

Findings and recommendations related to Bulgarian energy policy

On 27.03.2013 the Deputy Prime Minister and the Minister of Economy, Energy and Tourism of the Bulgarian Government met with the Commissioner for energy of the European Commission and requested assistance for a review of the Bulgarian energy sector on compliance with the internal energy market rules, in particular alleged market distortions and non-competitive behaviour.

On 08.04.2013 the European Commission and the Bulgarian Government agreed that the review should cover a number of core issues including: the conduct, powers and independence of the national regulatory authority; the Bulgarian Energy Holding and its position on the Bulgarian energy market; the design and operation of the national electricity and gas markets, energy prices and the system of setting regulated prices.

On 18.04.2013 – 19.04.2013 and 25.04.2013 – 26.04.2013 the European Commission conducted two fact finding missions in Sofia. The Commission team, with experts from DG Energy and DG Competition, held bilateral meetings with stakeholders of the Bulgarian energy sector. The team is grateful for the co-operation and assistance of the many people it met throughout the visit: the Ministry of Economy, Energy and Tourism, the Ministry of Regional Development and Public Works, the State Energy and Water Regulatory Commission (SEWRC), the National electricity company (NEK), the Bulgarian Energy Holding (BEH), the Electricity System Operator (ESO), the Bulgarian wind association, the Bulgarian PV association, the Bulgarian associations of district heating companies, independent power producers (Contour Global, AES), the three Distribution System Operators (EVN, CEZ and Energo-pro), electricity wholesale traders, the Bulgarian industrial consumer association, the Bulgarian household consumer associations and Enemona, a company financing energy efficiency projects.

The Commission team also met representatives of Embassies, the World Bank and the European Bank for Reconstruction and Development; the last two institutions have received similar requests from the Bulgarian caretaker government.

Based on the data and information from those meetings and from its own sources, the European Commission prepared the following findings and recommendations. These are aimed to support the efforts of the Bulgarian Government to implement necessary reforms of the Bulgarian energy sector.

Findings

1 Electricity market

Compared with other Member States, the Bulgarian efforts to reform the electricity sector started late and look modest and largely incomplete. The electricity market in Bulgaria follows a hybrid model where part of the transactions for the sale of electricity are concluded at regulated prices, approved by the regulator, and the remaining part is traded on the liberalized market at freely negotiated prices. According to different estimates the share of the regulated segment ranges from 75% to 90%. Whereas it is not uncommon for Member States to operate a central buyer or "pool" system for (part of) their market, in particular in the early phases of liberalization and for smaller electricity systems, the advantages of such systems depend crucially on their design which in Bulgaria has been suboptimal, with its deficiencies exacerbated by the falling demand and exports. In addition the small share of the free market in Bulgaria implies that market signals and competition cannot properly fulfil their function of ensuring efficiency in that segment of the market either.

Despite the partial privatisation of generation assets and of the distribution system, the single, vertically integrated, fully state-owned company (Bulgarian Energy Holding - BEH) retains a central role. BEH and its subsidiary, NEK hold generation assets representing 45% of installed generation capacity.

NEK has a central position in the Bulgarian electricity system. It performs functions that would be normally carried out by separate entities in a mature market.

In the regulated segment of the market, it acts as a single buyer from power generators on the high-voltage grid. As a public provider, NEK is the single supplier of electricity at regulated prices for DSOs/end suppliers. NEK has also a substantial role on the free market and acts as supplier of last resort to industrial consumers.

The electricity TSO, "Electricity System Operator EAD" (ESO), is a subsidiary of NEK. It currently operates and maintains but does not own the transmission grid.

Currently, public opinion of the electricity sector is very negative. Customers are distrustful and dissatisfied with their electricity suppliers, mostly due to price increases. The complex and non-transparent structure and functioning of the sector, which is largely the result of the regulatory and legal framework, creates distrust among system users and raises concerns of mismanagement, abuses and widespread allegations of corruption.

The creation of an open and competitive electricity market will enable Bulgaria to participate in the internal market for energy in the EU. This will enable Bulgaria to tap into the benefits that such participation can bring to economic growth and welfare of its citizens, relying inter alia on its excellent natural hydro, solar and wind energy potential.

