

## Position Paper

# The pathway to new market structures for the success of the energy transition (Energiewende)

### Options for government action

Berlin, 18 September 2013

## **Time to act**

The past legislative period was characterised by far-reaching energy policy developments. New fundamental challenges related to the design of energy supply reform moved into the focus of energy policy debate. It became clear to all participants: the market structures, as the foundation of a solid and reliable energy policy, must be adapted. During the last legislative period, many questions were raised and concepts developed. Now, at the beginning of the coming legislative period, decisions have to be made. Planning security and confidence in the success of the energy transition must be restored. It is time to act.

## **Our core proposals in brief**

- A fundamental reform of support for renewable energies - based on mandatory direct marketing for all new installations and the gradual acceptance of all market risks by renewable energy plants (for the promotion of competition and efficiency as well as the assumption of system responsibility) - from a technical-operational perspective, in order to guarantee stability of the grid.

This approach will create reliable and robust structures for the reform of power provision, as expressly supported by the BDEW, towards a system, in which renewable energies form the central pillar.

- The establishment of all elements required for the introduction of a decentralised capacity market, which is organised according to competitive principles and promotes innovations on a decentralised level.

This would create the basis for the profitable operation of necessary, existing power stations as well as for investments in new power station capacity and thus long-term security of supply.

- An optimisation of the existing Energy Only Market (EOM) in light of present challenges.

This will strengthen the market approach as well as proven structures.

- The short term establishment of a strategic reserve to underpin the reform of energy supply.

This would create security in the transitional phase and guarantee an enduring, solid basis for Germany to maintain its economic strength.

- The further development of incentive regulation towards an intelligent expansion of the networks as well as a new regulation of network charges to be more capacity oriented and a limiting of exempted network charges to controllable production capacities.

This will create solid structures for the development of a suitable network infrastructure for the energy transition.

- Embedding the German transition into the already existing and still to be developed European internal market for gas and electricity. This requires a greater degree of cooperation with neighbouring countries and an ambitious European energy policy. Solutions

for ensuring the security of supply should at least be sought by the Pentilateral Energy Forum.

A fundamental reform of the German Renewable Energy Act (EEG), based on obligatory direct marketing, as well as the establishment of a competitively organised strategic reserve could be the first step. Also the legislative basis for the introduction of a decentralised capacity market must be urgently created. The activation of a decentralised capacity market must take place as soon as the appropriate need has been determined. During the respective implementation, the BDEW will pay special attention to the impact on consumers and end customer markets.

The solutions presented here address, in particular, the high pressure for action in the electricity market. However, a successful energy transition will also entail decisive action in relation to the heating market and to mobility. The BDEW will also develop proposed solutions in these areas. We therefore invite all stakeholders to participate in relevant discussions.

Federal and State Governments are jointly urged to press ahead, after the German general election, with reforms necessary to ensure the success of the energy transition.

## **The current situation regarding energy policy**

Energy supply reform is faltering. The energy triangle is becoming unstable. Unforeseeable developments, but also a lack of common ideas amongst policy makers on the further progress of the energy transition, have resulted in market conditions which pose a significant risk to the security of supply and to economically viable investments in the future.

The rapid growth of renewable energies has brought the existing network and power station structures to the brink. The functional relationship between fluctuating renewable energy sources and power plants, the latter of which will be needed as back-up capacity for a long time to come, has become distorted. Rising costs caused by (mistaken) energy policy decisions has taken key groups in society to the limit of what they can afford.

The result of all this: Investor uncertainty, lack of planning security and a lack of trust and orientation. This is true for the growth of renewable energies as well as for the expansion of networks and storage. And it applies in particular to ensuring a power plant fleet which can guarantee the required security of supply in the long-term.

A good quarter of electricity supply in Germany is today already delivered by renewable energies. However, we now recognise: the growth of renewable energies finds itself in transition to a new phase. The systemic interaction of renewable energy, conventional power plants and intelligent networks and storage facilities, as well as the growing cost pressure, must be re-balanced and the long-term pathway be clearly identified once more. One must remember, the promotion of renewable energies not only affects its own share of the power generation mix in Germany. It affects the system as a whole.

