

IMPEDIMENTS, PRECONDITIONS AND SOLUTIONS TO SUCCESSFUL FUNCTIONING OF BiH ELECTRICITY MARKET

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I. EXECUTIVE SUMMARY

This paper specifically addresses the impediments, preconditions and solutions to the successful functioning of the BiH Electricity market. Bosnia and Herzegovina has legal obligations, both in connection with the Energy Community and its own legislation to open the market. The market opening deadline of 2012 is fast approaching.

A joint effort by the Market Working Group formed by the three BiH regulators and market participants, including the Ministries, identified eight impediments to market opening, five of which require some Government policy action. These areas are: Unbundling, Cost-based Tariffs, Deregulation of Generation, Vulnerable Customer Programs and the amendment of the Procurement Law. The different BiH Governments have different areas on which they must focus, and these areas are specifically addressed in Section V: Next Steps.

The document is structured to address the following areas:

Section II: Introduction

Section III: Market Working Group Approach. This section describes the formation of the Market Working Group by the three BiH regulators and the process by which the conclusions in the document were reached.

Section IV: Impediments. This section of the document provides a discussion of each of the eight impediments to market opening of the electricity market in BiH, explaining what is required for each and relying on specific comments from each of the regulators that performed extensive work to determine the status and readiness of the market in their jurisdiction areas. The full text of their work is attached as an Annex.

Section V: Next Steps, as described above.

II. INTRODUCTION

2012 is tomorrow, which is why the Market Working Group was formed by the three regulators tasked to analyze the most relevant issues related to the BiH electricity market. In 2012, the transitional period to market opening ends, which means that all BiH electricity customers but households are required to go to the market in 2012, with households going in 2015. New investments are planned by both Entities to commence in the near future, some of these investments replacing existing obsolete plants. The cost of these new investments when new capacity serves as a public supply obligation will be passed through to the tariff customers, so it can be expected that generation supply tariffs will rise.¹ Therefore, some customers may decide to change to a third party supplier,

¹ The new plant costs that will be passed through consist of O&M, interest on long-term debt and depreciation, and any profit allowed by the regulators.

finding electricity in the market at market price. The market may no longer be limited to BiH generators either and is certain to include import.

As a result of these deadlines and the consequences of new investments, the work of the Market Working Group has taken on a sense of urgency because the fact is that market opening is already here in Bosnia and Herzegovina.

Market opening is prescribed by both the State and Entities laws on electricity, as well as by the Energy Community Treaty (Treaty) to “open the market” to all non-household customers as of January 1, 2008, and from January 1, 2015, to all customers. The Eligible Customer Rules of the Entity Regulators require that all non-household customers go to the market as of January 1, 2012, while households are required to go from January 1, 2015. While 2012 may sound like it’s far into the future, in fact, it is very close from a restructuring point of view.

Market Opening means that end use customers – generally defined as industrial, commercial and household customers, who do not resell their electricity – are able to choose their own suppliers of electricity to purchase energy, capacity and other services at negotiated prices, while all natural monopoly services (such as the transmission and distribution of electricity) are available to customers at fair, transparent and nondiscriminatory prices, always regulated by the regulators.

Not only is market opening a legal obligation in Bosnia and Herzegovina – defined by BiH laws and by the Treaty – but market opening is already under way in Bosnia and Herzegovina. Several customers in the Federation already purchase portions of their supplies in the market. It is not unusual that commercial interests get ahead of the legal and regulatory structure; however, it is also not unusual that vestiges of the old, fully integrated system of the electricity sector remain in place and form obstacles to market opening. The questions for Bosnia and Herzegovina and the ones that the Market Working Group has taken a number of steps to define are:

- What are the remaining obstacles to successful market functioning?
- What are the options required to remove them? and
- Who has the responsibility to act?

The Market Working Group and the members’ regulators understand that the task of the Market Working Group has been to gather data and analyze it, not to make policy. While the BiH Governments and Parliaments/Assemblies have already expressed the intention to liberalize the electricity market, there remain a number of implementation steps that require further guidance from the Governments and other steps that require the action of the Elektroprivrede (EPs) and the regulators.

This document has been written with the intention of submitting it to the regulators’ respective Ministries, both to give the Ministries information and also to elicit further policy guidance, as deemed appropriate by the Ministries and their Governments.

III. MARKET WORKING GROUP APPROACH

As it commenced work to determine the status of market opening, the Market Working Group asked some basic questions, such as:

- Is the Bosnia and Herzegovina market functioning today?
- Are the EPs technically ready for customers to purchase from other suppliers? That is, can the EPs accurately and timely measure and bill electricity sales and provision of various services?
- Are customers protected if they leave the EPs as suppliers?
- If a customer wants to choose a supplier other than an EP, what exactly does that customer need to do?
- Are the regulators prepared for a new role in the sector where the regulators' role shifts from regulating all relations between power sector participants, including generation, to regulating the natural monopolies and monitoring the market?

In order to find the answer to these questions, the Market Working Group decided that it would be most beneficial to focus on a bottom-up, practical approach. Thus, the Market Working Group (i) gathered technical data from the EPs to determine their readiness to open the market (attached hereto as Appendix 1); (ii) hosted three small, interactive seminars that included representatives of all stakeholders in the market to address what is necessary on a technical and commercial basis for customers to be able to choose their suppliers, what are the impediments to doing so, and what is necessary to remove those impediments; and (iii) held a joint seminar for all attendees in which the top eight prioritized impediments and options to resolve them were presented and discussed.