Overcapacity

Key figures for the Bulgarian electricity sector in 2012

The installed generation capacity stood at 13.8 GW, the share of nuclear, fossil fuel¹ and RES² being 14.5%, 50.0% and 35.5% respectively.

The Bulgarian power plants generated almost 47 TWh of electricity, net exports were 8.4 TWh and the inland consumption was 38.6 TWh. The share of nuclear, fossil fuel and RES³ stood at 33.6%, 53.8% and 12.6% respectively

The maximum load of 7.4 GW (or 54% of the installed capacity) was reached in February. In 90% of the hours the load was below 5.5 GW. The minimum load of 2.6 GW (or just 19% of the installed capacity) was reached in May.

The data in the box makes clear that the Bulgarian electricity system has significant overcapacity. Partly this appears caused by the current economic crisis which has led to a dramatic fall in domestic consumption and in exports. Based on information from ESO, exports in the first quarter of 2013 fell by 40% on a year-on-year basis. However, it can be questioned whether demand is likely to increase significantly in the coming decade, taking into account the shrinking population of Bulgaria, Bulgaria's high energy intensity today which suggests scope for substantial efficiency improvements, and potential for low cost electricity generation in neighbouring countries. The current overcapacity therefore appears to be, at least to a certain extent, structural.

Under normal market circumstances, included in well-designed central buyer systems, the economically least efficient plants would in such situations of structural overcapacity not be dispatched and potentially even driven out of the market. However, in Bulgaria a combination of factors including the regulatory framework and existing long-term contracts seem to prevent a rebalancing between demand and supply.

Warmer than usual weather coupled with weak industrial demand in April 2013 have pushed the minimum load further down forcing ESO to introduce curtailment measures for plants within the quota and priority dispatch system. Curtailment measures are seen by power producers as arbitrary.

Dispatching of economically and environmentally inefficient plants

The regulated part of the market is organized such that it is not the most cost-efficient plants which are dispatched first. Plants are not bidding into the pool based on an economic merit curve. Instead, dispatching of plants is taking place on the basis of regulated quota and

¹ Defined as coal and gas from electricity and CHP power plants, including auto-producers.

² The share of small and large scale hydro was 23.1%, that of wind 5.0% and PV 7.4%.

³ The share of small and large scale hydro was 8.2%, that of wind 2.6% and PV 1.7%, the rest coming from biomass.

priority rules, at prices fixed by the regulator, which are not necessarily connected to underlying costs.

NEK is obliged to procure fixed volumes at regulated prices on the basis of quota allocated to certain baseload power plants by the SEWRC. The power plants which supply the regulated segment under the quota send their forecasted production schedule, capacity and operating expenses to the NRA. Using a cost plus approach the NRA then calculates “prices” and the final production schedule for the next regulatory period⁴. The extent to which SEWRC has the necessary tools and independence to verify effectively whether the costs submitted by the operators correspond to those of an efficient operator and to reject, where appropriate, inefficient costs, is unclear.

NEK has also entered into long-term power purchasing agreements with two thermal power plants (AES and Contour Global) according to which it has to pay for the full capacity of the plants irrespective of the amount of electricity actually dispatched (“take-or-pay contracts”).

Furthermore, it has the legal obligation to purchase electricity generated from RES, industrial CHPs and cogeneration at regulated prices.

Finally, NEK uses its own hydro generation portfolio for balancing and as a back-up.

Concerns have been expressed on a lack of compliance of certain power plants with environmental legislation. Bulgaria is lagging behind in terms of compliance with the EU Large Combustion Plant Directive and Air Quality Legislation.

Deteriorating financial situation of NEK

The regulated price at which NEK sells is in principle based on the average value of the variety of electric power purchased from different producers. However, in recent years NEK is said to have been operating with a growing deficit. NEK finished 2012 with a loss of EUR 50 million. The biggest part of the losses is attributed to various compensation mechanisms. NEK is also said to have accumulated EUR 1.17 bln of short term obligations vs. EUR 0.1 bln of receivables.

Distortive price elements

On the basis of the above described system, NEK is procuring electricity from power plants at “prices” ranging from 21 EUR/MWh to more than 350 EUR/MWh. At the same time, capacity at power plants with marginal costs much below 350 EUR/MWh remains idle.

