

Opinion

On the draft of the Danish Energy Agency

Draft conditions for pilot tendering procedure for a price premium for electricity generated at solar photovoltaic installations

Berlin, 17 March 2016

1 Introduction

The Danish Energy Agency initiated a consultation on 3 March 2016 on the design of a tendering procedure for freestanding PV installations in Denmark. Despite the very small auction size, at just 20 MW total volume, BDEW sees this consultation as a milestone as the level of subsidy for electricity from renewable energies will, for the first time, be set in a cross-border tendering process. The plan is to have 2.4 MW of installed capacity in freestanding PV plants constructed in this way in Germany each year, subsidised by the Danish support system for renewable energies.

In the opinion of BDEW, this could be a first step in the harmonisation of support schemes in Europe and a clear signal for the market integration of renewable energies. Market integration means, in this context, not only the reaction to market price signals in the electricity market but also the determination of electricity production costs (full costs) through competition. The intended determination of the level of subsidy through competition is therefore a positive aspect. Auctions are, provided there is sufficient competition and the procedure is designed accordingly, generally able, alongside volume control, to achieve a high level of cost efficiency in the support for renewable energies. At the same time, auctions not only increase the ability to plan renewable energy expansion due to the associated volume control but they also define reliable framework conditions for market driven investment in conventional energy plants.

BDEW has been intensively and constructively involved in the discussion process regarding the framework conditions for auctioning processes in Germany from the outset. To this end, the Association commissioned r2b energy Consulting GmbH and the Brandenburg Technical University (BTU) in Cottbus to prepare an opinion on the identification of relevant parameters for auctions to determine the level of subsidy for electricity from renewable energies.

Building upon the opinion¹ "Design of an auction model for RE installations in Germany" and the discussion, across all stages in the value chain, in the various working groups, BDEW hereby sets out its position on selected points from the Danish auction model.

Whilst we agree with the proposals in respect of realisation time limits, penalty rules and obligatory direct marketing, in the opinion of BDEW, there is a need for optimisation in respect of the object of the auction, the rules on how to deal with negative market prices and the price setting rule. Moreover, the proposed rules do not take into account the self-consumption privilege in Germany. BDEW recommends only granting a right to support in connection with auctions to the extent that the electricity generated is completely fed into the general supply grid, that is to say the self-consumption privilege is not used.

¹ [https://www.bdeu.de/internet.nsf/id/47C5F14138FD3513C1257ECF002BE0C6/\\$file/Gutachten_Auktionsdesign_r2b_BTU_FINAL.pdf](https://www.bdeu.de/internet.nsf/id/47C5F14138FD3513C1257ECF002BE0C6/$file/Gutachten_Auktionsdesign_r2b_BTU_FINAL.pdf)

2 Assessment of selected aspects

2.1 Realisation time limits and penalties

The penalty for not adhering to the realisation time limits regardless of fault and the opportunity to extending the time limit depending on where fault lies seem fair.

BDEW recommends, beyond that, the granting of a possibility to return subsidies without penalty in the event that an order or court judgement is issued which would impose restrictions on or render impossible the construction or operation of a supported project. This reduces the risks of tenderers and consequently reduces the risk premium which would otherwise have to be incorporated into the respective bid.

2.2 Direct marketing

In Germany, since the Renewable Energy Sources Act (EEG) came into force in 2014, there has been a direct marketing obligation regarding electricity from major renewable energy installations. It is therefore only logical that support for generation plants in Germany through the Danish support model, also ties in with that direct marketing obligation.

2.3 Exceptions

There are no apparent exceptions provided for in the scope of the regulation. BDEW expressly welcomes this - in particular in light of the pilot nature of the cross-border tendering process - as exceptions are usually detrimental to the objectives of volume control or cost-efficiency.

2.4 Support in hours with negative market prices

According to the state aid guidelines of the European Commission, the support mechanism for electricity from renewable energy installations must not create any incentives to generate electricity in times of negative market prices. Accordingly, the published draft from the Danish Energy Agency states that a price premium will only be granted for electricity which is fed-in during hours when the market price is positive. The market price signal mentioned in the draft is the hourly contract on the relevant electricity exchange for that location. This is also, in the opinion of BDEW, appropriate as the plant has an effect on the market into which it feeds its electricity irrespective of the support system behind it.

BDEW supports the objective of avoiding incentives to produce electricity during hours with negative market prices. The rule described above is problematic, however, in that it is only clear after close of trading whether a negative hourly contract has been set. Furthermore, it is hardly possible for investors/outside creditors to forecast, for the entire period of the subsidy, how often such a rule could apply. Due to that uncertainty, considerable risk premiums are to be expected in the auctions for the competitive determination of the level of support.