This list of prioritized impediments and optional solutions provides a platform for decision-making and subsequent steps that need to be taken by market participants, including the Governments. The following table of impediments to the successful functioning and opening of the BiH electricity market was developed after the described consultations:

Impediments, preconditions and solutions	Primary Responsible Parties
1. Measurement	Regulators and EPs, Transco and ISO
2. Unbundling of activities: accounting functional legal (deep unbundling) - end goal	Governments, Regulators, EPs
3. Cost based tariffs	Government, Regulators
4. Deregulation of generation	Governments, Regulators
5. Vulnerable customer program	Governments and Cantonal Governments
6. SOLR, default supplier, customer switching	Regulators and market participants, Governments
7. Contracts and full clarification of processes for: Third party access Ancillary services Balancing Financial settlement	Regulators and market participants
8. Procurement Law revisions	State Government

The organization of this paper is based on the list of impediments above, with each section including a description of the impediment, a discussion of the status of the issue in BiH, and suggested options to resolve the impediment.

IV. IMPEDIMENTS AND PRECONDITIONS

1. Metering/Measurement

1.1. Metering Requirements for Market Opening. Without accurate metering, market opening is quite simply impossible. It is insufficient to only know how much electricity is used per month by customers; meters must have the ability to measure quantity *and* time of use, and do so accurately. The characteristics of meters that are pertinent to market opening are that: (i) measure quantity; (ii) measure quantity flowing at intervals, e.g., every 15 minutes, every hour, or a continuum of real time and peak load; and (iii) information flows from the meter to the utility. A customer who wants to become eligible must have a meter that has at least the first two characteristics. This is necessary for a utility to have accurate measurement that enable the implementation of

different prices, such as peak, off-peak, and real-time (hour by hour), which in turn is essential for accurate customer billing. At this time, it is not practical to install multi-functional meters for households and small commercial customers; but load profiling can be done by load research, which involves extrapolating measurements of strategically placed meters to apply generally to households. For other commercial and industrial customers, there are too many variations to permit profiling: meters that measure quantity at intervals are necessary. The real time function is helpful for financial settlement of the system.

One of the driving principles of liberalization of the electricity market is that customers should pay for all the services they use and only for those services they use. The metering described above means that not only use of electricity can be identified, but also the market participants who cause imbalances and trigger a need for ancillary services can be identified, so that the costs can be allocated to those who cause the need for these services and benefit from them. When a customer leaves a tariff system with respect to the supply of electricity (kilowatt hours), the customer should only pay those costs it incurs while remaining connected to the distribution networks; if there is inappropriate metering, the utility will not have sufficient information to accurately know what costs are caused by which customers. This can result in the utility absorbing costs that actually belong to customers and vice versa. Further, the measurement information must be verifiable and remain available to customers for a determined period of time.

1.2. Metering Status and Effectiveness *(See full text of MWG inputs in Annex 1)*

- The status and characteristics of metering in each of the regulator's jurisdictions:
 - SERC: (i) Transco has installed multifunctional remote reading meters; (ii) Power Utilities have not installed appropriate meters at all connection points with Transco; (iii) Since Transco and the ISO have not agreed on the measurement of data flowing from meters installed in the transmission network to the ISO dispatching center, the ISO cannot perform its function regarding ancillary services and settlements; (iv) SERC obliged Transco, the ISO and generators (EPs) to install/resolve metering issues by October 31, 2010.
 - RSERC: (i) More than 99% of meters are traditional, inductive meters that are not appropriate for the successful functioning of the electricity market. ERS commenced a pilot project to install multifunctional remote reading meters; (ii) It is not clear whether a plan to install appropriate meters exists.
 - FERC: (i) More than 99% of meters are traditional, inductive meters that do not have required characteristics for successful functioning of the electricity market. EP BiH and EP HZHB have commenced pilot projects to install multifunctional remote reading meters; (ii) Metering codes, issued by both EPs, indicate the installation of multifunctional meters by 2015, for all industrial and commercial customers with demand above 23 kW.

- BiH documents (e.g., licenses, rules, conditions for supply) that prescribe characteristics of the measurement system on the transmission and distribution network:

- SERC: (i) Transmission system metering required characteristics are specified in the Grid Code, Market Rules and Rule on Connection; (ii) All transmission system users are required to have electronic metering capabilities with a possibility of registration and remote reading of consumption of active and reactive power every 15 minutes and peak power, and must have information stored for a period of 45 days.
 - RSERC: Distribution system users are required to have metering capabilities, with a possibility of registration of active, reactive power and peak power. Only medium voltage customers must have metering system with remote reading capability.
 - FERC: (i) The General Conditions for delivery and supply of electricity, Distribution Grid Code, and Rulebook on Metering points determine the metering system; (ii) These documents prescribe installation of multifunctional meters at all new customers whose capacity is over 23 kW. All other customers, including households, can have traditional meters that do not have remote control and reading. The deadline to replace current meters with new multifunctional meters at the connection points of customers whose capacity is over 23 kW is the year 2015. EPHZHB has the same rules as EPBiH, except EPHZHB's rulebook says all customers must have multifunctional meters.
- Do these characteristics meet basic conditions for successful market functioning as described above? If not, what are the plans for installation of the requisite meters?
 - SERC: Yes, the prescribed characteristics meet basic conditions for successful market functioning.
 - RSERC: No, the characteristics do not meet basic conditions for successful market functioning, and there are no plans to install them in reasonable period of time. There is no obligation of hourly metering for any category or group of customers.
 - FERC: Yes, the prescribed characteristics meet basic conditions for successful market functioning. The deadline to install appropriate meters is 2015.
 - Has load research for small commercial and household customers been done by the EPs or regulators? If not, what are the plans to conduct load research?
 - SERC: N/A.
 - RSERC: All distributors are obliged to perform load research. Comprehensive load research and profile development for characteristic groups of customers at the MH ERS level does not exist. RSERC obliged ERS to provide data related to the load research, but companies have not submitted the data completely.

- FERC: EPs have not done load research for small commercial and household customers. EPs do not have plans to undertake a load research, but FERC is planning to request the EPs to do that.

1.3. Metering Options and Solutions

The key technical requirement for market opening is appropriate metering and measurement, because proper metering device and accurate metering is the essential key for transparent operation of the network system. Only with proper and extensive metering can the system operators know with certainty what costs have been incurred by which customer and at what times; only with proper and extensive metering can eligible customers be assured that they are only paying for costs that they have incurred. If appropriate meters do not exist on the BiH system, a phase-in approach can be implemented to prioritize the purchase and installation of the necessary meters. Assuming that the metering system is adequate at the transmission and distribution network interfaces and with industrial customers on the transmission system, then adequate meters should be installed in a phased manner as follows:

- for 35 kV and 10 kV industrial customers; and
- for all commercial customers, but the smallest.
- For now, household and small commercial customers' loads can be profiled, so long as the proper meters are installed in the correct locations to enable load research to construct the profiles based on rational measurement data.

2. Unbundling

2.1 Unbundling Requirements for Market Opening.

Unbundling is the separation of Elektroprivreda (EP) activities into financially, functionally and/or legally separate business units. Since the transmission function has already been unbundled from the EPs, then, at a minimum, generation, distribution, and supply remain to be unbundled. In the market opening context, unbundling is important to enable full cost-based tariffs to assure that all customers, but especially Eligible Customers, only pay for EP services they use (and pay their proper share of such EP services that they do use). Further, even more extensive and detailed unbundling (deep unbundling) is necessary for transparency, commercialization and invoicing ancillary services, balancing, third party access, and pricing the services of the Supplier of Last Resort (SOLR) and default supply (all of which further discussed *infra*.) If this deeper unbundling to isolate the costs for the various services is not done by the EPs, then they will not be able to match cost causation with the appropriate customers and may end up absorbing costs that should be paid by customers, simply because of insufficient cost accounting.

2.2 Unbundling Status and Effectiveness *(See full text of MWG inputs in Annex 2)*

- What is the status and characteristics of unbundling in each of the regulators' jurisdictions?
 - SERC: Completed in the SERC area of jurisdiction.
 - RSERC: The Mixed Holding of Power Utility of Republic of Srpska, the parent company, is the company that is majority owned by RS Government (65%). There are eleven legally unbundled joint stock companies within the holding company, which are as follows: (i) Five generation joint stock companies (three hydro power plants and two thermal power plants with mines); (ii) Five distribution companies which, in their structures, are suppliers of tariff customers with electricity and each is independently running a business in its own electric distribution area; (iii) Research-development centre (IRCE). Most of the planned activities related to unbundling have been completed. Distribution and supply functions are still not unbundled but both functions are bundled in distribution companies.
 - FERC: Both EPs in FBiH are still vertically integrated companies. EPHZHB has done a restructuring study that is in accordance with the FBiH Action Plan on restructuring. EPBiH is performing a restructuring study, the outline of which differs from the FBiH Action Plan on restructuring.

- Which BiH documents (e.g., licenses, rules, conditions for supply) prescribe unbundling, and how is such defined? Do any documents need to be changed; and, if so, who will do it and by when?
 - SERC: N/A.
 - RSERC: The Action Plan of Republika Srpska for restructuring and privatization of the electric power sector and relevant RS and BiH laws; RSERC decision on Uniform Chart of Accounts.
 - FERC: The Action Plan of FBIH for restructuring and privatization of the power sector in BiH and relevant BiH and FBiH laws; FERC's General conditions for electricity supply obliges companies to sign individual contracts about mutual relations between generators, distributors, suppliers and other entities (Elektroprijenos BIH, Market operator – ISO and others).

- Even if basic unbundling has been done, what are the plans for deep unbundling?
 - SERC: N/A.
 - RSERC: Although the deadline for legal unbundling of distribution and supply of tariff customers is not defined in the existing primary and secondary legislation, it can be interpreted that the deadline for this unbundling is also the deadline for full market opening, namely 1 January 2015.
 - FERC: The FBiH Parliament should review the Action Plan on restructuring and adopt the new Electricity Law.