⁴ It is important to note that the NRA calculation of prices may be very different from a prices discovered on a genuine market where supply and demand fundamentals influence the price levels, not cost approval considerations. As there is no such a market in Bulgaria and for the sake of simplification, the text refers to the NRA calculations as “prices”.

Apart from costs of energy and availability, surcharges are added to the end-consumer bill and to the export price amounting to 17.5 EUR/MWh⁵. The elements of this additional cost item have the following relative shares as of April 2013:

- access and transmission charges (45%);
- green energy surcharge (33%);
- highly-efficient CHP (12%);
- stranded costs (10%).

Diminishing exports

The above-mentioned surcharges, which are also payable by exporters put exports in a competitive disadvantage, mitigate the effects of price signals from export markets and as such lead to a sub-optimal utilization of production assets. Export opportunities are reduced as demand in Greece, which traditionally was Bulgaria's largest export market, has also decreased and as neighbouring systems are currently well supplied by locally available hydro resources. Extended trials for a synchronous operation of the Turkish and ENTSO-E system since September 2010 are on-going.

2. Gas market

Natural gas plays a lesser role in Bulgaria's energy mix. The use of natural gas accounts for about 14% of the primary energy consumption. Currently less than 2% of the households in Bulgaria are connected to the gas distribution system, which is far below the average rates for the European Union, which stand between 27%-50%. Furthermore, only about 16% of the municipalities in the country have access to natural gas, compared to 27% to 80% for the rest of EU.

Domestic gas production is around 16% of total consumption. Bulgaria might have potentially significant on- and off-shore natural gas reserves.

For the rest of its demand, Bulgaria is currently fully dependent on imports from Russia and has no access to alternative supplies. Bulgaria could benefit from new sources of supplies from the Nabucco pipeline. BEH is part of the Nabucco project which aims at bringing natural gas from Azerbaijan (and potentially other countries) to Europe. BEH is also in negotiations with Gazprom about participation in the South Stream pipeline. The South Stream pipeline aims at creating an alternative supply route for Gazprom to deliver gas to Bulgaria and other EU Member States.

3. Energy efficiency

⁵ The overall surcharge has increased from 4.8 EUR/MWh in 2005 to 17.5 EUR/MWh in 2013.

Bulgaria's energy intensity remains the highest in the EU (four times the EU average if GDP at real prices is used) and there are possibilities for energy savings across the whole economy and energy chain. Energy prices were kept artificially low during the Communist period and this led to the construction of inefficient industrial processes, buildings and wasteful practices. While significant improvements in energy use in industry have been recorded (due to technical progress, policy measures but also restructuring towards more services based economy) the challenge of the inefficient energy transformation, and use in the residential, service and transport sectors remains. Policy measures were adopted and contributed to the realisation of energy savings projects in particular in industry and public buildings (e.g. mandatory audits above certain consumption, individual targets) but poor monitoring and enforcement remain a constraint to their full impact.

In the residential sector, the heating of multi-apartment buildings is particularly inefficient. This, combined with the slow modernisation of district heating companies, contributes significantly to high energy bills. While some pilot projects showed a reduction of energy use by 40-70% if a whole building is renovated, such measures are rarely realised. Available financing programmes have not triggered such renovations and the lack of enforcement of the building regulations had resulted only in 'patchy' insulations of individual apartments. The main reason for this is the individual ownership of each apartment (97% of dwellings are privately owned including by vulnerable consumers) alongside ineffective condominium legislation.

The high share of district heating in large cities is another legacy from the Communist period. While this technology is promoted at EU level because it is technically more efficient than individual heating, many of the district heating companies (DHC) in Bulgaria and their distribution infrastructure are not sufficiently modernised. As a result they are not able to capture the full benefits of the technology. The high costs of district heating in combination with poor insulation of the multi-apartment blocks prompted many apartment owners to switch to electricity heating which indirectly increased the cost for the remaining customers and aggravated the problems with high energy bills.

In addition, favourable tariffs for electricity generated from co-generation led to increased electricity output by DHCs. However, the setting of these tariffs does not take into account the economic and environmental efficiency of such power production. Moreover, the electricity tariffs are said to cross-subsidize heat.

