view them as making their power more expensive than imports from other countries.

Electricity generated from renewable sources is exempt from excise tax.

Constraints and risk factors

- Nuclear energy (with one reactor in construction) with its current 54 percent share in electricity production remains the most important source of electricity in Slovakia.
- Most photovoltaic energy sources in Slovakia, which were connected to the grid in 2010–2012 will lose financial support in 2025–2027 and it is expected that these will disconnect from the system.
- Regulatory requirements, such as building permits and natural habitat protection, are a typical barrier to some solar and wind plants in Slovakia.
- Elections in February 2020 may have a pivotal impact on Slovakia's environmental priorities.

Spain

The Spanish renewable energy market is taking off again, pursuing the 20 percent by 2020 target. The sale of large portfolios combining mainly wind and solar assets, and development of new assets relying on power purchase agreements are the key drivers to achieve that goal.

Share of renewable energy in gross final energy consumption in 2018 – 17.4 percent

Spain national target by 2020 – 20 percent, with a long-term goal of 42 percent by 2030

Drivers

Investors are increasingly focusing on large portfolios of renewable assets, combining mainly wind and solar PV (as well as other technologies such as biomass, CSP and hydro). Such portfolios usually mix operating projects and developing projects that are not yet ready-to-build. Oil and gas companies are increasingly showing interest in acquiring large renewable portfolios as a strategy to transition

from carbon-intensive activities to more environmentally friendly ones.

Many of the projects that were developed in 2019 had taken part in the 2017 public auctions and obtained subsidized capacity. However, according to public sources, 15–30 percent of the total capacity granted will ultimately not meet the requirements for regulated remuneration.¹ Therefore, those

¹ Consisting of the equivalent to a floor on the market price (€43 per MWh for wind, €30 per MWh for solar PV)

projects will not benefit from the floor mechanism (and will lose the guarantees they posted to secure the auctioned capacity). This might provide opportunities, as developers may be willing to sell these projects if they cannot secure their financing on an unsubsidized basis, e.g., through power purchase agreements (PPAs).

Beyond the auction projects, many unsubsidized projects are being developed, with financiers relying on a variety of price schemes under PPAs which are concluded on a longer-term basis (10–12 years), either with supply companies or energy traders as offtakers, as well as with big final consumers (either industrial or retail). Due to accountancy rules affecting how PPAs must be recorded, physical or combined PPAs (partially physical, partially financial) are increasingly preferred to pure synthetic ones (CfDs).

Distributed generation (autoconsumo) is also being promoted, with developers exempted from certain tax and costs as well as several administrative requirements for developing this kind of generation assets.

Constraints and risk factors

Scarce availability of connection points is an entry barrier for developing new renewable assets in Spain, since the price of the projects under development that have not yet achieved ready-to-build status is unusually high.

New regulations forcing developers to release non-utilized connection points by March 31, 2020, and providing transparency about the availability and features of the connection points should help mitigate scarcity. Moreover, a number of projects under development not meeting the deadline set out in the auctions rules may become available, thus potentially reducing the current value of greenfield projects.

The mass entry of new lower-cost renewable assets into operation may pull power market prices down in the mid-term. Futures markets show a decrease in power market prices from today's average of around €50/MWh to around €40/MWh in 2026.²

2 Source: OMIP.pt

Turkey

Turkey is a major market with great untapped renewable energy resources. Mostly due to the desire to mitigate dependence on energy imports, green energy opportunities continue to be a key item on the country's energy agenda. The 11th Development Plan for 2019–2023 issued by the Presidency of the Republic of Turkey prioritizes increasing the share of renewables in electricity generation (the 2023 target being 38.8 percent compared to 32.5 percent in 2018). In line with the policy to support renewables and increased use of domestically manufactured equipment, in 2019 the Ministry of Energy and Natural Resources of Turkey awarded four wind tenders with a total capacity of 1,000 MW. The ministry is expected to launch tenders for multiple solar projects in early 2020.

