



# Recognising potentials

**E|NEws** 

Renewable Energies: Global Trends and Experiences

Issue: August 2017 – [www.roedl.de/ee](http://www.roedl.de/ee)

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## In Focus

### > Short interview on „Ausschreibungen und Chancen am deutschen Markt“

with Kai Imolauer

#### **The renewable energy market has entered the next phase in terms of power auctioning rules. How do you assess these further developments?**

The result of the auction was certainly surprising at first, but in the end it actually wasn't. Diverse associations had earlier warned that the criteria for forming citizen cooperatives were too "lax", and the result has shown that they were indeed right. I am still critical about whether auctions are truly the right instrument for the controlled expansion of renewables. The "old" EEG and the flexible ceilings also worked fine and with much less bureaucracy, at that.

#### **What do you think the next auction rounds will bring?**

The prices offered by the tenderers certainly came as a surprise – here I believe that the level of these prices will be roughly the same in the future. As for other things, I am certain that there still will be cooperatives that will be used as a cover-up for the activity of large development companies.

#### **How do the results of the auction help achieve the goal of the controlled expansion of renewables?**

Answer: I believe there are some snags to the auction procedure which actually rather hinder the expansion. On the one hand, especially in the case of wind farms which were enrolled in the auction as wind farm cooperatives because they don't hold approvals, it should be assumed that not all projects will be completed. The ratio of completed projects will be thus probably significantly below 100%. Any capacities that fail to be delivered will not be auctioned again in the next auctions – they will be thus lost in terms of the expansion. Furthermore, the whole process is quite complicated when you look at it from the angle of financing – you, as a developer, take an additional risk when you enrol your farm for which you already hold an approval; this is because only after the bidding phase will you know whether you'll be awarded any remuneration at all („anzulegender Wert"). It is thus practically impossible to hedge this risk, which the unexpected result of the first auction round clearly showed because apparently many used the privilege designated for those without approvals and registered for the auction as cooperatives.

#### **And photovoltaics – is there hope that the market will develop again as earlier?**

I believe the PV market will be now driven by small-scale power plants with capacities under the de minimis threshold (10 kWp). A return to the old investor model is unlikely. Nonetheless, I believe that, given the 750 kWp rule, there is still the opportunity for implementing projects, especially in the case of project bundling. 10 such power plants also yield quite a handsome investment volume. I also hope that the industry will come to realise that photovoltaics offers an incredible opportunity for setting up energy-efficient supply systems at production sites, thus, enabling them to decrease the level of purchased power.

#### **And, before we finish, a quick look abroad – where do you see opportunities?**

I see tremendous opportunities in various countries – as with any country, entering a new market should be approached professionally, but the rule is: the early bird catches the worm. You can currently see PV contracting models emerging in Ghana, Nigeria; good opportunities for suppliers are opening up in India. Also Turkey plans to overhaul its support mechanisms in 2018. For investors and developers (also in early-stage projects), the challenge is certainly always to find each other. Therefore, we have developed the matchmaking platform [www.renerex.com](http://www.renerex.com) specifically designed to address this issue.

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## Around the world

### > About auctions, diversity of market players and expansion goals

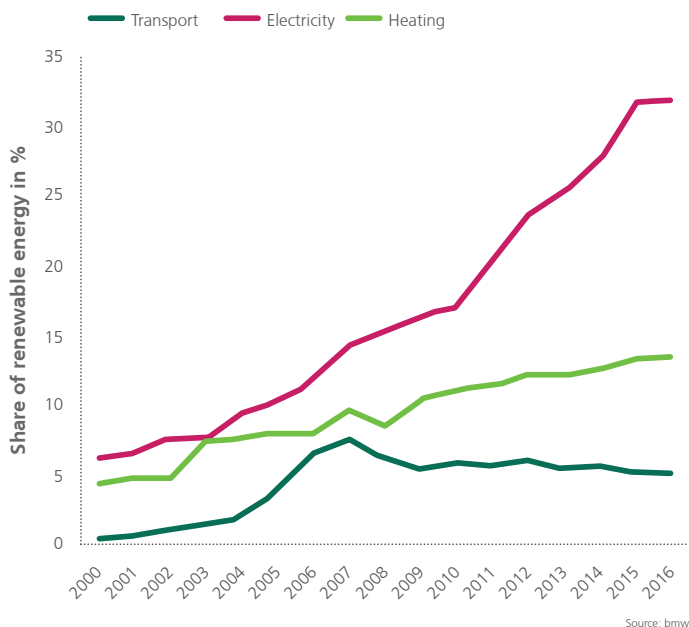
By Kai Imolauer

Already since 2013, more renewable than conventional energy capacities have been installed every year worldwide. New records in terms of record-low electricity generation costs are reported nearly every month all over the world. Significant changes occurred also in Germany alongside the introduction of EEG 2017 and earlier.

The lowering of the expansion goal, and thus the reduction in the annual market volume, for ground-based wind turbines to 2.8 GW between 2017 and 2019 and to 2.9 GW for 2020 (§§ 4 and 28 (1)) will affect the entire wind power market. The changes on the electricity market will be enormous even if only part of these plans are implemented.

#### The electricity market and sector coupling

Although the share of renewables in the electricity market is currently about 32% (see the graph below), there is still much to do in the areas of heating and transport. Rescue should come from "sector coupling" which is one of the two pillars of short-term energy policy (the other pillar is energy efficiency).



#### But how will decarbonisation affect the total energy requirement in Germany?

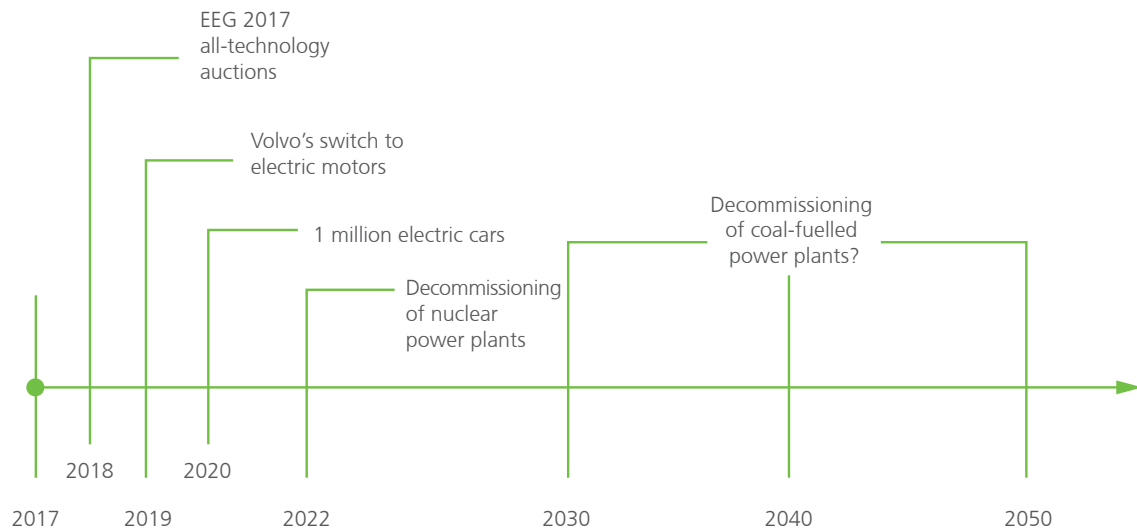
It is clear that far-reaching decarbonisation of the power industry will be successful only if all three sectors contribute to the process. Especially the heating sector, which accounts for 56% of final energy consumption in Germany, is the largest individual segment, while only 13% of final energy consumption is co-

vered by renewables. Because 85% of it is already covered from bioenergy, this segment is expandable only to a limited extent, because, as is common knowledge, the biomass potential has already been extensively exploited, and "desert-like corn fields" and monocultures in Malaysia are frowned upon and thus not regarded as sources of any further potential.

