Investing in renewable energy projects in Europe

Dentons’ Guide | January 2016

A foreword by Bloomberg New Energy Finance
Europe has seen a renewables surge in the last decade, with green power capacity doubling in the last five years alone. And this flood shows few signs of abating, with Europe set to welcome nearly 843 GW of additional renewables capacity over the next 25 years, according to Bloomberg New Energy Finance. This opportunity will require some US$1.2 trillion of investment—85 percent of Europe’s total financing of all power-generating capacity to 2040.

But where precisely in the 50 or so very different countries in Europe will this forecast investment take place? One significant determinant will be the policy context, more particularly policy credibility and stability. Europe has witnessed in recent years, to its detriment, that regulatory uncertainty can weigh down renewable power investment: an extreme example of this was sparked by the wave of retroactive policy changes across southern and central EU member states. The result was financial distress and eroded investor confidence, as Spain, for example, saw new clean energy investment drop from US$24 billion in 2008 to less than US$1 billion in 2014 and 2015. Overall, financing across Europe more than halved during 2011-13 and fell in 2015 to its lowest since 2006.

Renewables have to some extent been a victim of their own success, as subsidy payouts have unexpectedly surged. As a result, nearly half of the 28 EU member states have capped renewable energy funding, while at least five have frozen support or said that the coffers were bare.

Today, governments may have learned their lesson over retroactive policy changes. But uncertainty remains: the UK has been a case in point since the Conservatives won majority power in May last year, with support schemes ending early, and benefits cancelled and then reintroduced. The market is still awaiting news on the next contract-for-difference auction for onshore wind and PV, if there is one. Poland
has recently delayed the start of the new market framework by six months, and Russia’s 2015 renewables auction attracted little interest as it was held so soon after the implementation of multiple, significant regulatory changes.

Some of this policy flux has also been driven from the top, notably with the release of the EU state aid guidelines (see next section). In this context, Europe’s power sector is undergoing a transformation caused in part by this influx of renewables, together with the growth in customer-owned generation and dwindling demand in most countries.

In addition, renewable technologies are set to see further cost decreases: onshore wind is now the least-cost option for new power generation in the UK, with a levelized cost of US$85/MWh compared with US$115/MWh for coal and natural gas, according to BNEF. The cost of fixed-axis PV across EMEA dropped at least 15 percent in 2015, reaching US$127/MWh by September. But there is notable cross-country variation within Europe, with the levelized costs ranging from US$216/MWh in Turkey (despite its superior capacity factor) to US$106/MWh in Germany, in part due to lower capex and cost of debt.

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1 The EU-28, Iceland, Norway, Switzerland and Turkey
This guide provides brief snapshots of the prospects for renewable energy sources (RES) projects in 16 jurisdictions in Europe and Central Asia with active renewable energy industries and/or significant RES potential where Dentons has offices. In each case, we look at the general background and the intrinsic potential for RES development, the factors which have driven and continue to drive the industry, and the constraints and risk factors faced by investors.

European Union policy
For those countries in this guide which are member states of the European Union, Directive 2009/28/EC of the European Parliament and Council on the promotion of the use of energy from renewable sources (the “Renewable Energy Directive”) and EU policy on state aid have had a significant influence in shaping their approach to RES. EU policy also provides part of the background for many of those countries considered here that are not part of the EU.

The Renewable Energy Directive establishes a joint framework for energy production from renewable sources in the EU and ensures that renewables are an integral part of the energy mix for electricity generation, transmission, heating and refrigeration. It also establishes sustainability criteria for biofuels. The Directive forms part of an overall EU energy policy framework that includes the so-called “20-20-20” goals:

- 20 percent reduction in greenhouse emissions vs 1990 (30 percent if the conditions are right).
- 20 percent of final energy consumption from RES (and 10 percent of fuel in the transport sector to come from RES).
- 20 percent increase in energy efficiency.

The EU 2020 goals for RES have in turn been translated into individual targets for the energy sectors in each member state. The Renewable Energy
Directive requires the European Commission to report biennially to the European Parliament and Council on the progress achieved in renewable energy development in the EU and member states and on EU biofuel sustainability. The most recent data made available by Eurostat are as of end 2013.

A progress report issued by the European Commission in June 2015 shows that with a projected share of 15.3 percent of RES in 2014, the EU is making good progress towards its target. 25 out of 28 member states are expected to meet their 2013/2014 interim renewable energy targets.

The development of RES in the EU has largely been stimulated through the implementation of national support schemes, in particular for the production of electricity from renewable energy sources (RES). These have generally been either “green certificate” schemes in which wholesale purchasers of electricity must meet a certain quota of RES electricity (evidenced by tradable certificates issued to RES power producers), or “feed-in tariff” (FIT) schemes in which RES producers are paid a sector-specific price that replaces wholesale power market prices or supplements them by a fixed amount regardless of how they may fluctuate.
However, in April 2014 the European Commission (which must approve all such support measures) published revised State Aid Guidelines on Environmental Protection and Energy 2014-2020 (Guidelines) aimed at helping member states design support schemes that contribute to reaching their 2020 climate targets in a cost-effective way. The Commission was concerned that RES support schemes were over-compensating RES power producers, reducing incentives to efficiency and distorting competition.

The Guidelines do not immediately prohibit green certificates or FITs in the forms that they have generally taken so far. However, they envisage that from 1 January 2017 they will become the exception for new projects. The normal mechanism for awarding support should instead be competitive bidding processes open to all RES generators. Although the Guidelines only require five percent of planned new RES power generation capacity to be subsidized in this way during 2015-2016, a number of member states (including the UK and Germany) have moved further and faster towards schemes in which the level of support is set by auction or tender processes rather than by the government determining that all projects of a certain kind commissioned within a particular timeframe are automatically entitled to a certain level of support.

