



## **Scope of Work**

### **BiH REAP Case Study: Are Preconditions for Market Functioning Met?<sup>1</sup>**

#### **Background:**

The Market Working Group (MWG) was originally jointly established by the three regulatory commissions to develop a Policy Paper on how to eliminate impediments and create preconditions for successful market functioning in BiH. The MWG and subgroups have discussed the current status of certain preconditions and impediments for market functioning and found that there is disagreement as to whether these preconditions have been met or not. REAP recommends that these uncertainties be eliminated by the three regulatory commissions performing a Case Study with REAP participation.

This approach is, in fact, a gap analysis that should result in recommendations to develop/change/improve rules, processes and contracts in order to create circumstances for successful market functioning.

#### **The Case Study:**

##### **Hypothetical Facts:**

In the case study, the following participants will be involved in scenarios that would be run on a base case:

- Independent supplier
- 110 kV eligible customer
- 35 kV eligible customers
- 10 kV eligible customers
- Balance Responsible Parties
- ISO
- Transco
- Distribution System Operators

Supplier: A Third Party Supplier, other than the incumbent, has a trading and supply license and plans to supply some industrial customers in BiH.

Customers demand, capacity and cost: A Third Party Supplier, who has a trading and supply license, contracts to supply: Cementara Kakanj 100 %, 30% of 35 kV EP BiH customers, 30 % of 10 kV ERS customers and 30 % of 10 kV EPHZHB customers.

The total quantities are: 80,6 GWh (Cementara Kakanj) + 100,7 GWh (35 kV EPBiH) + 129,1 GWh (10 kV ERS) + 42 GWh (10 kV EPHZHB) = 352,4 GWh.

This is an average yearly capacity of approximately 40,2 MW, the cost of which is 1.174.666 Euros/month at the wholesale market price of 40 Euro/MWh.

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<sup>1</sup> This document is made possible by support from the American People sponsored by the United States Agency for International Development (USAID). The contents are the sole responsibility of the author/s and do not necessarily reflect the views of USAID or the United States Government.

Metering: Cementara Kakanj has interval multifunctional meters, while some 35 kV and 10 kV customers have simple meters that register the monthly peak demand, and the others have interval, multifunctional meters.

**Recommended Scenarios:**

A. Is supply under the above-described facts possible, given the answers to the following questions?

1. Rules on **Licensing** processes:

- a. Are the required qualifications and filing requirements for obtaining a license adequate in an open market environment?
- b. Is the process and time to get the license clear, complete and transparent and the timeframes efficient for a competitive market? Describe the process and time frames step by step .
- c. Do the Electricity/Energy Laws and Rules that concern licensing contain any preference for BiH incumbents over Third Party Suppliers?
- d. As an exercise, track a license application and attachments and award to ensure the process is clear, adequate and transparent.

2. **Standard contracts:** do they exist?

a. General issues:

- i. Can a Third Party Supplier and customers identify what contracts are to be signed and with whom? Where are these items defined? Present documents, articles and standard contracts that Third Party Supplier and customers have to sign to secure usage of transmission and distribution network, ancillary services, balancing energy, connection, third party access, SOLR service?.
- ii. Is the order and timing to sign all contracts clear, logical and transparent (i.e., the Third Party Supplier can easily locate contracting requirements somewhere?) Describe the process.

b. Power Purchase Agreement

- i. Is the process and time to sign a power purchase agreement well described and transparent? Describe the process step by step and time frames?
- ii. Is it necessary to prescribe the basic content of the agreement in a regulatory document? Is it prescribed and where?
- iii. If a regulatory prescription exists, do the regulations describe all important standard elements of the supply contract? Where exactly?
- iv. Should there be a standard contract, with standard, noncommercial elements approved by the regulator?
- v. Amend/change/develop/identify template contract.

c. Ancillary services Agreement

- i. Does the established ancillary service function work appropriately? If not, what specifically is not functioning?