2.3 Unbundling Options and Solutions

Whereas the EPs are already embarked on plans for unbundling, with MH ERS having already completed the process other than legal unbundling a Distribution System Operator and Supply, the regulators can contribute to the process by engaging in several activities. The regulators can harmonize the rules that concern market opening and can form working groups with the EPs and other market participants to ensure buy-in from the sector. The output of these working groups should include rules that govern the unbundled processes and provide pro forma contracts for unbundled services.

3. Cost-based Tariffs.

3.1 Cost-based Tariffs Required for Market Opening

Tariffs should be fully cost-based: this means that tariffs should reflect the full cost of providing services and should be appropriately allocated to customer classes. If tariffs are not cost based and set below market prices, then customers will be unlikely to want to become eligible and depart from the regulated tariff system.

Another effect of non-cost-based tariffs is that investment is deterred. If tariffs are set below costs, investors will not want to invest in the sector because there will be inadequate returns. Specifically, generation must be fully unbundled so that if a customer becomes eligible and moves from one source of supply to another, it will no longer pay supply costs included in the tariff, but only those costs related to its use of the distribution network and ancillary services, if applicable.

Non-cost-based tariffs result in cross-subsidies (where some customers pay more than their costs to enable other customers to pay less.) Cross-subsidies should be reduced as much as possible. If the tariff for the supply of tariff customers is too low, no rational customer will ever leave the tariff system, and the system will suffer from uneven investment and lack of adequate investment. If the tariff for the supply of tariff customers is too high, customers will leave the system, resulting in the remaining customers having to absorb the costs that had been borne by the departing customers; this means that the tariffs will go up even more for the remaining customers. Such a result would also have potential adverse impacts on the economy overall and the attractiveness of doing business in BiH.

Generation development is a current hot topic in Bosnia and Herzegovina, and it is important that additional supply be planned for the future. New investments are planned by both Entities to commence in the near future. The recoverable costs (such as O&M, interest, depreciation and profit) of these new investments in generation that supplies tariff customers will be passed through to the tariff customers at full cost, so it can be expected that generation supply tariffs will rise. Cost recovery of new infrastructure makes the question of accurate and full cost tariffs an urgent one, not only for the current

governments that are planning the new projects, but also for future investors, who expect to recover costs through tariffs to ensure recovery of capital.

As a result of this expected rise in tariffs, some customers may decide to change to a third party supplier, finding electricity in the market at market price. Particularly in an environment of increasing numbers of Eligible Customers, generation investors or traders moving electricity in-country, it is of utmost importance that the transmission network tariffs, Independent System Operator (including System services) tariffs and distribution network tariffs are fully cost based and properly allocated to all customers.

If customers are required to acquire supply at the market, a complicated political situation can result. This is an approach that has been implemented by some countries in the EU and the region, based on the grounds that tariffs lower than the market inhibits competition. Politics aside, however, to force customers from the system requires fully accurate information on use and production. Thus, for successful market opening, there must be accurate cost information + time differentiated cost of production (metering) + political will to set tariffs at cost.

3.2 Status of Cost-Based Tariffs and Their Effectiveness *(See full text of MWG inputs in Annex 3)*

- What is the status of cost-based tariffs, including cross-subsidies, in each of the regulators' jurisdictions? What are the approximate amounts of cross-subsidies that need to be removed for each class or activity of each EP in order for tariffs to be cost-based without cross-subsidization?
 - SERC: From SERC's perspective, cost-based tariffs have been introduced where SERC has jurisdiction;
 - RSERC: Current tariffs, effective from January 1, 2010, cover all justified costs and rates of return: 2% for generation, 3,5 % for distribution and 3,5 % for supply. There are no cross subsidies between the EP's functions. There are no cross subsidies between distribution system users. The only subsidy exists between a major part of customers from the category of "other consumption at low voltage" whose capacity charge is not determined by metering (the second and third tariff group of other consumption - commercial customers) and customers from the category of households, in a way that customers from the category of other consumption subsidize household customers. These subsidies amount to approximately 17 million BAM, i.e., 7,29 %. These subsidies are gradually decreasing in each tariff proceeding.
 - FERC: The Rules on Tariff Methodology and Tariff proceedings has prescribed that full implementation of tariff methodology that enables establishment of cost based tariffs will be possible only after the transitional period, when the following most important conditions are met: (a) Accounting and functional unbundling implemented; (b) Regulatory Analytic Chart of the Accounts applied; and (c) Load research is possible for the purpose of allocation of the costs on categories and groups of consumption. The

Conditions for the establishment of cost-based tariff have not been met yet, since accounting and functional unbundling is only partially completed; the regulatory chart of accounts has been prescribed but not fully implemented; and the EPs have not performed load research. There are no subsidies for customers connected on high voltage in both EPs when applying the method of average generation-procurement price. Subsidies between other categories and groups of consumption are in the range -25% to +25% (based on the revenue requirement approved in the last tariff proceedings for both EPs in FBIH).

- Which BiH documents (e.g., licenses, rules, conditions for supply) prescribe cost-based tariffs?
 - SERC: N/A.
 - RSERC: Energy Law of RS; Rule on Tariff methodology and Tariff proceeding; Rule on Methodology to determine a connection fee.
 - FERC: Rule on Tariff methodology and Tariff proceeding.