**Other policy considerations**

Although the regulatory and commercial structures of national markets often differ substantially, governments and regulators in all the jurisdictions considered in this guide have to grapple with many of the same issues. These include:

- How to drive down the costs of RES support while still meeting relevant RES targets (particularly in a world of relatively low fossil fuel prices).

- How to keep up with falling costs and rising efficiency of some RES technologies.

- How to reconcile the demands of RES policy, now given fresh impetus by the Paris 2015 UNFCCC (CoP 21) Agreement, with the demands of their own fossil fuel industries and the limitations of existing (often intermittent) RES technologies.

- Managing the transition from historic green certificate and FIT schemes to the new world of competitive awards.
• How to ensure that there is a liquid market for power purchase agreements from RES power projects.

• Whether (and/or how far) to prioritize the development of RES over energy efficiency measures and the expansion of nuclear power (as the main current alternative low carbon power generation technology) as ways of reducing greenhouse gas emissions.

• Controlling the costs that RES support schemes impose on consumers, in particular on the most energy intensive industrial users of power.

• How to deal with relatively new market phenomena that arise from the increasing abundance of RES power, such as regular negative power prices.

National policies and legislation are regularly changed as governments and regulators seek to address these challenges. For RES developers and investors, understanding current and possible future changes, spotting the opportunities that may arise from them, avoiding potential risks and finding a business model that is capable of surviving the resulting uncertainties is a key constituent of commercial success.

Power-generating capacity mix by country, GW
Source: Bloomberg New Energy Finance
Azerbaijan

Azerbaijan has a long history as a major hydrocarbon producer, and the oil and gas sector continues to dominate the economy, accounting for approximately 40 percent of national GDP. Although the country has extensive renewable energy potential, including significant wind, solar, hydro and geothermal resources, these have not so far been exploited on a large scale. However, there are signs that this could change. In 2015 work began on a 50 MW onshore wind farm and plans for a 200 MW offshore wind farm were announced.

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<th>Share of renewable energy in gross final energy consumption in 2014 – 2.3 percent [excluding hydropower]</th>
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<td><strong>Azerbaijan national target by 2020</strong> – 9.7 percent [excluding hydropower]</td>
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A restructuring of the power sector is in process. Distribution and supply functions have been transferred from the state-owned company Azerenerji JSC (which will continue to be responsible for generation and transmission) to the ownership and control of a separate state-owned entity, Azerishig OJSC (until February 2015, known as Bakielectricshehebeke OJSC). The split of generation and transmission from distribution and supply functions was dictated by the need for both business areas to operate more effectively.

**Drivers**
Tax and legal incentives for RES development are briefly mentioned in the Law on the Use of Energy
Resources, No. 94-IQ, of 30 May 1996 (the ER Law) in the context of the efficient use of energy resources. The ER Law encourages foreign investment in order to attract expertise, new technologies and materials, as well as financial resources, for the purpose of improving the efficiency of energy usage in Azerbaijan.

A draft Law on Alternative and Renewable Energy (the Draft Law) is currently being reviewed by the Cabinet of Ministers. It prioritizes the renewable energy sector over other forms of electricity generation and provides for the priority connection of alternative and renewable energy installations to the grid system. According to the Draft Law, the state is to subsidize the difference between the established tariff and the expenses of the producer, though the mechanism has not been specified. The Draft Law includes provisions on a feed-in tariff (FIT) and guarantees that the energy will be purchased at the tariff for a period of 10 years.

**Constraints and risk factors**

Unlike the oil and gas sector, where the legal and regulatory framework has been specifically designed to encourage private sector participation, including by foreign investors, the power sector remains primarily under state ownership and control.

The Law on the Protection of Foreign Investments, No. 57, of 15 January 1992 (the FIP Law,) which applies only to foreign investors and companies with foreign investment, provides important guarantees, including national treatment, repatriation of profits, the right to arbitration and certain protection against changes to legislation and the nationalization and expropriation of property. Bilateral investment treaties providing similar guarantees have been concluded with a number of states.

Despite the FIP Law, the power sector in Azerbaijan remains fairly closed to foreign investment, making the current legal framework of limited practical application. The government continues to fund the capital investments of Azerenerji JSC and does not appear to be contemplating the privatization or sale of assets of state-owned companies in the sector.
Belgium is a federal state, composed of Communities and Regions, and therefore the power to make decisions does not rest solely with the federal government and federal parliament. Energy, including renewable energy, is a regional matter, and the Flemish Region, Brussels-Capital Region and Walloon Region have jurisdiction in this domain. Only offshore wind power and hydro power are governed at the federal level. There is a significant pipeline of both onshore and offshore wind power projects – the latter in particular benefiting from some recent changes to the subsidy regime and plans for a more coordinated approach to offshore transmission infrastructure.

**Share of renewable energy in gross final energy consumption in 2013** – 7.9 percent  
(Wallonia – 9.7 percent; Flanders – 5.9 percent; Brussels – 2.1 percent)

**Belgium national target by 2020** – 13 percent  
(Wallonia – 13 percent; Flanders – 10.50 percent; Brussels – 3 percent)

**Drivers**
Belgium has four regulatory authorities—one at the federal level (CREG) and three at the regional level (VREG, BRUGEL and CWaPE). Energy policies vary significantly between the Regions, and therefore the legal framework reflects the goals and priorities of each particular Region. Belgium has implemented, at both the regional and federal level, the common EU standards required by the Renewable Energy Directive.
Renewable energy is promoted via a scheme of green certificates, as well as guaranteed minimum prices. To promote renewable heating and cooling, companies are eligible for a tax deduction on investment costs. Electricity from renewable sources is promoted mainly through a quota system based on the trade of certificates. Other federal measures promote the development, installation and use of RES-installations through an indirect fiscal mechanism for research, development and demonstration (RD&D) programs. Electricity generated by renewable energy sources is given priority on the electrical grid, and the federal government also has recourse to fiscal tools such as tax deductions. Additionally, the federal government has created a scheme of tax-exempt biofuel quotas and has introduced the mandatory use of biofuel in the fuel mix.

