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**HYDRO POWER AND ENERGY
PLANNING PROJECT (HPEP)**

ASSESSMENT OF ELECTRICITY MARKET RULES FROM DECEMBER 2013 AND ITS CONSISTENCY WITH GEMM 2015

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1.0 ACRONYMS

ATC	Available Transmission Capacity
DSO	Distribution System Operator
ETM	Electricity Trading Mechanism
EU	European Union
ESCO	Electricity System Commercial Operator
GEMM 2015	Georgian Electricity Market Model 2015
GNERC	Georgian National Energy and Water Supply Commission
GoG	Government of Georgia
HPEP	Hydro Power and Energy Planning Project
HPP	Hydro Power Plant
IFI	International Financial Institution
IPP	Independent Power Producer
MO	Market Operator
MoE	Ministry of Energy of Georgia
MW	Megawatt
MWh	Megawatt Hours
RPS	Renewable Property Services
TSO	Transmission System Operator

2.0 INTRODUCTION

USAID's Hydro Power and Energy Planning (HPEP) Project commenced in September, 2013. A major task for USAID HPEP is the further support to the electricity sector in implementing the Electricity Trading Mechanism (ETM) envisaged under the future market design for Georgia referred to as the Georgia Electricity Market Model for 2015 or "GEMM 2015" which is in line with EU Energy Community regulations and principles.

Over the recent years, Georgian energy sector has undergone a significant transformation. Notable progress has been achieved in energy sector liberalization, energy security and legal and regulatory framework. The principal energy sector primary and secondary legislation in Georgia incorporates some aspects of energy regulation and market rules in line with EU principles.

The Government of Georgia (GoG) and Ministry of Energy of Georgia (MoE) is committed to facilitating private sector led development of Georgian hydropower resources. The responsibilities of the various market entities will become diverse and expand. GEMM 2015 defines further steps towards the design and development of a competitive electricity market in Georgia.

The purpose of the report is to describe modification in the market rules since December 2014 and analyze if each change is consistent with GEMM 2015.

3.0 SUMMARY OF MARKET RULES MODIFICATIONS

Market rules are required in order to design and implement the modifications (compliant with EU competitive market principles and harmonized with the Turkish power market rules and procedures) to the Georgian power market design to enable Georgian HPPs to sell their electricity output into the Turkish power market (and, eventually, other regional markets), with a trading mechanism that properly allocates risks among market players and provides dependable cross-border transmission capacity rights.

GEMM 2015 considers a few phases towards the transition of competitive market. The process envisaged for implementing an enabling electricity trading mechanism will be a multi-phase process that aims to commence regional spot trading with improvements so that expanded types of trading can be added over time.

- Phase 1: Planning (conceptual future electricity market design including the energy law, revised market design and secondary legislation such as market rules, grid code, etc., a road map, action plans for each key market supporting entity, joint implementation agreement between GoG and donors/IFIs).
- Phase 2: Implementation of action plans.
- Phase 3: Harmonization with Turkey's power market framework according to ENTSO-E rules.

- Phase 4 and beyond – Implementation of next rounds with updated harmonization.

One of the main steps to be taken according to GEMM 2015 is putting in place Market Operating Rules and related codes and procedures that provide effective safeguards against the possibility of market abuses and unfair trade practices.

The Market Rules regulate:

- a) Functioning of Electricity and Guaranteed Capacity Market and activity of Commercial System Operator and Dispatch Licensee;
- b) Electricity purchase and sale related technical, commercial and financial relations through direct agreements, among them System Commercial Operator;
- c) Technical, commercial and legal relations related to electricity generation, transmission, dispatch, flow and distribution activities, securing United Electricity System with Guaranteed Capacity and trading, electricity import and export, work in parallel regime of electricity systems and own consumption of the electricity generated by electricity generation licensee and small hydro power plant;
- d) Different principles and procedures of electricity generation, consumption, import and export for qualified enterprises, according to the principles determined by the Georgian Law ‘On Electricity and Natural Gas’;
- e) Drawing up electricity (capacity) balances and their implementation rules; and,
- f) Other issues determined by the Georgian legislation.