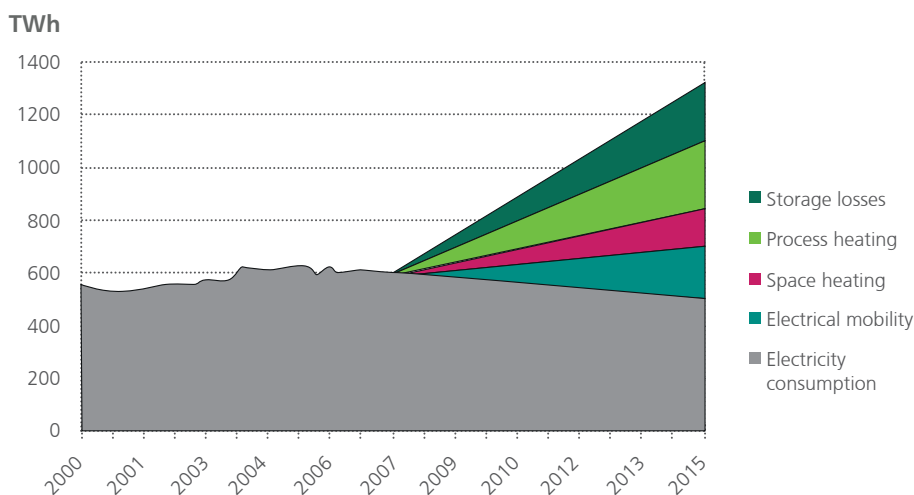
Due to technical and economic conditions, the expansion of the complementary solar thermal energy and (near-surface) geothermal energy is limited mainly to new constructions and the restructuring of buildings for energy purposes. Nonetheless, deep geothermal energy will play a huge role in the process, mainly in the south – for example in Munich and the surrounding areas, as e.g. Unterhaching, Grünwald, and Kirchweidach have already shown and Gräfelfing will show in future. However, the significant share of electricity in the heating sector should be covered from wind power and photovoltaics. In the long term, this will gradually lead to a significantly increased need for electricity.

Also the expansion of renewables in the transport sector is currently a huge question mark. In the meantime, the government has admitted that the goal of having a million electric cars on the streets by 2020 will not be achieved, but a transition is sure to come to the mobility market in the foreseeable future. The question here is not if but when the exponential growth will start. Electrical mobility will thus additionally increase the need for electricity from renewable energy sources. (Volvo's decision to stop designing combustion-engine-only cars by 2019 can be treated as a consequence of the said trend, even if the company clearly made this move in order to meet Brussels' prescribed CO2 limits for fleets, and thus to avoid multi-million penalty payments.)

The nuclear power phase-out by 2022 has also been resolved now, and if the government wants to meet the set climate goals, the coal phase-out should better happen today than tomorrow. Also the large power suppliers have recognised the need for a structural change on the market and respond accordingly. For example, RWE commissioned in 2015 in Ibbenbüren one of the most efficient power-to-gas power plants in Germany. From the angle of a timeline, it becomes clear that the erstwhile sluggish energy landscape will undergo a significant transition.



Even if it is not yet clear at what pace the said change will happen, it is already certain that the need for electricity will dramatically increase in the long term. Prof. Dr. Quaschning has prepared the following simulation and graph:



According to Prof. Dr. Quaschning (TU Berlin), a climate-neutral energy supply by 2040 will require electricity at the level of 1320 TWh (assuming that efficient energy saving measures are implemented). This would mean over a two times higher need for electricity than today.

Sector coupling will be advanced also at the pan-European level. Recently, the Union of the Electricity Industry - EURELECTRIC has signed a joint declaration with associations of the wind and solar power industry (windeurope and Solarpower Europe), the heat pump industry (EHPA), the copper industry (European Copper Institute), and the electrical mobility industry. These and 49 other proponents, including many utilities such as EnBW, Vattenfall or RWE, have a joint objective of decarbonising Europe by replacing fossil power with electricity.

Nevertheless, every KWh generated by a brown coal-fired power station is still a source of income for the operators, who of course will make every effort to continue to operate for as long as possible. And they seem to be quite successful as of now. If you look at the grid expansion plan, you will see that the same level of utilisation of coal-fired power stations as today is assumed for 2030<sup>1</sup>. The federal government's Climate Action Plan (of 14 November 2016) seems to be similarly tentative. A working group is said to be established in 2018 (!) whose work will include "assessing and politically evaluating economic, social and ecological impacts of suggested measures".<sup>2</sup>

The situation becomes graver also in the area of grids and networks: If the generation of energy from renewable sources increases and the conventional energy generation is not reduced, this will lead to grid overloads, switch-offs or shutdowns of RE power plants, re-dispatching, and the necessity to export the excess electricity abroad at lower or even negative prices. The cost of this policy will be shouldered mainly by private households and the SMEs sector, which, as a result, will have to bear the financial burden of the EEG surcharge. If, in consequence, the market price quoted on the energy exchange is low because there is surplus electricity, the surcharge will increase, which will be reflected in higher utility bills of private households. Instead of phasing out coal-fired power plants successively, consistently and without any compensatory payments (keyword: hidden reserves) and more quickly advancing the expansion of renewables and promoting energy storage technologies, the government is currently doing the exact opposite.

<sup>1</sup> www.netzausbauplan.de – Szenariorahmen 2030

<sup>2</sup> Climate Action Plan 2050; Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety



## Wind should put it back on the right track – but where?

Also at the level of the federal state policy (and Bavaria's H10 rule is a good example for that), wind energy receives a harsh rebuff, as in North-Rhine Westphalia recently. According to the CDU/FDP Coalition Agreement for North-Rhine Westphalia, a rule should be introduced where wind turbines should be built 1,500 metres away from residential housing. The potential area where wind turbines could be installed would thus shrink by 80%. Restrictions on building new wind farms also became tougher in Rheinland-Pfalz. The federal state government under the leadership of SPD, FDP and the Green Party has resolved to include in the Rheinland-Pfalz federal state development plan a requirement where the minimum distance between new wind turbines and residential housing must be 1,000 metres.