In the opinion of BDEW, a switch from time-limited support for renewable energies, as currently applies under the German Renewable Energy Sources Act (EEG), to a production quota model, would be a very promising alternative to administratively regulated non-payment of support in times of negative market prices. BDEW proposed the introduction of volume quotas as far back as 2012.² In the production quota model, the renewable energy installation's need for subsidy is no longer allocated to all kilowatt hours but to a defined volume of electricity. This does not lead to any increase or decrease in the level of support for a particular generation installation. However, positive effects in terms of system integration are produced. This creates an inherent incentive only to feed-in electricity if the plant operator can earn a positive profit margin on the market. As a result of the subsidisation of a volume quota, the incentive for generation of electricity in times of no demand and for feeding-in electricity at negative market prices is reduced.

A further benefit of the production quota model is that the resulting changed supply behaviour would produce far fewer hours of negative prices. This leads to a reduced burden on the EEG levy because the monthly market value would not or only slightly be pulled downwards by negative prices.

In addition to the introduction of a production quota model, suitable framework conditions would have to be developed for the coupling of sectors. In this way, the occurrence of negative market prices can be effectively counteracted without jeopardising the security of the system of investment certainty.

2.5 Price setting rules

As far as price setting rules are concerned, BDEW generally advocates the application of a uniform pricing system.

Unnecessary risks for inexperienced market players should be reduced as these could become barriers to market entry in the medium term. The risks for new and comparably inexperienced market players include, in particular, the "winner's curse"³. This risk is much greater if auctions are only conducted once than if auctions for the same good are held regularly. In the latter case, there is, as a general rule, sufficient information available regarding the value of the auctioned good. Thus, simply holding auctions regularly, with a short interval between, can reduce the risk of the successful bidder becoming subject to the "winner's curse". Therefore, one can expect that only inexperienced players will be affected. This risk is considerably reduced through uniform pricing. In this way, regularly held auctions not only protect new market players but also lead to an increased rate of realisation because a non-realisation is generally to be expected in the case of miscalculations of value.

² BDEW (2013): Position paper, "Proposals for a fundamental reform of the German Renewable Energy Sources Act".

³ The "winner's curse" states that winning an auction is not always good news for the bidder concerned. This is because, if the value of the auctioned good is uncertain, winning the auction can mean that the bidder has incorrectly estimated the value of the good and can suffer a loss.

Avoiding the "winner's curse" is also of benefit to the tendering body as it will be easier for that body, due to the higher rate of realisation, to organise its activities according to the statutory expansion pathway.

Moreover, the pay-as-bid process incentivises players to strategically submit a bid in excess of its individual marginal costs and to attempt to guess the market clearing price. Therefore, it is not to be expected that the pay-as-bid approach would be more cost-efficient than the uniform pricing approach.

A further benefit of the uniform pricing approach is in the low administrative cost. Pay-as-bid auctions lead, for example, to considerable additional costs for settlement as there is an individual payment grade for each project.

2.6 The object of the auction (fixed versus variable market premium)

The Danish Energy Agency announced the object of the auction to be a fixed market premium.

BDEW had also preferred a fixed market premium over a variable market premium in past position papers. The core argument for switching to a fixed market premium is that investments in conventional electricity generation plants carry an inherent long-term price risk. However, this position is still a subject of fierce debate within BDEW. In light of this, BDEW had the interaction of variable and fixed market premiums with auctions examined in the opinion and came to the conclusion that the variable market premium is preferable as a support instrument for the introduction of auctions in the area of renewable energies.

This position is tenable because the switch to a fixed market premium would bring advantages in respect of market integration but would not bring advantages in respect of system integration of the renewable energy plants or in respect of cost efficiency of support. Thus, there are the same incentives under both the fixed and the variable market premium to react to fluctuating market prices and to comply with balancing obligations. The incentive effect to make production forecasts and the incentive to optimise plant design even prior to investment are also similar. As far as feed-in behaviour in times of negative prices is concerned, it can be expected in the case of both types of market premium that renewable energy plants under the market premium model will only reduce output if the negative market price exceeds the market premium, namely if a loss occurs.

In contrast, disadvantages would have to be expected in respect of fixed compared to variable market premiums in connection with auctions.