The Electricity Market Rules (September 2006, as subsequently amended in March 04, 2014) were drafted using the current electricity sector structure. In order for GEMM 2015 and the ETM to operate, a new legal framework must now replace the existing guaranteed capacity market, and the commercial and financial relations between MO and TSO.

Market rules fall under the responsibility of the Ministry of Energy, which adopts the rules. GNERC has full authority to request any data including completely deregulated export/import and transit activities. The Ministry of Energy has identified step-by-step deregulation of the energy sector as one of the priorities of energy policy.

GEMM 2015 considers the following steps:

- Draft Initial Market Operating Rules
- Approve Interim Market Operating Rules
- Drafting of Final Market Operating Rules
- Approve Final Market Operating Rules

The table below summarizes the amendments to the Market rules from December 2013 through March, 2014 and whether or not each amendment is consistent with GEMM 2015.

Amendments in the Market Rules	Consistency with GEMM 2015
<p>Subparagraph “h” of Paragraph 2 of Article 2:</p> <p>h) The Electricity Consumption in the Transmission Network of Electricity” – is the electricity consumption, which includes the self-consumption of the sub-station; the electricity consumption in the safety mode of the transmission; the volume of electricity, metered during the synchronization; the losses in the electricity transmission lines, power, voltage booster and measuring transformers, composite coils and bridging reactor, synchronous condenser and condenser batteries and also other technical losses of the electricity in the transmission line in the operation and no-load modes.</p>	<p>Consistent with GEMM 2015</p>
<p>Subparagraph “h¹” of Paragraph 2 of Article 2</p> <p>h¹) Testing of the Electricity Transmission Network – is the inspection of work parameters of the electricity transmission network or one of its elements, which requires connection of the network, putting it (or its elements) under the voltage and/or the electricity overflow. Testing is carried out based on the request from the electricity transmission line owner, by the decision of the dispatch licensee. The system commercial operator shall be informed about the testing of the electricity transmission line intended for the intersystem transit (overflow);</p>	<p>Consistent with GEMM 2015</p>
<p>Paragraph 1 of the Article 3:</p> <p>Electricity and guaranteed capacity trading in the electricity system of Georgia is allowed solely among the enterprises registered as qualified enterprises under the Georgian Law on Electricity and Natural Gas and these Rules. The Dispatch licensee is also entitled to participate in the electricity purchase portion of wholesale trade for the purpose of covering electricity losses incurred for</p>	<p>Partially consistent. Currently, Market rules do not allow traders to participate in wholesale electricity trading.</p> <p>Traders will be able to buy and sell electricity on domestic and foreign markets. Domestically, they may buy electricity from the RGs (surpluses), IPPs and Small HPPs for the purpose of onward sales to Eligible Customers or the RPSs, TSO or to DSOs to</p>

<p>securing electricity (capacity) transit.</p>	<p>cover distribution losses.</p>
<p>Paragraph 8 of the Article 3:</p> <p>8. The System Commercial Operator shall inspect the submitted documentation within the 10 work-day period and accordance of actual condition with the requirements of these Rules. In case of non-compliance of submitted documentation with the requirements of these Rules, the System Commercial Operator shall inform (in the written form) the applicant about the refusal (except the seeker of being registered as the importer or the exporter in the wholesale trade) to be included as a participant in the wholesale trade, indicating corresponding reason for such refusal, not later than within 10 work days after presenting the documentation.</p>	<p>Consistent with GEMM 2015</p>
<p>Paragraph 8¹ of the Article 3:</p> <p>8¹. In case of the individuals, who are seeking for the registration as an importer or an exporter, the System Commercial Operator inspects the submitted documentation and accordance with the requirements of these Rules, within 10 work-day period. In case of non-compliance of submitted documentation with the requirements of these Rules, informs (in the written form) the applicant about the refusal to be included as a participant in the wholesale trade, indicating corresponding reason for such refusal not later than within 10 work days after presenting the documentation. In the event that presented documentation meets actual conditions, the System Commercial Operator includes the seeker in the register of wholesale trade participants, not later than within 12 work days.</p>	<p>Consistent with GEMM 2015</p>