How should especially the smaller project developers position themselves on the market now in order to stay afloat also in the future and will the diversity of the market players continue to decrease? After the first auction, a certain tendency can be clearly seen.

In the first auction round held on 1 May 2017 where 800MW were auctioned among ground-based wind farms, citizen-owned wind power cooperatives were the big winners. Out of 70 awards, 65 contracts were awarded to small regional citizen investors. In this process, the mean feed-in price was 5.71 ct/kWh. Because the EEG 2016's definition of citizens' wind farms leaves much room for interpretation, it is yet to be specifically examined whether indeed there are no large companies behind the citizens' projects. The relatively quick reaction of the German Federal Network Agency in form of abolishing the privilege for cooperatives in 2018<sup>3</sup> should be certainly interpreted to the effect that the criticism voiced earlier by many associations saying that the criteria for the cooperatives were too lax was indeed justified. To be classed as a citizen cooperative, only the minimum number of members (10 real individuals) must be met, whereas none of these members may hold more than 10% in the cooperative. In addition, holders representing 51% of the voting right must have had their principal place of residence in the administrative district where the planned project is to be situated for at least one year.

According to enervis energy advisors GmbH, out of the 214 citizen cooperatives which placed a bid in the auction, 148 should be directly allocable to a project developer. This means a ratio of 70% (!). In addition, about 61% of the winning power cooperatives were founded and registered only between March and April. The functions of their managing

directors are often performed by employees of large wind power companies...<sup>4</sup>

Furthermore, only within the coming four and a half years will it be possible to see whether the winning projects will be actually implementable. This is because citizens' wind farms will be able to enjoy more privileges than other investors. For example, citizens' wind farms do not have to hold the building permit under the Federal Immission Control Act at the date they submit a bid in the auction (§ 36g (1) EEG 2017). In addition, citizens' wind farms always receive the highest price achieved in the auction per fed-in kWh, irrespective of their own bid. (§ 36g (5) EEG 2017). Furthermore, citizen-owned power cooperatives have 24 months more to complete the project and bring it to the final, grid-connected state (§ 36e (1) EEG 2017). Therefore, it will be possible to effectively assess the first auction round only in at least four and a half years. Here, it should be also noted that the financial guarantee required for citizens' wind farms in case of failure to implement the project is half as high as that for other project forms (§ 36g (2) no. 1, §§ 31, 36a EEG 2017). It is also doubtful whether the winning "citizens' wind farms" will be actually connected to the grid. If they aren't, the non-installed capacity will not be considered in the next auctions any more and thus all of it will be squandered.

In sum, it should be stated that the situation of citizens' cooperatives will become difficult starting from 2018 at the latest, and the diversity of the market players will significantly decrease to an extent noticeable also to an outside world, if no changes to the legislative framework are made to prevent this situation. To that end, the law should be amended in that the requirements for the qualification as a citizen-owned power cooperative should be significantly toughened. But because many politicians prematurely proclaimed the first auction round as successful, it is unlikely that the law will be amended anytime soon before the upcoming Bundestag elections.

## A look into other countries

If you look at other countries where the auction model has been implemented, a clear tendency can be observed. The majority of contracts for the implementation of wind farms are awarded to big investors. For example, in Brazil, contracts were mainly awarded to large utilities, investment banks and international project developers. A similar situation is in Spain. The auctioned volume of 500MW was mainly awarded to three large companies Grupo Forestalia (300 MW), Jorge (102 MW) and EDP (93 MW).<sup>5</sup>

<sup>3</sup> Energate messenger 22. Juni 2017

<sup>4</sup> Article | Spiegel online | 29/06/2017

<sup>5</sup> Energiezukunft.eu | Article 27/07/2016



## Ownership structure in Germany

A similar picture begins to emerge also in Germany. The following illustration shows, among other things, how the ownership structures have changed over the years:



In the meantime, the expansion of ground-based wind turbines has been shaped by many diverse market players. This includes citizen-owned power cooperatives, project developers, utilities, but also international market players.

Thus, an increasing M&A activity has been observed in recent years. More and more often, smaller project developers are bought up by the larger ones. The most renowned examples of the least years include the strategic partnership between Vattenfall and ABO Wind, and the acquisition of Belectric by Eon. Also foreign companies are active on the M&A market. For example, France's utility EDF acquired Lower Saxony's Offshore Wind Solutions.

Mergers between smaller projects developers or between investors from the private or non-institutional sector are an option to maintain yourself on the market. Thus, also with a smaller project portfolio, you can achieve economies of scale such as e.g. agree more advantageous terms of delivery with manufacturers. Citizen-owned power cooperatives will certainly have to look for alternative ways of developing projects.

## Conclusion

Rather tough times are ahead for project developers and investors (excluding the last transactions on the secondary market). Projects will surely be there, but access to them will

be difficult. Forming collaborations is surely the first go-to strategy, other than that, market players will have to choose between returning to a smaller-scale business (PV leasing models) and venturing abroad. Abroad, the risk/benefit ratio is totally different, but many countries have a much more

fundamental problem than Germany: they simply need electricity and their electricity markets are not overregulated yet so for example RE power plants must only stay competitive on the market through PPA auctions – and they are fairing better and better.

Rödl & Partner provides active assistance in those activities abroad. On our platform on [www.renere.com](http://www.renere.com) we help you find projects and investors and the most suitable financing programme at the same time.

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## Around the world

### > Italy: Mandatory energy audits for German companies at production sites in Italy

By **Svenja Bartels**

The Energy Efficiency Directive<sup>1</sup> has been transposed into law in Italy by the Legislative Decree no. 102/14. Article 8 of the Legislative Decree 102/14 provides that large enterprises are required to carry out one energy audit by 22 December 2015 at their production sites located in Italy and to repeat the audit every four years afterwards. The reporting date in the following years is 5 December every year.

The Italian National Energy Efficiency Agency of ENEA is responsible for setting up a portal where enterprises subject to the audit requirement can evidence that they met the said requirement. Financial penalties for the failure to conduct the mandatory audit range from EUR 4,000 to EUR 40,000. In November 2016 the press reported that the Ministry of Economic Affairs was to soon start sending penalty notices (to companies entered in the CSEA register, more details below).

This begs the question as to the circumstances under which German parent companies will be required to conduct an audit of their Italian subsidiaries. In this context, the aggregation of

data of multiple companies (possibly even including data of the parent company itself) in the calculation of the size of the company is of utmost importance.

#### 1. Obligation to carry out energy audits

The obligation applies mainly to large enterprises rather than small- and medium-sized enterprises. Large enterprises are exempted from the obligation if they implemented EMAS or ISO 50001 or EN ISO 14001 certified energy management systems, provided that such systems include an energy audit. Technical details are included in Appendix 2 of the Decree.