- ii. What do stakeholders think about existing ancillary service function and how do they see appropriate design of the ancillary services.
  - iii. Describe adequate ancillary services design.
  - iv. What steps need to be taken to implement an adequate ancillary services design?
  - v. Review the design with stakeholders.
  - vi. Does a standard template contract exist? Does the contract contain all items which clearly define commercial and technical relations between the parties thereto?
  - vii. Do the Third Party Supplier and customer know the price they will pay for ancillary services and are these prices cost reflective? Will the Third Party Supplier/customers pay only the cost they cause to the system?
  - viii. Develop a standard template contract for the agreed ancillary services design.
  - ix. Should the standard, non-commercial terms of the ancillary services contract be approved by the regulator?
- d. Balancing Agreement
- i. Does balancing service exist? Describe.
  - ii. Do technical conditions exist to implement market-based balancing service, meaning balancing service based on competition between prospective service providers? Describe the technical preconditions and market-based balancing service.
  - iii. If it exists, check whether the balancing service is adequately designed, described and regulated?
  - iv. Is the process and time frame for signing the balancing contract well described and transparent? Describe the process step by step and the time frame?
  - v. Does a standard template balancing contract exist and does it provide for all necessary issues? Describe the necessary issues and develop a template contract.
  - vi. Should the standard, non-commercial terms of a balancing services contract be approved by the regulator?
- e. Contract to use the transmission network
- i. Is the process and time frame to sign a contract to use the transmission network well described and transparent? Describe the process step by step and the time frame?
  - ii. Does the standard template transmission contract exist and does it provide for all necessary issues? Describe the necessary issues and develop a standard template contract.
  - iii. Should the terms of the Use of the transmission network contract be approved by the regulator?
  - iv. Is Third Party Access included in the connection agreement. Should it be?
- f. Contract to use distribution network
- i. Is the process and time frame to sign a contract to use the distribution network well described and transparent? Describe the process step by step and the time frame?

- ii. Does the standard template distribution contract exist and does it provide for all necessary issues? Describe the necessary issues and develop a standard template contract.
    - iii. Should the terms of the use of the distribution network contract be approved by the regulator?
    - iv. Is Third Party Access included in the connection agreement? Should it be?
  - g. Connection Contract for transmission network
    - i. Is the process and time frame to sign a connection contract to the transmission network well described and transparent? Describe the process step by step and the time frame.
    - ii. Does the standard template connection contract exist and does it provide for all necessary issues? Describe the necessary issues and develop a standard template contract.
    - iii. Should the transmission connection contract be approved by the regulator?
  - h. Connection Contract for distribution network
    - i. Is the process and time frame to sign a connection contract to the distribution network well described and transparent? Describe the process step by step and the time frame.
    - ii. Does the standard template connection contract exist and does it provide for all necessary issues? Describe the necessary issues and develop a standard template contract?
    - iii. Should the distribution connection contract be approved by the regulator?
- 3. **Measurement**: Is the existing metering system adequate to ensure each customer pays only for the costs it causes?
  - a. Is the procedure to read measurement data, collect the data, process it and send bills for payment, clear and transparent?
  - b. Can the data be easily sent to third party suppliers?
  - c. Is there a process in place for dispute by the third party supplier customers that must be worked back into the EP system? Is there a process for third party supplier disputes?
  - d. Is the process by which the third party supplier collects money and pays for network charges clear and transparent and possible to monitor or audit? Alternatively, is the process to collect money and share it with all service providers clear, transparent and possible to monitor or audit?
  - e. Can the existing system measure all costs that customers will be billed by their Supplier, with the Supplier paying the network costs for their customers?

**B: Default Supplier:**

The market opening default supplier mechanism has been adopted by the regulators.

- 1. Is the Default Supplier process specific, clear and understandable?
  - a. Are the customers informed of what is the process and what will happen in what timeframe? If not, who is to inform them and when?
  - b. Are the EPs organized with proper processes for the Default Supplier function?

- i. Licenses?
  - ii. Processes for moving customers to Default Supplier ready?
2. Is the pricing methodology clear, transparent and implementable? If not, specifically what are the issues?
3. Are the specific steps for customer switching out of the Default Supplier clear and transparent? Can customers return to the Default Supplier after being supplied by a third party supplier?
  - a. What action must a third party supplier/customer take when the customer wants to be supplied by a third part supplier?
    - i. Notifications
    - ii. Transfer of customer information to third party supplier
    - iii. Metering
    - iv. Billing for final payment to Default Supplier
  - b. Under what conditions can a customer come back to the Default Supplier from a third party supplier, if any?
    - i. If the customer returns to the Default Supplier, what processes need to be followed
    - ii. Transfer of customer information to the Default Supplier
    - iii. Final payment to the third party supplier.