Share of renewable energy in gross final energy consumption in 2018 – 13.7 percent

Turkey national target by 2023 – 20.5 percent

Drivers

In 2016, Turkey adopted a system that may be deemed partly “feed-in tariff” and partly “feed-in premium” for plants commissioned by

December 31, 2020, at the latest. Guaranteed prices denominated in US cents are applicable for 10 years after commissioning. The level of FIT varies depending

on the technology and the amount and type of domestic equipment used.

In October 2016, a new regulation was enacted to promote (i) large-scale renewable energy designated areas (Turkish acronym: YEKA) and (ii) the use of domestically manufactured equipment. Rights to a YEKA are tendered by way of a reverse auction whose ceiling price may not exceed the FIT. Following the two YEKA tenders held in 2017 (one for a 1,000 MW solar project, the other for a 1,000 MW wind project), in May 2019, the Ministry of Energy and Natural Resources of Turkey finalized the YEKA tenders for four wind projects, each with an installed capacity of 250 MW. Turkish energy company Enerjisa won the tenders for two projects, offering US\$0.0456/kWh and US\$0.0367/kWh respectively. The other two projects were secured by Enercon with respective bids of US\$0.04/kWh and USD\$0.0353/kWh. The offered purchase term for each project is 15 years from the execution of the agreement granting YEKA utilization rights. The ministry is expected to launch tenders for multiple solar mini-YEKAs (each with a capacity of 10–50 MW) in early 2020, with the aim of finalizing the tender

process by April 2020. The recently enacted regulation on license-exempt projects (including renewable self-consumption projects and renewables with installed capacity of 5 MW or less) aims to promote such projects by introducing monthly net metering. The Energy Market Regulatory Authority has proposed a draft regulation to lay down the regulatory framework for storage.

Constraints and risk factors

- Grid capacity for connecting wind and solar power plants is limited.
- The new regulation has restricted license-exempt ground-mounted solar projects.
- No official statement has been made yet as to whether there will be a RES support scheme for plants commissioned after December 31, 2020, and, if so, in which form. It is expected that a support scheme will be available but without the denomination of FITs in US cents, since the current scheme introduces an element of currency risk for the government.
- The storage market is constrained due to uncertainties caused by the lack of regulation.

Ukraine

Approximately 2.8 GW of RES power plants were awarded the green tariff in the first 10 months of 2019, with total capacity expected to reach 5 GW. The pace of further growth will be impacted by anticipated changes in the support scheme and the expected implementing auctions in 2020. Necessary implementing regulations were adopted on December 27, 2019, except for capacity quotas for auctions. Capacity quotas for auctions are expected to be approved during the first quarter of 2020. The legislative framework for green tariff and auctions for RES power plants is still developing.

The share of renewables in gross final energy consumption is more than 5 percent, including large hydro, and the share of renewables in overall electricity production is approximately 9 percent.

In 2019, attractive feed-in tariffs incentivized many foreign investors to acquire projects or develop their own sites. Market players consist of a mix of local players and foreign investors, with foreign investors increasing their share in the wind sector. 2019 also witnessed a rush to commission RES facilities by year-end to achieve the higher tariff, as tariffs will reduce

substantially from 2020.

The dynamic growth of the market in 2019 has put financial pressure on the continued viability of the existing support scheme. Despite the pending legislative uncertainties, market players believe an acceptable solution will be reached to stabilize the market and further incentivize

new projects beyond 2020. Technical solutions (new generating facilities, energy storage capabilities, etc.) need to be implemented to enable the Ukrainian power grid to balance the rapidly increasing output of RES facilities as well as tolerate possible challenges to the system during its operation in isolated mode (before integration with ENTSO-E).

Drivers

- High feed-in tariffs for electricity from solar and wind in 2019, but reductions start in 2020.
- Fixed (EUR-linked) feed-in tariffs, with a state guarantee to purchase power from the date of commissioning to the end of 2029, but pending amendments might extend the tariff until 2034 or even longer.
- Auction tariffs will be fixed in EUR from the date of commissioning for 20 years.
- Positive history of awarding feed-in tariffs and payments, with some delays and disruption caused by the new electricity market and rapid growth in output of RES facilities.
- Stimulating tariff for heat from renewables at the level of 90 percent of current heat production from gas for respective categories of consumers or

90 percent of average heat production tariffs from gas in the respective region.