Despite this activity at the federal level, the bulk of the relevant legislation is enacted at the regional level. In the Brussels-Capital Region, access to electricity generated by renewable sources is mainly regulated by the regional electricity market ordinance. In Flanders, renewable energy is supported by an ecological premium, a net-metering scheme, as well as a quota system set up by grid operators and municipal governments. Wallonia promotes electricity generation through renewable sources by way of regional support schemes such as energy subsidies and investment assistance, as well as net-metering.

**Constraints and risk factors**

Legal uncertainty is probably the most significant risk associated with renewable energy projects. The legislation relating to renewable energy sources is continuously evolving, which can lead to financial uncertainty (for example due to fluctuations in tax rates).

There are also risks associated with European and Belgian competition and state aid rules. Some renewable energy projects, especially the construction of wind farms, have been annulled by the Council of State (Conseil d’Etat / Raad van State) because of violations of administrative regulations.
In the Czech Republic, RES has developed gradually since the first modern incentives programs were introduced in 2005. The granting of generous support led to a boom in photovoltaic plant construction in 2009 and 2010. As a result, installed capacity jumped from 0.04 GW in 2008 to 2 GW in 2011. Since then the support for new photovoltaic power plants has been limited to rooftop installations. The development of other types of RES has been less dramatic and can be described as steady growth. While there was an increase in biogas power plants in recent years, this seems to have ceased in 2015. Currently, support is aimed primarily at new small projects.

**Share of renewable energy in gross final energy consumption in 2013** – 12.4 percent

**Czech Republic national target by 2020** – 13 percent

**Drivers**

The Czech Republic consolidated its system of RES support in 2012 by enacting the Promoted Energy Sources Act No. 165/2012 Coll. (the Act). The Act is generally based on previous legislation and guarantees the same level of support as applicable before the Act came into force for projects commissioned prior to the effectiveness of the Act. The incentive scheme is based on support for electricity producers in the form of feed-in tariffs and green
bonuses. The feed-in tariffs consist of mandatory prices for which selected electricity traders are obliged to buy the electricity produced from RES. Green bonuses represent direct support which a producer receives in addition to the price generated by the sale of such electricity on the market. Generally each producer may choose from which system of support it wishes to benefit. Each producer is also entitled to a priority connection to the grid.

The support under the Act is set to ensure that projects recover their investment costs during a 15-year period and are annually increased by two percent, which is the inflation target of the Czech National Bank. The specific values of the support are set individually for each type of RES and year of commissioning in the annual Price Decisions of the Czech Energy Regulatory Office (the ERO). Calculation of these values takes into account estimation of average investment costs and production efficiency in the year when the project was put into operation.

Constraints and risk factors

The notification of the RES support program to the European Commission as state aid is still pending in respect of energy sources put into operation prior to 2013. The support program for projects commissioned during the period from 2013 to 2015 has been notified and approved by the European Commission.

Czech public opinion tends to be skeptical towards new RES projects (especially photovoltaic power plants). This results in occasional pressure on politicians to decrease their support of RES. Furthermore, according to the latest statistics of the ERO, the Czech Republic has already reached its RES 2020 national target. This may have a potentially negative effect on the appetite of politicians to support RES projects.

So far the ERO has not published any Price Decision which would set specific values of support in respect of projects commissioned from 1 January 2016.
Since the beginning of 2014, after a few years of decreased investment, France’s renewable energy sector has become increasingly attractive to investors. The recovery, as indicated by the increasing installed capacity of renewable energy plants, is mainly due to the simplification of the permit process and increased volume of the tender processes by which subsidies are made available.

Solar (PV) and onshore wind are the most widely deployed technologies. In these sectors, tariffs are getting closer to the wholesale market price. France has the second largest wind power potential in Europe—with three different major wind exposures and a 2,500 kilometer coastline. This, combined with a relatively favorable solar exposure in the south of the country, means that France has strong potential to develop RES further.

The draft medium term plan that has just been disclosed by the
government sets an ambitious objective of 36 GW to 43 GW of installed capacity for the PV and onshore wind sectors by 2023. The government is also fostering new and innovative forms of renewable energy, such as maritime renewable energy.

**Drivers**
The Energy Transition Act has simplified the permit process for the operation of onshore wind energy plants. There is now a single decision that includes all the permits, declarations and approvals required under French law. A similar single decision-making process applicable to offshore wind projects is expected for 2016.

The Energy Transition Act has introduced into French law a new support scheme for renewable energies based on a feed-in premium (FIP). Under this scheme, suppliers sell directly to the market. In compensation, they receive a premium calculated ex-post to cover capital and operation costs and ensure a reasonable ROI. Depending on the type of RES, FIPs are awarded either on demand or after a tender process. As a last resort, a buyer is provided for suppliers which do not succeed in selling their energy, in order to improve the project’s bankability. This new support scheme will not replace the previous feed-in tariff support scheme but supplement it. Onshore wind and PV plants with installed capacity below 100 KW will temporarily remain under the FIT system.

**Constraints and risk factors**
In France, the main difficulty relates to the permit process, which is still slow and complex. Although a single decision authorizes RES operations, suppliers still have to apply separately for grid connections and FITs/FIPs.

In addition, French environmental associations who are not always in favor of renewable energy projects, are particularly active, and French procedural law facilitates their ability to take legal action.
Germany

On 1 January 2016, Germany celebrated the 25th anniversary of its statutory framework for the promotion of renewable energy. The predecessor of the Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG, the RES Act), the Electricity Feed-in Act (Stromeinspeisegesetz, StromEinspG) was adopted in 1990 and became effective on 1 January 1991. The renewables sector in Germany was a success story until the first signs of negative side effects made some adjustments necessary between 2012 and 2014. This led to a change in mood in the market, at least in the short term.