<p>Paragraph 9 of Article 3:</p> <p>9. In case of conformity of presented documentation with the requirements of these Rules, within five work days, the System Commercial Operator, the dispatch licensee, the applicant and the person, who owns the power network, where the applicant is connected, shall inspect the metering nodes to be used in the wholesale trade, including the generators the metering nodes available at the self-consumption transformers and compose inspection acts (hereinafter referred to as Metering Node Inspection Act) as of metering nodes to be used in the wholesale trade. The System Commercial Operator and the dispatch licensee shall jointly approve the form of this act. The requirements of this Clause do not apply to the registration of importers, exporters, transmission and dispatch licensees as the participants of wholesale trade.</p>	<p>Consistent with GEMM 2015</p>
<p>Paragraph 1 of Article 13:</p> <p>Trade of balance electricity shall be carried out only through the Electricity Market Operator. Sale and purchase of balance electricity through the Electricity Market Operator can be carried out based on direct agreements as well as based on standard direct agreement rules</p>	<p>So far operation of Georgian balancing market is not consistent with GEMM 2015. Trade in balancing market is conducted via standard direct agreement rules and price of balancing electricity is determined by MO. However, it is not based on principles of competitive electricity market</p> <p>Under the GEMM 2015, the MO's principal function is to operate the balancing market and ensure that energy purchase and sales quantities contracted for under bilateral contracts are balanced, by ensuring that "balance energy" is available. To do so, the MO is responsible to develop a balancing mechanism that matches 'offers' and 'bids.'</p>
<p>Paragraph 5¹ of Article 13:</p> <p>Electricity purchased based on a direct agreement signed by the Electricity Market Operator with generators (except for the generators provided for in Clause 5 of this Article) or importers shall be deemed balance electricity, with the exception of the cases provided for in Clause 7 of this Article.</p>	
<p>Paragraph 5¹ of Article 13:</p> <p>Electricity purchased based on the transit deviations agreement (provided for in Article 148 of these Rules) signed by the Electricity Market Operator with the enterprise ordering the transit shall be deemed as the balance</p>	

<p>electricity, with the exception of the cases provided for in Clause 7 of this Article.</p>	
<p>Article 14¹¹. The Dispatch Licensee's Sphere of Authority in Establishing the Capacity of Cross Border Transit (Interconnection) Lines</p>	<p>According to this article the Dispatch Licensee is authorized to determine the capacity and the available transmission capacity (ATC) of the cross border transit (interconnection) lines (except for the New Cross Border Transit (Interconnection)).</p> <p>While GEMM 2015 is a strategic vision of Georgian electricity market development, it does not describe all necessary and sufficient procedures for the approximation to EU principles. Establishment of ATC auctioning is another step for achieving GEMM 2015 goals</p>
<p>Paragraph 1 of Article 30:</p> <p>In order to make an annual forecast of electricity (capacity) balance, no later than November 1 of each calendar year the Dispatch Licensee shall receive from Qualified Enterprises standard applications for electricity (capacity) supply-demand for the following year starting from January 1 through December 31.</p>	<p>Consistent with GEMM 2015.</p> <p>Under GEMM 2015, demand forecast section should cover forecasted total demand and losses for the country, information related to peak demand during the previous year, seasonal demand analyses, sector demand development, etc. The DSO, RPSs and Eligible Customers should submit all information necessary for demand forecasts to the TSO. Additionally, each RPS will be obligated to provide the TSO with monthly demand forecasts (in MWh) as well as weekly minimum and maximum demand forecasts (in MW) for the coming year and for the following years, monthly demand forecasts (in MWh) and monthly minimum and maximum demand forecasts (in MW).</p> <p>Also, TSO will be obligated to prepare a Generation Capacity Projection. It will be based on demand forecast prepared by DSOs and RPSs, and will be finalized by the TSO. It is all based on information provided by the licensed generators. The generation section includes:</p> <ul style="list-style-type: none"> • total existing installed capacity in Georgia during the previous year; • power plants that are licensed but not yet commissioned and generating facilities currently under construction; • for each year, power plants that will be