<sup>1</sup> DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC



The obligation covers also highly energy-intensive enterprises according to Article 39 of D. L. 83/12 and L. 134/12. All energy-intensive enterprises are entered in the list of CSEA (Cassa per i servizi energetici ambientali)

In D. Lgs. 102/14, as in the Energy Efficiency Directive, large enterprises are defined as enterprises having

- > over 250 employees AND
- > a turnover of more than EUR 50 million OR.

The enterprise is then required to conduct an audit provided that the above conditions have been met in two consecutive financial years as of the date of compiling the annual financial statements. Consequently, the company should check every year whether –on the basis of data for the previous two-year period– it is required to conduct an audit by 5 December of the current year.

If the company is considered to be a „large enterprise“ for the first or the second time and is included for the first time in the CSEA register, the obligation arises in the current financial year rather than the next financial year.

A detailed definition of a small- and medium-sized enterprise (SME) is also included in M.D. 18/04/2005. The provision contains also a regulation on when employees or sales revenue figures of other enterprises are added to the calculation of the size of the company.

1. An associated enterprise (*impresa associata*) is an enterprise in which over 25 % of shares or voting rights are held by another enterprise either solely or jointly with other enterprises. If the shareholding exceeds 25%, data regarding employees and financial statements of the other enterprise in which shares are held are added to the calculation of employees and financial statement figures of the shareholding enterprise at the rate which corresponds to the percentage of shares held in that other enterprise (if the shareholding is 30%, the figures relating to employees and financial statements of that other enterprise are added at 30%).
2. Affiliated enterprise (*impresa collegata*) is an enterprise in which
  - > another enterprise holds a majority of voting rights which can be exercised during a general shareholders meeting OR
  - > the portion of the voting rights held is so high that a controlling influence can be exercised in the shareholders meeting OR
  - > a controlling relationship exists (arising from a constitutional document) which is permitted by law OR
  - > another enterprise holds the majority of voting rights due to arrangements between the shareholders.

Therefore any subsidiary which is wholly owned by a large enterprise automatically qualifies as a „large enterprise“, too. It should be noted here that in its last explanations concerning obligations of large enterprises published in November 2016, the Ministry of Economic Affairs repeated its 14 October 2015 opinion about foreign shareholdings.

The opinion reads that when determining the size of the enterprise only the production sites of the enterprise and its affiliated enterprises located in Italy should be taken into account. The Ministry further holds that: If a foreign enterprise has many affiliated enterprises in Italy (*impresa collegata*), the affiliated enterprises are regarded in mutual relations as affiliated with each other based on the relationship with the parent company and thus their data are added.

In practice, this means that it should be checked whether a German parent company directly holds shares in multiple companies in Italy. In any case, the data of subsidiaries which fall under the scope of the definitions of „affiliated“ and „associated“ must be included in the calculation of the size of the company.

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## Around the world

> Spain: First system-neutral auction of 3,000 MW of renewable production capacity. High hopes of investors and project developers. Next auction to be held on 28 July

By **Christoph Himmelskamp**

On 17/05/2017, the first system-neutral auction for feed-in tariffs (in form of the so-called specific remuneration) was held in Spain.

The criterion for being granted the right to be included in the specific remuneration scheme was the percentage reduction of a fictional value of initial investment which participants had to offer for each tranche of their bids. The maximum fictional investment value prescribed by the Ministry was EUR 1,200,000/MW for wind power and PV and EUR 2,000,000/MW for other technologies. According to RD 413/2012, investors should achieve a "reasonable rate of return" on their investment within a life span of 25 years. The "reasonable rate of return" is 300 basis points over Spanish 10-year treasury bonds as of 2013 – this makes about 7.5% until a potential revision at the end of 2019.

According to the Ministry, the annual specific remuneration for projects to be commissioned in 2019, assuming a reduction of 0%, totals EUR 36,908/MW for PV and EUR 45,056/MW for wind power provided that a PV plant produces power during 2,367 hours and a wind power plant during 3,000 hours per year. If these values are not reached, the specific remuneration will be proportionately reduced.

This means in practice that, for example, the specific remuneration would total EUR 13,750.80 /year/MW for a PV power plant if the investment value was reduced by 20%. In the case of a 25% reduction, the remuneration would total EUR 7,961.50 and in the case of a 30% reduction – only EUR 2,172.20 /year/MW, because the remuneration does not decrease linearly with the reduction.

According to the information from the Ministry, auction participants bid for a 10 GW capacity, which came as a little surprise, and about 99% of the wind turbines were awarded contracts. Forestalia was awarded a contract for 1,200 MW, Gas Natural for over 600 MW, Endesa 540 MW, Gamesa 200 MW and Norvento 128 MW.

The threshold for the reduction in the case of wind turbines, which were also awarded another contract, was 63.43%, and in the case of some PV plants it was 51.22%. This means that PV investors assume that they can earn about EUR 585,000 on every MW they feed into the grid. For the period until 2019, the

Spanish state will thus not pay any remuneration beyond the market price, and this will not change after 2019, either, unless the market price falls under EUR 42/MWh. Investors assume that the power plants are a lucrative business also given the current market prices (EUR 51.24/MWh in 2017 so far).

One could ask what sense it makes to take part in the auction if only the market prices will be paid anyway. Theoretically, power plant operators may claim specific remuneration from the Spanish state if the market price falls below EUR 42 on the annual average and if no significant changes are resolved alongside the upcoming reform of parameters of the specific remuneration and those of the "reasonable return" on 01/01/2020. For example, it is possible and also enshrined in the law that the reasonable return will fall from the current 7.5% to about 4% (300 basis points over the Spanish 10-year treasury bonds in 2018). It is currently impossible to tell what consequences, if any, this will have on the guaranteed floor of EUR 42, and the Spanish government has drawn a veil of silence over this issue, too.

Nonetheless, immediately after the first auction, Prime Minister Rajoy announced that a second auction, also for 3 GW, would be held on 28 July. The success of the first auction has convinced also the Spanish PP government, which has grown to support renewable energy sources.

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## Around the world

### > Course of the first two auction rounds for renewables in Poland

By Piotr Mrowiec

In late June, further auctions for the purchase of electricity generated from renewable energy sources were held in Poland. Although the earlier advertised reference prices were quite reasonable, the auctions did not generate much interest. In this article, we will discuss in greater detail the last auction and the planned changes awaiting the wind energy sector currently facing a financial gap.

#### Auction round for intermittent energy sources of up to 1 MWp

The first auction round for renewable energy in Poland was held in late December 2016. In the energy mix in which intermittent energy sources of up to 1 MWp competed with each other (especially: photovoltaics, wind power, some hydro power plants), the auction did not go as smoothly as expected. Due to significant difficulties accessing the internet auction platform, many of the bidders admitted to the auction were not able to submit their bids. The problems accessing the auction were particularly reflected in the number of winning bids selected in the December 2016 and June 2017 rounds. The number of winning bids was four times higher than that concerning the auction held six months ago. The following tables include information on the two auctions.