**Energiewende – energy transition, expansion of renewables**

Share of renewable energy in gross final energy consumption  
in 2013 – 12.4 percent  
Germany national target by 2020 – 18 percent

Germany’s energy transition is centered on a phase-out of nuclear power plants by 2020, the federal government’s climate strategy and the promotion of energy production from renewable sources. By 2020 the federal government expects renewable energy to reach 19.6 percent of gross final energy consumption, which exceeds the national target of 18 percent.

**Drivers**

Germany remains the RES powerhouse of Europe, with particularly strong growth at present...
in the offshore wind sector. In regulatory terms, the main event of 2015 for the German renewables industry was the planned shift from the current feed-in tariff model to an auction model for commercial-scale projects. The government began the legislative implementation of a pilot tender framework in preparation for this shift. PV installations were selected for the pilot tenders because of their short planning and approval periods. Furthermore, given that there are already established professional providers operating on that market, it was possible to launch the tenders quickly. The feedback on the three tenders accomplished in 2015 was mixed, but from the government’s perspective, many of the goals set for this new support model seem to have been reached (e.g., lower prices for the electricity generated by the projects winning the tenders).

**Constraints and risk factors**
- Some industry associations in Germany claim that the move from the feed-in tariff to the auction model for all technologies in the renewables sector bears more risks than opportunities.
- The legal framework continues to undergo significant changes. Apart from the aforementioned transition, the German government is working on a draft for an Electricity Market Act (*Strommarktgesetz*). As a consequence, market participants are facing some uncertainty in their planning process.
- Rising electricity prices for consumers—when wholesale prices are decreasing—is reducing the public’s support for the sector and may lead to political pressure to modify the system.
- Grid expansion, 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 and difficult topic in Germany.
Hungary

Hungary has been identified as having the potential to satisfy a very significant proportion of its energy needs from renewable energy. It has an established support regime in place for renewable energy projects, in the form of obligatory feed-in tariffs for electricity generated by eligible projects. However, fiscal measures taken in the aftermath of the global financial crisis have caused investments in renewable energy projects to slow down in recent years.

Another factor constraining renewables growth has been a practical ban on the further installation of wind generation capacity because of network balancing constraints on the electricity transmission network. However, it is expected that a proposed new conceptualized renewable energy subsidy regime may give impetus to renewable energy developments and investments in the coming years.

**Drivers**

The Hungarian Electricity Act creates the legal basis of the obligatory off-take regime and the feed-in tariffs which together comprise the key form of support for electricity

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<th>Share of renewable energy in gross final energy consumption in 2013</th>
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<td><strong>Hungary national target by 2020</strong></td>
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generation by renewable energy projects (including solar; wind; geothermic; wave; tidal and hydro energy; biomass; landfill gas, gas from waste and sewage; and biogas).

The basis of the obligatory off-take system is the “FIT balance circle,” which is operated by the transmission system operator (MAVIR) and includes all eligible renewable energy generators. MAVIR purchases renewable energy from the generators within the FIT balance circle on regulated feed-in tariffs. Although the tariffs are more favorable than market prices, the same feed-in tariff applies to different types of renewable energy sources (except for wind and solar projects). The applicable tariffs are periodically indexed, calculated and promulgated by the regulator, in accordance with the Electricity Act. Upon the request of an eligible renewable energy generator, the regulator specifies the volume of electricity generated from renewable energy sources that may be sold by each generator within the FIT balance circle to MAVIR and the period of such entitlement. The goal of this administrative measure is to ensure a reasonable return on investment, while avoiding over-subsidization.

Renewable energy projects may also be entitled to development tax incentives in the form of corporate income tax allowances, depending on factors such as the location, magnitude and labor intensity of the development. In addition, renewable energy projects may also benefit from preferential grid connection conditions.

Expected changes:
Given that Hungary is being hindered from reaching its national target for 2020 due to the lack of significant renewable energy related investments in recent years, the government is currently looking to reshape the renewable energy subsidy regime. Unfortunately, so far little is known about the concept and implementation timeline of a potential future renewable energy support mechanism.

Constraints and risk factors
- Adverse regulatory and fiscal measures generally affecting the Hungarian energy industry in recent years
- Potentially changing support regime for renewable energy projects
Italy

Italy was an early adopter of renewable energy. Up until the 1970s, almost its entire electric system was hydroelectric, and geothermal technology was invented in the early 20th century in the country in order to exploit the large steam underground reservoirs of Larderello near Pisa. Hydro capacity is present all over the country with a peak in the alpine regions in Lombardy, Südtirol and Abruzzi. Italy has been granting public subsidies to RES since 1992; however, the country has not developed its own wind and solar technologies.

| Share of renewable energy in gross final energy consumption in 2013 – 16.7 percent |
| Italy national target by 2020 – 17 percent |

Solar installations grew rapidly between 2009 and 2012 when very generous feed-in tariff schemes were enacted; however, although in the long term solar is probably the country’s most available renewable energy source, the market for new installations has yet to recover from recent tariff changes.

Drivers

Italian legislative decrees No. 387/2003 and 28/2011 provide a solid legislative basis for renewables, simplifying the permitting process and granting expedited connection arrangements and dispatching priorities.
The generous incentive schemes for solar photovoltaic installations available between 2005 and 2014 were interrupted after the last regime enacted in 2012 had been completed. This means that newly built solar photovoltaic (PV) plants can only operate in grid parity. While several attempts to build PV plants in grid parity were started, very few were built.

The solar tariffs already granted were modified in 2014 to be payable over a longer period of time than the original 20 years, with a corresponding reduction of the unitary level. Owners could opt not to join the extended period, in which case they agreed to suffer an immediate higher tariff cut. The lawfulness of this mechanism has been challenged before the Italian Constitutional Court in a pending case.