- Auctions are expected to be implemented starting in spring of 2020.

Constraints and risk factors

- Lack of funds in the electricity market for renewables due to price caps, subsidies for households and cross-subsidies in the industry as well as increasing import of electricity.
- According to the TSO, 11 GW of offers for grid connection were issued but due to expected changes in law many of these projects will not be able to be implemented under feed-in tariffs and there may not be enough capacity quotas to enable them to participate in auctions.
- Electricity market reforms and lack of necessary implementing regulations resulted in there being no incentives to develop/operate balancing facilities or facilities for auxiliary services needed to balance variable RES.
- Uncertainty over the timing for implementation of RES auctions due to delays in adopting necessary regulations and implementing technical solutions for auctions.

United Kingdom

In the first half of 2019, renewables accounted for over half of UK installed electricity generating capacity, and over a third of electricity produced in the UK. In the third quarter of 2019, UK renewables generated more electricity than UK fossil-fueled power stations.

Drivers

2019 saw another heavily over-subscribed auction for price-stabilizing Contracts for Difference (CfDs). CfDs were allocated to just under 6 GW of renewable electricity generation. Most of this is in offshore wind projects, although some onshore wind projects on Scottish islands and advanced conversion biomass projects were also successful. All are to be delivered in 2023/2024 or 2024/2025, with strike prices of £39.65 per MWh and £41.61 per MWh respectively (in 2012 prices: this is equivalent to approximately £5 per MWh above current day-ahead wholesale market prices).

Looking forward, the prime minister

has promised to make the UK the “cleanest, greenest country on earth,” building on the adoption of a legally binding net zero greenhouse gas emissions target for 2050 (2045 in Scotland). The government envisages offshore capacity of 40 GW by 2030, and is focusing again on developing a support regime for carbon capture, usage and storage (CCUS) clusters. The intention is that this would allow gas-fired plants to provide low carbon, flexible back-up to renewables, as well as enabling the decarbonization of energy intensive industrial processes.

From a commercial perspective, the UK renewables sector continues to be characterized by an active

secondary market in terms of acquisitions and re-financings of portfolios of developed assets, often involving private equity or institutional investors. Perhaps most encouragingly, there are a number of signs of increased demand for renewable power among both household and corporate customers. Prices for renewable guarantees of origin continue to rise. More energy retailers, including some of the most dynamic and successful recent entrants into the market, are offering their customers 100 percent renewable supply. Examples include Octopus, Bulb, and Shell which, as a result of two recent acquisitions, now has 1 million customers being supplied in this way. Elsewhere there have been some notable “corporate PPA” or collective renewable electricity purchasing transactions.

Constraints and risk factors

The prospects for further RES growth in the UK vary with technology, location and project size.

New solar projects and onshore wind projects (except on Scottish islands), remain ineligible for public subsidies, and the government’s decision not to include them in the 2019 CfD auction is the subject of a pending legal challenge that may yet result in the most recent CfD auction having to be re-run. Solar and wind projects

will be able to compete in future GB Capacity Market auctions, but subject to heavy de-rating factors (ranging from 2.34 percent for solar to 14.45 percent for offshore wind). However, many developers appear optimistic about the prospects for subsidy-free projects.

The electricity regulator, Ofgem, is continuing the process of reforming the network charging regime. Opinion is divided as to precisely what the impacts of its latest decisions in this respect will be on new (and particularly smaller-scale) renewables projects, but there are indications that they will not be positive. Ofgem is trying to correct what it sees as distortions in the existing framework, some of which have favored renewable and other distributed generation.

The impact of the UK’s departure from the EU on the renewables sector remains unclear, but the result of the recent General Election suggests that some clarity on this may emerge in 2020.