There has also been a boom in the industrial high-efficiency co-generation units. It is believed that some of these units are mainly used for electricity generation only with very poor heat to electricity ratios. Such inefficiencies appear to be encouraged by an inappropriate regulatory framework which allows industrial co-generators to supply all electricity produced to NEK at high regulated prices (up to 150 EUR/MWh), whilst procuring electricity for their own consumption from NEK at much lower regulated prices (39 EUR/MWh).

4. Renewables

Bulgaria's share of renewable energy in final energy consumption reached **13.8%** in 2010⁶; its target for 2020 is **16%**, thus, for the moment, Bulgaria is well above the indicative trajectory specified by Directive 2009/28/EC.

Currently, Bulgaria has roughly 850 MW installed capacity of wind, respectively 1040 MW of PV⁷ (above the estimations in the National Renewable Energy Action Plan), while hydro power plants (large and small) account to approximately 3100 MW; the installed capacity of other RES sources is negligible. As the total installed capacity of the Bulgarian electricity system is approximately 14 000 MW, variable RES power plants account for approximately 13% of it. However, compared to peak demand of 7,4 GW the installed RES capacity in Bulgaria is high. This opens perspectives for Bulgaria to share its renewable power production with EU Member States having less RES potential, e.g. through co-operation mechanisms⁸. No new RES projects are envisaged to be connected in 2013 as the system operators have not forecasted any available grid capacity for RES projects.

RES plants have been significantly curtailed recently, particularly PV, due to sunny days combined with structural low electricity demand; additionally, due to grid technical limitations, grid access for electricity produced by some wind and PV plants has been limited. No curtailment or balancing rules are in place, the regulator being at present in the process of drafting balancing rules.

Bulgaria implements a feed-in tariff scheme to support the use of renewable energy sources, the regulator having the right to adjust the feed-in tariff level at any time, the new tariff being applicable only to new RES plants coming online; RES plants receive the FiT in force at the date of receiving the operating permit. The FiT level for new installations has been constantly decreased, the most significant reduction being operated in June 2012⁹ for the next year, e.g. 22% reduction for wind plants, respectively 50% for PV. In September 2012, grid access tariffs have been introduced for RES plants¹⁰, reducing their revenues by 10% - 39%, depending on the type of technology and date of grid connection. The cost of RES support accounts for approximately 6-7% in the final customer price (both household and liberalized market) in 2013¹¹.

5. Institutional

⁶ Eurostat

⁷ Figures provided by SEWRC are slightly different showing approximately 700 MW of installed wind generation and 1000 MW of installed PV capacities.

⁸ Articles 6-12 of Directive 2009/28/EC.

⁹ FiT levels set in June 2012 for the next year: wind (approx. 66.35 – 74.35 EUR/MWh), PV (84.92 – 190.59 EUR/MWh)

¹⁰ SEWRC Decision no 33/14.09.2012

¹¹ Information provided by RES industry.

i. Legal and Regulatory Framework

Two infringement proceedings for partial transposition of the Third Internal Energy Market Package (2009/72/EC and 2009/73/EC) are pending. In addition, an infringement procedure was launched for non-communication of transposing national law for the purposes of Directive 2010/75/EU on industrial emissions¹². Full transposition of the EU Directives is only a step towards creating a stable legal framework. It should be followed by proper and transparent application. Having a strong regulatory framework, whereby the public bodies involved have sufficient capacity to oversee the implementation of the legislation and operate based on clear division of functions, without encroaching upon each other roles', is central in this respect.

ii. Ministry of Economy, Energy and Tourism

The Ministry of Economy, Energy and Tourism (MEET) conducts the energy policy of Bulgaria pursuant to the Bulgarian Energy Law. Although the Ministry comprises around 600 people, only 40 to 60 of those work in the field of electricity and gas. This indicates serious understaffing taking into account the many challenges in the energy sector. A comprehensive energy policy, providing a transparent, stable and reliable framework for investors, market operators and enforcement agencies to act in, is missing.

iii. State Water and Energy Regulatory Commission

The State Energy and Water Regulatory Commission (SEWRC) – the national regulatory authority for energy, is established by the Energy Law as a specialised State body which regulates the activities in the energy, water supply and sewerage sectors. The legislation assigns to SEWRC many crucial regulatory functions for the energy sector and thus reflects the strong role envisaged for national regulators under the Third Energy Package. However, SEWRC does not have the necessary financial and human resources, as well as the high level of independence, which are absolute pre-conditions for carrying out its tasks effectively.