The market environment for conventional power plant operators is subject to the growing pressure of much needed consolidation as well as the effects of advancing Europeanisation. A disturbingly high number of power stations today, is no longer able to cover their fixed costs through earnings. New construction projects are on ice or are cancelled. At the same time, however, the need for new investments for the time after 2020 is already apparent and must be thoroughly addressed for the maintenance of supply security.

The following is clear: The current structures alone are no longer sufficient. The BDEW has thus developed a series of essential measures, following intensive discussions covering the full range of analyses and concepts available, to overcome the lack of direction in energy policy and make the pathway towards a successful energy transition more distinct.

This paper, together with the related explanatory appendixes, lays out the specific steps developed by the BDEW and promotes their implementation with the aim of achieving the energy transition.

The proposals centre around a new target model, developed by the BDEW, for the promotion of renewable energies, based on mandatory direct marketing and the urgent orientation of the expansion of renewables towards market structures. In addition, the BDEW proposes a concept for creating a decentralised capacity market which can ensure long-term security of supply as well as promote innovation on a decentralised level according to clear criteria. There

exists an especially urgent need for action in these two areas, hence they should swiftly and simultaneously be addressed following the German general election.

We demonstrate a way forward which is viable in the long term, which builds on existing structures but nevertheless requires ambitious changes.

Our proposals rely on a further development of the proven mechanism of the "energy-only" market whilst also advocating, in this crucial transitional phase, that security of supply be safeguarded, in one of the largest economies in the world, through a strategic reserve.

Above all, however, we believe in a European approach. We are in favour of a European energy policy based on common principles and improved coordination between states operating in a single market. The European internal market for electricity and gas is reality and it will continue to develop. Ignoring that fact creates inefficiencies and leads to a system which requires constant corrections and adjustments. That is the opposite of long-term planning security. Pressure to act is immense. The European Commission is called upon further to advance the implementation and consolidation of the internal market, complemented by intensive regional cooperation. At the same time, however, delays at a European level cannot be used as a pretext for taking no action in Germany.

**Appendix 1:** A detailed view of the present situation, in particular of the conventional power stations can be found in the commented BDEW power station list.

## **1 A new target model for the promotion of renewable energies**

At the centre of the changes which have to be made is an extensive and rapid reform of the subsidisation of renewable energies. The current structure of the German Renewable Energy Act (EEG) must be changed, resolutely and without delay, due to the cost dynamics involved and especially due to the systemic challenges. In the first half of 2013, over 25 per cent of gross electricity consumption was covered by renewable energies. Their share of wholesale power supply today has become significant. After an initial growth phase, in which the support for renewable energies was primarily focussed on quantity, we now found ourselves entering a new phase - with new challenges:

- The additional construction of renewable energy plants currently occurs in an uncontrolled manner. The feed-in of electricity is increasingly difficult to predict.
- The associated increase in costs has brought many consumers to the limit of what they can afford and is jeopardising public acceptance of the energy transition.
- The expansion of the grid, necessary for the integration of electricity from renewable energies, can no longer keep pace in all areas.
- It is becoming an ever more frequent occurrence that the power output of renewable energy plants has to be limited for reasons of system security.
- The necessary (conventional) replacement and reserve power stations are losing economic viability due to the current situation on the wholesale market, with low electricity prices and significantly declining running times.
- The administrative expenditure for promotion and account mechanisms in the context of the EEG, has reached a level beyond which it will not be manageable.

In the opinion of the BDEW, it is of the utmost priority to institute a fundamental and urgent reform of the EEG after the general election in 2013. This must be approached with the aim of ensuring that the objectives of developing RE can be achieved as cost-effectively as possible, without jeopardising the balance in the energy triangle. Mandatory, retroactive changes to the legal framework for existing plants or for plants for which an investment decision has already been made should be avoided, for regulatory reasons, in light of the above mentioned subsidy mechanism.

At the core of the necessary reform lies the market and system integration of renewable energies. It is the BDEW view that the success of the energy transition depends on renewable energies assuming some system responsibility. As a first step they should assume technical system responsibility. For this purpose renewable energy power generation plants would have to be enabled to provide, in competition with other market participants, system services of equivalent technical quality. This includes an obligation to equip RE plants with technical components for, amongst other things, output regulation and remote control as well as for the production of reactive power and short-circuit current.