Uzbekistan

2019 has been a key year for Uzbekistan in promoting renewable energy. In August 2019, it adopted the Complex Program for Enhancing the Energy Efficiency of Sectors of the Economy and the Social Sphere, implementing energy-saving technologies and developing renewable energy sources in the 2019–2022 perspective. The aim is to increase the share of renewable energy sources in total energy generation from 10 percent currently (total capacity in 2019 is around 13,000–14,000 MW, with more than 85 percent for gas fired plants). Moreover, in October 2019, the president approved the strategy for the transition to the green economy for the period 2019–2030: reducing specific greenhouse gas emissions per unit of GDP by 10 percent from the 2010 level and doubling energy efficiency indicators.

Drivers

The newly adopted Law of Uzbekistan on the Use of Renewable Energy Sources defined the main directions of state policy in this area and provides certain incentives. For example, entities generating energy from RES (with nominal capacity of 0.1 MW and more) are exempt for 10 years from (i) property tax on their facilities, (ii) land tax on their facilities.

Entities specializing in manufacturing (assembly) of renewable energy facilities are also exempt from all types of taxes for five years from their incorporation date. Certain tax incentives have been granted to households who completely rely on renewable energy.

In May 2019, the Law of Uzbekistan on Public-Private Partnership was

adopted, which provides a legal framework for cooperation between the public and private sectors when developing public infrastructure or providing municipal services.

Institutional reforms in the energy sector in 2019 include (i) establishment of the Ministry of Energy of Uzbekistan in February 2019; (ii) unbundling of JSC Uzbekenergo into three companies, JSC Thermal Power Plants, JSC National Electric Networks of Uzbekistan and JSC Regional Electric Networks; (iii) establishment of the Public-Private Partnership Development Agency.

In October 2019, Uzbekistan announced the results for the country's first ever competitively tendered solar power public-private partnership (PPP) project, which was carried out with the IFC acting as financial advisor. Masdar Clean Energy of United Arab Emirates was awarded the project with a bid to supply solar power at just US¢2.67 per kWh. At the end of 2019, the government announced a PPP tender for two solar projects of up to 200 MW each, followed by another round for 500 MW.

Constraints and risk factors

The government encourages investors to take part in a wide range of renewable energy projects (solar, wind and hydro) and is building its capacity to cooperate with foreign investors within a PPP framework.

In November 2018, the government addressed low consumer prices for fuel and energy resources, approving a gradual increase in tariffs. As admitted by President Shavkat Mirziyoyev in his speech at the 20th plenary meeting of the Senate of the Parliament of Uzbekistan, electricity price liberalization is the only way to attract investment in the energy sector. According to him, Uzbekistan should raise electricity prices. Otherwise, investors will not come.

Contacts



Arkadiusz Krasnodębski
Poland Managing Partner
Head of Europe Energy group
Dentons
D: +48 22 242 56 63
arkadiusz.krasnodebski@dentons.com



Yolande Meyvis
Partner, Brussels
Dentons
D: +32 2 552 29 31
yolande.meyvis@dentons.com



Dario Traum
Head of Policy – EMEA
BloombergNEF
T: +44 20 32 16 47 04
dtraum1@bloomberg.net



Petr Zákoucký
Partner, Prague
Dentons
D: +420 236 082 280
petr.zakoucky@dentons.com



Giles Dickson
CEO
WindEurope
T: +32 2 213 18 11
giles.dickson@windeurope.org



Marc Fornacciari
Partner, Paris
Dentons
D: +33 1 42 68 45 44
marc.fornacciari@dentons.com



Michael Schmela
Executive Advisor and Head of
Market Intelligence SolarPower
Europe
D: +49 173 15 70 999
m.schmela@solarpowereurope.org



Otar Kipshidze
Georgia Managing Partner
Dentons
D: +995 32 250 93 00
otar.kipshidze@dentons.com



James Hogan
Azerbaijan Managing Partner
Dentons
D: +994 12 490 75 65
james.hogan@dentons.com



Thomas Schubert
Partner, Berlin
Co-head of Europe Energy
Regulatory practice
Dentons
D: +49 30 26473 430
thomas.schubert@dentons.com