- What documents or actions need to be taken in order to get cost-based tariffs ready for market opening? Who will do it and by when?
 - SERC: N/A.
 - RSERC: Defining the network tariff creates conditions for end users to obtain, under equal conditions, electricity from a supplier while the conditions of the network use are regulated. RSERC has issued its Rule on obtaining the status of Eligible Customers. Since RSERC analysis showed that the percentage of increase of the average electricity prices, incurred by introducing "feed-in tariff" for RES, for a standard customer that consumes 3500 kWh, is from 4,5% to 8,2%, the impact of incentive prices for RES should be taken into account when introducing and calculating cost-based tariffs.
 - FERC: Government FBIH should adopt the policy and guidelines for FERK's work. The policy of Government FBIH should contain all segments that follow establishment of cost-base tariffs including also effects of incentive tariffs for renewable, social policy issues etc.

3.3. Cost-based tariffs options and solutions.

It is critical that the Governments strongly support fully cost-based tariffs and work with the regulators to create a plan for a transition to cost-based tariffs and the removal of cross-subsidies over a limited and defined timeframe. While the creation of cost-based tariffs is the role of the regulators, they cannot effectively do this work without political support and endorsement of the effort by the politicians. Additionally, it is important that EPs complete their deep unbundling activities in preparation for market opening and to protect their interests. With detailed knowledge of the costs of all their services, EPs can protect themselves and their revenues by insuring that all costs are covered by the proper parties. Due to an environment of increasing numbers of Eligible Customers, generation investors, or traders importing electricity in country, the first priority in a defined

timeframe of achieving a cost based tariff should be the transmission network tariffs, Independent System Operator (including System services) tariffs and distribution network tariffs.

4. Generation Deregulation

4.1 Deregulation of Generation Required for Market Opening.

Since many customers will be going to the market in 2012, and all by 2015, the issue of the deregulation of generation when generation price may to move to market levels must be addressed by the Governments now, because of the lag time in implementing policy. Even though the Treaty and regulations have set the date for customers to go to the market, how this issue is resolved vis-à-vis generation located in BiH is a policy question, so the Governments must address whether and when BiH generation should be deregulated.

In the open market, the prices that customers pay for generation reflect the real-time economic cost of electricity, not the accounting cost. This is how all other commodity markets operate, and a genuinely open electricity market replicates as closely as possible commodity markets. In Bosnia and Herzegovina, the embedded, accounting cost of generation is, on an average price basis, less than the economic, market price. However, the cost of the ambitious development program for increasing generation capacity in BiH must be kept in mind: the cost of the plants that is passed through to supply tariff customers, will, as previously described, result in a generation price most likely moving toward that of the market of its own accord.

4.2 Status of Deregulation of Generation *(See full text of MWG inputs in Annex 4)*

- What is the status of deregulation of generation in each of the regulators' jurisdictions. Has there been any discussion of this except internally?
 - SERC: - N/A.
 - RSERC: RSERC plans amendments to the Rule on Tariff Methodology regarding determination of generation prices for tariff customers as one step to generation deregulation but no official discussion has taken place to date.
 - FERC: There have been no activities considering deregulation of generation, insofar as FERC knows.

- Which, if any, BiH documents (e.g., laws, rules) pertain to deregulation of generation?
 - SERC: - N/A.
 - RSERC: - N/A.
 - FERC: Electricity Law in FBIH, Art. 8, prescribes the gradual introduction of the electricity market until full liberalization, pursuant to energy policy and

the reform of the energy sector and enforcement acts, including the rules on regulation of the electricity market;

- What documents need to be changed in order to get ready for deregulation of generation?
 - SERC: - N/A.
 - RSERC: It is particularly important that structures in charge of the electric power policy – Governments and Parliaments – have a clear market orientation; and other stakeholders, regulated companies, regulators and customers understand and implement the policy.
 - FERC: - N/A

4.3 Deregulation of Generation Options and Solutions.

There are several ways to deregulate generation. The most conservative way is to deregulate generation over a defined period of time and adjust supply prices to market levels over the same period of time. (The ramifications of this approach are discussed in the last paragraph of section 3.1 above.) Another approach is to deregulate generation all at once and share the profit (which occurs when moving from below market prices to market prices) with customers over time, in an attempt to keep customers whole, since the customers through tariffs have paid for the generation.

Each of these options could create a profit, so the Governments' policies must determine what is to be done with the profit. Here, there are also a number of options: the owners can retain the profit; the regulators can designate the use of the profit; all customers can receive the benefit of all the profit through reduced distribution, transmission or other network charges in an amount equal to the profit; or customers can receive a benefit of a portion of the profit as determined by the Government or the regulators.

5. Vulnerable Customer Plan

5.1 Vulnerable Customer Plan Required for Market Opening.

The lack of a Vulnerable Customer Plan in the Federation makes the implementation of cost-based tariffs difficult. Currently, commercial tariff customers are fully subsidizing household customers, which is at best economically inefficient. The Republika Srpska has already instituted a Vulnerable Customer Plan. In many developing countries, tariffs have been set below costs in an effort to protect vulnerable citizens. Protection for vulnerable customers is a political and social issue and should not be a problem for a utility to solve. Different approaches to the vulnerability issue are possible: general social support scheme (which is dominant in the Federation BiH) or energy-related support (as in the Republika Srpska).