A second element is the market integration of renewable energies. For this integration it is essential that plant operators in future also consider long-term price forecasts and thus reve-

nue risks. A stronger focus on market and system requirements increases the value of electricity from renewable energy installations and creates a new basis for a development of renewable energies which is system-compatible as well as politically and socially desirable. In doing so, it is possible to build on existing structures of the market premium model and on already instituted changes with consistent purpose and resolve.

### **BDEW target model**

We advocate mandatory direct marketing for electricity from new RE installations and thus the introduction of obligatory scheduling at the core of the reform of renewable energy subsidy. Our target model also requires the determination of subsidy levels in competitive conditions, for example in the scope of an auction, in connection with a defined pathway for the construction of new renewable energy plants. Our goal is for renewable energies gradually to assume market risks through a shift from an ex-post market premium to one which is fixed ex ante. That creates competition and efficiency and increases the added value of the electricity generated by renewable energy plants.

Obligatory direct marketing ensures effective market integration of renewable energies and initiates the role reversal between renewable and conventional generation, necessary for the implementation of the energy transition. Provided the process is designed correctly, auctioning the right to construct new RE installations, in conjunction with a reliable pathway for expansion, enables a high degree of subsidy efficiency to be obtained, whilst ensuring the achievement of RE expansion targets. The BDEW places great importance on basic framework conditions which allow small and large companies to participate equally in the restructuring of the energy supply.

Taking the factors laid out above into account, it is clear that the target model needs to be implemented with the utmost urgency. Nevertheless, there are good reasons in favour of a gradual implementation of the described target model for the promotion of electricity generation from renewable energies, within a clear definition of the goal. In light of the structural changes to the energy supply associated with the energy transition, risks arise which make an immediate switch to an ex-ante fixing of the market premium seem difficult. Similarly, any auction process requires an intelligent design which leverages the advantages of competitive forces but avoids unnecessary risks.

### **Immediate measures**

In a first and key step, immediately after the general election, obligatory direct marketing for electricity from RE plants can be introduced, together with the granting of a variable market premium which compensates the difference between a (fictitious) feed-in tariff and the average electricity market returns.

In addition, the following measures, which have already been discussed in great depth, should be implemented without delay:

- Abolishment of the management premium for new RE plants

- Obligation for plants to have remote control function - to be used by the direct marketer for the purpose of technical-operational system integration
- Increase in technology-specific potential
- Mandatory installation of technical equipment for the provision of system services
- Enable a switch to direct marketing for the operators of existing RE plants with the provision of a reduced management premium
- Abolishment of time limits for subsidies (generally 20 years), replacement with introduction of volume quotas for subsidies
- Synchronisation of newly constructed renewable energy installations with the expansion of the grid, through
  - Realisation of strategic network expansion planning in the distribution network
  - Introduction of market signals for RE installation operators in the installation planning process
- Reorganization of privilege criteria (e.g. exemption from the EEG levy) to avoid the effects of an "erosion of solidarity".

### **Completion of the target model**

Alongside the implementation of the immediate measures, the instruments and statutory basis for the competitive, ex-ante determination of the market premium (e.g. in the scope of an auction model) have to be developed, to allow the target model to be implemented as soon as possible. In particular, the coordinated planning of RE expansion between Federal and Land authorities and clear criteria are required, on the basis of which an auction model should be designed, to enable the competitive determination of the level of subsidy.

It must be taken into account, however, that the development of a suitable auction design for renewable energies is a complex task. An auction model can only be introduced once we have an auction design which has proven to be effective and which increases the cost effectiveness of the energy transition, maintains the diversity of participants, ensures the RE expansion goals can be achieved and which fairly transfers the risks, which have so far been socialised, to the investor.

**Appendix 2:** Detailed design and model proposals and the associated schedule for implementation can be found in the BDEW position paper, "*Proposals for a fundamental reform of the German Renewable Energy Sources Act*".

## 2 A market for security of supply

### Criteria

Due to a lack of available storage capacity, sufficient network expansion and other system components, renewable energies alone will not be able to guarantee security of supply for some time to come. An energy-only market optimised according to our proposals (see. point 3: Optimisation of the EOM), would possibly also be unable, at present, to offer sufficient security long-term. In view of the required reliability, it is thus absolutely essential that further elements are developed right away which complement the energy-only market and ensure sufficient guaranteed capacity and thus sustained reliability in security of supply. In view of the required lead-in time, the development of the design of a functioning and economically efficient capacity market must be undertaken as soon as possible. Any system should only be activated, however, once an actual need has been identified. Furthermore, the development in the European market framework should be considered.