Namely, the financial and human capacity of SEWRC is inadequate, with the budget for 2013 being less than EUR 2 million and entire staff comprising only 128 persons (and many fewer experts working on electricity and gas). Experts often leave due to unattractive payment, which makes building a strong internal expert knowledge challenging for the regulator.

Although the legislation envisages that SEWRC will be an independent State body, it does not explicitly spell out the more detailed independence requirements which the Third Package establishes (i.e. that the regulator should not seek or take direct instructions from the government or other public or private entity, should act independently from any market

¹² This directive applies from 1 January 2016 to large combustion plants permitted before 7 January 2013 (and to plants the operators of which have submitted a complete application for a permit before that date, provided that such plants are put into operation no later than 7 January 2014), while to other large combustion plants it applies from 7 January 2013. The Large Combustion Plants Directive is repealed with effect from 1 January 2016 and is replaced by Chapter III and Annex V of the Industrial Emissions Directive.

interest and take autonomous decisions). The principle of independent decision-making and performance of tasks by the regulator is at the core of the Third Package. The Government, as well as other state bodies, should abstain from formulating any instructions to SEWRC for decisions it should or should not take in carrying out its competences. Furthermore, while the Energy Act envisages that the Commissioners of SEWRC will be appointed and dismissed by the Government, it does not establish a procedure which will be followed for the appointment and dismissal. There are thus no safeguards that the process will be transparent and will guarantee the independence of the regulator.

The importance of adequate capacities and independence of SEWRC has recently triggered active public discussions in the context of its investigations and procedures related to distribution system operators and end-suppliers.

The Regulator should invest in confidence building with all stakeholders. It is important that SEWRC lives up to due process and transparency requirements in its decision making, for instance by informing stakeholders of upcoming consultations sufficiently in advance and providing adequate information to enable their active participation.

iv. National Competition Authority

The National Competition Authority (the CPC) has a budget of 3.7 million BGN for 2013, and around 120 staff. The CPC has three departments (i) antitrust and mergers (around 40 staff), (ii) public procurement, and (iii) unfair commercial practices.

In 2010 the CPC opened a sector inquiry into transmission and supply of gas. On 27 March 2013 the CPC announced that the scope of the sector inquiry was extended to also cover markets for generation, trade, transmission and supply of electricity; the investigation will include transparency in price setting and vertical relationships within the sector, as well as issues arising from the implementation of the Third Energy Package.

v. Unbundling of TSOs

Under EU legislation, the operators of the transmission networks for gas and electricity need to be separated and made independent from undertakings with generation and supply activities. This process of unbundling is more advanced in the gas sector and the certification of the TSO, Bulgartransgaz, is in progress before SEWRC.

The unbundling process in the electricity sector is progressing more slowly. Corporate restructuring of BEH is on-going but no formal application for certification as an unbundled TSO has been filed by ESO yet.

Bulgaria is planning to apply the independent transmission operator (ITO) model for ESO. However, under the ITO model it is essential that ESO owns all the assets for the activity of

transmission, including the transmission system. Thus there are guarantees it could carry out its functions independently from the vertically integrated undertaking in financial terms. Such sufficient resources do not seem to have been guaranteed to ESO so far. Furthermore, the ITO model in the Third Package entails constant oversight by the regulator. Such might be challenging given the shortcomings in the financial and human capacity of the regulator and its independence.

6. Consumers and civil society

Consumer confidence both towards the energy sector players and the Bulgarian authorities is low. Consumer organizations miss transparency and real dialogue with MEET, SEWRC and undertakings.

Despite recent progress, not all consumer rights foreseen under EU legislation are guaranteed in Bulgaria as a consequence of lack of full transposition of the third package legislation.

The scheme for the protection of vulnerable customers is not yet complete and does not appear effective. Regulated retail prices apply to all residential customers without distinction.