Ordinary auction no. AZ/3/2016

#### Results of the auction held on 30 December 2016; New power plants – the so-called other power plants – with an installed capacity of 1 MW

Number of producers whose bids were selected as winning bids in the auction	62
Number of winning bids	84
Minimum price of electricity sold	253.50 PL/MWh
Maximum price of electricity sold	408.80 PL/MWh

Ordinary auction no. AZ/1/2017

#### Results of the auction held on 29 June 2017; New power plants – the so-called other power plants – with an installed capacity of 1 MW

Number of producers whose bids were selected as winning bids in the auction	236
Number of winning bids	352
Minimum price of electricity sold	195.00 PL/MWh
Maximum price of electricity sold	398.87 PL/MWh

When comparing the two auctions, one can see that the minimum and maximum prices achieved in the two rounds were lower. The decrease in the prices in each further auction goes in line with the trend in Europe. The achieved prices trended mainly between PLN 300–350 per MWh, i.e. about 7.1 cent/kWh and 8.3 cent/kWh. By comparison, the average price for photovoltaics in the first auctions held in Germany under EEG 2017 was 6.58 cent/kWh. The lowest successful bid was 6.0 cent/kWh; the highest was 6.75 cent/kWh. When comparing the Polish auctions to those in Germany, what astonishes is the more than twofold difference between the lowest and the highest bid in Poland. Thus, this begs the question of whether the bidders who achieved 46 cent/kWh during the auction will eventually decide to construct the power plants.

The last auction was overall successful. Due to lower purchase prices and lease costs for land where power plants are to be mounted, and due to generally lower other operating expenses relating to the operation of photovoltaics power plants in Poland, investment in photovoltaics in Poland can be a successful business.

#### Future of wind energy in Poland

A totally different situation is in the wind energy market. The Polish energy regulator does not organise any auctions for power plants of over 1 MW producing electricity from intermittent energy sources. This thus blocks the opportunity for developing larger-scale and more profitable wind farms in Poland. In addition, the restrictive planning legislation and the introduction of the 10H rule nationwide effectively limits the number of accessible sites for the construction of wind turbines in Poland.

Also the existing wind turbines are in an unenviable situation – extremely low prices for green certificates have led to a situation where many turbines are not profitable. In addition, a new law on wind power investments was enacted in Poland in July 2016 based on which the tax base changed effective 1 January 2017. The Ministry of Finance and some administrative courts



hold that because the whole wind turbine is now classed as a construction, all components of the wind turbine should be taken into account when calculating the tax base for property tax. The expansion of the tax base is catastrophic for taxpayers. In the light of the current interpretation of the provisions, the property tax to be paid by taxpayers might increase even five times. Before the enactment of the above-mentioned law, the property tax was charged only on the tower and the foundations of the wind turbine. The Ministry of Energy has recognised this acute problem – which was of course not particularly hard to do. A bill was presented to the Parliament which includes a requirement to reinstate the previous principles where tax is charged on wind blades. If the proposed bill is approved, the old rules will prevail. Notably, this favourable reinstatement should take effect already on 1 September 2017.

The on-going measures by the Ministry of Energy should be assessed as very positive. There is hope that the bill including the proposed reinstatement of the previous wind turbine taxation rules will be adopted. But problems could arise when trying to answer the question of whether the 2017 property tax should be paid based on the currently applicable or the new provisions planned to take effect on 1 September. As of now, decisions of the voivodship administrative courts (Polish abbreviation: WSA) are not favourable for taxpayers – they tend to take the approach where the entire wind turbine is counted in the property tax base (WSA Łódź I SA/Łd 1/17; WSA Bydgoszcz I SA/Bd 866/16 und WSA Gorzów Wielkopolski I SA/Go 56/17). In the upcoming months, this question is due to be decided by the Supreme Administrative Court.

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## Araound the world

### > Latest developments in the renewable energy sector in Belarus

By Marianna Schimanowitsch

Since 21 August 2015, the volume and capacity management for Belarusian renewable power plants has been subject to a quota regime. Feed-in tariffs are guaranteed for 20 years of the power plant operation and are tiered during the first 10 years based on the so-called incrementing coefficients; during the further 10 years, the feed-in tariff remains at the same level.

As regards the functioning of the Belarusian promotion of renewable energies: "Energy transition in Belarus – New framework conditions for renewable energies" dated 03/07/2015

Currently, the Regulation of the Council of Ministers of the Republic of Belarus No. 305 dated 26/04/2017 revises the procedure for determining and allocating energy generation quotas.

#### Overview of major changes

Regulation No. 305 redefines, among other things, the composition of the so-called [Committee for the determination and allocation of quotas for the installation of power plants generating electricity from renewable sources](#) and significantly expands its competencies. If, during the tender, two or more bidders submit the same bids, the Committee will be authorised to invite the representatives of the power producer to negotiate their bids.

Valid quotas will be from now on advertised on the [internet website of the Ministry of Energy](#) :

As has been long postulated, [geothermal energy](#) has been now included in the list of renewable energy sources and is now also subject to the quota regime.

#### Fair quota allocation procedure

Tenders for the allocation of quotas are organised every year. Before the enactment of Regulation No. 305, the tender criteria varied depending on the type of a power plant. Coefficients depend on e.g. the type of energy source and additionally on the capacity, life, and other power plant features. Overall, especially the rules for weighting the individual criteria, were regarded as ambiguous – therefore critics had extreme doubts as to the transparency and fairness of this approach. Therefore, [unified assessment criteria were introduced to assess power producers taking part in the tenders](#).



Criteria	Weighting factor
1. Rate of the offered tariff coefficient for the sale of electricity	0.6
2. Operating life of a RE power plant as of the commissioning date, in years	0.2
3. Participation in the daily capacity feed-in schedule	0.2