Capacity markets are complex and their design is prone to errors. Therefore, clear criteria are required to enable different models to be weighed against one another. The BDEW has developed criteria, together with the German Association of Local Utilities (VKU) and on the basis of a detailed analysis of the general requirements for capacity mechanisms performed by the BDEW, whose consistent application should form the foundation of the strict further development of market structures.

- A: The goal of a capacity market is solely to ensure security of supply.
- B: The legislative framework must offer long-term planning security. The mechanism must be robust enough to withstand changes in the market environment.
- C: Further developments of the market conditions should encourage competition with no preference for any particular technology whilst minimising economic costs.
- D: In addition, a market-wide (i.e. encompassing all capacities) and transparent mechanism is required which has minimal administrative costs of implementation.
- E: It must be possible for the future capacity mechanism to be integrated into the further development of the European internal energy market.

The consistent application of the criteria presented here and fully justified in the BDEW discussion paper leads to the exclusion of some of the capacity market models currently being discussed. This applies, in particular, in the case of models which needlessly increase complexity through overlapping several objectives and thus undermining the efficiency and practicability of a mechanism essential to the security of supply. Similarly, models which require constant, regulatory control interventions must be ruled out.

**Appendix 3:** Detailed reasoning can be found in the BDEW discussion paper "*General Requirements of Capacity Mechanisms*"

### **Our solution: A decentralised market for capacity**

The BDEW has scrutinised all conceivable models, examined all models which are debated nationally and internationally, in line with the criteria developed. We have arrived at the conclusion, as other participants in the energy industry, that the best option is a decentralised market for guaranteed capacity which meets the needs of customers. In a decentralised capacity market, the balancing group managers/energy suppliers are required to specify their capacity requirements. Only if they need more guaranteed capacity for their customers than can be financed through the energy market, are there corresponding proceeds. If the energy-only market provides adequate signals for ensuring the security of supply, no additional revenues will be generated by the capacity market.

Based on clearly defined and tradable products, the decentralised capacity market offers potential for innovation and the development of demand-side management and efficiency improvements. It builds on the existing competitive structures and can thus form the basis for ensuring guaranteed capacity in the best interests of the economy as a whole. The BDEW believes it is of great importance that the decentralised capacity market is designed such that smaller companies are not overstrained and thus the diversity of participants in the German market is secured long-term.

Various different models, the principles of which are, however, very similar, for the creation of a decentralised capacity market were presented at the beginning of the year and not only in Germany. The BDEW has analysed these suggestions in detail and further developed them. We therefore offer legislators specific implementation assistance for the creation of such a market for capacity.

The core elements of the decentralised market proposed by the BDEW are:

- The introduction of an obligation for electricity suppliers to hold guaranteed-capacity certificates ("capacity certificates") in the amount of the sum of electric capacity required at times of shortage.
- Marketing of secure electricity generation capacity, independent of the energy produced, by operators of power stations, pump storage plants and the like, in the form of capacity certificates.
- A standardisation of capacity certificates which would make them suitable for trading on an exchange.
- Product freedom for demand-side flexibility.
- The establishment of a central register for the administration of capacity certificates.
- The definition of the validity period of capacity certificates as being at least one quarter.
- A definition of shortage situations, primarily oriented at the market price, for which the availability of capacity certificates should be assessed.
- In case of shortages, sellers of capacity certificates must be able to provide power, equivalent to the capacity certificates sold.

- The introduction of a financial penalty for non-fulfilment of a capacity certificate, calculated at a multiple of the price for such certificates and applicable to certificate issuers (generators) and to suppliers in order to safeguard the end customer portfolio.
- The participation of foreign capacities in this system is possible, provided definite inter-connection capacities are available.

We have come to the conclusion that the issues discussed in the economic debate surrounding a decentralised capacity market can be solved and the proposed concept can be implemented and serves the achievement of the overriding objectives. A decentralized structure not only enables innovation but it also fits perfectly with the organisation of the energy transition so far.