RES plants other than PV plants were operated under a green certificates regime from 1999 until 2015. Since 2012, all new plants have been granted a feed-in tariff. From 2016, this will be extended to all plants which were granted green certificates in the past.

New schemes of feed-in tariffs will be available from 2016 for all renewable sources, except for solar PV, which however still benefits from tax cuts for new household installations.

**Constraints and risk factors**
The RES sector is perceived to face some level of political risk in Italy. In 2013-2014 the government made cuts to align the incentives to international standards. A second round of cuts seems unnecessary and therefore unlikely to occur.

Issues affect the construction of new plants when it comes to the timing of connection. Recently wind farms experienced resistance by landowners, and this led to a massive use of expropriation procedures by project developers facing the risk of expiration of deadlines for commissioning under rules for granting public subsidies.

The market sharply criticized the regulator’s decision to impose shortfall penalties for the injection of electricity into the grid by RES plants.
Kazakhstan has a favorable landscape and climate for renewable energy. Hydro, wind and solar energy have great prospects for growth. There are positive developments in establishing new wind and solar stations. 2016 should see the commissioning of the first Kazakh wind farm of 50 MW or more, and a number of other projects on this scale are in the pipeline, several with participation by the EBRD, Asian Development Bank or Chinese corporations. The government’s commitment to solar extends to the creation of a domestic PV panel manufacturing industry as well as a 50 MW generating station.

The importance that the government accords to renewable energy is shown by Kazakhstan’s ratification of the International Renewable Energy Agency Charter (IRENA) in 2009; by the setting of a goal of supplying 50 percent of domestic energy consumption from renewable and alternative sources as part of its 2050 Strategy; and by its putting renewable energy at the heart of the Astana EXPO 2017 world’s fair themed around “Future Energy.”

Drivers
There are two key laws—the Law on Support for the Use of Renewable Energy Sources and the Law on Electric Power—as well as the Environmental Code and secondary legislation that regulate the renewable energy sector. These
laws were amended to introduce a new mechanism for the sale and purchase of renewable energy based on differentiated tariffs, the absence of which has created a disincentive to invest in the sector. Kazakhstan has also ratified the Kyoto Protocol and accepts voluntary obligations on fulfilment of it but is not an “Annex 1” country.

Incentives available to generators of renewable energy:

**Preferential fixed tariffs:** Tariffs are fixed for a period of 15 years and are subject to annual indexation based on inflation.

**Priority grid connection and transmission:** Where there is any limitation in the capacity of the transmission grids, the energy transmission companies must give priority to the transmission of electricity generated from renewable energy sources.

**Preferences applicable to investment projects:** Companies constructing renewable energy facilities may be eligible for certain investment preferences and subsidies in the form of customs exemptions, in-kind state grants and tax benefits and investment subsidies.

For such projects, import customs duties exemptions may be granted for the import of technological equipment, components and spare parts as well as raw materials and/or supplies.

**Exemption from payment for power transfer services:** Entities producing electric and thermal power from renewable sources are exempt from paying energy transmission companies for power transfer services.

**Constraints and risk factors**
The RES sector is still relatively immature in Kazakhstan, and there is a general lack of awareness and knowledge as well as skepticism around RES. Legislative regulation of the sector also requires further development.

As Kazakhstan is an oil-rich nation, development of its renewable energy industry has been hampered by the high cost of production of renewable energy as compared to conventional power generation sources.
For several years we have observed a significant increase in renewable energy sources in Poland. One of the most attractive areas for investors is the wind power sector, where the installed capacity exceeded 5 GW in the beginning of 2016. Moreover, the implementation of a new, stable support mechanism awarded through public auctions may boost the attractiveness of the Polish RES sector and attract new types of investors, such as pension funds. However, the new auction system, which was supposed to be launched as of 1 January 2016, has been postponed by the Polish Parliament until later in 2016.

**Share of renewable energy in the gross final energy consumption in 2013** – 11.3 percent

**Poland national target by 2020** – 15 percent

**Drivers**

In February 2015, Poland adopted the Renewable Energy Law (the RES Law). Chapter IV of the RES Law (introducing the new incentive scheme) was originally set to take effect on 1 January 2016. The RES Law formed two separate incentive systems for RES installations, depending on when the installation started to generate electricity:

- **Existing installations (i.e., RES installations which started generating electricity on or before 31 December 2015):** The support system is based on two pillars, i.e., the imposition of a purchase...
obligation on the obligated buyer and certificates of origin from RES issued to the renewable power generator (green certificates). Green certificates must be purchased by obliged entities in the amounts determined by the RES Act (the Certificates System). At the same time, existing installations may choose to participate in dedicated auctions instead of being part of the Certificates System.

New installations (i.e., RES installations which start generating electricity on or after 1 January 2016): Support is based on “contracts-for-difference” awarded in auctions organized by the President of the Energy Regulatory Office and executed with Operator Rozliczeń Energii Odnawialnej S.A. (a special vehicle created by the government), under which an auction winner sells energy on the market, but is entitled to receive the difference between the bid price and the market price (the Auction System). Auctions will be held at least once a year with the last auction to take place on or before 30 June 2021. Price will be the only criterion of an auction.

However, in the last days of December 2015, the Polish Parliament passed an amendment to the RES Law postponing the entry into force of Chapter IV until 1 July 2016 (the RES Amendment Act). In consequence, all installations which will commence generating electricity for the first time on or before 30 June 2016 will be eligible for the Certificates System. These installations will also have the right to switch to the Auction System (with certain exceptions). The provisions of the RES Amendment Act do not directly change the schedule of the first auction. If the deadlines provided in the RES Law are observed, the first auction will likely take place in November 2016.

Constraints and risk factors

• Power grids require further modernization and expansion in order to absorb increasing volumes of green energy.