	<p>non-operational for longer than year as well as power plants that will be added to the grid; and</p> <ul style="list-style-type: none"> • Import-export volumes for the previous year and estimation for subsequent years.
<p>Paragraph 1 of Article 31. Supply and Consumption Schedules</p> <p>The Dispatch Licensee shall elaborate monthly forecasts and daily/hourly plans of generation and supply sources within the approved electricity (capacity) balance, based on monthly and daily/hourly supply and demand applications submitted by the Qualified Enterprises, and taking into account the expected regimes and resources of the power system.</p>	<p>Consistent with GEMM 2015.</p>
<p>Paragraph 2 of Article 31. Supply and Consumption Schedules</p> <p>For the purpose of monthly planning, 4 working days prior to commencement of the each settlement period the Qualified Enterprises (except importers and exporters) and 10 working days prior commencement of the each settlement period the importers and exporters shall submit to the Dispatch Licensee typical hourly consumption and supply schedules for the following reporting period, specifying the amounts of electricity to be purchases or sold during a month based on the direct agreements, in compliance with the instructions provided for in Clause 24 of this Article.</p>	<p>This is initial start for the development of competitive electricity trading in Georgian Electricity market. At this stage, Market Rules establish procedures which enable market participants to begin day-ahead scheduling. This is a precursor for the establishment of Day-ahead market. However, Day-ahead market requires more sophisticated rules and regulation. Therefore, Market rules should be amended in accordance to the steps required to start day-ahead trading in Georgian electricity market.</p>
<p>Paragraph 2¹ of Article 31. Supply and Consumption Schedules</p> <p>For the purpose of daily planning, 1 (one) working day in advance, the Qualified Enterprises (except importers and exporters) and 2 (two) working days in advance the importers and exporters shall submit to the Dispatch Licensee the consumption and supply applications for the following working day, while in case of non-working days - the demand and supply applications for the following non-working day and the very first</p>	

working day, in compliance with the instructions provided for in Clause 24 of this Article.

Paragraph 2² of Article 31. Supply and Consumption Schedules

Based on the hourly demand and supply applications received from the Qualified Enterprises, the Dispatch Licensee shall work out and approve the electricity (capacity) supply and consumption plan. In case of any inconsistencies in the consumption and supply applications submitted to the Dispatch Licensee, the Dispatch Licensee shall immediately notify the Qualified Enterprises, specify the reasons and offer to correct the inconsistency within the deadline provide for in the relevant instruction. If no agreement is achieved with the Qualified Enterprise or if the Qualified Enterprise fails to respond on time, the Dispatch Licensee shall have the right to work out and approve consumption and supply balances and the electricity (capacity) supply and consumption plans at the Dispatch Licensee's own discretion, taking into account the expected regimes and resources of the power system.

Paragraph 2³ of Article 31. Supply and Consumption Schedules

If the supply and consumption applications for each calendar day or their inconsistency corrections are not provided within the deadlines provided for in Clauses 21 and 22 of this Article, within 3 working days after the end of the reporting period the Dispatch Licensee will work out corresponding summarizing information and assessments and publish them on the Dispatch Licensee's web page.

Paragraph 2⁴ of Article 31. Supply and Consumption Schedules

The application forms (monthly, daily/hourly), as well as the instructions for making forecasts and daily/hourly plans must be developed and approved by the Dispatch

Licensee.

Paragraph 3 of Article 31. Supply and Consumption Schedules

The Electricity Dispatch Licensee shall officially publish on its web page www.gse.com.ge the information regarding daily/hourly electricity (capacity) consumption and supply schedules immediately upon approval of such schedules, in compliance with the instruction provided for in Clause 24 of this Article. Publication of such information on the web page by the Dispatch Licensee shall be considered as official publication.

Paragraph 4 of Article 31. Supply and Consumption Schedules

Implementation of the electricity (capacity) consumption and supply schedules developed by the Dispatch Licensee shall be mandatory for all the persons involved in electricity generation, export, import, transmission, distribution, dispatch, consumption and transit. These schedules impose specific obligations and responsibilities upon each of them. The approved daily consumption and supply schedules shall not be subject to revision and/or correction except for emergency situations and other cases provided for in the legislation.

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