### Overview of coefficients for state electricity purchases:

Power plants installed for the 2015 quota allocation and commissioned between 21 August 2015 and 31 December 2018:	Power plants installed for the 2016 quota allocation and commissioned between 1 January 2017 and 31 December 2019:
<b>1. Wind turbines, irrespective of capacity</b>	
the first 10 years from commissioning a power plant with an operating life of	
> less than 5 years: 1.2 > more than 5 years: 1.05	> less than 5 years: 1.1 > more than 5 years: 1.01
↓	
<b>2. Hydro power plants</b>	
the first 10 years from commissioning a power plant with a capacity of	
> up to 300 kW: 1.2 > 301 kW to 2 MW: 1.15 > over 2 MW: 1.1	> up to 300 kW: 1.3 > 301 kW to 2 MW: 1.25 > over 2 MW: 1.2
↑	
<b>3. Power plants which produce energy from woodfuels and other biomass</b>	
the first 10 years from commissioning a power plant with a capacity of	
> up to 300 kW: 1.3 > 301 kW to 2 MW: 1.25 > over 2 MW: 1.2	> up to 300 kW: 1.3 > 301 kW to 2 MW: 1.25 > over 2 MW: 1.2
<b>4. Biogas power plants</b>	
the first 10 years from commissioning a power plant with a capacity of	
> up to 300 kW: 1.3 > 301 kW to 2 MW: 1.25 > over 2 MW: 1.2	> up to 300 kW: 1.3 > 301 kW to 2 MW: 1.15 > over 2 MW: 1.1
↓	
<b>5. PV power plants</b>	
the first 10 years from commissioning a power plant with a capacity of	
> up to 300 kW: 2.5 > 301 kW to 2 MW: 2.3 > over 2 MW: 2.1	> up to 300 kW: 2.0 > 301 kW to 2 MW: 1.7 > over 2 MW: 1.5
↓	
<b>6. Power plants generating electricity from geothermal sources and from other energy sources not classified as non-renewable sources</b>	
the first 10 years from commissioning a power plant with a capacity of	
> up to 300 kW: 1.2 > 301 kW to 2 MW: 1.15 > over 2 MW	> up to 300 kW: 1.2 > 301 kW to 2 MW: 1.15 > over 2 MW: 1.1

On 2 May 2017, the Republican Interministerial Committee convened in the Ministry of Energy to determine and allocate quotas for the installation of RE power plants for the year 2020.

During the convention, the Committee determined quotas for the installation of RE power plants with the total capacity of 56.245 MW, including biogas – 2.72 MW, wind – 2.5 MW, solar – 5.025 MW, hydro – 33.0 MW, woodfuels and other biomass – 13.0 MW.

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## Around the world

### > Legislative changes in Kazakhstan to support renewable energy sources

By Michael Quiring

In the July 2016 issue, we informed you about the changes in Kazakhstan's renewable energy laws arising from the introduction of annual indexation of flat feed-in tariffs amid the changing exchange rate for the Kazakh Tenge (KZT) against foreign currencies. Back then, no procedure for the implementation of the basic indexation mechanism was specified, though.

Only on 17 April 2017, Resolution No. 207 was passed by the Government of the Republic of Kazakhstan to supplement the provisions relating to the determination of flat tariffs (Resolution No. 271 dated 27 March 2014). With these changes, the indexation formula for flat tariffs has now been specified.

#### Indexation formula

Resolution No. 271 dated 27 March 2014 was added item 11-2 which provides for the indexation of flat tariffs once a year, taking into account inflation and changes in the exchange rate against convertible currencies. This only applies to projects where the power producer has foreign currency liabilities, and also only if the exchange rate of the domestic currency against convertible currencies changed by 25% or more on the previous year. In such cases, indexation is calculated according to the following formula:

$$T_{t+1} = T_t \times \left( 1 + 0,7 \times \frac{VPI_t - 100\%}{(100\%)} + 0,3 \times \frac{USD_{t+1} - USD_t}{(100\%)} \right), \text{ wo}$$

$T_{t+1}$  – indexed flat tariff calculated based on the above-mentioned formula, rounded down to a full tiyn;

$T_t$  – current flat tariff, approved by the Government of the Republic of Kazakhstan, taking into account earlier indexations if carried out;

$VPI_t$  – Consumer Price Index (CPI), cumulative for 12 months before 1 October of the indexation year, determined based on information from the competent state statistics authority;

$USD_{t+1}$  – current exchange rate of the tenge against the US dollar as of 1 October of the indexation year, determined based on information from the National Bank of the Republic of Kazakhstan;

$USD_t$  – average exchange rate of the tenge against the US dollar, calculated for 12 months before the indexation date, determined based on information from the National Bank of the Republic of Kazakhstan.

The adjustment of feed-in tariffs will not apply to flat tariffs paid for solar modules made of Kazakh silicon (Kaz PV) with a total capacity of 37 MW used for the transformation of solar energy.

The adjusted tariff rates are advertised by the Financial Settlement Centre on its [website](#) no later than 15 October of the year.

#### Advantages

Regulating the indexation system may facilitate obtaining financing for RE projects.

#### Disadvantages

Nonetheless, this provision will take effect not earlier than two years following its first official publication in standard printed media.

It remains to be seen how investors will react to the long awaited indexation of feed-in tariffs. If you have further questions, Rödl & Partner will be happy to assist you.

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## Around the world

### > India's ambitions to expand renewables – an interim report

By Michael Wekezer and Sabrina Buckert

After years of stable growth, India has become one of the largest drivers of the global economic growth. Alone in the budget year 2016/2017, India reported an economic growth rate of 7.1%.

Nonetheless, the economic growth, the use of new technologies that comes with it, and a population already of over 1.3 billion, are factors which also increase the need for energy in this third largest democracy in the world. Coal-fired power plants invariably remain the main component of the installed capacity. Electricity generation using fossil fuels is often more expensive because excess consumption in India is subject to higher prices due to the cross-subsidisation system there. For comparison: At INR 2.44/kWh, the electricity price for solar energy has been lower than that for coal power for the first time this year. Another problem is that a nationwide supply of electricity cannot be always ensured. In order to produce more energy and thus offer a broader energy portfolio and reduce the growing environmental damage that comes from fossil energy sources in the future, India is increasingly turning to renewable energy sources. In this process, India has undertaken as part of the Paris Climate Agreement to produce 40% of its energy capacity from non-fossil energy sources by 2030.

In the light of the ambitious plans of the Indian government to expand renewable energy sources, there are first indications for a transition in energy supply: In the National Electricity Plan released in December 2016, the government announced that the INDC goal (Intended Nationally Determined Contribution) would be exceeded and the non-fossil capacities would even reach about 56.5% in 2026-27. By 2022, 175 GW should be additionally fed into the grid, with the electricity coming from renewable energy power plants (solar power plants: 100GW, wind power: 60 GW, biogas & biomass 15 GW, small-scale hydro power: 5 GW). If this plan were implemented, India would become one of the largest green energy producers in the world and would overtake some industrialised nations in renewables.

But how does India want to achieve this ambitious goal? Given a market share of currently about 17%, renewables do not yet play the role the government desires them to play on the sub-continent. The main approach of the Indian government



to changing this situation is to build –with the help of foreign investors– technologically advanced coal-fired power plants or install the so-called supercritical reactors which currently show a higher degree of efficiency (as of now 31%) and emit less carbon dioxide, fumes, and other pollutants into the atmosphere. Despite long years of a political debate over the construction of large dams, hydro power also shows immense potential, especially when it comes to small-scale hydro power stations. India wants to expand the installed capacity from the current 35 GW to 150 GW by 2030 and enjoys technological and financial support under the German Development Cooperation programme for this purpose. Especially in the Himalayas and in the north-eastern region of the country, India sits on the so far untapped hydro power potential which is very suitable for the production of electricity from hydro power.