2. Recommendations

On the basis of our analysis of the Bulgarian energy sector based upon the request of the Bulgarian Government, there is no "silver bullet" to redress the situation overnight. A combination of short term and longer term reforms throughout in particular the electricity sector, but also in the heat and gas sectors, seems necessary. Whilst windfall profits of public and private investors should be avoided to keep energy bills in check, it is important also not to undermine the investment climate in Bulgaria by measures which are, or can be perceived as, arbitrary or improvised.

Against this background, it is important that the Bulgarian Government establishes and communicates a clear overall energy policy plan, putting the purpose of individual reform measures in perspective, demonstrating how they are necessary to provide Bulgaria with an economically and environmentally sustainable energy future and indicating how efforts are spread over all stakeholders (Bulgarian and foreign, industry and consumers, undertakings and government bodies,...) in an equitable way,

Short-term (3 to 9 month horizon)

1. **Commission an independent analysis of generation adequacy** going forward, taking into account possible demand scenarios, import and export scenarios and the need to ensure system reliability (including flexible back-up for intermittent wind and solar) and **consider the possible decommissioning of individual power plants** taking into account their economic efficiency, lifetime expectation, compliance with environmental performance, especially compliance with minimum environmental standards¹³, their effects on, and, where appropriate, non-compliance with, environmental quality standards and intermediate emission ceilings laid down in the Treaty of Accession; rights and legitimate expectations of their owners and impact on system stability.
2. **Staff and resource SEWRC in accordance with its tasks and responsibilities**, in particular:
 - appoint the new Board on the basis of a transparent and objective selection procedure and well identified competency requirements;
 - ensure that SEWRC's budget is increased to an adequate level taking into account its duties and obligations;
 - use EU structural funds to build up the administrative capacity of SEWRC
 - use opportunities offered by EBRD and other international institutions and organisations to implement capacity building programs for SERWC (twinning

¹³ In view of, in particular, the fact that the Industrial Emissions Directive, applicable to existing plants from 1 January 2016, contains significantly stricter provisions than the LCP Directive.

projects with foreign NRAs, assistance by consultancies, training and secondment programs, etc.)

3. **Improve the regulatory framework and its implementation**, in particular
 - fully transpose the Third Package Directives. Consider early implementation of the energy efficiency Directive.
 - develop transparent and fair balancing and curtailment rules in line with EU legislation.
 - review existing surcharges to ensure that they are non-discriminatory, cost-oriented, and that they cause artificial export barriers.
 - review the amount of cold reserves needed with the aim to avoid unnecessary capacity reservations. Oblige ESO to purchase all cold reserve through open and transparent tendering procedures.
 - make sure that grid access tariff for renewables are applied fairly.
 - amend the legal provisions, which currently gives the regulator the right to adjust the FiT for RES at any time with a view of setting a transparent and stable timeframe for this adjustment (e.g. every 3 months, every 6 months etc.).
 - ensure proper monitoring of installed CHP units (industrial and district heating) so that high efficiency is maintained during operation.
 - ensure that support for CHPs complies with criteria for high efficiency set out in national and in EU legislation.
 - ensure that energy utilities comply with accounting rules stipulated in the Third Energy Package.
4. **Complete and reinforce the measures for protection of vulnerable customers** by developing well-targeted, more adequate and effective support. This may include direct financial support to vulnerable consumers to enable them to cover their energy at market prices and/or energy efficiency support measures for these particular customer groups. If social tariffs are chosen as a tool, these should be limited to vulnerable consumers only and should not compromise retail competition.
5. **Facilitate exports of electricity**
 - explore options for structural cooperation with Turkey, including possibly a dedicated high voltage line from Maritsa East to the Turkish grid;
 - define clear and transparent conditions in which force majeure events can result in a limitation of cross-border exchanges. Keep the range of such scenarios to the minimum.
6. **Speed up the unbundling of the electricity TSO, ESO, and consider a more radical separation of the gas and electricity TSOs by taking them out of BEH** (i.e. implement ownership unbundling). One option could be to shift the control over the TSOs to the Minister of Finance, whilst BEH would remain under the control of the Minister of Energy. A similar separation would have to be introduced at the level of the administrations. Such a full separation will foster the TSO's independence, help

to build trust of the market participants and will keep the TSOs ring-fenced financially from the rest of the activities of BEH. Finally, it will facilitate regulatory oversight compared to the more complex ITO model, which is currently foreseen.