• Strong social resistance to RES projects (in particular wind) affects various areas of Poland.

• The regulatory environment is quite unstable.
Following the renewables rush in Romania during 2010-2013, in recent years there has been a greater focus on consolidating and increasing the profitability of existing projects in a rather challenging legal environment. As of the end of 2014, Romania had RES installed capacity of approximately 4,000 MW. The country promotes renewable energy through a quota system based on green certificates.

**Share of renewable energy in gross final energy consumption in 2013** – 23.9 percent

**Romania national target by 2020** – 24 percent

As regards hydropower, Romania only counts electricity produced in plants of 10 MW and above towards its RES targets. Electricity is sold via the centralized market. As an exception, electricity generated by small and medium sized power producers, in power plants with installed capacities below 3 MW, can be sold via bilateral power purchase agreements.

**Drivers**

Since 1 January 2014, Romania has awarded three green certificates per MWh produced and delivered by solar power plants, and 1.5 green certificates per MWh produced and delivered by wind power plants. From 2018, wind power plants will receive 0.75 green certificates per MWh produced and delivered. The price per green certificate varies between €27/MWh and €55/MWh.
RES companies benefiting from the support scheme, contracted and sold on the electricity market, have guaranteed access to the grid.

RES electricity generated by plants with an installed capacity of a maximum of 1 MW per plant or 2 MW per high efficiency cogeneration plant fired on biomass can be sold to suppliers at regulated prices for each type of technology. The electricity sold at regulated prices does not benefit from the RES support scheme.

**Constraints and risk factors**

- Power grids require further modernization and expansion in order to absorb increasing volumes of green energy.

- Energy intensive companies (e.g., manufacturers of paper and paperboard, manufacturers of refined petroleum products) are exempt from the payment of green certificates corresponding to 85 percent, 60 percent or 40 percent of the electricity they consume. The estimated number of beneficiaries is 300, and the total budget allocated is €750 million. The scheme will run for 10 years.

- Between 1 July 2013 and 31 March 2017 the trading of one green certificate per MWh produced and delivered by wind power producers/two green certificates per MWh produced and delivered by solar power producers accredited until 31 December 2013 is suspended. The trading of these certificates is to be resumed on 1 January 2018 and phased out by 30 December 2020 at the latest. The rules for resuming the trading of these certificates are not yet available.

- For 2015-2020 the compulsory annual RES-E quota benefiting from green certificates is approved on a yearly basis by the Romanian government. This quota’s yearly determination introduces further uncertainty into the market as investors do not have a long term perspective. On 31 December 2015, the Romanian government decided on a 12.5 percent quota of electricity from renewable resources benefiting from the green certificates support scheme.
Russia

Russia is well behind most European and Asian countries (such as China) in the renewable energy sector. When it comes to generating low carbon power, it has traditionally focused more on nuclear than on renewable energy, although it also has the fifth largest hydro sector in the world.

However, the development of its capacity-based auction system for renewable subsidies since 2013 has shown a willingness to make RES projects work in quite challenging market conditions. At present the overall share of renewables in the Russian energy mix does not exceed 6.2 percent, and solar generating facilities make up only 0.001 percent of the whole energy system in the country. However, between 2013 and 2020 Russia plans to introduce new RES generators to produce the equivalent of 6 GW of energy including 1.5 GW based on solar generation. What is not in doubt is the extent of renewable energy resources in Russia (especially wind, solar, hydro and geothermal), even if some of these are located far from centers of electricity demand, meaning that a lot of new transmission infrastructure would need to be built to integrate them into the grid.

Drivers

Russia is the fourth country in the world by volume of emissions (after China, USA and India). During the next 15 years, the government plans to control emissions at the current level, which is a reduction of emissions by 2030 by approximately 25-30 percent compared to 1990 levels.

The new Russian Energy Policy for 2014-2035 provides for an increase in capital investment in renewables, especially in hydro and solar energy, a greater focus on energy efficiency, a decrease in energy consumption and
development of “balancing” energy programs. In 2015 Russia joined the International Renewable Energy Agency (IRENA).

Statements by energy sector officials suggest that Russia plans to invest approximately US$53 billion in renewables up to the year 2035. Hydro energy generation is the core renewable and is well regulated in Russia. 15 percent of the country’s energy production comes from hydropower sources. Solar potential in Russia is reasonable despite its northern latitudes. Although Russia does not utilize many solar plants, it is quite advanced in photovoltaic technologies, especially in the production of silicon. One of the most important projects is a solar power plant initiated by a joint venture of Rusnano and Renova.

Russia has now held three renewables capacity auctions, together approving awards to more than 1250 MW of capacity, and has refined the regime in a number of ways for the most recent (2015) one, which saw awards to 365 MW of the 460 MW of pre-approved bidding projects. This includes 280 MW of solar capacity, 35 MW of wind and just less than 50 MW of hydro capacity.

Constraints and risk factors

- Financial problems arising for projects as a result of fluctuations in the value of the ruble.

- Potential liability for penalties in the event that projects fail to deliver on schedule.

- Perceived potential risk to foreign investments in Russia in the current political context (sanctions etc.).

- Difficulties associated with “local content” equipment requirements in the subsidy regime.

- Relatively low federal government interest in RES projects; greater interest of regional administrations, but lacking financial resources.

- Significant hydrocarbon lobby due to material investment made in oil and natural gas development in the past.

- Reduction of electricity consumption by population and production enterprises as a result of crisis and sanctions.
The main obstacles to RES development have been generally low transparency, constantly changing and very strict legislation, as well as a poor administrative and political environment. RES development in Slovakia was also influenced by fear of the “Czech scenario,” after which the Slovak regulator massively lowered the feed-in tariffs for PV and abolished financial promotion of PV plants with capacity greater than 100 kW. The most used RES are biomass and solar energy, and interest in photovoltaic panels and heat pumps is increasing. Biomass is seen as the most interesting renewable, with theoretical potential of 120JP.