Wind power is located mainly in the southern federal states, Tamil Nadu and Andhra Pradesh. The expansion of wind power has partly reached its limits because the allocation of land in recent years in this densely populated country has caused entrepreneurs difficulties due to complicated land ownership and leasehold laws. Nonetheless, the Indian government is alternatively scouting out opportunities for offshore wind power plants. The first offshore wind power plant with a capacity of 500 MW is due to be completed by 2019 in the federal state of Gujarat. Further power plants are being planned. Furthermore, India is home to the Suzlon company, the third largest wind turbine manufacturer in the world, currently building in Gujarat one of the world's largest wind farm with a capacity of 1GW.

Solar energy from solar thermal power plants is mainly produced in western federal states of Rajasthan and Gujarat. Photovoltaics (PV) power plants are installed on a nationwide scale. In the area of solar power, further projects are being implemented: The United Nations (UN) works closely with Indian railway companies. The United Nations Development Programme (UNDP) is also to help achieve the ambitious goal of producing 5 GW in solar electricity by 2025 thanks to the installation of solar panels on trains. This should be implemented in three stages using rooftop and ground-mounted installations (Phase 1: Gujarat & Rajasthan, Phase 2 & 3: the rest of the federal states). Thus, the solar energy production capacity should increase fivefold compared to the initial goal of 1 GW. In addition, by 2032, India wants to replace diesel and petrol cars with electrical cars to be fuelled using electricity from renewable energy sources.

One of the most important prerequisites for the economic growth of India is to create a positive stimulus for its economy. The negative impact of using coal on the health of people and the related costs are an important factor which is gaining in importance also in India. It remains to be seen what influence this will have on

India's coal policy in the years ahead. The country's ambition to expand renewables shows, however, that India has recognised the huge potential of these energy sources and their role in ensuring a sustainable energy supply. The strong desire of India to become a global leader in producing and using renewables often manifests itself in the approach adopted by the Indian government e.g. during the German-Indian governmental consultations held in late May in Berlin, where the German federal government warranted India an annual development budget of EUR 1 billion for investments, including those in renewables, and is also reflected in the recent founding of the international Solar Allianz (ISA). Also bi- and multi-lateral initiatives are an important factor contributing to further lowering the renewable energy costs thanks to the development and transfer of technologies and thus to accelerating the transition in energy supply. Nonetheless, the Indian government must yet face up to huge challenges: Till today, it has not been able to sufficiently support the domestic solar module production. In the 2016/17 financial year, about 5.7 GW, or 89%, of solar modules were imported. This dependence on imports in such a growing and strategically important market sector as the solar power involves the risk of the Indian government making hasty and wrong political decisions as long as they continue to support short-sighted incentive programmes, rather than consider long-term implications for the sector and develop an appropriate domestic production plan.

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## Around the world

### > “Scaling Solar” of the World Bank – option to enter the African market?

By Anna-Lena Becker

„Scaling Solar“, the aid programme of the World Bank, has been run for over two years now and the first successes can already be reported. Zambia closed the first auction round and launched the second round. The first auction round is being conducted in Senegal, while Ethiopia was the next country after Madagascar to be included in the programme.

Scaling Solar is an aid programme launched in January 2015 by IFC (International Finance Corporation), a member of the World Bank Group, with the aim of promoting fast and transparent further development of the photovoltaics (PV) market in Africa. The aid programme was launched in different African countries and is conducted in collaboration with the local governments. The programme aims to facilitate and accelerate the implementation of PV projects in Africa to the effect that PV projects should be planned, auctioned and implemented within a maximum of two years. To that end, auction agendas are developed in different countries participating in the project. In addition to the pre-drafted contract templates for the projects, pre-approved financing opportunities from IFC should be available to the winning bidders.

#### Zambia

Zambia closed the first auction round with success. The auction round was carried out for two power plants of up to 50 MWp each. The auction round was conducted by the Zambian Industrial Development Corporation (IDC). The winners of the auction round are Enel Green Power SpA and a consortium consisting of Neoen SAS and First Solar Inc. Both winners concluded a 25-year Power Purchase Agreement with the state electricity supplier ZESCO. The Neoen / Firstsolar consortium will construct a 54MWp power plant and receive a price of USD 6.02 per kWh. Enel will construct a 34 MWp power plant at a price of USD 7.84 per kWh. As these are the lowest solar electricity prices in Africa, they attracted international attention. The construction of the PV power plants is due to begin shortly. The Neoen / Firstsolar consortium received a comprehensive financing and guarantee package from the World Bank.

Currently, the second auction round is being held in Zambia. The auction is held for two projects with a capacity of ca. 70 MWp and 110 MWp, whereas the 110 MWp project will be divided between two separate locations. Also in these projects, ZESCO will be the power off-taker under a Power Purchase Agreement. The first stage of the auction round (Request for Prequalification) has already been accomplished. Shortlisted were 12 out of 21 applicants:

#### Applicant

Scatec Solar ASA

Nareva Holding

Acciona Energia S.A –

Swicorp Company-Enara Bahrain

Access Eren JGC Zambia IPP Consortium

Mitsui & Company Limited

Engie Global Developments B.V.

Globeleq – FRV Consortium

Enel Green Power SpA

Tata Power Company Limited

Neoen & First Solar

Total Mulilo Zambia Consortium

EDF Energies Nouvelles

#### Origin

Norway

Morocco

Spain, Saudi Arabia

France, Japan, UAE

Japan

Netherlands

United Kingdom,  
Netherlands

Italy

India

France, USA

France, South Africa

France

The second stage of the auction round (Request for Proposal), during which winners for the two projects will be selected, will start shortly. Provided that all economic, legal and technical conditions are met, the price is the only eligibility criterion in the second stage of the auction round. As in the first auction round, IDC will establish a special-purpose vehicle (SPV) for each project. After the contract is awarded, the winners will acquire a clear-cut majority stake in the SPV while a smaller portion of shares remains with IDC. IDC will also obtain in advance the rights to land and necessary permissions for the SPV.

Overall, IDC plans to implement 600 MWp as part of the Scaling Solar project. The third round is likely to be advertised yet in 2017.

#### Senegal

In Senegal, a total of 200MWp should be auctioned as part of the Scaling Solar project. Currently, the first round is being conducted for three projects with a total capacity of 100 MWp. The first stage of the auction round has been already conducted and the following 13 applicants were short-listed.





### Applicant

Scatec Solar ASA  
Nareva Holding  
Access + EREN  
Fotowatio Renewable Ventures +  
Pele Green Energy  
Adani Enterprises + Green of Africa +  
Nova Power + Hida Energy  
Enel Green Power SpA  
EDF Energies Nouvelles  
Acciona Energia SA  
Total S.A + Mulilo + DGE  
Neoen + BTSA  
Phelan Energy Group Limited +  
SECI Energia  
Isolux Corsan + Alten  
Engie Meridiam

### Origin

Norway  
Morocco  
France, UAE  
Spain, South Africa  
India, Morocco, USA  
Italy  
France  
Spain  
France, South Africa  
France, Netherlands  
South Africa, Italy  
Spain, France  
France

in Ethiopia, have concluded an agreement under which IFC will advise Ethiopia on matters relating to the procurement of up to 500 MWp as part of the Scaling Solar initiative. The first round is planned to be held yet in 2017, during which up to 200 MWp should be auctioned.