The decentralised market for guaranteed capacity proposed here, has numerous advantages:

- It reduces the necessary central planning to a minimum. In particular, it requires no state determination of the total volume of guaranteed-capacity certificates. This will, instead, be established in a decentralised manner, based on knowledge available locally about the capacity requirements of customers and on innovative products which the energy suppliers offer customers taking into account their individual decisions on safeguarding their electricity requirements.
- It provides for a standardisation of capacity certificates which makes the safeguarding of supply efficient and suitable for exchange trading.
- It avoids the growth of state institutions and thus bureaucratic costs, as it is controlled largely by civil law contractual agreements between end customers, suppliers/traders and providers of guaranteed capacity.

Therefore, the BDEW calls for:

- A: The creation of a legislative basis for the introduction of a decentralised capacity market, based on obligatory capacity certificates.
- B: Definition of the conditions necessary for the transition to the decentralised capacity market described.

The BDEW believes it is important to point out that the implementation of this concept would mean that, in addition to the elimination of external market constraints, no additional state subsidies would be required for the foreseeable future in order to integrate flexibility into the market. A certain amount of price volatility, to be permitted in the future design of the market, is sufficient in order to enable flexibility on the supply and demand side and thus achieve economic efficiency.

**Appendix 4:** Detailed reasoning can be found in the BDEW position paper, "*Design of a decentralised capacity market*". This can serve politicians as the groundwork for the implementation of such a market.

### **3 Optimisation of the EOM**

In general, the following applies: The introduction of a power market is a change to the current structures and is not possible without any lead-in time. In the opinion of the BDEW, it is therefore necessary to optimise current market structures in a way which would stabilise the market and would, as "no regret" measures, not impede the necessary reform of market structures.

The energy-only market is at the centre of European energy policy and has a fundamental coordinating function for all participants in the electricity market. This includes cross-border competition and the efficient use of power stations with low energy costs for the benefit of customers. The European energy market has so far acquitted itself well in transformation processes, for example in respect of the integration of renewable energies as well as in respect of high transparency and trust in wholesale markets.

Different speeds in terms of Europeanisation, liberalisation, consolidation as well as the manner and extent of the expansion of renewable energies place the market, in its current form, under extreme pressure. Secure and flexible generation capacities, including pump-storage power stations, are being driven from the market - more than is conducive to the security of supply. Therefore it is doubtful whether the structure of this market can remain the sole basis for guaranteeing security of supply in the long-run.

Essentially, the doubts are based on the fact that price levels today cannot cover the fixed costs for existing power plants in Germany or elsewhere in the EU in the long-term and certainly offer no incentive for investment in new construction of power plants or storage capacity or for developing demand-side management measures. This is caused on the one side by the current over-supply of power station capacity in a market with ever progressing additions of renewable energies. On the other hand, persistent political uncertainty means that even following market corrections (i.e. shutting down unprofitable power plants) there might not be sufficient market signals for investment in the construction of new power plants. In addition, the falling price level leads to reduced demand for longer-term trading products, as the lack of procurement volume can be purchased, at reasonable cost and without volume restrictions, the previous day. These longer-term trading products are, however, an important indicator for power plant investment decisions.

The BDEW is convinced that the energy-only market must be preserved as an effective dispatch instrument which provides efficiency. However, it requires intelligent development. This development is necessary, regardless of whether further elements are needed, beyond an optimised energy-only market, in order to guarantee the fundamentals of secure supply with electricity (no regret basis). It must aim, for example, to stimulate long-term planning for the greatest security possible in energy procurement, by penalising energy consumption without sufficient procurement on the level of the balancing groups.

The high speed of change and the limited forecasting accuracy, particularly of the RE working volumes to be integrated into this market, requires short notice availability of increased volumes of control power as well as short-term trading products (intraday and hourly products). It must be ensured that sufficient control power is always available for the TSO. This may not

be prevented by regulatory influencing measures on the part of the German Federal Network Agency.