### **C. SOLR**

The Third Party Supplier notified the regulator that it will go out of business in three months. To ensure that event will not endanger supply of the Third Party Supplier's customers the following issues should be checked:

1. Is the SOLR process specific, clear and understandable? Who notifies whom? When? How?
  - a. Is the Third Party Supplier obliged to notify anyone when it runs into serious financial difficulty and what constitutes financial difficulty? What is the timeframe for such notification?
  - b. Is the SOLR regulated?
  - c. Describe the process and cite the documents.
  - d. Is the process time schedule sufficient to ensure the customer will be supplied continuously without interruption?
  - e. Identify the gaps and propose measures to eliminate obstacles.
  - f. Describe the revised process.
2. Are the specific steps for the customer switching process to the SOLR clear and transparent?
  - a. What action should the current Third Party Supplier take when it goes out of business?
  - b. What action should the SOLR take when a new customer requires service?
  - c. What must customers do when their Third Party Supplier goes out of business?
  - d. Among other things, how are measurements and billing accomplished to switch to the SOLR and then back to another supplier?
  - e. Identify gaps and propose measures to eliminate obstacles.
  - f. Describe the revised process.

Who will supply customers as SOLR?

- a. What will the process be for choice/nomination of the SOLR?
4. Who, other than the incumbent could be SOLR? Which concrete characteristics must the SOLR possess to get a license for SOLR service?
    - a. Is the process and time frame to become SOLR well described and transparent? Describe the process step by step and the time frame?
    - b. Are the Electricity/Energy Laws harmonized with the Rules allow everyone who meets the requirements defined in documents, to apply for SOLR role?
    - c. Describe the preconditions to get a license and do an exercise to hypothetically apply them to a Third Party Supplier other than the incumbent who applies to serve as the SOLR?
    - d. Are the technical preconditions described in the Rules for SOLR licenses? Are they concrete and transparent? Describe the technical preconditions for this scenario?
    - e. Are the financial preconditions described in the Rules to get SOLR licenses concrete and transparent? Describe financial preconditions for this scenario?
    - f. Who chooses the SOLR? Does the regulator or Ministry consider the application and award the license?
  5. What is the selection process for the SOLR?
    - a. Describe the process on the basis of the existing laws and regulations.
    - b. Identify gaps if they exist.
    - c. Determine changes in laws and regulations needed to create a transparent and straightforward procedure to select SOLR.
  6. How will SOLR prices be determined for the different customers?
    - a. Describe the procedure and methodology/criteria to determine SOLR prices in BiH.
    - b. Identify gaps to determine SOLR prices.
    - c. Determine the methodology/criteria to set SOLR prices.
    - d. Determine needed changes in the laws and regulations to create a transparent and straightforward procedure to determine an SOLR prices.
  7. Is the existing metering system adequate to ensure each customer pays only for the costs it incurs when served by the SOLR?
    - a. Explain the costs that a customer causes to the system.
    - b. Explain which kind of metering system is needed to enable each customer to pay only the costs that it causes.
    - c. Propose an interim solution in light of the EPs' plans to install multifunctional meters.

The above are only a few examples are a few of multiple scenarios that could be run in the case study when the group conducting the case study is formed. It is recommended that the case study group consist of core members, with individuals from the Regulators, Ministries and EPs be added as needed.

The product of the case study will be a gap analysis to identify missing processes, contracts and technical issues for successful market functioning, along with recommended actions to fill

in the gaps. The case study should give the regulators and staff a clear, realistic and unbiased view of the actual status of the sector's readiness for market opening and directions on what action needs to be taken.

***The next steps that should be undertaken in regard to this task are:***

- To establish a Group in which REAP will participate that will work on this task
- The Group should develop a Base Case for the Case Study and design different scenarios
- In addition, the Group should:
  - Analyze and design a detailed Work Plan, including the Group's participants
  - Run different scenarios, and
  - Write a gap analysis as the result of running of different scenarios.

## Attachment 1:

### ***Basic Tables on the customers, Third Party Supplier and contracts that the Group should approve:***

The following tables present further development of the basic case scenario where customer demand, metering systems and the contract to be signed are presented.

Customer demand, capacity and cost: The Third Party Supplier who has a trading and supply license, contracts supplies: Cementara Kakanj 100 %, 30% of 35 kV EP BiH customers, 30 % of 10 kV ERS customers and 30 % of 10 kV EPHZHB customers.

The total quantities are: 80,6 GWh (Cementara Kakanj) + 100,7 GWh (35 kV EPBiH) + 129,1 GWh (10 kV ERS) + 42 GWh (10 kV EPHZHB) = 352,4 GWH.

This is the average yearly capacity of app 40,2 MW, the cost of which is 1.174.666 Euros/month at the wholesale market price amount of 40 Euro/MWh.

Metering: Cementara Kakanj has interval multifunctional meters, while some 35 kV and 10 kV customers have simple meters that register the monthly peak demand, and the others have interval, multifunctional meters.