Firstly, all bidders would, prior to submitting a bid, not only have to calculate their total costs but also have to produce a long term electricity price forecast in order to be able to calculate the fixed market premium they would require. Ideally, this long term electricity price forecast would then actually coincide with the electricity prices which later emerge. Due to the uncertainty concerning the future development of electricity prices, one would have to expect risk premiums being applied. These would be higher or lower depending on the risk propensity of

the bidder. In the case of a switch to a fixed market premium, this would lead to an increase of the required subsidy and thus an increase in the EEG levy, which has to be borne by the end consumers (households and industry), would have to be expected.

Moreover, it needs to be taken into account even under the current framework conditions that tenderers for good wind inland locations in the context of the reference yield model must produce long term electricity price forecasts even in the case of a variable market premium and have to price these into their bids as the starting payment is made for a shorter period than the technical lifetime of the projects.

Secondly, the necessity for the players to create long term electricity price forecasts associated with the switch to a fixed market premium would lead to a further increase in the level of complexity. It would have to be expected that smaller and less experienced market players in particular would have difficulties in estimating the associated risks accurately. In that case, the fixed market premium could act as a barrier to entry and reduce the number of players and the intensity of competition.

If the Danish Energy Agency should decide to use a variable market premium, it must be ensured (as provided for by the Danish Energy Agency) that the energy source specific reference market values are calculated on the basis of market prices pertaining to the market area into which a plant feeds power. Otherwise, lock-in effects could occur. This could be the case, for example, if the market price signal of the country of investment is applied and this were below the market price signal relevant for the marketing of the electricity.

2.7 Self-consumption and tendering

From the proposals offered in the consultation, it is not clear that self-consumption of electricity from installations for which the level of support is determined through means of an auction is excluded. In the view of BDEW, however, that is important as otherwise the self-consumption privilege which exists in Germany would lead to distortions of competition between the players involved. In light of the small volume to be auctioned, this is not relevant here, however, it would become more important if the auction model was to be expanded.

In the last few years, the proportion of plants with self-consumption has increased greatly in Germany and is currently at more than 80% of installed new photovoltaic plants. The profitability calculation of the operator and self-consumer is currently based on the proportional EEG levy evaded and on network charges, levies, fees and taxes which do not apply to the consumption of self-generated electricity. Therefore, by using the self-generated electricity, the operator gains an advantage in comparison to the statutory feed-in tariff. However, the number of final consumers amongst whom the costs of renewables can be shared is thereby reduced. This applies similarly in respect of the network charges and other levies. In the case of duties and taxes, less money is raised, to the detriment of public budgets. Furthermore, it should be noted that the users of self-generation are also usually reliant on the grid for the security of the electricity supply and for frequency stability.

The consumption of self-generated electricity also does not ease the burden on the distribution network. The strongly fluctuating electricity generation from PV installations, in conjunction with the similarly fluctuating own demand of the households, leads to a situation whereby in almost any given hour, the distribution networks are being called upon, either because excess production must be carried away or - in the absence of own generation - because the demand has to be balanced.

Self-consumed electricity from own generation plants must therefore generally be subject to the same taxes, duties and levies as the electricity drawn from the general supply grid. The distortion of competition for investment and the consequent misallocation would be eliminated in this way. From the perspective of regulatory policy, the protection of existing plants must be taken into account so that any changes to the legal framework only affect new plants.

Creating a level playing field between self-consumption and drawing electricity from the grid is of central importance, in particular in respect of auctions. Auctions in connection with the self-consumption privilege would lead to distortions of competition, specifically to the detriment of those players whose self-consumption proportion is comparably low. In this context, for example, supermarkets and other commercial businesses would probably be able to consume a larger proportion of the electricity they generate than is possible for private households. This situation would be reflected in the submission of bids such that those players with a larger self-consumption proportion would seem to need a lower level of subsidy as they would be disproportionately supported through the self-consumption privilege to the detriment of society as a whole. As a result, other players would be squeezed out, which in turn would lead to a politically undesirable reduction in the number of players.

Moreover, players with a large self-consumption would not only be able to avail themselves of the self-consumption privilege but would also receive a higher level of support (in a pay-as-bid system, they would guess the market clearing price). The resulting additional burden on electricity customers would be paid primarily by those end consumers who are not able to operate their own generation installation. This leads to socio-political issues which could significantly influence the acceptance of the Energiewende as a whole.

In light of the existing privilege afforded to self-consumption, BDEW recommends only granting a right to support in connection with auctions to the extent that the electricity generated is completely fed into the general supply grid, that is to say the self-consumption privilege is not used.

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