5.2 Status of Vulnerable Customer Programs (See full text of MWG inputs in Annex 5)

- What is the status of energy-related vulnerable customer plans in each of the regulators' jurisdictions?
 - SERC: BiH Ministerial Council has adopted a Social Action Plan for Bosnia and Herzegovina where an action plan and time schedule to implement the Plan have been determined.
 - RSERC: RS has been implementing a targeted program to protect vulnerable electric customers several years now.
 - FERC: FBiH does not have energy-related support scheme but has a general social support scheme.

- Which BiH documents (e.g., laws, rules) pertain or should pertain to energy-related vulnerable customer programs?
 - SERC: The BiH Ministerial Council has adopted a Social Action Plan for Bosnia and Herzegovina
 - RSERC: In September 2007, pursuant to a conclusion of the RS National Assembly, a working group developed a social program to protect vulnerable customers. The Energy Law, Art. 5, para. (2) defined that the energy development strategy should also, among others, define measures for providing protection of end users as well as mechanisms and measures for protection of vulnerable customers in the conditions of the liberalized market.
 - FERC: FBiH does not have energy-related support scheme but has a general social support scheme.

- What documents need to be created in order to develop a Federation vulnerable customer program and maintain the RS vulnerable customer program? Who is responsible for developing the Federation program?
 - SERC: BiH Ministerial Council has adopted Social Action Plan for Bosnia and Herzegovina.
 - RSERC: It is necessary to create a document that will define inhabitants who merit social support. Also, rules of a behavior toward customers who are in difficult living conditions (e.g., sick, invalids, disabled persons) are needed;
 - FERC: The issue of vulnerable customers should be regulated with a set of laws (prescribing conditions for obtaining the status of vulnerable customer, register of vulnerable customers, prescribing the line item in the budget for financing vulnerable customers) FBiH does not have energy-related support scheme but has a general social support scheme.

- How have vulnerable customers been defined in the RS?
 - SERC: - N/A.

- RSERC: The working group for development of the social program defined, as vulnerable customers the following categories:
 - Retired persons with lowest pensions,
 - Persons who receive permanent financial assistance,
 - Persons who need support for the help and care of other persons,
 - Beneficiaries of the support for mothers, and
 - Beneficiaries of the support for children.
- FEREC: N/A.

5.3. Vulnerable Customer Programs Options and Solution

A vulnerable customer program must be developed by the Federation and the already-funded vulnerable customer in the Republika Srpska should be continued. With regard to the development of the vulnerable customer program, the Federation must identify those customers qualified to receive support for electricity bills and fund the program from the government budget.

Many think that block tariffs are a simple solution to fund vulnerable customers, since the perception is that those with low usage are vulnerable (i.e., low income); however, studies have shown that this assumption is false. For example, if block tariffs were instituted, some well-to-do customers who work long hours and are not home during the day would be getting the same subsidy from block tariffs as vulnerable customers. Further, weekend homes would also be eligible for block tariffs because of low usage, but the owners of such homes are far from vulnerable. As a result, it is clear that vulnerable customer programs must be funded from the government budget, not from the coffers of the utility or from block tariffs.

6. Supplier of Last Resort (SOLR)/Default Supplier/Customer Switching

6.1 SOLR, Default Supplier, and Customer Switching Required for Market Opening

Both the SOLR and the Default Supplier are concerned with the security of an Eligible Customer's supply, although they have different functions. It is possible although not necessary, for the same company to perform the role of both SOLR and Default Supplier. The role of the SOLR is to stand ready to supply an Eligible Customer if its supplier fails to provide supply as contracted. Typically, the SOLR's interim supply obligation is limited in time, with supply purchased by the SOLR pursuant to tender. The SOLR must search for least cost supply and recovers all of its costs.

The role of a Default Supplier is broader. When all customers are Eligible Customers but fail to choose a supplier, the Default Supplier serves those customers that do not choose. The prices can be based on a tariff or a form of tender. The Default Supplier concept raises customer switching issues.

The intelligent Eligible Customer will only want to go to the market voluntarily when the market price is lower than the tariff prices; similarly, when the market price rises above the tariff price, then the customer will want to switch back to being a tariff customer. This is actually “gaming the system” and must be controlled, since an Eligible Customer does not depart the tariff system with no impact on the remaining customers. In fact, that portion of the system generation costs that was borne by the Eligible Customer must be picked up by the remaining customers, and the entire cost system is jolted again when an customer switches back to the system. An orderly, clear, detailed and cost-based set of rules governing this process is essential.

6.2. Status of SOLR/Default Supplier Programs *(See full text of MWG inputs in Annex 6)*

- What is the status of SOLR/Default Supplier/Customer Switching in each of the Entity regulators’ jurisdictions?
 - SERC: - N/A.
 - RSERC: Rule on getting status of Eligible Customer defines the right of customers to have a Supplier of Last Resort in the transitional period which is valid until 1 January 2012. Article 23 of this Rule states that the Regulatory Commission shall timely, before expiry of this deadline, define the right of the end user to "Universal service of electricity supply" including the right to have a Supplier of Last Resort.
 - FERC: The FERC Rule on Obtaining Eligible Customer’s Status provides that after the transition period FERC will, before the expiration of the deadline, prescribe the right of a customer to a Supplier of Last Resort and the conditions under which the customer may realize that right, as well as the right for electricity supply service at regulated prices.