Drivers
The Slovak Republic adopted Act No. 309/2009 Coll. on Promotion of Renewable Energy Sources and High-efficiency Cogeneration (the RES Act) in 2009. The RES Act and incentive schemes it provides for have since been subject to numerous amendments, whereby the tariffs

In comparison to some of its neighbors, the Slovak Republic has had very little demand for new RES projects in recent years, although it should be remembered that the country starts from a position where about 70 percent of its power generation already comes from low carbon sources (nuclear and hydro).
are amended annually. Generally, electricity from RES is promoted through a feed-in tariff. The Act also offers RES projects priority connection, priority dispatch for electricity from RES, and statutory obligation of grid operators to purchase and pay for electricity from RES.

In general, all renewable electricity generation technologies are eligible, provided the plant capacity does not exceed a general limit of 125 MW, or 200 MW in the case of specific effective combined production. Plant operators may receive subsidies for the support of RES from the Operational Program Environmental Quality funded by the European Regional Development Fund (ERDF).

Electricity generated from renewable sources is exempt from excise tax.

**Constraints and risk factors**

The wind energy potential in Slovakia is limited, due to the fact that protected bird areas cover 23 percent of Slovakia’s territory. However, there could be potential to install wind power plants in industrial wastelands, abandoned military areas or airfields.

Certain RES projects need a building permit, and certain PV and RES-based power plants need a certificate to prove their compliance with the Slovak energy policy concept.
Spain

Spain’s energy industry is pushing for new RES capacity to be installed, further exploiting the country’s solar and wind resources and technical expertise. Although most observers see the Spanish market primarily in terms of an active secondary market at present, and opinions differ as to whether Spain is likely to hit its RES 2020 national target, there are those who predict a return to the development of new projects. If politics are a factor in any recovery in the Spanish market, the outlook remains unclear following the general election in December 2015.

Share of renewable energy in gross final energy consumption in 2013 – 15.4 percent

Spain RES 2020 national target – 20 percent

Drivers
As a result of the National Action Plan for RES 2011-2020, Spain has enacted legislation on electricity generation from RES sources in both mainland Spain and the islands. There is a General Regime for existing and new capacity, and a Special Regime whereby the Ministry of Industry, Energy and Tourism can call for competitive bids for fresh capacity. The General Regime for RES, introduced in 2013, replaced the previous tariff system and has had a significant negative impact on the RES industry. A challenge to the 2013 legislation by the Region of Murcia recently failed in Spain’s Constitutional Court. A number of cases brought by foreign investors against Spain are pending under the Energy Charter Treaty.
RES projects are entitled to receive proceeds from the sale of electricity at market prices in the pool. Existing and new facilities are also entitled to receive subsidy payments consisting of distinct elements of compensation for investment in installed capacity and for operational expenses.

Payments are made for the duration of a project’s regulatory life (between 20 and 30 years, depending on the technology), but the amount of subsidy is subject to reassessment and revision every six years (the first such “Regulatory Period” finishes at the end of 2019).

In addition, through a Resolution of 18 December 2015, RES companies can now participate in the ancillary services market. This may create new sources of revenue for some projects.

The Special Regime for RES on the mainland was established in 2015. An auction for the award of subsidies for 500 MW of wind power and 200 MW of biomass projects was launched on 14 January 2016. More auctions will follow.

Under the Special Regime, bidders offer a discount to the investment compensation they are entitled to, in order to win the right to install fresh RES capacity until the available capacity for that particular bidding round is exhausted.

Likewise, a Special Regime is set up for the islands. It is regulated by Order No. 1459/2014, which calls for up to 450 MW of new wind power capacity for the Canary Islands.

Constraints and risk factors
• The current subsidy regime is still relatively new but is already tested, as Spain’s Supreme Court has recently confirmed it.

• Although some Spanish banks are still cautious about lending to domestic renewables projects following previous exposure to projects affected by retrospective tariff cuts, financing is again available.
Turkey has great untapped renewable energy resources. Increasing concerns about global warming and climate change, and the desire to mitigate dependence on energy imports, mean that green energy opportunities are a key issue on the country’s energy agenda. The Strategic Plan issued by the Ministry of Energy and Natural Resources for 2015-2019 emphasizes the importance of Turkey’s renewable energy sources and prioritizes increasing the share of hydro, wind, solar, geothermal, wave and tidal technologies in producing electricity and heat energy.

**Share of renewable energy (including hydro) in electricity generation in 2014** - 20 percent

**Turkey national target by 2023** - 30 percent

**Drivers**
Turkey adjusted its renewables support mechanism in 2010 in order to adopt a more incentivizing scheme in the form of a feed-in tariff denominated in US cents.

Renewable power plants commissioned between 18 May 2005 and 31 December 2020 qualify for the FITs. The guaranteed prices are applicable for 10 years after commissioning. The qualified power plants include wind, solar, geothermal, biomass, biogas (including waste gas), wave and tidal plants. They also include hydro plants—either canal or run-of-river type—or with a reservoir area of less than 15 square kilometers. The level
of the FITs provided varies depending on the type of renewables-based power generation. Use of domestic equipment also plays a role in determining the level of FIT benefits, and higher tariffs may be achieved based on the amount and type of domestic equipment used.

In addition to the FIT regime, renewable energy power plants enjoy a number of other benefits such as reduction in licensing fees, exemption from certain fees payable in respect of land rights and priority in grid connection.

Separately, renewable energy power plants with an installed capacity not exceeding 1 MW are exempt from licensing requirements. Any excess electricity released into the grid by such power plants must be purchased at the FIT rate for a period of 10 years.

**Constraints and risk factors**

- Grid capacity for connecting wind and solar power plants is limited.