Scaling Solar remains an attractive programme, also to German companies looking to enter the African market. Because –despite the great potential for renewable energy projects– the implementation of projects in Africa is often difficult due to the missing or insufficient legal and regulatory framework and delays, Scaling Solar is a welcome initiative. Long-standing disputes concerning land plots and lengthy negotiations of power purchase agreements are not uncommon in Africa. The Scaling Solar approach where these problem areas are initially solved thanks to an SPV is thus a big step forward. Rödl & Partner has an established network of wholly-owned offices and associate offices in the whole of Africa and will be happy to assist you with handling your application for a Scaling Solar project.

The second stage of the auction round is due to start shortly.

### Madagascar

In Madagascar, an auction agenda for 40 MWp is currently being developed as part of a preparatory due diligence review.

### Ethiopia

In 2017 it was announced that Ethiopia was the fourth country to participate in the Scaling Solar programme. IFC and the Ethiopian Electric Power (EEP), the national electricity supplier

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## Around the world

### > Brazil – Renewable energies – General overview and perspectives

By Philipp Klose-Morero and Pedro Paschoal

With its territory spanning several climate zones and the associated exceptional natural features, Brazil is considered a hydrothermal system and thus unique in the world. This offers not only optimal conditions for hydroelectric power plants but also great potential and suitable areas for very diverse renewable energy projects.

According to the information from the Secretariat of Energy Planning and Development of the Ministry of Mines and Energy (MME), about 80% of Brazil's electricity demand was covered by renewable energies in 2016. Thus, the share of renewable energies increased by five percent compared to the previous year (2015: 75.5%). The share of different energy sources is as follows: 65.0% hydro power; 8.7% biomass; 6.5% wind power and 0.01% solar power.<sup>1</sup>

In 2003, the Brazilian federal laws no. 10.847/2004 und 10.848/2004 introduced a relatively stable regulatory framework for the energy sector. The framework is based on a number of basic principles and intends to bring the state planning into line with the market-oriented competition and to create a friendly

environment for private investment. All this is because the sector was entirely controlled by the state until the end of the 20th century.

Investments, whether made as part of auctions or in form of independent power generation, are open to national and international legal entities and investment fund companies, either individually or jointly through consortium agreements. In order to obtain a power plant authorisation and sign the Power Purchase Agreement, foreign entities (as well as investment fund companies, if awarded a contract) must establish a special-purpose vehicle (SPV).

<sup>1</sup> <http://www2.aneel.gov.br/aplicacoes/capacidadebrasil/OperacaoCapacidadeBrasil.cfm>



In order to be allowed to generate electricity in Brazil, certain financial and technical requirements must be met. Bidders and companies must prove that they have the capacity required for carrying out the planned project. Legal entities must reach certain thresholds, including without limitation

- > liquidity ratios and minimum net equity requirements;
- > bid bonds in order to participate in the bidding procedure;
- > a guarantee that the obligations will be fulfilled at the time the authorisation is granted and
- > a presentation of all main features of the power plant during the registration phase, and indication of a professional in charge of the project implementation and the operational and construction planning in line with requirements arising from the bid.

According to the 10-year plan for energy expansion for the period 2014–2024<sup>2</sup>, prepared by the Brazilian Renewable Energy Research Agency (EPE), renewable energy sources, such as wind, solar, small hydro, and biomass, are expected to increase at an average rate of 10% p.a. This would result in an estimated 35 GW of added capacity, in addition to the already installed capacity.

In addition, according to the plan, the percentage share of biomass, small hydro, wind and solar power is expected to grow between 2018 and 2024 from approx. 20% to approx. 30% of the power generation capacity in the wide area synchronous grid.

In addition to hydro power, wind and solar are the two main renewable energy sources in Brazil. Till 2024, the Brazilian government expects that an installed capacity of up to 24 GW will be added from wind power and 7 GW from solar power. Considering not only the last auction in 2015 in which 1.5 GW of solar power generation contracts were awarded but also the solar radiation potential, the solar industry has considerable growth potential. Currently, over one thousand enterprises from different sectors and countries are operating on the Brazilian solar energy market.

As far as the wind power sector is concerned, Brazil has the greatest installed wind power capacity in Latin America and the world's best conditions for the use of wind power. Thanks to an additional 9GW in wind power generation contracts to be concluded in the near future and more than one thousand market players operating in a very fragmented market, opportunities in new business fields will arise and it can be also assumed that demand in the M&A market will increase.

The third largest energy source in Brazil is biomass. Due to large resources of sugar cane and forest residues, Brazil boasts an installed capacity of 14GW in biomass power plants, with currently 500 power plants being in operation.

Despite the recent economic downturn and the political crisis in Brazil, the country is – with the GDP of about \$2 trillion and a population of over 200 million – Latin America's largest economy and by far the most important trading partner and investment location in the region for Germany. Given its competitive and stable regulatory environment and the increasing power capacities to be added in the future, Brazil offers excellent business opportunities for renewable energies and for investments in wind, solar, small hydro and biomass.

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<sup>2</sup> <http://www.epe.gov.br/PDEE/Relat%C3%B3rio%20Final%20do%20PDE%202024.pdf>





## News on international renewable energy incentive programmes

### > Erweitertes Green-Bond-Portfolio der KfW

Since 2015, KfW has not only been an issuer of green bonds for financing the climate and environmental protection but also actively participated in building up its own green bond portfolio. In May 2017, with support from Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, the target volume was doubled from EUR 1 billion to EUR 2 billion. Green bonds can be purchased e.g. for renewable energy sources, resource efficiency, environmental friendly transportation, pollution prevention and control, and sustainable water and wastewater management.

The minimum criteria for the purchase of green bonds specified by KfW include:

- > a clear project definition, including statement of objectives and the expected environmental impact;
- > an informed project selection and a transparent process of using the earmarked funds;
- > regular and publicly accessible reporting about the type and scope of projects, outflow of funds and the environmental impact (quantified if possible); and
- > verification of the selection of projects / use of funds by a qualified independent third party.

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„Força, Equilibri, Valor i Seny“ (strength, equilibrium, valour and common sense) is the Catalan motto of all Castellers, describing their fundamental values very accurately. It is to our liking and also reflects our mentality. Therefore Rödl & Partner embarked on a collaborative journey with the representatives of this long-standing tradition of human towers – Castellers de Barcelona – in May 2011. The association from Barcelona stands, among many other things, for this intangible cultural heritage.

### Impressum E|nEws

Publisher: **Rödl & Partner GbR**  
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