### Customers demand and metering characteristics:

#### EP BiH

Customers	metering	Voltage level kV	demand GWh
C <sub>CeKa</sub>	interval multifunctional	110	80,6
C <sub>EPBiH 1-35</sub>	interval multifunctional	35	15
C <sub>EP BiH 2-35</sub>	interval multifunctional	35	22
C <sub>EP BiH 3-35</sub>	interval multifunctional	35	20
C <sub>EP BiH 4-35</sub>	interval multifunctional	35	13
C <sub>EP BiH 5-35</sub>	interval multifunctional	35	19
C <sub>EP BiH 6-35</sub>	interval multifunctional	35	8
C <sub>EP BiH 7-35</sub>	simple	35	3,7
Total			181,3

#### EP HZHB

Customers	metering	Voltage level kV	demand GWh
C <sub>EP HZ 1-10</sub>	interval multifunctional	10	6
C <sub>EP HZ 2-10</sub>	simple	10	3
C <sub>EP HZ 3-10</sub>	interval multifunctional	10	7
C <sub>EP HZ 4-10</sub>	simple	10	3
C <sub>EP HZ 5-10</sub>	interval multifunctional	10	5
C <sub>EP HZ 6-10</sub>	interval	10	5

	multifunctional		
C <sub>EP HZ 7-10</sub>	interval multifunctional	10	5
C <sub>EP HZ 8-10</sub>	simple	10	1
C <sub>EP HZ 9-10</sub>	simple	10	4
C <sub>EP HZ 10-10</sub>	simple	10	3

### EP RS

Customers	metering	Voltage level kV	demand GWh
C <sub>EP RS 1-10</sub>	interval multifunctional	10	6
C <sub>EP RS 2-10</sub>	interval multifunctional	10	13
C <sub>EP RS 3-10</sub>	interval multifunctional	10	7
C <sub>EP RS 4-10</sub>	interval multifunctional	10	13
C <sub>EP RS 5-10</sub>	simple	10	5
C <sub>EP RS 6-10</sub>	simple	10	5
C <sub>EP RS 7-10</sub>	simple	10	5
C <sub>EP RS 8-10</sub>	interval multifunctional	10	11
C <sub>EP RS 9-10</sub>	interval multifunctional	10	8
C <sub>EP RS 10-10</sub>	interval multifunctional	10	7
C <sub>EP RS 11-10</sub>	interval multifunctional	10	6
C <sub>EP RS 12-10</sub>	interval multifunctional	10	8
C <sub>EP RS 13-10</sub>	interval multifunctional	10	13
C <sub>EP RS 14-10</sub>	interval multifunctional	10	7
C <sub>EP RS 15-10</sub>	interval multifunctional	10	15
Total			129

*Contracts that should be signed:*

### EP BiH

	PPA	ASA	BA	Contract to use transmission network	Contract to use distribution network	Connection Contract for transmission	Connection Contract for distribution
C <sub>CeKa</sub>							
C <sub>EPBiH 1-35</sub>							
C <sub>EP BiH 7-35</sub>							

### EP HZHB:

	PPA	ASA	BA	Contract to use transmission network	Contract to use distribution network	Connection Contract for transmission network	Contract for distribution network
C <sub>EP HZ 1-10</sub>							
C <sub>EP HZ 4-10</sub>							

ERS:

	PPA	ASA	BA	Contract to use transmission network	Contract to use distribution network	Connection Contract for transmission network	Connection Contract for distribution network
C <sub>EP RS 1-10</sub>							
C <sub>EP RS 2-10</sub>							
C <sub>EP RS 5-10</sub>							

Third Party Supplier

	PPA	ASA	BA	Contract to use transmission network	Contract to use distribution network	Connection Contract for transmission network	Connection Contract for distribution network
C <sub>CeKa</sub>							
C <sub>EP BiH 1-35</sub>							
C <sub>EP BiH 7-35</sub>							
C <sub>EP HZ 1-10</sub>							
C <sub>EP HZ 4-10</sub>							
C <sub>EP RS 1-10</sub>							
C <sub>EP RS 2-10</sub>							
C <sub>EP RS 5-10</sub>							

## **Attachment 2:**

- **FBiH customers**
- **RS customers**
- **DC Brcko customers**

**(See next page.)**



## Regulatory and Energy Assistance

### GROUP I. Customers connected to transmission network and commercial customers with annual consumption in excess of 10 GWh.