- Solar and wind developers currently face a choice between the relatively burdensome process of bidding for a license in one of the regulatory authority’s infrequent licensing rounds, or relying on the rule that allows projects of up to 1 MW to be built without a license and possibly clustering a number of such projects together or holding them in common ownership. Many have chosen the latter route. As a result, a recently proposed amendment to the legislation proposing that a legal entity/real person and any companies in which the legal entity/real person holds shares may not be allocated an installed capacity over 1 MW in respect of a given transformer center has prompted some concerns.

- An ongoing debate on the environmental impacts of hydro plants has resulted in increased opposition by environmental non-governmental organizations.

- While the denomination of FITs in US cents is advantageous to projects that already benefit from FITs, it introduces an element of currency risk for the government, potentially constraining the level and availability of future tariffs.
There is still no accurate information about the actual share of renewables in 2014. However, according to comments from certain experts, it was approximately five percent. Ukraine has a target of 11 percent of its gross final energy consumption from RES by 2020 according to its obligations within the European Energy Community.

The development of RES projects in the electricity sector slowed down considerably from 2013 until mid-2015 due to restrictive feed-in tariff legislation. The legislation required domestically produced equipment in order to be eligible for the feed-in tariff, prohibited the use of energy crops, established unbalanced feed-in tariff rates (tariffs for solar were too high) and created other barriers. The sector was also adversely affected by the political and economic crisis in Ukraine and the military conflict in the East of Ukraine. Legislative changes in 2015 removed these barriers, and the RES sector has become more attractive for foreign investors.

Ukraine is striving for energy security. We have observed an increased interest from investors and consumers in substituting natural gas...
in heating and implementing new projects. However, renewable heat projects are still at a disadvantage compared with the current subsidies for heat production from natural gas.

Drivers

• Feed-in tariff for electricity produced for certain types of renewables, including an arguably protectionist bonus where domestically produced equipment is used for such generation.

• Recommended (see below) stimulating tariff for heat produced from energy sources other than natural gas (at the rate of heat produced from gas or close to this figure).

• Exemption from import VAT and customs duties for equipment producing biofuels and certain equipment consuming biofuels.

• Exemption from excise duties for production of bioethanol.

The rates of feed-in tariff for new power plants currently depend on RES types, power capacity and certain other factors and range from five to 20 eurocents. They are fixed for an eligible plant as of the date of its commissioning until 2030. In future, these rates will be gradually decreased, and from 2025 the feed-in tariff will not be linked to the EUR/hryvnia exchange rate for newly commissioned power plants.

Constraints and risk factors

• The feed-in tariff is granted and guaranteed only after the commissioning of power plants, not before.

• Continuation of emergency measures in the power sector allows the government to reduce the rate of the feed-in tariff for limited periods of time.

• The stimulating tariff for heat is not guaranteed by primary legislation (only recommended by the government to the regulator) and is therefore currently completely ignored by the regulator.

• It is expected that the issue will be resolved later in 2016 after the introduction of changes to primary legislation. Meanwhile, conventional energy sources in the heat and power sectors are still heavily subsidized, which makes it difficult for renewables to compete in the market.
Since 2010 the UK renewables sector’s shares of electricity generation and generating capacity have almost trebled. But energy from RES still only amounts to seven percent of the UK’s gross final energy consumption (compared with the UK RES 2020 national target of 15 percent). The climate for renewables in the UK has become generally less benign since the new Conservative government, with its focus on reducing public spending, was elected in May 2015.

There is a large pipeline of consented projects of all technology types. However, the prospects for individual projects vary according to their size, permitting history, technology (for example, the government aims to end subsidies for new onshore wind projects and is in the process of drastically curtailing solar subsidies) and location (for example, solar projects enjoy higher subsidies in Northern Ireland, and in some cases Scotland, than in England). The offshore wind sector is likely to see most growth to 2020, but at least in the short term there will be some significant opportunities for solar, onshore wind and CHP biomass as well.

Drivers
The UK has four renewables subsidy regimes. For many RES technologies, there are feed-in tariffs for domestic and small-scale commercial projects (up to five MW), a green certificate scheme (the Renewables Obligation or RO) and (since 2014), contracts for difference (CfDs), which are generally awarded by a competitive auction (pay as clear) process. The Renewable Heat Incentive supports
plants exporting biomethane to the grid. All these subsidy schemes have been major drivers of RES projects, in particular because, until recently, the government has taken care to avoid retrospective changes to subsidies for existing projects. Other positive factors have included the ability of RES projects to benefit from certain tax exemptions that have now been phased out, and a generally efficient and predictable grid connection process (including a robust system for providing offshore transmission links for offshore wind farms). In future, at least for onshore projects, the resilience and creativity that the UK solar industry (in particular) has had to develop to respond to frequent regulatory changes will be put to the test finding solutions for an environment with little or no subsidy.

**Constraints and risk factors**

The government has set limits (known as the Levy Control Framework) on the amounts of subsidy to be received by RES projects under the FITs, RO and CfD regimes and seems to have underestimated how quickly those limits would be reached.

Tariff and other changes to the FITs regime are making it less attractive for commercial-scale development, with the possible exception of rooftop solar. The RO is being replaced by CfDs and is being or has been closed to new projects (depending on the technology and scale of the project) at various dates between 31 March 2015 and 31 March 2017. The deadlines are extended for a year or 18 months for projects meeting specified criteria.

The CfD regime can produce attractive returns for large-scale projects that are able to compete effectively in the auction process, but it is not yet clear which technologies other than offshore wind will be eligible to bid for CfDs in the three further CfD auctions that the government has said it will hold over the next four and a half years—or how large the total subsidy budget for each auction will be. This creates a problem for developers of projects that have not yet made the necessary investment in securing permitting and other rights, and cannot be sure whether it will be worthwhile—or how long they will have—to do so.
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