Therefore, the BDEW calls for:

- A: Higher incentives for load forecasts in combination with a strengthening of balance group loyalty
- B: Expansion of demand flexibility through a reduction of administrative obstacles
- C: The lifting of the de facto prohibition on scarcity prices
- D: An adequate design of balancing energy tender system
- E: The lifting of the de facto prohibition on shutting down conventional power stations

The further development measures listed above are necessary, irrespective of how extensively the market design is changed. However, if an additional degree of security is sought, in addition to the optimised EOM, there are supplementary measures available which, importantly, are reversible, without the need for extensive market interventions, or replaceable with other measures which take more time to be introduced. Apart from the on-going integration of renewable energies into the market, these include the strategic reserve which prevents the shutdown of useful power stations, including pump-fed power stations, in a market-oriented way and which is needed during the transition process.

Therefore, in this document and its appendices, the BDEW calls for the following additional measures for the purpose of optimising the energy-only market:

- The introduction of a strategic reserve
- The introduction of mandatory direct marketing for renewable energies
- A scheduling obligation for renewable energy installations

Detailed examinations of fundamental market development, of energy-only market optimisation and on the assessment of its performance are currently being discussed within the BDEW with the expert support of CONNECT. A respective report will be completed and published.

#### **4 Strategic reserve: back-up in times of change/security of supply**

Pressure to consolidate, as well as the necessary substantial restructuring in the energy industry, requires a back-up system in order to maintain a reliable and continuous supply of electricity. Also, during the transition the security of supply for Germany and its neighbours must be guaranteed at all times. Any uncertainties in the reform of the energy supply, which

might compromise security of supply, undermine the industrial policy seeking to make Germany an attractive location for business. This risk must be avoided.

In order to ensure this, the BDEW has developed the instrument of the strategic reserve, based on positive experiences in Sweden and Finland, which is, unlike the network reserve implemented by the German government, built on competitive and cost efficient structures and takes into account the situation on the electricity market as a whole. In an "Expert Dialogue on the Strategic Reserve", organised by the German Federal Ministry for the Environment (BMU) together with the BDEW, the German Renewable Energy Federation (BEE) and a series of scientific institutes, a concrete implementation concept was developed which has already been made available to decision makers in Federal and Land governments as a basis for future action.

A utilisation of the strategic reserve would provide a suitable indicator for when the energy-only market can no longer deliver and the system for secure supply certificates must be activated. For a transition period, the strategic reserve could be required beyond the introduction of secure supply certificates, in order to provide a safeguard during the necessary learning process of the market participants.

Therefore, the BDEW calls for:

- A: The urgent amendment of the German Reserve Power Plant Ordinance in order to transfer the power reserves into a competitively organised strategic reserve
- B: An immediate invitation for tenders for such a strategic reserve
- C: A regulation, which provides for the employment of the strategic reserve before the network reserves
- D: Gradual transfer of the network reserve into the strategic reserve
- E: Enhancement of the strategic reserve with a regional component

The introduction of the strategic reserve makes an important contribution towards the stabilisation of the EOM.

**Appendix 5:** Details can be found in the final report, "*Strengthening markets, securing supply - a concept for the implementation of a strategic reserve in Germany*", of the expert dialogue "Strategic reserve" of the BMU, BDEW and BEE with representatives from six scientific institutes.

## **5 Basis for the development of the network infrastructure**

Due to the energy transition, the electricity networks must master substantially different challenges in the future. The connection and feed-in of distributed generation plants has an increasing impact on the management and expansion of distribution networks. This effect will continue to increase in the future. In addition, due to the rising tendency of covering own demand, structural changes to electricity consumption from the electricity supply networks are to be expected. Today, many customers are already covering, at times, a part of their own power demand through own production installations. These self-producers still use electricity networks, but in different ways than in the past.

On a transmission network level, the grid must be expanded in order to allow the focus in terms of generation to be altered, the offshore wind farms to be integrated and the European internal market for electricity to be completed. The restructuring and expansion of the electricity networks is the best value option for the economy in the long run, in order to enable the further development of renewable energies.

In order to, in particular, put the distribution network operators in a position where they can reliably plan and finance the necessary expansion of and changes to the network infrastructure, an adjustment to the regulatory framework to allow immediate recognition of investments and the creation of smart grid infrastructure is essential.

The existing system of incentive regulation must be transformed into a system for the promotion of innovative and future oriented investments in order to redesign and expand the distribution networks so that they become intelligent networks. To this end it is necessary, above all, to quickly eliminate the time delay which still exists in respect of the recognition of investments in the low and medium voltage level.