- Which BiH documents (e.g., laws, rules) pertain to these issues?
 - SERC: N/A.
 - RSERC: Rule on Obtaining the Status of Eligible Customer.
 - FERC: Rule on Obtaining Eligible Customer’s Status.

- What documents need to be created in order to develop appropriate rules for SOLR, default suppliers and customer switching? Who is responsible for developing them and what is the timeline, if there is one?
 - SERC: N/A.
 - RSERC: Legal framework and related regulations have to be developed to enable households and small commercial customers to get supply under “Universal Service” after the market opening (1 January 2015), which means these customers are provided with electricity supply of the standard (specified) quality at clearly benchmarked, transparent and non-discriminatory prices from a default supplier.

- FERC: The Government FBiH should define in an electricity policy the status of SOLR/Default supplier, based on which it can adopt certain rules.

6.3. SOLR/Default Supplier Options and Solutions

Price methodologies must be developed by the regulator for both the SOLR and Default Supplier. Generally, methodologies for the SOLR provide requirements for a tender for supply and allow for a straight pass-through of supply costs to the customer. This allows the SOLR to buy electricity on the market on a month-to-month basis and pass the cost through to customers; there is no regulatory risk for the SOLR with this methodology.

The price methodology for a Default Supplier is less straight forward and must take into account the customer switching issues described above. The Default Supplier methodology also generally requires tenders for supply, but other factors can be taken into account. The regulator who is developing a Default Supplier methodology must have an understanding of the system impact of customer switching on remaining customers, both when a customer leaves the tariff system and returns; and the regulator must remain mindful of regulating undesirable customer switching. For example, the tariff can track market price, and restrictions can be imposed on customers who leave the system, such as requiring that the customer remain out for a certain period of time when leaving the system or remain in the system for a certain period of time when returning. Exit fees can be charged to compensate for the additional costs caused to other customers.

The removal of cross subsidization is also important also from the Default Supplier price point of view. If a Default Supplier is in place and all customers are required to enter the market (as is currently the case in BiH for all non-households customers as of 2012, and all customers as of 2015), and if cross-subsidies have not been removed from the tariff, then a tariff shock can result for power utilities and those customers who are Eligible Customers but who do not choose to leave the system. Eligible Customers would fall under the care of a Default Supplier, where the Default Supplier's prices are at or close to the market price. It is estimated that in the Federation, as of April 2010, the cross-subsidy is approximately 25%, while in the Republika Srpska, the cross-subsidy is 7,29%. Under these conditions, the tariff impacts would be substantial. If this cross-subsidy still exists in 2012 and 2015, then other considerations will have to come into play in developing the pricing methodology for the Default Supplier, such as a two-stage move toward market prices.

7. Contracts and Clarification of Processes

7.1. Contracts and Clarification of Processes for Market Opening

Underlying all Eligible Customer processes is deep unbundling, a process conducted by the regulated utilities to break the processes down into many sub-components, regulated either by contracts or regulated terms and conditions. Clarity is needed as to who

supplies the service, delivery of the services, billing, settling the price, payment and distribution of funds from the payment.

Proper pro forma commercial contracts are required for a transparent market and to prevent discrimination among similarly situated customers. The contracts should be public and verifiable. Such contracts define key terms and responsibilities; allocate risk and responsibilities; and provide the terms of financial settlement. There is an array of six commercial contracts that are required for market opening, four of which are not yet developed:

Type of Contract	Status
Power Purchase Agreement	Negotiated
Ancillary Service Agreement	Pro forma, needed
Balancing Agreement	Pro forma, needed
Grid Access Contract	Pro forma, needed
Financial Settlement Contract	Pro forma, needed
Connection Contract	Current contracts adequate

Ancillary Services Agreements: Usually the generator agrees to supply ancillary system services (critical for operating the network) through the system operator. The contracts contain terms for the scope of service, price and duration of the service. Ancillary services must be deeply unbundled so that the utilities can precisely identify of the market participant(s) that caused the need for ancillary services, the activities that created the need for the ancillary services, and the resulting cost. This way, those who caused the costs to be incurred will be responsible for them.

Balancing Agreement. Balancing includes issues similar to those for ancillary services and requires transparency on who is short or long, with nondiscriminatory treatment of all in the system, and with a transparent and competitive way to obtain balancing quantities. It is critical that measuring between the generation/network and distribution/customer is precise and accurate for imbalance calculation. Buying the requisite supply for balancing should also be least cost.

Grid Access Contract. Discrimination by network owners against third party generation is common, so grid access contracts are needed to ensure that there is transparency and nondiscrimination for access to the grid. It is particularly important that these contracts are prescribed or approved by the regulator and posted publicly on the regulator’s website.

Financial Settlement Contract. Financial settlement is an agreement for prompt, cash payment, on a verifiable basis, when ancillary services, balancing and other services for the networks are provided. Separating payment from other processes to assure prompt payment helps to improve the confidence of the public in the fairness and honesty of the system.