GROUP I.	consumption 110 kV (GWh)	number of customers 110 kV	customers at 35 kV with consumption above 10 GWh (GWh)	number of customers at 35 kV with consumption above 10 GWh (kWh)	customers at 10 kV with consumption above 10 GWh (GWh)	number of customers at 10 kV with consumption above 10 GWh (GWh)	consumption of customers connected to transmission network and other customers with annual consumption above 10 GWh	number of customers connected to transmission network and other customers with annual consumption above 10 GWh
EP BiH	371	5	291	10	91	5	753	
EP HZHB	962	3	0	0	0	0	962	
<b>Total F BiH</b>	<b>1.334</b>	<b>8</b>	<b>291</b>	<b>10</b>	<b>91</b>	<b>5</b>	<b>1.716</b>	

### GROUP II. Customers to whom the capacity is not measured (Power permit issued to peak capacity greater than 23 kW) with annual consumption less than 10 GWh

customers at 35 kV voltage level

35 kV	consumption 35 kV (GWh)	number of customers 35 kV
EP BiH	31	38
EP HZHB	5	3
<b>Total F BiH</b>	<b>36</b>	<b>41</b>

customers at 10 kV voltage level

10 kV	consumption 2010. (GWh)	number of customers
EP BiH	582	607
EP HZHB	145	140
<b>Total FBiH</b>	<b>727</b>	<b>747</b>

commercial customers I tariff group

comm. I group	consumption 2010. (GWh)	number of customers
EP BiH	207	1.738
EP HZHB	122	1.241
<b>Total FBiH</b>	<b>329</b>	<b>2.979</b>

**TOTAL GROUP II.**

<b>GROUP II.</b>	consumption 2010. (GWh)	number of customers
EP BiH	820	2.383
EP HZHB	272	1.384
<b>Total FBiH</b>	<b>1.091</b>	<b>3.767</b>

**GROUP III. Customers to whom capacity is not measured and they belong to categories commercial customers and public lighting**

commercial customers II and III tariff group and public lighting

<b>GROUP III.</b>	consumption comm. II and III group 2010. (GWh)	number of customers comm. II and III group	consumption public lighting 2010. (GWh)	number of customers public lighting	consumption comm. II and III group + public lighting 2010. (GWh)	consumption comm. II and III group + public lighting
EP BiH	525	51.119	78	5.225	603	56.344
EP HZHB	137	13.448	21	1.611	159	15.059
<b>Total FBiH</b>	<b>662</b>	<b>64.567</b>	<b>99</b>	<b>6.836</b>	<b>762</b>	<b>71.403</b>

**GROUP I. Customers connected to transmission network and commercial customers with annual consumption above 10 GWh**

<b>I GROUP</b>	consumption 110 kV (GWh)	number of customers 110 kV	customers at 35 kV with consumption above 10 GWh (GWh)	number of customers at 35 kV with consumption above 10 GWh (kWh)	consumption of customers connected to transmission network and commercial customers with annual consumption above 10 GWh	number customers connected to transmission network and commercial customers with annual consumption above 10 GWh
<b>Republika Srpska</b>	<b>110,26</b>	<b>4</b>	<b>148,66</b>	<b>6</b>	<b>258,92</b>	<b>10</b>

**GROUP II. Customers to whom capacity is not measured (end customers whose connection capacity corresponds to the installation fuse 63 A) with annual consumption less than 10 GWh**

customers at 35 kV voltage level

35 kV	consumption 35 kV (GWh)	number of customers at 35 kV
<b>Republic of Srpska</b>	<b>22,24</b>	<b>18</b>

customers at 10 kV voltage level

10 kV	customers at 10 kV (GWh)	number of customers at 10 kV
<b>Republic of Srpska</b>	<b>484,00</b>	<b>631</b>

commercial customers I tariff group

comm. I group	comm I group (GWh)	no of customers comm. I group
<b>Republic of Srpska</b>	<b>208,95</b>	<b>1.444</b>

**TOTAL GROUP II.**

<b>II GROUP</b>	consumption 2010. (GWh)	no of customers
<b>Republic of Srpska</b>	<b>715,19</b>	<b>2.093</b>

**GROUP III. Customers to whom capacity is not measured and they belong to categories comm. Consumption and public lighting**

comm. Consumption 2,3,6 and 7 tariff group and public lighting

comm. 2, 3, 6 and 7 group and public lighting	consumption comm. 2, 3, 6 and 7 group 2010. (GWh)	number of customers comm. 2, 3, 6 and 7 group	consumption public lighting 2010. (GWh)	number of customers public lighting	consumption comm 2, 3, 6 and 7 group + public lighting 2010. (GWh)	number of customers comm. 2, 3, 6 and 7 group + public lighting
<b>Republika Srpska</b>	<b>331,66</b>	<b>31.073</b>	<b>59,06</b>	<b>414</b>	<b>390,72</b>	<b>31.487</b>