In the context of the debate surrounding a future market design, a sustainable solution must also be found regarding network charges. Whilst the network (operator) costs are primarily fixed costs, the focus of the charge system is on variable price elements for electricity volumes drawn from the network. The energy industry therefore believes that a swift change of system should be made in which capacity is the price-determining factor of the network charges for end customers. In this way, network charges, in particular in the area of low voltage, can be based, to a much greater extent than they are today, on network costs and can counter the "loss of solidarity effects" through own generation.

In light of the ever increasing distributed generation, exemptions from network charges should fairly reflect the alleviation of the feeder network and thus only be granted to those generation units which, from the perspective of the network operator, feed-in power in a controlled way and which can be expected to have an unburdening effect on the network.

In the described reorganisation of the system for network charges, appropriate burden sharing, the avoidance of unintended incentives, feasibility, understandability and transparency will all have to be considered. The BDEW has already prepared proposals which satisfy these considerations.

The transformation of the energy industry to renewable energies must be accompanied by an improved coordination of fluctuating and controllable generation, energy storage, energy infrastructure and the possibility of introducing flexibility into demand.

With smart grids, the objective of matching fluctuating generation and price-responsive demand and achieving an efficient expansion and transformation of the network, as well as a high quality of supply, is pursued. In order to overcome these challenges, the BDEW presented the road map "The realisation of smart grids in Germany" in February 2012. Working on the basis of this road map, legislation and procedures for the realisation of smart grids must be developed without delay.

Therefore, the BDEW calls for:

- A: The introduction of a greater capacity component to network charges
- B: The implementation of the BDEW smart grids road map
- C: The recognition of innovation in the regulation of incentives
- D: The abolishment of the time delay for distribution networks
- E: The restriction of passing on exempted network charges to dispatchable plants

**Appendix 6:** BDEW road map *"Realistic steps for the implementation of smart grids in Germany"*.

## **6 Germany's energy policy in the centre of Europe**

Germany lies in the centre of Europe. The processes of liberalisation and Europeanisation of the markets for electricity and gas are very advanced. National interventions in the existing market structures, of whatever type, have substantial effects on the states joined in the common market. Many energy and climate policy objectives only make sense if they are conceived in a European context.

The integrity and operational ability of the European Emissions Trading Scheme (ETS) must be secured also beyond the year 2020. In the opinion of the BDEW, it is absolutely necessary for a binding, ambitious greenhouse gas emissions reduction target for 2030 to be set for the EU as soon as possible. Such a target for 2030 should be formulated in line with the objectives of the "Road map for moving to a competitive, low-carbon Europe by 2050".

In the opinion of the BDEW, a functioning internal energy market is essential to the efficiency of energy systems, the competitiveness and the security of supply of the EU. There are physical requirements for the integration of European markets. It was thus only right, that the European Commission has made the expansion of cross-border infrastructure a focus of its policy action. Specifically, the expansion of cross-border interconnection points, laid out in the

ten-year grid development plans, deserves the support of all those in positions of political and social responsibility.

On the basis of the learning curve in individual member states, pathways to market and system integration of renewable energies must also be developed in Europe. The European commission should thus speak out in favour of a continuous adjustment of subsidy systems. In this context, the market design for renewable energies should be further developed through the introduction of competition elements and the abolishment of elements which negatively influence the operation of the energy-only market.

An initially regional and then progressively European approach is also advisable in respect of the provision of security of supply. A capacity mechanism introduced in Germany would not protect against a lack of capacity in neighbouring countries also affecting Germany through the internal market. In reverse, a too high level of capacity abroad can lead to a situation whereby in Germany power stations and demand-side management measures are pushed out of the market.

A look at the existing border interconnection capacities shows: mutual security for Germany and its neighbouring states is possible. Furthermore, it is possible even if the market coupling in Central Western Europe is taken into account. A joint approach enables the potential of non-simultaneous peak and residual loads, capacity excess in individual countries and the displacement of loads to be exploited. Any free-riding of individual states can thus be effectively counteracted.

Therefore it is sensible and necessary for Germany to agree a common approach together with its neighbours in Central Western Europe (BENELUX, France and Austria).