7.2. Status of Contracts and Clarification of Processes (See full text of MWG inputs in Annex 7)

- What is the status of each of the Entity regulators' jurisdictions on pro forma contracts?
 - SERC: See answer to next question.
 - RSERC: The template, namely the content of the contract on connection/supply/access, has been prescribed by General Conditions for delivery and supply of electricity. The obligation to have the contract concluded is prescribed by General Conditions. Contracts on connection/supply/access are being concluded with end users/network users.
 - FERC: EPs obliged to submit draft contracts on connection/supply/access for FERC's review.

- Which BiH documents (e.g., laws, rules) pertain to these issues?
 - SERC: (i) SERC's Decision on Determination of Tariffs for Ancillary Services, dated April 27, 2010, obliges ISO BiH and the EPs in BiH to propose an Agreement on ancillary services defining precise volumes of secondary and tertiary reserves of the generators that ISO BiH shall engage in accordance with the criteria defined no later than October 31, 2010. ISO BiH shall prepare bills for all ancillary services on a monthly basis; (ii) In December 2009, SERC approved a new form of standard contract on responsibility for balancing; (iii) In December 2006, SERC issued the Rules of Third Party Access to the Transmission System.
 - RSERC: General conditions for delivery and supply of electricity define the content of the connection/supply/access contracts. The distributor is obliged to conclude the contract on access to the network with all customers connected to the distribution network apart from household customers. The supplier of tariff customers is obliged to conclude contract on supply with the customer.
 - FERC: General conditions for delivery and supply define the content of following contracts: Contract on connections; Contract for usage of the distribution grid and Supply Contract. FERC obliged EPs to sign contracts between generation, distribution and supply function that belong to EP as well as contracts with Transco and ISO.

7.3. Contracts and Clarification of Processes Options and Solutions

In order to develop properly all of the contracts that are needed for market opening, sufficient information is needed from the EPs, system operators, the Transmission Company, generators, customers and other market participants. There are two ways for regulators to handle the contract dilemma: one is for the regulators to develop detailed rules that describe the essential terms, with broad outline contracts annexed to the rule,

and the other is to develop detailed contracts with broader references in the rules. Whichever method is adopted by the regulators, appropriate pricing structures for each service must be prepared.

8 Procurement Law Revisions

8.1. Procurement Law Revisions for Market Opening

The State Procurement law contains provisions that subject publicly-owned utilities to certain requirements that other market participants are not subject to, such as long and involved tender processes, which include, for example, the procurement of electricity for the purposes of resale (supply). This requirement is not objectionable in other areas of public procurement, but with regard to the companies' participation which are licensees for trade at the same time in the market, it is overly restricting compared to other companies which possess the licenses for the same activities and this condition does not restrict them. The electricity companies must be able to act to procure or sell electricity on the market at a moment's notice to manage the operation of the network and provide the services required by an electricity market.

8.2 Input to this Procurement Law Section, if any *(See full text of MWG inputs in Annex 8)*

- SERC: N/A.
- RSERC: EP as a trader and a supplier deals with both, selling and buying electricity. In some cases two companies conduct tendering processes in the same time, one to buy and another to sell electricity which additionally restricts competition. It should be checked if Public Procurement Law does not request tendering procedure to be applied if wholesale market exists.
- FERC: N/A.

8.3. Procurement Law Revisions Options and Solutions

An analysis of the Procurement Law restrictions and draft of required amendments must be prepared. The regulators and market participants need to join efforts to obtain the necessary amendments from the Parliament. In fact, customers will benefit from changing the Procurement Law, because this will operate to lower costs.

V. NEXT STEPS

Five of the eight activities listed in the table entitled "Priorities and Responsible Parties – Next Steps" on p. 7 involve the need for some Government policy action in the areas of Unbundling, Cost-based Tariffs, Deregulation of Generation, Vulnerable Customer Programs and the amendment of the Procurement Law.

There are two circumstances that contribute to the urgent need for action on the part of the BiH Governments: the fast-approaching market opening for all customers but households in 2012, and the passthrough of the cost of the new generation projects and the renovation of existing plants result in tariff increases in the near future.

To ensure that the market opening occurs in a controlled manner that ensures that both the customers and the utilities are properly protected, it is requested that the Governments act to designate policy in the following areas:

The Federation Ministry and Government

1. Unbundling. Encourage and ensure the unbundling of EPBiH and EPHZHB as soon as practicable, so that deeper, transparent unbundling can commence for all market-related services and appropriate tariff methodologies, all in time for the 2012 market opening.
2. Vulnerable Customer Program. Work with the proper Governmental agencies to ensure the development of a vulnerable customer program that will support the vulnerable citizens when the household's tariffs increase with the removal of cross-subsidies and passthrough of new development project costs.

State Government

3. Procurement Law. Support the passage of amendments to the Procurement Law that will enable the utilities to participate in the electricity market to quickly procure and sell quantities of electricity for secure operation of the electricity system.

All Governments

4. Cost-based tariffs. Issue regulatory policy that fully supports cost-based tariffs.
5. Deregulation of Generation. Issue policy that provides direction with regard to the deregulation of generation.

The regulators stand ready to advise and assist the members' respective Ministries and Governments with regard to above.

In the meantime, the regulators and the EPs can and will focus more intensive efforts on measurement; SOLR, default supplier and customer switching issues; and work on pro forma contracts for third party access, ancillary services, balancing and financial settlement.