7. **Adjust NEK's off-take obligations to real demand in the regulated market segment.** In particular:
 - reduce quota, starting with power plants with the highest marginal cost and the highest emissions;
 - limit NEK's off-take obligation for industrial CHPs to their net surplus production, i.e. the volume of electricity they produce minus the volume of electricity consumed at the industrial plant concerned;
 - make an inventory of renewable installations which have received direct subsidies to cover (part of) their installation costs, and assess their eligibility for other support schemes;
 - assess the possibility to renegotiate existing power purchase agreements and incentivize producers to sell part of their production on the free market.
8. **Consider the use of fiscal measures** to fund part of the system costs directly from the State budget in compliance with state aid rules and respecting the political commitments of the EU to phase out subsidies to fossil fuels, and avoid as much as possible funding stranded costs through consumer bills.

Medium term (1 to 3 years)

1. **Ensure a sufficient number of participants in the open market on both the supply and demand side to allow for effective competition. Against this background:**
 - **facilitate the establishment of new entrant power suppliers which can compete at arm's length with BEH in the free market.** Consider in this regard the option to give new entrants access to low cost base load generation for example through virtual power plant arrangements for nuclear as well as the possible divestiture of some of BEH's hydro plants and/or competitive tendering of hydro licenses.
 - **consider imposing quota on large sellers (and potentially large buyers) of power in the Bulgarian market mandating them to sell/buy minimum amounts on the free market.**
2. **Set up an organised trading place** for running the day ahead, intra-day and balancing markets. Seek assistance from a specialized organization on the best design of the power exchange. Alternatively, explore with all relevant stakeholders the possibility of selling Bulgarian power production on existing power exchanges in neighbouring countries. In order to ensure sufficient depth, consider imposing quota on (certain) buyers and sellers to trade minimum volumes over the exchange.

3. **Speed up the coupling of the Bulgarian electricity market** with neighbouring electricity markets and introduce implicit capacity allocation on the borders.
4. **Reform the single buyer model:** first, enable SEWRC to set prices reflecting the costs of an efficient operator for each supplier and technology. In the longer term move towards merit-order based dispatch.
5. **Review renewable support instruments** in line with the guidance that the European Commission is scheduled to provide in Q3 2013. Ensure that renewables are gradually integrated in the market. Ensure that the network and balancing charges for renewables are proportionate and non-discriminatory. Migrate to a feed-in premium system once the market is functioning properly; consider a mechanism to increase the cost-efficiency of support.
6. **Develop a detailed roadmap for the phasing out of regulated retail prices**, based on the development of a well-functioning and competitive wholesale market, and taking into account specific protection needs of vulnerable customers. As part of the roadmap, work towards the elimination of cross-subsidies between various customer groups and between electricity and heat.
7. **Develop a detailed strategy to enhance energy efficiency** throughout the value chain. As part of this strategy:
 - Develop the Cohesion funds; use partnership agreement and the relevant operation programmes in view of the need to tackle the high energy intensity of the country, in particular targeting renovation of buildings, modernisation of district heating, and where appropriate, provide stimuli for energy efficiency improvements for SME and large industries.
 - Develop strong legal (possibly by strengthening the role of owners' associations, enforcement of building regulations) and financing support framework (using grants for the most vulnerable and financial engineering for the rest) for the refurbishment of the building stock
 - Step up the modernisation of district heating network and generation also by using Cohesion funds and other sources (e.g. decommissioning funds, EIB, EBRD, WB funding)
 - Develop transparent and easy to understand rules for calculating the district heating bills
 - Carry out a comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling and develop long-term plan of how this is to be utilised so to ensure investment confidence.
8. **Develop gas transmission, distribution and storage infrastructure and continue efforts to promote competition in the gas market.** In particular,

- Continue supporting gas pipeline projects which contribute to the diversification of gas supplies (e.g. Nabucco).
- Ensure a physical connection between existing transit pipelines and the national transmission network.
- Grant licenses for conventional and unconventional gas exploration and production in an open and transparent way with due consideration to environmental impacts and risks.
- Examine the possibility of developing local distribution networks e.g. in the Sofia region.