- Development of common methods for the calculation of capacities, non-simultaneous peak loads etc., availability
- Common standards for including foreign capacities in the guaranteeing of security of supply at home
- Coordinated initiatives for reducing obstacles to development of demand-side flexibility
- Agreement of a level of security of supply which applies for each state involved

This approach to strengthening European co-operation should be vigorously pursued. Beyond that, it would appear desirable for the states in Central Western Europe to agree on a common framework for the securing of sufficient capacities. A decentralised market for guaranteed capacity enables the participation of foreign power stations. It therefore represents an option for a common approach. Steps towards this goal could be:

- Joint evaluation of the reciprocal effects of capacity mechanisms
- Coordinated inclusion of cross-border contributions
- Clarification of necessary institutional issues

The Pentilateral Forum represents a suitable framework for this.

ENTSO-E should improve the methods for measuring performance and better reflect the interactions of the national markets.

These developments must be taken into account in the energy policy debate and require improved coordination within energy policy. The aim must be for more Europe, not less.

Nevertheless: The pressure to act is high. Delays due to a lack of decisiveness on a European level cannot and must not be used as a justification for inaction in Germany.

Therefore, the BDEW calls for:

- A: A strengthening of certificate trading through ambitious CO<sub>2</sub>- reduction targets beyond the year 2020.
- B: The market and system integration of renewable energies on the basis of the promotion of best practice examples.
- C: The completion of the internal market.
- D: Activation of the Pentilateral Forum soon, in order to:
  - Coordinate the national contributions of the participating states to ensure security of supply.
  - Establish a common level of security of supply for the states connected by the Central Western European market.
  - Development of proposals for a common market design for the cross-border guarantee of security of supply.
  - Creation of a basis for a pan-European approach.
- E: The improvement of the ENTSO-E methods for the measurement of supply security.

**Appendix 7:** References to the possibilities and restrictions of a cross-border securing of sufficient capacities can be found in a study undertaken by CONSENTEC and Frontier Economics for the BDEW.

## **Our conclusion: The success of the energy transition is possible**

The measures outlined here are the result of intensive analysis and consultations in the German Association of Energy and Water Industries. They outline a pathway for the successful implementation of the energy transition which is demanding but also well balanced in light of the enormous pressure for action and feasible for the various participants in the energy industry.

We are convinced that the implementation of our proposals can help to counteract the impending lack of orientation in the energy policy debate. For many of the individual aspects, we experienced an intensive and growing support across all groups within the energy industry and beyond.

The German energy industry, our clients, but also Germany as a business location require a high-performing and reliable energy supply as this forms the backbone of economic growth and thus prosperity and employment.

The energy transition and the associated energy policy goals are supported by the German energy industry. Our companies provide an extensive contribution, across the various stages of the value chain, to the success of the energy transition and want to continue doing so.

However, this enterprise, "energy transition", requires a huge effort and a high degree of perseverance. Only through good project management of this exceptional industry and environmental project and the creation of reliable framework conditions and structures can the necessary investment and innovation be realised in a cost-effective manner.

We have based our proposals on competitive and market oriented solutions. We are also counting on the fact that decision makers on a federal and Land level will not make decisions on the complex and difficult decisions they are faced with, without considering the expert knowledge of the participants whose daily work comprises the implementation and realisation of the energy transition as well as securing a reliable, cost-effective and environmentally friendly energy supply.

We want to make our contribution to the design of the energy transition.

## Our appendices

### **Appendix 1:**

Energy Info: Commented evaluation of the BDEW power plant list for 2013

### **Appendix 2:**

BDEW position paper *"Proposals for a fundamental reform of the German Renewable Energy Sources Act"*

### **Appendix 3:**

BDEW discussion paper *"General Requirements of Capacity Mechanisms"*

### **Appendix 4:**

BDEW position paper *"Design of a decentralised capacity market"*

### **Appendix 5:**

Report on the findings of the expert dialogue on the "Strategic Reserve" (BMU, BDEW and BEE with representatives from six scientific institutes): *"Strengthening markets, securing supply - a concept for the implementation of a strategic reserve in Germany"*

### **Appendix 6:**

BDEW road map *"Realistic steps for the implementation of smart grids in Germany"*

### **Appendix 7:**

Study undertaken for the BDEW: CONSENTEC and Frontier Economics, *"Capacity mechanisms - a look at the European dimension"*

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