Anita Horváth

Partner, Budapest
Dentons
D: +36 1 488 5200
anita.horvath@dentons.com



Carsten Steinhauer

Partner, Rome
Dentons
D: +39 06 809 120 19
carsten.steinhauer@dentons.com



Victoria Simonova

Partner, Almaty
Dentons
D: +7 727 258 2380
victoria.simonova@dentons.com



Christel Dumont

Senior Counsel, Luxembourg
Dentons
D: +352 46 83 83 211
christel.dumont@dentons.com



Jan Jakob Peelen

Partner, Amsterdam
Dentons
D: +31 20 795 38 00
janjakob.peelen@dentons.com

Contacts



Marcel Janssen
Partner, Amsterdam
Dentons
D: +31 20 795 34 23
marcel.janssen@dentons.com



Evgenia Teterevkova
Partner, St. Petersburg
Dentons
D: +7 812 325 84 44
evgenia.teterevkova@dentons.com



Agnieszka Kulińska
Managing Counsel, Warsaw
Dentons
D: +48 22 242 57 40
agnieszka.kulinska@dentons.com



Katarina Pecnová
Counsel, Bratislava
Dentons
D: +421 220 660 220
katarina.pecnova@dentons.com



Michal Motylewski
Counsel, Warsaw
Dentons
D: +48 22 24 25 666
michal.motylewski@dentons.com



Javier Lasa
Partner, Madrid
Dentons
D: +34 91 43 63 325
javier.lasa@dentons.com



Claudiu Munteanu-Jipescu
Partner, Bucharest
Dentons
D: +40 21 312 4950
claudiu.munteanu@dentons.com



Barlas Balcioglu
Turkey Managing Partner
Balcioglu Selçuk Akman Keki
Attorney Partnership
D: +90 212 329 30 00
bbalcioglu@baseak.com



Alexei Zakharko
Russia Managing Partner
Dentons
D: +7 495 644 0500
alexei.zakharko@dentons.com



Maksym Sysoiev
Counsel, Kyiv
Dentons
D: +380 44 494 4774
maksym.sysoiev@dentons.com



David Cruickshank

Partner, Edinburgh
Dentons
D: +44 33 0222 1704
david.cruickshank@dentons.com



Charles July

Partner, London
Dentons
D: +44 207 246 7654
charles.july@dentons.com



Lucille De Silva

Partner, London
Dentons
D: +44 20 7320 3795
lucille.desilva@dentons.com



Adam Brown

Managing Practice Development
Lawyer, London
Dentons
D: +44 20 7246 7014
adam.brown@dentons.com



Eldor Mannopov

Uzbekistan Managing Partner
Dentons
D: +99 878 150 31 05
eldor.mannopov@dentons.com

Sources of official data used in this publication

- BloombergNEF
- Directive 2009/28/EC of the European Parliament and of the Council of April 23, 2009 on the promotion of the use of energy from renewable sources
- Directive (EU) 2018/2001 of the European Parliament and of the Council of December 11, 2018 on the promotion of the use of energy from renewable sources
- Communication from the European Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, on the European Green Deal. December 11, 2019
- European Commission Renewable Energy Progress Report, April 2019
- Eurostat data on the share of renewable energy in gross final energy consumption as of January 2020
- National Energy and Climate Plans
- SolarPower Europe
- WindEurope

ABOUT DENTONS

Dentons is the world's largest law firm, delivering quality and value to clients around the globe. Dentons is a leader on the Acritas Global Elite Brand Index, a BTI Client Service 30 Award winner and recognized by prominent business and legal publications for its innovations in client service, including founding Nextlaw Labs and the Nextlaw Global Referral Network. Dentons' polycentric approach and world-class talent challenge the status quo to advance client interests in the communities in which we live and work.

[dentons.com](https://www.dentons.com)

© 2020 Dentons.

Dentons is a global legal practice providing client services worldwide through its member firms and affiliates. This publication is not designed to provide legal or other advice and you should not take, or refrain from taking, action based on its content. Please see [dentons.com](https://www.dentons.com) for Legal Notices.